

# **DEVELOPMENT OF A NEW MEASURE OF WORK-ABILITY FOR INJURED WORKERS**

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**ATTESTATION OF AUTHORSHIP**

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed:

## CO-AUTHORED WORKS

This work has not been submitted for publication at present, although some of the data from the literature review on work-ability informed a recent report concerning ‘work outcomes’ to the Accident Compensation Corporation. This is an unpublished report:

McPherson, K. M., Fadyl, J., Rutherford, S., Bright, F., Kayes, N., & Moloczij, N. (2009). *Rehabilitation outcome measures literature review* (Unpublished report for New Zealand Accident Compensation Corporation). Auckland: AUT University.

For clarity, the report itself also states:

Please note that the work presented here includes findings drawn from a number of studies and relevant projects our team has been involved in. In particular, it should be noted that work carried on outside the funding framework has been drawn on, particularly in relation to the discussion of concepts related to Workability (this being the topic of Joanna Fadyl’s Master of Health Science thesis, pending submission) carried out contemporaneously to this report and being directly related to the brief. To that end, this report will be listed as an associated publication in Joanna’s thesis (supervised by Professor McPherson) and we would request that any dissemination of findings by ACC acknowledge this contribution. We also wish to confirm that AUT’s postgraduate office is aware of the use of this material for this report.



## ACKNOWLEDGEMENTS

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## **ETHICAL APPROVAL**

Ethical approval for this research was granted by the Health and Disability Ethics Committee and the Accident Compensation Corporation Ethics Committee.

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## THESIS ABSTRACT

*Background:* Work-ability is often assessed as part of the vocational rehabilitation process for injured workers. However, research highlights a concern among therapists who carry out vocational assessments that there is a lack of consistency with regard to quality and comprehensiveness using current methods of assessment. One of the reasons for this is that there are no standardized measures of work-ability available that are designed to be used for the purpose of facilitating rehabilitation. The Participation And Work-ability Support Scale (PAWSS) is a new measure, conceptualized and initially developed by Professors Lynne Turner-Stokes and Kathryn McPherson, that was designed to address this gap.

*Design and Methods:* This research was designed to develop the PAWSS measure to the point where it had face validity, and was complete enough to be formally psychometrically tested. The design of the research involved three parts. Firstly, a comprehensive review of the literature was undertaken. This was done to identify all the aspects of work functioning that are considered to contribute to work-ability, and then consider currently available work-ability measures in relation to their suitability for assessing vocational support needs. Secondly, in phase one of the research, qualitative focus groups and interviews with stakeholders in the return-to-work process were undertaken. The purpose of this phase was to check the content of the measure against stakeholder experiences, and determine the most appropriate administration context and procedures. Interviews and focus groups were analysed using descriptive analysis, and findings were used to inform revisions to the measure. Finally, phase two of the research involved pilot testing the measure. This was carried out by contracting experienced occupational therapists to test the new measure with consenting workplace assessment clients. Feedback from assessors and injured workers, assessor testing notes and scoring were analysed to examine feasibility and acceptability of the PAWSS, and revisions to the measure were made in accordance with findings.

*Results:* The qualitative interviews and focus groups (phase one) provided feedback and comments that informed adaptations to the measure to bring it more in line with

stakeholders' experiences of work-ability. Furthermore, this phase provided information about the context in which the measure should be administered, and this was adopted for the pilot testing. Pilot testing of the measure (phase two) showed that the measure was acceptable to both the assessors and the injured workers, and that it was feasible to administer as part of a workplace assessment. Revisions to the measure and training procedures at this stage were primarily made to enhance clarity of item descriptions and scoring decisions.

*Conclusions and implications for practice:* Findings from the research confirmed the need for a standardized measure of work-ability that can be used to plan vocational supports and interventions. Furthermore, the PAWSS was shown to be feasible and acceptable as a comprehensive tool for assessment of the work-ability of injured workers. Further research is needed to test the reliability and validity of the PAWSS before it can be used in practice.

## 1 INTRODUCTION

This introductory chapter will cover the background to the research in terms of vocational rehabilitation and return-to-work practices, and the origins of the Participation And Work-ability Support Scale (PAWSS) measure. The purpose of the research will then be discussed, along with the potential significance of findings in relation to contribution to vocational rehabilitation practice. The final section will outline the structure of the remaining chapters of the thesis.

### 1.1 Background: Vocational Rehabilitation Practice and Assessment

#### *1.1.1 Vocational Rehabilitation Assessment*

In order to introduce a discussion of vocational rehabilitation assessment practices, it is useful to start by looking at definitions of vocational rehabilitation. The United Kingdom Vocational Rehabilitation Association defines vocational rehabilitation as “a process, which enables persons with functional, psychological, developmental, cognitive, and emotional impairments or health conditions to overcome barriers to accessing, maintaining or returning to employment or other useful occupation” (Vocational Rehabilitation Association, 2008). This is an inclusive definition that covers a range of approaches to vocational and occupational rehabilitation for people with both recently acquired and longer-term conditions. Since the focus for this research was specifically on return to work in injured populations, it is helpful to also consider a more injury-focused definition. Vocational rehabilitation following an injury is defined by the New Zealand Accident Compensation Corporation (ACC) as a process that involves “helping a person to keep working in their current job or finding another job that is suitable considering their injury and skills or becoming ready to return to suitable employment” (Accident Compensation Corporation, n.d.). What actually happens for each individual during the process of vocational rehabilitation after injury varies depending on injury type and severity, pre-injury occupation, and resources available; however, the aim is generally to enable a return to work and / or prevent significant work disability. Therefore practices tend to follow a process of first assessing work functioning and needs, then providing interventions where appropriate. In accordance with this, one of the key processes associated with vocational rehabilitation is the assessment of work-ability.

There are two broad types of work-ability assessment that are commonly used in return to work after injury. One type is fitness or physical capacity assessments that tend to be associated with determining benefit or compensation entitlement (for example ‘fitness for work’ and ‘functional capacity evaluation’ assessments). The aim of these assessments is usually to determine whether someone is physically capable of working in a job role they have previously been doing. The other type is workplace assessments, which are done for the purpose of evaluating a person’s current workplace support and rehabilitation needs with a view towards a return to work. The literature in the area of work-ability suggests that the aspects of work functioning that could affect the worker’s ability to carry out the job include physical, environmental, cognitive, social and contextual (Business Work and Aging Centre for Research, n.d.; de Zwart, Frings-Dresen, & van Duivenbooden, 2002; van den Berg et al., 2008; Williams et al., 2007). Therefore, ideally an assessment intended to determine current work-ability and help minimize future work disability should assess ability to function in all these various aspects of the work, to ascertain the extent to which supports or interventions are needed to function in the job (and therefore what would be needed for a successful return to work, if possible). In terms of what each type of work-ability assessment actually looks at, the literature offers only broad descriptions and analyses, which are discussed below.

### *Fitness for Work Assessments*

Two particularly relevant articles offer some insight into assessment practices in fitness for work assessments carried out by an occupational physician — a literature review by Serra et al (2007) and a subsequent interview study with insurance physicians by Slebus, Sluiter, Kuijer, Willems and Frings-Dresen (2007). Serra et al (2007) proposed, based on their review, that criteria usually taken into account for the judgement of fitness for work consisted of all or some of: health and safety risk, physical capacity, ethical considerations, employment and earning capacity, and economic viability of employing the person. These criteria were frequently assessed using occupational history, clinical interview, standardized questionnaires, and information about job tasks and demands obtained through various methods. Physician decision-making was usually made either as a clinical judgement of the individual case, or based on standardized criteria outlined for particular disease groups (Serra et al., 2007). Both

Serra et al (2007) and Slebus et al (2007) found that particularly for patients with musculoskeletal disorders, physicians tended to focus on assessing physical work capacity only, with little consideration of the workplace environment and other factors. Serra et al (2007) critique the typical fitness for work evaluations done by occupational physicians for their lack of consideration of options for enabling the worker to re-enter the workplace through modified duties, adjustments or graduated return to work. Furthermore, both fitness for work assessments and functional capacity evaluations have been critiqued for rarely considering non-physical aspects of work functioning (Fisher, 1998; Slebus et al., 2007).

### *Workplace Assessments*

In contrast, workplace assessments usually carried out by occupational or physical therapists tend to be carried out via analysis of job duties, interview or discussion with the worker, employer and family, and observation of the workplace and the worker in a variety of work situations (Innes & Straker, 2002; Strong et al., 2004). While options for enabling the worker *are* a consideration in typical workplace-based assessments carried out by therapists (Strong et al., 2004), Innes and Straker (2002) highlight a concern among therapists who do these assessments that there is a lack of consistency in terms of content and quality. Therapists reasoned that this problem may be due to lack of appropriate standardized tools available for workplace assessments; limited reliability and validity of tools that *are* available; and limited flexibility of these tools to address referrer concerns (such as assessing overall work-ability) while also being meaningful for the worker and workplace (Innes & Straker, 2002). A study of workplace assessment practices in Southern Ontario by Strong et al (2004) found that although all seventy-six assessors who took part in the study assessed physical functioning, less than half assessed emotional aspects of work functioning, one third assessed social or interpersonal aspects, and less than a third assessed cognitive. Furthermore, only fourteen of seventy reports included in the study incorporated details of workplace procedures and policies. This situation is concerning as the processes for providing appropriate and timely vocational interventions are dependent on comprehensive assessment of current circumstances and needs.

### *Requirements of a New Vocational Assessment Tool*

In their article profiling workplace assessor practices, Strong et al (2004) provide an overview of dimensions along which different approaches to work-related functional assessment typically vary. These are illustrated in Table 1.1. This framework can help to clarify what a new tool would need in order to address the concerns raised by therapists in the Innes and Straker (2002) study (discussed above). To be meaningful to the worker but still address referrer concerns, the tool would need to be standardized and psychometrically tested, and also flexible enough to take into account the abilities of the particular individual and the match with their work environment. Furthermore, the tool would need to involve interactions between the assessor and the worker that tend towards the collaborative rather than purely observational. Finally, as much contextual information as possible would need to be considered by the tool, as these factors could potentially affect both work-ability and how meaningful the assessment is to the worker.

**Table 1.1: Dimensions along which different approaches to work-related functional assessment approaches vary, adapted from Strong et al (2004)**

Dimension	Description
Nature of interactions between the assessor and the worker	These can vary from ongoing interaction tending towards partnership, to minimal interaction utilizing observation only.
Flexibility of assessment protocol	This varies from being very flexible and based on the individual match between the worker and their job, and the particular requirements of the referrer, to a totally fixed protocol that does not vary at all depending on the parties involved.
Incorporation of contextual information	The extent to which the contextual information associated with what is going on in the person's life is taken into account. That is, their feelings about the work environment, competing demands, interpersonal issues, etc. At one end of the continuum, all of these are considered. At the other, only capacity to carry out job tasks is assessed.



### *1.1.2 New Zealand Context*

In New Zealand, vocational rehabilitation after injury is coordinated by the Accident Compensation Corporation (ACC), a state corporation which was set up to manage a no-fault injury compensation scheme established by the Accident Compensation Act, 1972. ACC is currently governed by the Injury Prevention, Rehabilitation, and Compensation Act, 2001. This means that injury-related rehabilitation in New Zealand is coordinated by ACC, and professionals who provide work-related assessments and rehabilitation are contracted by ACC to provide these services. Therefore, the context of this research project was that all participants in the study all had some association with this scheme. In addition, much of this research was part of a larger project funded by ACC Research Services, through their 2007 contestable funding round (McPherson, Fadyl, & Turner-Stokes, 2008).

## **1.2 Purpose of the Research**

This research project was carried out to develop the Participation and Work-ability Support Scale (PAWSS) — a new measure of work-ability. The origins and structure of the PAWSS are outlined in chapter two. The purpose of developing the PAWSS measure was to produce a tool that is designed to assess current work-ability and can be used for planning interventions and supports. For this thesis, the purpose was to develop the measure to the point where it included all the areas stakeholders in the return-to-work process considered to be important to work-ability (that is, it had face validity), and was acceptable and feasible to administer. At this point, it would be at the stage of development when the psychometric properties of the measure could be formally tested.

## **1.3 Significance of the Research**

The PAWSS measure was proposed to provide a standardized assessment of the level of supports and interventions that are needed to achieve required work performance in each aspect of work functioning. If this comprehensive measure was developed and found to be valid and reliable, it could offer a new resource to aid workplace assessment professionals and funders. The PAWSS could address a current gap in the literature — the lack of a standardized measure that considers all aspects of work functioning and

can be used to plan rehabilitation. Furthermore, it could potentially offer a useful research tool for evaluating the impact of interventions on various aspects of work functioning, and for comparing vocational rehabilitation resources and practices. The PAWSS was designed so that the resulting measure would cover the full range of aspects of work functioning. Therefore, if it is used as a standard part of a workplace assessment, all these aspects would have to be considered in order to complete the assessment. In this way, it could also address therapist concerns about varying quality and comprehensiveness of workplace assessment practices and reporting as discussed by Innes and Stracker (2002) and Strong et al (2004).

#### **1.4 Structure of the Thesis**

This study was conducted in three parts. Firstly, a review of the literature was carried out to identify the components of work-ability that are described in the literature, and the existing measures of work-ability. This was done to explore and develop the concept of work-ability itself, and to ensure that the PAWSS measure would address all the factors described as important in the existing research literature. The review also served to provide a rationale for the development of the measure through contrasting the factors described in the literature with those that are covered by existing measures. Secondly, qualitative focus groups and interviews were carried out with stakeholders in the return-to-work process to inform further development of the PAWSS measure (phase one). Finally, pilot testing of the measure was undertaken to explore the feasibility and acceptability of the measure (phase two). In this thesis, chapter two gives the origins and structure of the PAWSS; chapter three outlines the literature review undertaken; chapter four describes the design and methods for each phase of the research; chapter five provides the results of the research along with initial summary interpretations; and chapter six offers in-depth discussion of the results and implications of the findings for research and practice. For chapters four and five, the qualitative phase and pilot phase are described separately in turn. In the discussion chapter (chapter six), the implications for both phases of the research in combination with findings from the literature review are brought together and analysed. Conclusions from the research are summarised at the end of chapter six.

#### 1.4.1 A Note about Language

Throughout the thesis, a consistent approach to language has been used as follows: The word *factors* has been used to describe the constructs the research literature or research participants described as components of work-ability (for example, physical functioning, relationship with supervisors). With reference to the PAWSS measure itself, *items* refer to the aspects of work functioning that are scored using the measure, and *domains* refer to collections of similar items. For example the *Thinking and Problem Solving domain* contains five *items* that relate to thinking and problem solving at work (*cognitive skills, self-organisation and planning, safety awareness and communication*). APA referencing style is used throughout the thesis.

## **2 ORIGINS AND STRUCTURE OF THE PAWSS MEASURE**

### **2.1 Origins of the PAWSS**

The PAWSS originates from a collaboration between Professors Lynne Turner-Stokes and Kathryn McPherson. The motivation for development of a new measure stemmed from frustrations with the lack of an appropriate work-ability measure for use in rehabilitation research and practice. On a previous study evaluating vocational rehabilitation practice in New Zealand (McPherson et al., 2007), researchers found they could not identify a suitable outcome measure that would capture the current work-ability of participants, meaning a potentially less meaningful outcome had to be measured instead. Moreover, a review of return-to-work outcome measures by a collaboration of authors who attended a conference on improving return-to-work research showed that there were no measures of return to work that were comprehensive enough to meaningfully capture the dimensions that are important for rehabilitation (Wasiak et al., 2007). Professors Lynne Turner-Stokes and Kathryn McPherson responded to these issues by proposing a measure of work-ability that scored aspects of work functioning according to the level of support or intervention needed.

### **2.2 My Involvement in the PAWSS Development**

My involvement in the development of the PAWSS measure stemmed from my background as a vocational rehabilitation practitioner (as a trainer and job coach for people returning to work after serious injury), and my interest in improving practice through research. My involvement started with commenting on the original version of the measure, making suggestions for the domain structure and specific items. Following this, Professor Kathryn McPherson and I put together a proposal to develop and test the measure, and together with Professor Turner-Stokes put in an application for funding to the ACC contestable funding request for proposals put out in late 2007, which was funded in early 2008 (McPherson et al., 2008).

## 2.3 Structure of the PAWSS

### 2.3.1 Structure and Scoring

The design of the proposed PAWSS intended to address key aspects of work functioning through having these represented in the measure as individual items (for example *sensory and perceptual skills, safety awareness, communication*). In addition, these items were grouped into domains according to the type of work functioning they relate to (for example *Physical / Environment, Social / Behavioural*). It was intended that during administration, each item would be assessed and assigned a score from Level 1 to Level 7 based on the scoring structure illustrated in Table 2.1. These scores would be arrived at through use of decision trees that address key scoring decisions (see Appendix A for examples). The proposed scoring structure for the PAWSS was based on the scoring structure used for the Functional Independence Measure (FIM) (Keith, Granger, Hamilton, & Sherwin, 1987). This was proposed as the original structure pending consultation for two reasons. Firstly, having a scoring structure based on support and intervention required seemed appropriate for a measure intended to inform rehabilitation planning. Secondly, because the FIM is widely used among therapists, the structure would be familiar to assessors.

Since the intention of this study was to develop the PAWSS structure and content, a number of versions of the measure were produced during the study. The PAWSS as it was initially proposed (version 1) is provided in Appendix A. Each revised version is referred to and the relevant Appendix noted throughout the thesis.

**Table 2.1: Scoring structure for the PAWSS measure**

<b>Independent</b>	
Level 7	<b>Independence without modification</b> No problem at any level with managing the requirements of the job.
Level 6	<b>Independence with modification</b> Some consideration for time or effort. Or requires adaptation / strategies / equipment above the ordinary provided for the job in order to function independently. Able to self-prompt / correct or to structure their own environment. Minimal reduction in work productivity.
<b>Supported working</b>	
Level 5	<b>Supervision / set-up</b> Requires someone else to set up equipment or prompt on strategies or externally structured work environment. Monitoring, with only occasional prompting / correction.
Level 4	<b>Minimal support</b> Able to manage >75% of the time in that aspect of the job. Regular planned intervention or support only. Work productivity only mildly affected.
Level 3	<b>Moderate support</b> Able to manage more than half the time in that aspect of the job. May need infrequent* unplanned intervention on top of regular monitoring. Work productivity moderately affected.
Level 2	<b>Maximal support</b> Able to manage less than half the time in that aspect of the job. Frequent unplanned intervention on top of regular monitoring. Work productivity severely affected.
Level 1	<b>Constant support, or effectively unable</b> Effectively unable or manages less than 25% of the time. Unplanned intervention many times a day.
Unable to score (Further information needed)	Unable to score due to insufficient information. More information required.

\* Frequency of unplanned interventions not rigidly defined in terms of time — varies for different items and possibly also for different interventions. E.g. Level 3: Not every day; Level 2: Most days; Level 1: Many times a day. Define individually for each item if needed.

### *2.3.2 Administration Information*

The PAWSS is intended to be scored based on information about the abilities of the worker, the work environment, tasks and demands, and supports and interventions that are currently provided and/or are available to assist the worker to carry out his or her job. Therefore, information required to complete the measure may come from the worksite, the worker, medical notes or referral information, and in some cases the employer. Since this is the sort of information that can be collected via a worksite assessment carried out by a vocationally trained health professional, this was the context within which we expected the PAWSS could be administered most appropriately.

The PAWSS measure was designed to be a comprehensive summary of how much intervention or support an individual needs on a range of aspects of work functioning (for example sensory and perceptual skills, communication skills). It is a tool that, if reliable and valid, may provide a method of standardized workplace assessment reporting. Because of this, it was not expected to be particularly quick to administer, but rather the focus was on ensuring that all aspects that could be important to work-ability assessment are included in the PAWSS. In New Zealand, initial workplace assessments generally take approximately an hour for the visit to the workplace, plus writing up the report afterwards which is generally 1–2 hours. Subsequent monitoring visits and reports are usually shorter in duration and are allocated less funding. Funding is provided as a fixed sum per assessment for the visit and report (ACC Research Services, personal communication, April 21, 2008). It is intended that the PAWSS could become part of this process — therefore the administration time for the final measure would need to be such that it could fit in with these procedures and funding arrangements.

### 3 LITERATURE REVIEW

This literature review had two purposes. One purpose was to identify the factors that were reported in the research literature as being components of work-ability. This was to ensure the subsequent development of the PAWSS was grounded in knowledge of the work that had previously been carried out internationally in the area of work-ability, particularly as the concept of work-ability still lacks agreed definition. The other purpose was to look at existing measures of work-ability and discuss their limitations in relation to measuring work-ability for vocational rehabilitation purposes. This review also establishes a framework by which the PAWSS itself could be evaluated once further developed, in terms of whether it addresses the gaps identified.

#### 3.1 Background

Work-ability can be broadly defined as the match between the physical, mental, social, environmental and organisational demands of a person's work and his or her capacity to meet these demands (Alavinia, van Duivenbooden, & Burdorf, 2007; Business Work and Aging Centre for Research, n.d.; Comerino et al., 2008; de Zwart et al., 2002; Martinez & Latorre, 2006; van den Berg et al., 2008; Williams et al., 2007). Although there is general agreement in the literature that ability to function at work can be affected by a number of different factors, there is still a lack of a clear, agreed definition of, and boundaries around, what the components of work-ability are.

Defining and measuring work-ability is of interest to those in the field of occupational rehabilitation for two primary reasons. First, it is important that people are not at work when it is unsafe, or when that person's capability to perform the job is affected to the extent that there is a significant risk to them or their employer (Serra et al., 2007). Second, it is crucial that people are not excluded from work because of perceived incapacity, when reasonable supports could be put in place that would allow them to perform satisfactorily in the job. This is important not only because of economic demands put on the employer when workers are on sick leave, but also because being in employment is often associated with better quality of life, health and physical functioning (Ross & Mirowsky, 1995; Steadman-Pare, Colantonio, Ratcliff, Chase, & Vernich, 2001). While these points may seem logical, often it is not straightforward to



determine whether someone is safe and capable of performing their job (or could be with reasonable supports) when they are experiencing impairment(s) related to illness or injury. Therefore, it is important that we can accurately and reliably measure work-ability to ensure that people who *are* able to work can be offered the right supports, and timely interventions can be put in place when work rehabilitation is necessary.

Measurement of work-ability encompassing a range of factors beyond physical ability to perform tasks is discussed in the occupational rehabilitation literature from the early 1990s, with psychosocial influences being raised as important to return-to-work success (see Feuerstein (1991)). This review sought to critically evaluate the literature to firstly identify the important factors contributing to work-ability for a population of injured workers, and then consider how these relate to currently available measures. A literature search was carried out as described below based on the principles of systematic review (Petticrew & Roberts, 2006). An initial search was carried out to identify the factors that contribute to work-ability. The search was then broadened to identify currently available measures of work-ability for injured populations and compare them against the findings from the first search.

### **3.2 Key Components of Work-ability: A Systematic Approach to the Literature**

#### *3.2.1 Aims*

The aim of reviewing the literature was to help identify key factors that contribute to an individual's work-ability.

#### *3.2.2 Search Limits*

Limits for the search were identified based on the PICOT framework (Fineout-Overholt & Melnyk, 2005) as outlined below:

##### *Population*

The population was defined as people with a condition affecting their work-ability. While the primary population of interest was injured workers, the initial search limits

were kept broad to ensure that all articles that could include information of relevance to the work-ability of injured workers were included. However, populations with long-term illness (consecutive sick leave of greater than six months due to reason other than injury or reason not specified) and psychiatric illness were excluded. This was because it is likely they have additional or different influencing factors for work-ability compared to short-term illness or injury (due to being longer term and / or involving more than one disabling episode).

### *Intervention*

Workplace assessment or work-ability assessment. Articles that only described or tested measures of “functional capacity evaluation” were excluded, as these are numerous and designed for very similar purposes (that is, to test physical capacity to perform job tasks). Critical reviews of functional capacity evaluations were included.

### *Comparison*

No specific comparison factors were identified as relevant for this topic

### *Outcome*

Outcomes included in the search terms were vocational support, return to work, work-ability, and related terms (specified in 3.2.3. *Keyword Searches*).

### *Timeframe*

In order to ensure both a comprehensive and relevant approach to the review (given many factors related to work environment and associated societal issues change over time), only the literature from the last twenty-one years was included: from 1988 to 2008 inclusive.

From this analysis, the following keyword and subject heading searches were developed and carried out.

### 3.2.3 Keyword Searches

#### *Keywords*

“work ability” OR “work disability” OR “work functioning” OR “work capacity” OR “work incapacity” OR “work assessment” OR “work site assessment” OR “work place assessment” OR “work capacity evaluation” OR “work capacity assessment” OR “vocational assessment”

AND

“work rehabilitation” OR “vocational rehabilitation” OR “vocational support” OR “work preparation” OR “employment support” OR “return to work” OR “RTW”

#### *Databases Searched Using Keywords*

*SCOPUS* health sciences and social sciences journals 1988–2008, article or review, in English (returned 730 references).

*Web of Science* 1988–2008, English language, relevant subject areas refined to healthcare, rehabilitation, occupational and social sciences related subjects (returned 386 references).

These databases were chosen for the keyword searches because they are citation indexes that cover a wide variety of journals and subject areas.

### 3.2.4 Subject Heading Searches (Database Specific)

Databases for the subject heading searches were chosen because of the relevance of work-ability and return to work to the disciplines that these databases cover. In particular, *MEDLINE* covers health-related journals, and *AMED* is focused on allied health, which includes physiotherapy and occupational therapy — professions that are often involved in the assessment of work-ability and delivery of work rehabilitation.

*MEDLINE*: Subject heading search “work capacity evaluation” (returned 4502 references); limit to publication year 1988–2008, human, English language (returned

1167 references); limit to NOT “functional capacity evaluation” (returned 1112 references); limit to adult (returned 751 references).

*AMED*: Subject heading search “work capacity evaluation” 1988–2008 (returned 265 references).

### 3.2.5 *Assessment of Relevance*

For the references returned in the search, the titles and abstracts were read, and articles that showed potential to meet the inclusion criteria defined within the PICOT framework (see *Search Limits* in section 3.2.2) were obtained and read. In particular, articles that discussed the concept of work-ability or its components, or detailed research testing work-ability or the factors that affect it were sought. Papers that dealt exclusively with demographic or injury-related predictors of work-ability were outside the scope of the review, but these are discussed briefly for completeness and to give context. It is worth noting here that this review focused solely on work-ability — that is the ability to function in the job. While return to work following time off due to an injury or illness would usually also involve a decision (whether explicit or not) on the part of the individual concerned, factors that focus on the *decisions* individuals make about return to work were not looked at as part of this review.

### 3.2.6 *Quality Screening and Identification of Factors Important to Work-ability*

Each article that reported research findings was critiqued for quality during reading using the appropriate Critical Appraisal Skills Programme (CASP) framework (Public Health Resource Unit, 2002) for quantitative designs, or the framework for evaluation of qualitative research specified in Mays and Pope (1995) for qualitative designs. The CASP framework consists of sets of quality-assessment questions specific to the particular research design to assist with evaluating research publications (Public Health Resource Unit, 2002). The Mays and Pope framework is a checklist of attributes proposed as key aspects of good quality, rigorous, qualitative studies, including clear description of theoretical framework and methods, detailed description of analysis, and sufficient data stated to support conclusions (Mays & Pope, 1995). Checklist-type quality assessment tools which evaluate whether key rigour requirements for the

particular study design are met were used rather than quantitative scoring tools. This approach was taken because this review sought to incorporate information from a wide range of study designs, and the checklist-type tools allowed each study to be evaluated based on the rigour requirements of the particular research design employed. In addition to research findings, many articles discussed the concept of work-ability or related information as part of the introduction or discussion. Any information that was relevant to the topic was included when putting together the summary of factors below, although for research findings, only those which fulfilled all the criteria for good quality research using the quality assessment checklists described above (that is, those studies which met each of the checklist criteria) were reported in the summary.

From the title and abstract screening, thirty-four articles were obtained to be read and critiqued, and twenty-three both met the quality criteria and provided information about the factors that contribute to work-ability. The factors identified from this search as being important in work-ability are summarised below. These are grouped according to the International Classification of Functioning, Disability and Health (ICF) framework (World Health Organisation, 2001), in order to present the information in terms of a current (and arguably widely recognised) theoretical rehabilitation framework.

### *Body Structures and Body Functions*

*Physical Functioning.* Physical functioning was identified as the aspect of work-ability with the longest history of measurement. Physical functioning is most commonly measured by either medical assessment carried out by an occupational physician, or functional capacity evaluation carried out by a workplace assessor or occupational therapist (King, Tuckwell, & Barrett, 1998; Pransky & Dempsey, 2004; Serra et al., 2007; Slebus et al., 2007). While recent research has established that physical functioning is only one component of work-ability, it remains a vital factor to consider when assessing work-ability, particularly when it comes to making sure that a worker is fit to do the tasks required for the job and is able to maintain safe working practices (Ilmarinen, Tuomi, & Seitsamo, 2005; King et al., 1998; Serra et al., 2007; Slebus et al., 2007). Particular aspects of work-ability affected by physical functioning can be divided into six categories of factors. 1) Access to and around the workplace, including access to suitable transport to and from work, 2) physical strength or tolerance of work tasks, 3) motor skills, 4) sensory abilities, 5) perceptual functioning, including effects of

lighting and other environmental factors, and 6) ability to manage fatigue and maintain stamina throughout the day (Briand, Durand, St-Arnaud, & Corbière, 2008; Kuijer et al., 2006; Pransky & Dempsey, 2004; Sjögren-Rönkä, Ojanen, Leskinen, & Mälikä, 2002; Targett, Wehman, William, & Young, 2004).

*Psychological Functioning.* From the search results, it was clear that in general injury and illness populations, psychological functioning is a factor that is important to consider in addition to physical functioning. Being off work or experiencing significant life changes (as are often brought about by injury or illness) can alter a person's psychological well-being, leading to problems such as stress, anxiety and depression, which can affect his or her ability to carry out aspects of the work (Briand et al., 2008; Goedhard & Goedhard, 2005; Marhold, Linton, & Melin, 2002; McKee-Ryan, Song, Wanberg, & Kinicki, 2005). In addition to this, issues to do with confidence and motivation (such as worries about ability to return to the workplace, or perform in the job) are also reported to affect work-ability, especially in individuals who have been off work for longer than a few weeks (MacEachen, Kosny, & Ferrier, 2007; Magnussen, Nilsen, & Råheim, 2007).

*Thinking Skills and Problem Solving (Cognitive Functioning).* Cognitive abilities greatly affect the ability to function in the workplace, particularly if the job requires planning, problem solving, organising, concentration, or tasks that require good memory or attention skills (Bootes & Chapparo, 2002; Chappell, Higham, & McLean, 2003; Gilworth et al., 2006; Golden, 1995; Greenspan, Wrigley, Krensnow, Branche-Dorsey, & Fine, 1996; Ilmarinen et al., 2005). However, sometimes these barriers are not identified before return to work or job placement, meaning they can interfere with work functioning (Gilworth et al., 2006). In particular, individuals who have suffered a brain injury, significant pain, or psychological distress may experience changes in their work-related cognitive abilities, and thinking and beliefs about work-ability (Bootes & Chapparo, 2002; Schonstein & Kenny, 2001). While cognitive skills are often assessed in individuals who have suffered a traumatic brain injury, other populations who may benefit from assessment in this area (for example people with chronic pain) are sometimes overlooked (Schonstein & Kenny, 2001). It is important, therefore, to include thinking skills and problem solving in assessment of work-ability, to prompt routine consideration of possible difficulties experienced in this area. Examples of

cognitive skills that may affect work-ability are concentration, attention, memory, planning and organising, safety evaluation, problem solving, task initiation, and adapting appropriately to unanticipated events (Bootes & Chapparo, 2002; Chappell et al., 2003; Golden, 1995).

### *Activities and Participation*

*Social and Behavioural Functioning.* In addition to thinking and problem-solving skills, another set of factors that can be affected by brain injury, pain, or psychological changes is social and behavioural skills. This encompasses following normal work practices or rules (for example personal presentation, adhering to expected work practices), interpersonal relationship skills (with superiors, colleagues, and clients), and reacting appropriately to work requests (such as supervisory instruction) (Bootes & Chapparo, 2002; Golden, 1995).

### *Environmental Factors*

*Workplace Factors (Social and Environmental).* Workplace factors that incorporate the environment, culture, and social climate of the workplace are another key factor in work-ability (Briand et al., 2008; Eakin & MacEachen, 1998; Ilmarinen et al., 2005; Serra et al., 2007; Shaw, Robertson, Pransky, & McLellan, 2003; van den Berg et al., 2008). For example, studies report that the level of social support available in the workplace, particularly from colleagues and direct supervisors, makes a difference to how well a person is able to cope with the injury or illness in the workplace, therefore affecting their ability to return to work in a timely manner (Lysaght & Larmour-Trode, 2008; Marhold et al., 2002; Shaw et al., 2003). In particular, whether an individual feels he or she is supported and involved the decision making, and whether his or her difficulties are acknowledged as genuine, are important as to whether a person feels capable of being in the workplace (Shaw et al., 2003). The environment in the workplace (for example the type of building, lighting, temperature, machinery) is also considered to be important, particularly in terms of the interaction of these factors with physical capabilities of the worker (Briand et al., 2008; Serra et al., 2007). Interestingly, it has been found from several studies evaluating practices for workplace or work-ability assessments, that these factors are often not recorded and are therefore

overlooked when making judgements about an individual's work-ability (Serra et al., 2007; Slebus et al., 2007; Strong et al., 2004).

*Factors Outside the Workplace.* In addition to factors directly associated with performance in the workplace, there are several factors related to social and family environment and other life events which are identified as having an influence on an individual's ability to work (Veloza et al., 1999). Routines and problems outside the workplace (such as morning routines or ability to access support services) can influence an individual's ability to perform to the required standard and adhere to expected work routines (Targett et al., 2004). Social and family supports have been shown by several studies to act as either facilitators or barriers for return to work after injury or illness (Briand et al., 2008; MacEachen et al., 2007). Furthermore, financial, legal and societal issues may affect a person's available energy and influence motivating factors for return to work (Franché & Krause, 2002; Waddell, Aylward, & Sawney, 2002). For example, if a person is having to undergo legal proceedings because of the circumstances surrounding an injury, or if there are societal issues such as negative experiences with work rehabilitation agencies, or questions about whether it is financially viable to come off benefits, these may contribute to an individual's feelings about whether they are capable of working at that point in time (MacEachen et al., 2007; Magnussen et al., 2007; Waddell et al., 2002).

#### *Injury-related and Demographic Predictors of Work-ability*

Although a thorough review of injury-related and demographic predictors was not included in the scope of the review, brief discussion of these predictors of work-ability described in the research literature is warranted to give a complete picture. Based on relevant research and review articles in this area, injury-related and demographic variables associated with reduced work-ability are site of injury (back injury being most often associated with reduced work-ability), more pain, and older age (Cheng & Hung, 2007; Krause, Frank, Dasinger, Sullivan, & Sinclair, 2001).

#### *Interventions*

Early return-to-work intervention and workplace accommodations have been found to be associated with higher likelihood of return to work in a number of studies, further

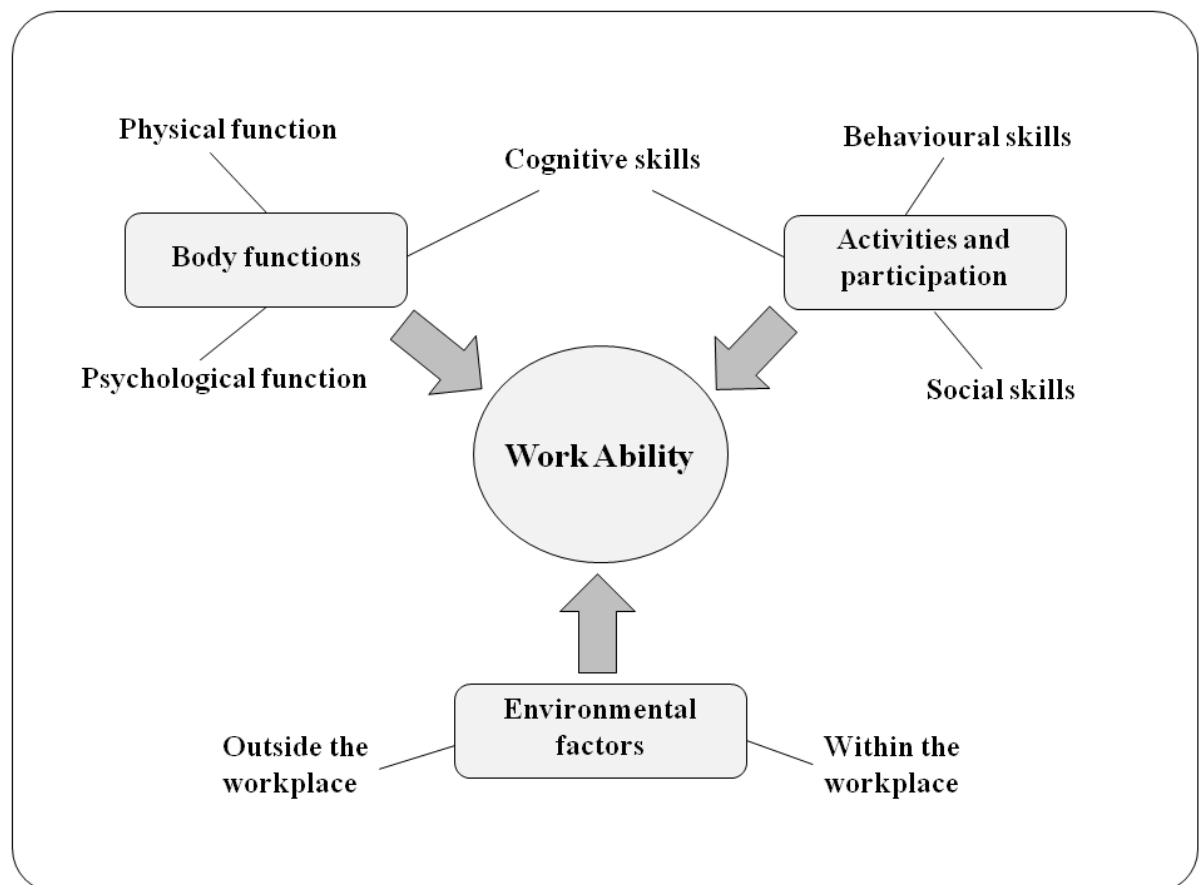


reinforcing the contribution of workplace environment and employer actions to work-ability (Isernhagen, 2006; Krause, Dasinger, & Neuhauser, 1998; Taskila & Lindbohm, 2007; Waddell et al., 2002; Wheeler, Kearney, & Harrison, 2001/2002).

### *Summary Diagram*

Figure 3.1 below provides an illustration of how the factors identified as being important to work-ability from the findings of this literature review can be presented in terms of the ICF framework (World Health Organisation, 2001). This diagram demonstrates that the factors that contribute to work-ability relate to many different domains of functioning; further contributing to the argument that assessment of work-ability should involve consideration of a range of aspects — including not only the ability to function physically, but also environmental factors that impact on ability, and the cognitive, behavioural and social skills necessary for the job.

**Figure 3.1: Factors contributing to work-ability**



### 3.3 Measures of Work-ability Following Injury

As a follow-up to the literature review identifying factors that contribute to work-ability, the search was broadened to identify the currently available measures of work-ability for use in injured populations. To capture any measures that had not been identified in the first search, the following keyword search was also carried out in Web of Science and SCOPUS citation index databases for years 1988–2008, (article or review, in English): “work capacity assessment” OR “work capacity evaluation” OR “work site assessment” OR “workplace assessment” OR “vocational assessment”. Assessments that were not available in English were excluded. Ten descriptions of measures intended for measurement of work-ability in injury populations were retrieved based on this broadened search. The results are summarised below.

#### 3.3.1 Measures of Work-ability

One key point to consider at this stage was that work-ability can be measured for a number of different purposes. It was necessary to take this into account when drawing conclusions about the appropriateness of each measure, as our primary interest related to assessing whether the tools were potentially useful for planning vocational rehabilitation. Taking this into consideration, the properties looked at for each measurement tool were:

- i. The intended purpose of the tool
- ii. The aspects of work-ability measured by the tool
- iii. The reported validity and reliability of the tool (discussed below)

An overview table describing each of the measures of work-ability identified from the literature search is provided in Table 3.1. The measures evaluated are listed below.

- *Work Ability Index* (Ilmarinen, 2007; Ilmarinen, Tuomi, & Klockars, 1997)
- *Functional Capacity Index* (MacKenzie, Damiano, Miller, & Luchter, 1996)
- *Work Instability Scales (3 scales)* (Gilworth et al., 2007; Gilworth et al., 2006; Gilworth, Smyth, Smith, & Tennant, 2008)
- *WL-26* (Amick, Lerner, Rogers, Rooney, & Katz, 2000)
- *Functional Capacity Evaluations* (category of measures, see King et al (1998) review)
- *Work Capacity Evaluation* (Schonstein & Kenny, 2001)
- *Occupational Role Questionnaire* (Kopec & Esdaile, 1998)
- *Worker Role Interview* (Fisher, 1998; Velozo et al., 1999)

### 3.3.2 *Validity and Reliability of Measures*

An overview of the validity and reliability information that has been reported for each of the measures is provided in Table 3.1. Validity and reliability information are important indicators of how trustworthy the instrument is in terms of what we know about its capacity to provide dependable results regarding the characteristic or factor the instrument claims to measure. The various different types of validity and reliability reported in Table 3.1 are outlined below.

#### *Validity*

*Criterion.* This refers to the extent to which an outcome can be calculated based on the information provided by the instrument (Bowling, 2005).

*Construct.* The extent to which the construct scores are shown to be related to the actual construct. For example whether score on a measure of “appropriate client interaction” correlates with the whether the person’s actual clients perceive their interactions to be appropriate (Bowling, 2005).

*Predictive.* This refers to the ability to predict what will happen in the future based on information provided by the instrument. For example whether score on a measure of potential for job loss is related to actual future job losses (Bowling, 2005).

### *Reliability*

*Test-retest reliability.* How reliable the instrument is regarding whether it would give the same results if used more than once on the same subject under the same conditions (Fleiss, 1981).

*Inter-rater agreement.* How reliable the instrument is regarding whether it would give the same results if used more than once on the same subject using different raters (applies to instruments that require another person to rate the subject) (Fleiss, 1981).

*Internal consistency.* This refers to whether the items within the instrument that are supposed to measure the same construct produce scores that correlate with each other. For example if there are five items measuring the construct “physical work-ability”, the scores for those five items should correlate with one another (Peat, Mellis, Williams, & Zuan, 2002).

**Table 3.1: Measures of work-ability and their uses**

Tool	What it measures	Purpose / Uses	Validity and Reliability
<p><b>Work-ability Index (WAI)</b> (Ilmarinen, 2007; Ilmarinen et al., 1997)</p>	<p>7-item self-report questionnaire. Covers:</p> <ul style="list-style-type: none"> <li>• Current ability compared with lifetime best and own prognosis for work-ability in 2 years</li> <li>• Work-ability in relation to demands of job (self-evaluation)</li> <li>• Number of current diseases diagnosed and estimated work impairment from these diseases</li> <li>• Sick leave in past 12 months</li> <li>• Mental resources</li> </ul>	<p>Designed to be completed as the initial part of an occupational health assessment.</p> <p>Widely used in research for assessing general work-ability for people with illness / injury — particularly in aging workers.</p>	<p>Reliability:</p> <p>A study of test-retest reliability showed that 66% of subjects remained in the same WAI category (excellent / good / moderate / poor) when retested 4 weeks after their original test. Individual score changes at retest (out of 49 points) ranged from -14 to +9 points, with 95% of changes being less than 6.86 points (de Zwart et al., 2002).</p> <p>A study of internal consistency using a large study that took place in 9 European countries showed overall Cronbach's alpha was 0.72 (satisfactory internal consistency) (Radkiewicz, Widerszal-Bazyl, &amp; the NEXT-Study group, 2005).</p> <p>Validity:</p> <p>A large study assessing construct validity showed that high score on the WAI predicted high scores on a health index scale (better health), lower scores on a scale measuring burnout due to work (lower levels of emotional burnout), and lower scores on a disability index (less disabled) (Radkiewicz et al., 2005).</p>

Tool	What it measures	Purpose / Uses	Validity and Reliability
<b>Functional Capacity Index (FCI)</b> (MacKenzie et al., 1996)	<p>Assessing limitation in function due to injury (independent of social / vocational context).</p> <p>10 broad dimensions that encompass physical and cognitive function (cognitive function 1 dimension).</p>	<p>Predicting likely impact of a particular injury on future functioning.</p>	<p>Reliability:</p> <p>Good inter-rater agreement within dimensions about how to define levels of FCI based on functional capacity. Poor agreement about relative weight of each dimension on overall functional capacity (MacKenzie et al., 1996).</p> <p>Validity:</p> <p>Criterion validity study looking at the correlation between FCI score and return to work at one year post-injury, found that there was a significant increase in percentage returned to work at one year in people with higher (better) FCI scores compared to those with lower FCI scores when comparing groups of subjects based on FCI score (MacKenzie et al., 2002).</p>
<b>Work Instability Scales</b> <ul style="list-style-type: none"> <li>• Traumatic Brain Injury (Gilworth et al., 2006)</li> <li>• Office workers with musculoskeletal disorders (Gilworth et al., 2008)</li> <li>• Nurses (Gilworth et al., 2007)</li> </ul>	<p>Mismatch between individual functional and/or cognitive abilities and demands of their job.</p> <p>Self-report questionnaire (true/false).</p>	<p>Screening for potential job loss.</p>	<p>Test-retest reliability for all the scales was tested, but insufficient information provided in published articles. Although contact with the author was made, the correspondence failed to yield the information required within the timeframe of the thesis.</p>

Tool	What it measures	Purpose / Uses	Validity and Reliability
<b>Work Limitations Questionnaire / Work Role Functioning measure (WRF-15)</b> (Amick et al., 2004; Lerner et al., 2001)	<p>Originally developed to measure work limitations within a chronic conditions population, a version (WLQ-16) was psychometrically tested in 2005 for a musculoskeletal injury population (Beaton &amp; Kennedy, 2005). This scale was later refined to drop one item and became the Work Role Functioning measure or WRF-15 (Amick et al., 2004).</p> <p>Impact of injury on work (job) in 4 domains:</p> <ul style="list-style-type: none"> <li>• Physical demands</li> <li>• Output demands</li> <li>• Time management demands</li> <li>• Mental / interpersonal demands</li> </ul>	<p>Perceived impact of injury (or condition) on ability to meet work demands</p>	<p>Internal consistency:</p> <p>Scales were shown to be internally consistent for the musculoskeletal injury population - Cronbach's alpha 0.86 to 0.96, and one exception at 0.74 because the domain contained only 2 items (Beaton &amp; Kennedy, 2005).</p> <p>Validity:</p> <p>Beaton and Kennedy paper (2005) demonstrated construct validity in that the scale correlated as expected with measures of overall disability and work disability.</p> <p>Caution is needed as this work was done with an earlier version of the measure than is now in circulation.</p>
<b>WL-26 / WL-27</b> (Amick et al., 2000); (Amick, personal communication, September 13, 2008)	<p>Developed for broader illness and injury from same framework as the Work Limitations Questionnaire (Lerner et al., 2001), with a further domain: 'Scheduling Demands'.</p> <p>Impact of injury on work (job) in 5 domains:</p> <ul style="list-style-type: none"> <li>• Time demands</li> <li>• Scheduling demands</li> <li>• Physical demands</li> <li>• Mental / interpersonal demands</li> <li>• Output demands</li> </ul>	<p>Perceived impact of injury (or condition) on ability to meet work demands.</p>	<p>Internal consistency:</p> <p>WL-26 subscales reported to have good internal consistency (Cronbach's alpha for subscales 0.8– 0.92) (Amick et al., 2000).</p> <p>Validity:</p> <p>Paper published in 2000 indicates that data is being collected on construct validity. Authors report that in one study a 20-point change in work limitations score (on a 100-point scale) is associated with 2.7 more weeks of lost productivity (Amick et al., 2000).</p>

Tool	What it measures	Purpose / Uses	Validity and Reliability
<b>Functional Capacity Evaluation (FCE)</b> many versions available — see (King et al., 1998; Shervington & Balla, 1996)	Ability to perform set functional tasks that may be either standardized, or derived from actual work tasks.	Determining the ability of the worker to meet physical work demands.	Some FCEs have published reliability and/or validity statistics, some do not. Poor or unsubstantiated reliability and validity for the majority of the available FCEs has been reported in reviews of FCEs (Innes & Straker, 1999; King et al., 1998).
<b>Work Capacity Evaluation</b> (Schonstein & Kenny, 2001)	Functional capacity evaluation, + Psychosocial factors (return-to-work goals and expectations, fear avoidance beliefs, depression, job satisfaction, + Work duty assessment, attitudes of management and co-workers.	Assessing ability of an individual to perform a particular job — taking into account functional ability, psychosocial factors, and attitudes of managers and co-workers.  This is only a conceptual model currently — proposed 2001.	No information found.
<b>Occupational Role Questionnaire</b> (Kopec & Esdaile, 1998)	Back-pain specific 8-item self report questionnaire of how back pain has affected occupational role performance.  Sub-scales are productivity (time spent on work, time taken to do work tasks, required breaks, concentration) and satisfaction (satisfaction with job, help requires from co-workers, perceived opportunities and job security).	Perceived effect of back pain on role performance in current job. Only relevant for people who are currently working.	Reliability:  Good internal consistency (Cronbach's alpha 0.88 for total score) (Kopec & Esdaile, 1998).  Test-retest Pearson correlation coefficient was 0.91 for the summary score (Kopec & Esdaile, 1998). However interpretation should be cautious as the Pearson-type correlation does not take account of systematic errors (Williams et al., 2007) .  Validity:  Correlations with scales of pain and disability were as expected (Kopec & Esdaile, 1998).



Tool	What it measures	Purpose / Uses	Validity and Reliability
<p><b>Worker Role Interview (English version)</b> (Fisher, 1998; Velozo et al., 1999)</p>	<p>Structured interview tool designed for use by therapists. Measures worker interpretation of the abilities and risks; worker values and interests; influence of worker (and other) role identification; habits and routines; and work and family environment.</p>	<p>Purpose is to assist therapists to identify (particularly psychosocial) factors that are potential barriers to return to work so they can be addressed.</p>	<p>Reliability:</p> <p>One small study (n=20) showed a high test-retest reliability with intraclass correlation coefficient (ICC) 0.95. The same study also assessed inter-rater reliability and calculated ICC above 0.8 for only three of the six content areas (Biernacki, 1993).</p> <p>Validity:</p> <p>Two studies examined predictive validity with conflicting results. The study with the larger sample size (n = 80) found the WRI score predicted return-to-work outcome (Fisher, 1998; Velozo et al., 1999).</p>

### 3.3.3 *Comparison of Measures with Factors Identified*

Table 3.2 shows which factors contributing to work-ability identified in the literature review are considered by each of the existing measures. Interestingly, there are many stakeholders with interests in ensuring work-ability and return to work of injured workers, including workers themselves, employers, insurers, families, health professionals and wider community (Shervington & Balla, 1996; Young et al., 2005). However, the measures identified typically only seek the perspective of the worker (six of ten measures), and in a few cases, the health professional doing the assessment (four of ten measures). None of the measures seek the employer perspective, and only one measure (the Worker Role Interview (Veloze et al., 1999)) is designed to take into account more than one stakeholder's perspective on work-ability of the worker.

None of the identified measures covered all the factors identified as being important to work-ability in the literature review. This revealed that there was a difference between the factors considered to be important *contributors* to work-ability in the conceptual discussion from the literature, and the aspects of work-ability that are actually *assessed* by work-ability measures.

**Table 3.2: Factors included in current measures**

Tool	Conceptual areas included						Who contributes to evaluation			
	Physical function	Psychological function	Cognitive skills	Social and behavioural skills	Workplace factors	Factors outside workplace	Worker	Health Professional	Employer	Other Stakeholder
<b>Work-ability Index</b> (Ilmarinen, 2007; Ilmarinen et al., 1997)	✓	✓	✓		✓		✓			
<b>Functional Capacity Index</b> (MacKenzie et al., 1996)	✓		✓					✓		
<b>Work Instability Scales<sup>1</sup></b> TBI: (Gilworth et al., 2006) Nurse: (Gilworth et al., 2007) Office Worker: (Gilworth et al., 2008)	✓	✓	✓	✓	✓		✓			
<b>WL-26 / WL-27</b> (Amick et al., 2000) <b>WLQ-16 / WRF-15</b> (Amick et al., 2004; Beaton & Kennedy, 2005)	✓		✓	✓	✓		✓			
<b>Functional Capacity Evaluation</b> (many types — see King et al (1998))	✓				✓			✓		
<b>Work Capacity Evaluation</b> (Schonstein & Kenny, 2001)	✓	✓			✓	✓	✓	✓		
<b>Occupational Role Questionnaire</b> (Kopec & Esdaile, 1998)	✓		✓	✓	✓		✓			
<b>Worker role interview</b> (Fisher, 1998; Velozo et al., 1999)	✓				✓	✓	✓	✓		✓

<sup>1</sup> Note: these scales are made up of specific questions relating to worker experiences (e.g. “I have to be careful not to overdo it at work”). If the scale contained a question related to the conceptual area, the area was counted as included.

### 3.3.4 Reasons for Measuring Work-ability

It was clear when reviewing the measure descriptions that work-ability measurement is used for several different purposes. There are various different reasons for measuring work-ability, and consequently various approaches to measurement, with the focus of the tools changing, depending on the purpose. The reasons for measuring work-ability and focus of measurement associated with them are summarised in Table 3.3. The fact that none of the tools found in the search were intended to be used for planning vocational rehabilitation may explain why the measures found did not cover all the areas identified as important from a return to work or rehabilitation point of view.

**Table 3.3: Reasons for measuring work-ability and associated focus of measurement**

<b>Reason for measuring work-ability</b>	<b>Main focus of measurement</b>	<b>Examples of measures</b>
Screen for potential job loss.	Identifying where work demands are greater than work performance.	Work Instability Scales (Gilworth et al., 2007; Gilworth et al., 2006; Gilworth et al., 2008).
Estimate ability to return to work following illness / injury.	Measuring the ability to function to a minimum level required for the job.	Work Capacity Evaluation (Schonstein & Kenny, 2001).
Estimate impact of illness / injury on work performance.	Measuring how illness / injury symptoms and treatment are affecting or could potentially affect performance at work.	Work-ability Index (Ilmarinen, 2007). Work Limitations Questionnaire (Lerner et al., 2001). WL-26 / WL-27 (Amick et al., 2000). Occupational Role Questionnaire (Kopec & Esdaile, 1998). Worker Role Interview (psychosocial factors) (Fisher, 1998; Velozo et al., 1999).
Estimate economic impact of health-related loss of productivity.	Estimating how much of the time injury / illness symptoms and treatment is affecting work productivity, and to what extent.	Work Limitations Questionnaire (Lerner et al., 2001). WL-26 (Amick et al., 2000). Occupational Role Questionnaire (Kopec & Esdaile, 1998).
Determine what aspects of worker ability are affected by illness / injury and to what extent (for the purpose of work rehabilitation planning).	Identifying areas of work affected and whether these might be mitigated (to some extent) through intervention or support.	No specific measures determined at the time of the review.

### 3.3.5 *Relative Importance of the Various Factors*

One outstanding consideration which could be relevant to the discussion is the relative importance of each factor to overall work-ability. This is likely to vary depending on the demands of a particular job. It would be an important consideration when it comes to measurement of work-ability, as the validity of a 'score' indicating a person's work-ability may depend a lot on how much weight each aspect of his or her work functioning has towards overall performance.

## 3.4 **The Application of Work-ability Measurement to Vocational Rehabilitation**

The type of work-ability measurement of particular interest for this project is measurement that would help to inform vocational rehabilitation after injury. Assessment of work-ability is crucial to be able to effectively plan vocational rehabilitation following injury. Without identifying which aspects of a person's work functioning are affected, it is difficult to know where to target supports and interventions. Whilst this type of assessment in some form is done routinely by work rehabilitation professionals, there is little detailed information available on procedures, and no standardized tool was identified that would provide a common and empirically verified approach.

### 3.4.1 *Limitations of Current Measures in Relation to Rehabilitation Planning*

The review of the published literature identified no standardized tools covering all the important factors that measure work-ability *for the purpose of vocational rehabilitation*, and only one proposed structured model that could potentially be used in this way. The Work Capacity Evaluation protocol (Schonstein & Kenny, 2001) is a proposed protocol designed for assessing work-ability of workers experiencing back pain, in the form of a workplace assessment. The authors suggest that components that should be assessed for determining the work capacity include a functional capacity evaluation (including assessment of pain, cardio respiratory endurance, and so forth); psychosocial factors (for example return-to-work goals and expectations, coping patterns, psychological well-being, job satisfaction); and an assessment of actual work duties, including attitudes of management and co-workers (Schonstein & Kenny, 2001). This protocol covers (to some extent) only four of the six categories of factors identified from our

literature review to (that is, it covers physical functioning, workplace factors, psychological functioning and factors outside the workplace but not thinking and problem solving or social and behavioural skills). It is fairly common for a workplace assessment that is not intended for a neurological injury population to omit assessment of thinking and problem solving or social and behavioural skills; however it is important not to assume these important aspects of work-ability will be unaffected (Joss, 2007; Lou & Lane, 2005). While this model could go some way to addressing the need, it does not cover all the areas identified as important in the literature, and it is only a broad framework without detail regarding implementation. The Work Capacity Evaluation protocol (Schonstein & Kenny, 2001) was the only proposed model identified in the published literature that was both formalized in some way (rather than a description of practices) and could reasonably be used for the purposes of rehabilitation planning. However, not only is it lacking sufficient detail to implement without some interpretation, but there is no published information to suggest that any version of this tool has been formally evaluated or tested. There is still a clear lack of standardized tools available for assessing work-ability for vocational rehabilitation.

### **3.5 Summary of Key Points from the Review**

#### *3.5.1 Factors Contributing to Work-ability*

Based on a comprehensive review of the published literature, six categories of important contributing factors to work-ability were identified:

- physical function
- psychological function
- thinking and problem solving skills
- social and behavioural skills
- workplace factors
- factors outside the workplace

While each of the factors identified was shown in the literature to be important in ability to function at work, it is still unclear how much weight each of these factors may have with regard to their influence on overall work-ability. For example, it may be that for a particular individual, one factor (for example physical ability) is crucial to be able to perform the job, while another factor (for example social and behavioural skills), despite

having an influence, has less of an impact on overall work-ability. It is also very likely that this could vary depending on the type of job the person performs, and other personal factors. Indeed, one example is a study by Ilmarinen et al (2005), which showed that work and life factor correlates of work-ability scores using the Work-ability Index are slightly different for an older working age population than for a younger one.

### 3.5.2 Measures of Work-ability

From a search of the literature, ten measures of work-ability were identified. From reviewing these measures, four conclusions are proposed:

- 1) There are several different reasons for measuring work-ability, and therefore different intended uses for the various measurement tools. The content of measurement tools are therefore different and tend to reflect the intended uses.
- 2) None of the ten measures identified covered all the factors the literature review identified as contributors to work-ability.
- 3) The measures identified typically seek only the perspective of the worker or the health professional doing the assessment, not the employer or other stakeholders.
- 4) None of the current measures identified are designed to assess work-ability for the purpose of informing vocational rehabilitation planning.

This summary of the available measures of work-ability highlights the fact that work-ability measurement is used for a number of different purposes, which require various different types of measures. Given that the purpose of this research is to explore measurement of work-ability that will help inform vocational rehabilitation after injury and target intervention appropriately, the conclusion based on this review is that there are currently no standardized measures that fulfil these needs.

It remains unclear whether all of the areas identified in the conceptual literature review of work-ability must be assessed individually to have a useful measure of work-ability. It is also currently unclear whether aspects that should be included might vary depending on the reason for measurement. Several of the existing measures show reasonable validity with the testing that has been done so far, so this may indicate that although the factors identified in the conceptual review are important *contributors* to

work-ability, not all need to be measured to *assess* overall work-ability. However, for a tool that is intended to be used for rehabilitation planning, it would be appropriate to include all the factors, as it would be important to identify all areas contributing to poor work-ability so interventions can be put in place. Certainly for any new measure, careful consideration needs to be taken of the aspects of work-ability that should be included to ensure that the measure is useful for its intended purpose. In addition, rigorous reliability and validity testing is vital to warrant use of the measure in research and practice.

### *3.5.3 Measuring Work-ability to Inform Vocational Rehabilitation*

Assessment of work-ability following injury is crucial to help identify needs and provide appropriate vocational intervention. However, any measure used needs to be suitable for this purpose, and none of the measures found were intended or suited for informing vocational rehabilitation following injury. Whilst assessment of work-ability for rehabilitation purposes is carried out to varying extents by vocational professionals, there is still very little information available regarding the content and administration of these assessments, and in particular no standardized tool. Because of this, it would be valuable to develop and test a tool designed for measuring work-ability in a vocational rehabilitation context.



## 4 DESIGN AND METHODS

This chapter will outline the design of each phase of the research in terms of methodology and methods. Each phase is described separately in turn. Finally, the ethical considerations related to both phases of the research are discussed in the last section.

### 4.1 Phase One: Qualitative Focus Groups and Interviews

#### 4.1.1 *Phase One Methodology*

In order to develop a measure of work-ability that can be used effectively to plan supports and interventions, it is crucial to identify all the key aspects of work functioning that could affect a person's work-ability. Phase one of this research took an approach informed by social constructionism to identify these aspects. From a social constructionist standpoint, there is not one objective 'truth' with regard to the components that make up work-ability, but multiple truths which are constructed through individual experiences and interactions in relation to this concept (Burr, 2003; Gergen, 1994). In line with this thinking, each person's construction of work-ability and its components was seen to be derived from their previous knowledge about and involvement in workplaces and work systems, and engagement with other people within those environments and systems. Therefore, in addition to obtaining information from the research literature, it was appropriate that the early stages of development of this measure included a qualitative exploration of what the important components of work-ability are for each of the stakeholder groups involved in the process of rehabilitation and return to work. The stakeholders identified for this research were: injured workers, employers, workplace assessors (health professionals) and the workers' compensation scheme (in the case of the New Zealand context, the Accident Compensation Corporation (ACC)). By including all four of these stakeholder groups, work-ability could be explored based on the various experiences associated with each different role in the return-to-work process. The methodology employed for the first phase of the research was therefore qualitative focus groups and interviews with these various stakeholder groups. This was in order to elicit their thinking and experiences relating to work-ability, and to get their feedback regarding the proposed version of the PAWSS measure.

This type of qualitative approach is increasingly being used in the early stages of the development of measures which seek to quantify elements of human experience (see for example The WHOQoL Group (1995); Gilworth et al (2003); Lerner et al (2001)). The purpose is to identify important components or aspects of the phenomenon of interest through targeted discussion with people who have direct experience of it. Qualitative analysis of the focus group and interview discussions is then undertaken, and the findings inform the development of the measure. This process ensures that the version of the measure that then goes on to be quantitatively tested, and later refined on the basis of this testing, takes into account the range of factors that could potentially be important in measurement of that phenomenon. This challenges the traditional positivist approach to development of measures which takes the position that the essential components of a concept or phenomenon are the same for everyone, and can be deduced via an objective observation (Crotty, 1998). Instead, a qualitative approach informed by social constructionism takes the position that people who have different roles or experiences in relation to a concept or phenomenon will be aware of different and equally valid ‘truths’ about it (Crotty, 1998), and that through exploring their various knowledge and experiences in the early stages of development, the resulting measure will be more complete, and therefore more clinically useful. One high-profile example of this approach is the work undertaken by the World Health Organisation Quality of Life (WHOQoL) group in their development of the international WHOQoL quality of life measure (The WHOQoL Group, 1995). This group of researchers conducted focus groups internationally in fifteen centres, exploring and teasing out the concepts associated with quality of life with local people, and getting feedback on the provisionally drafted domains and facets of quality of life. This process was undertaken to ensure they had identified the range of factors that were important to quality of life for the people in each centre, before piloting and field testing the new measure.

#### *4.1.2 Phase One Aims*

The qualitative focus groups and interviews had three primary aims which are listed as follows.

- 1) To explore stakeholders’ experiences and ideas about factors and processes important to work-ability.

- 2) To elicit feedback on the proposed measure regarding:
  - a) whether the domains of the measure represented all general areas stakeholders considered to be important;
  - b) whether the items within the measure comprehensively covered the aspects of work functioning that stakeholders considered to be important;
  - c) what should be included that was not currently in the proposed measure;
  - d) if there was anything that should not be included that was currently in the proposed measure;
  - e) which stakeholders were likely to find the information helpful, and in what form; and
  - f) who should be involved in collecting the information required to complete the measure.
- 3) To revise the measure based on stakeholder feedback.

#### *4.1.3 Phase One Design*

Semi-structured interviews and focus groups were designed to elicit stakeholders' ideas about the aspects of work functioning that affect work-ability, and their feedback on the initial version of the proposed measure. The semi-structured format was chosen as the most suitable for the purpose of the research. This allowed people the flexibility to contribute their ideas about the topic, while still providing a structure, so discussion remained focused on the information required for refining the measure (Finch & Lewis, 2003). Because work-ability is an abstract concept (see Chapter 3: literature review), it was likely that discussion between colleagues about the issues involved would result in a more in-depth exploration of the concept than individual interviews (Lewis, 2003). Therefore, focus groups were used for employer, case manager and health professional stakeholder groups. For injured workers, it was felt that concerns about sharing personal information with other group members combined with the difficulty with getting all participants to an agreed location outweighed the potential benefits of group discussion (Carter & Henderson, 2005). Therefore, for injured workers, individual interviews were arranged to take place at a convenient location for them. In addition, if a particular stakeholder was unable to attend a focus group, or did not want to share information in the group setting, an individual interview was arranged instead. Focus group size of three to four participants was used in this study, in order to allow a balance between discussion within the group and opportunity for individual contribution

from each person (Finch & Lewis, 2003). Furthermore, for health professional and case manager focus groups, the groups were designed so that professionals who work in a serious-injury population and those who work in general injury were organised into separate focus groups. This was done so that in-depth discussion of the issues relating to work-ability could occur without having to additionally discuss the differences in challenges faced by people with serious injury versus the general-injury population. With separate groups arranged according to the level of injury they normally work with, this would be likely to come out anyway through the different issues raised by the different groups (Finch & Lewis, 2003). For each type of stakeholder, five to six participants were sought overall. This number was sufficient to get variation in the participant characteristics, while still allowing a small enough sample to gather rich qualitative data from each person (Ritchie, Lewis, & Elam, 2003). All interviews and focus groups were audio-taped and transcribed verbatim. The data in the transcripts could then be analysed in detail to identify the aspects of work functioning that participants considered to be important in work-ability, and to extract feedback regarding the content and administration of the proposed measure.

### *Participants*

In accordance with established methods in qualitative research, purposive sampling of participants from each stakeholder group was undertaken based on the characteristics that were likely to have an influence on experiences relating to work-ability (Patton, 2002). Purposive sampling involved deliberately seeking to recruit a heterogeneous sample to ensure that the diversity in the population with regard to these characteristics was encompassed within the sample selected for the research (Ritchie, Lewis et al., 2003). In line with this, recruitment was conducted differently for each stakeholder group depending on what was most appropriate. These methods are outlined below.

Four groups of participants took part in this phase of the research. These groups were:

- 1) injured workers (individual interviews);
- 2) employer representatives (mix of individual interviews and focus groups);
- 3) health professionals involved in return to work (focus groups); and
- 4) ACC case managers (one focus group, one interview).

*Injured workers.* Injured workers were recruited via letter from the ACC Research Office. To be contacted for the study, injured workers had to meet the following inclusion criteria: a) resident in Auckland; b) allocated to a case manager; c) had been off work for at least four weeks; and d) able to give informed consent. The inclusion criteria specifying allocation to a case manager and having been off work at least four weeks were used in order to increase the chance of recruiting participants who were likely to have experienced work disability. In addition, the database search was stratified based on age, ethnicity, gender, occupation type and injury classification as shown in Table 4.1. This was done to ensure that people with a range of characteristics and experiences were invited to take part in the research, and to increase the chances of getting a varied sample from the injured workers who consented to take part.

**Table 4.1: Stratification of sample of injured workers**

Variable	Stratification category		
<b>Age</b>	18–40 yrs	41–65 yrs	
<b>Ethnicity</b>	Maori	Non-Maori	
<b>Gender</b>	Male	Female	
<b>Occupation type</b>	Primarily physical	Primarily sedentary	
<b>Injury classification</b>	Traumatic Brain Injury (Read codes* E2A2., S0..., S60., S62., S629., S62A., S646., S830., S8343, SD00., SE0., G60., G61., G66..)	Musculoskeletal injury (Read codes* S504., S524., S550., N2114, N2115)	Chronic pain (Read codes* N14..)

\* Clinical classification codes (Chisholm, 1990)

The recruitment mail-out from ACC was designed so that a greater number of consent forms would be returned to the researchers than participants needed for the research. This method was used so that researchers could select participants to interview based on their demographic information, injury classification, and occupational type, aiming to get as much diversity in these characteristics as possible. The three types of injury classifications (brain injury, musculoskeletal injury and chronic pain) were chosen to represent a variation in terms of typical difficulties experienced with return to work. In particular, people with brain injuries tend to experience cognitive and social and behavioural difficulties, people with musculoskeletal injuries tend to experience more physical limitations, and people with chronic pain commonly experience difficulties

with sustaining work postures and movements (Bootes & Chapparo, 2002; Gilworth et al., 2007; Gilworth et al., 2008; Patel, Greasley, & Watson, 2007). Based on an expected response rate of 15–20%, 120 potential participants were identified by ACC staff using their data warehouse, and sent a letter containing an introduction to the research and invitation to take part, a participant information sheet, and a consent form with return envelope. From twelve people who returned the consent forms, six were selected and participated in an interview.

*Employer representatives.* Employers interested in taking part in the research were identified through existing personal or professional relationships with members of the Faculty of Health and Environmental Sciences at AUT University. In identifying employers, efforts were made to include both small and large employers, and to get representation from different types of industries. Four employers were then formally contacted by telephone and email to introduce the research, provide them with a participant information sheet, and invite them to take part in an interview or focus group. All the employers contacted agreed to take part and were also requested to inform other interested employers in their own networks about the research and invite them to get in touch with the researchers. One further employer participant was recruited via these networks.

*Health professionals involved in return to work.* Six health professionals from two organisations providing return-to-work interventions and worksite assessments were identified through University networks and an internet search for local providers. Efforts were made to identify health professionals who worked with a variety of injury severities in order to ensure that the feedback could be applied to a broad range of injured workers. Of the organisations contacted, one specialised in return to work after serious neurological injuries, the other worked with a more general population — dealing mainly with workers with musculoskeletal injuries. As with the employers, health professionals were contacted to introduce the research, provide them with a participant information sheet, and invite them to take part in a focus group. Two focus groups for health professionals were organised based around the population group that the professionals normally work with. This was because it was anticipated that professionals who work with more seriously injured populations (who typically require more time off work) may raise different issues to those who work primarily with people who return to work fairly soon after the injury.

*ACC case managers.* ACC case managers were recruited through local area managers. After an initial meeting with JF, area managers identified five staff who were a) case managers with at least two years experience, and b) interested in taking part in the research. Case managers with at least two years experience were targeted, as two years was indicated by the area managers to be the time it takes for people in this role to gain competence and get the range of experience that would enable them to contribute to the research. Case managers who worked in both general case management and specialist serious injury case management were invited to take part. These case managers were emailed participant information sheets and given time to ask questions and consider whether they would be willing to participate. All case managers who were contacted agreed to participate in the research.

#### *4.1.4 Phase One Procedures*

##### *Data Collection*

All the focus groups were conducted by two researchers: JF who took the lead and moderated the group, and KM who took notes and contributed to questioning. Individual interviews were conducted by JF. In addition, the focus groups and interviews were audio-taped and transcribed verbatim by JF.

Focus groups and interviews were semi-structured and based around the following questions.

- What things do you consider to be important for successful re-integration into the workplace? Barriers / facilitators? This was used as an opening question to get people thinking about their own thoughts and experiences about the aspects of work functioning that are important to work-ability.
- Is there anything missing from the current version of the measure?
- Is there anything that is in the measure that shouldn't be?
- How feasible is it to obtain the information required to complete the measure?
  - If not now, could it be, and how?
- Which professionals are best to complete the measure?
  - Is it better to have different people filling in different parts?
- Who could use the information?
- How would or should the information be used? What is the best format?

- How culturally appropriate is the measure?

Questions were ordered so that the first question was always about what the person or group considered important from their own experiences, without having seen the structure of the PAWSS. This was done so that they had already reflected on their own experiences and thinking before they saw the PAWSS, to minimize any influence information provided by the researchers may have had on participants' responses about their experiences regarding work-ability.

Microsoft PowerPoint was used to present the components of the proposed measure to participants, and flexibility was allowed for participants to have discussion around the points and give examples.

### *Analysis*

Analysis of the focus groups and interviews was carried out using techniques of descriptive analysis. This involved firstly conducting line-by-line analysis of each transcript to identify ideas and feedback, followed by categorisation of these according to the particular topic and the parts of the measure they related to. Finally, the comments were compared within and between stakeholder groups (Ritchie, Spencer, & O'Connor, 2003). Comments were coded by JF according to whether they related to a) acceptability of the measure, b) uses of the measure, c) feedback about the existing version of the measure, or d) factors people considered important for successful reintegration into the workplace. They were then organised according to the parts of the measure they referred to. QSR NVivo7 software (QSR International Pty Ltd, 2006) was used to store and manage the coded data electronically. All information relating to potential content and administration of the proposed measure was then compiled in a table. At various times during data analysis, JF and KM met to check interpretations, ensure findings were consistent with the raw data, and discuss the implications of findings in terms of revisions to the measure. Following data analysis, JF met with KM and other originator of the measure, Professor Lynne Turner-Stokes. This meeting was used to discuss findings from the development and ensure changes made to the measure were both in line with participant feedback and met requirements for a workable tool.



## **4.2 Phase Two: Pilot Phase**

### *4.2.1 Phase Two Methodology*

The broad aim of pilot testing the measure was to pick up any issues with administration or acceptability that may affect its utility. It was important to do this before any further testing of the measure, as it would be poor use of resources to test the properties of the measure without first identifying and addressing any issues that may adversely affect its use in practice (Bowling, 2005). Therefore, one of the key methodological considerations regarding the pilot testing was that it should be carried out in an environment that was as similar as possible to that in which the final measure would be used. It was established based on the feedback from health professionals and ACC case managers during phase one of the research that the measure would be most appropriately administered by health professionals who were a) familiar with the client and their workplace, and b) experienced in assessing work functioning in the context of the specific workplace and job tasks. Therefore, although a provisional plan for the design of the pilot phase had been drafted and ethically approved prior to the start of the project, it was re-designed (and re-submitted for ethical approval) following the first phase to bring the procedures into line with this feedback. The approach taken to pilot testing was pragmatic, with a focus on ensuring that experienced assessors were recruited to act as research assessors; that they were trained to administer the measure; and that feedback was comprehensive and took into account the different settings and types of clients that assessors work with.

### *4.2.2 Phase Two Aims*

This phase of the research had three specific aims as listed below.

- 1) To test the feasibility of using the measure;
- 2) To test the acceptability of the measure to
  - a. Assessors, and
  - b. Injured workers;
- 3) To revise the measure and training procedures based on findings.

### 4.2.3 Phase Two Design

The pilot phase was designed so that pilot testing of the measure occurred alongside a regular workplace assessment, and was carried out by an experienced workplace assessor. Experienced assessors were subcontracted and trained by the researchers to carry out the pilot testing. The participants for this phase were workers who were undergoing a regular workplace assessment and were recruited through the trained assessors.

#### *Assessors*

*Recruitment of localities.* Two localities that employ staff who normally carry out workplace assessments were contracted to take part in the research. One of the localities specialised in brain injury, and the other in general musculoskeletal injuries. This ensured that the measure could be pilot tested by assessors who work with different client populations, and also so that clients who had injuries associated with different sorts of limitations had the opportunity to provide feedback about the measure. From these localities, a total of four staff were trained to act as research assessors for the pilot testing of the measure. These staff were subcontracted through the localities.

#### *Participants*

Trained assessors were asked to help recruit nine participants (three with brain injury, three with musculoskeletal injury, and three with chronic pain diagnoses). Recruitment was carried out in the following way.

- 1) The client was given the information sheet by the trained assessor in advance of a planned workplace assessment, and given time (at least 24 hours, and longer if required) to consider whether they wanted to take part in the research *in addition to* their normal workplace assessment.
- 2) The client was given the opportunity to ask questions of a researcher. Contact details of researchers were given, or if preferred, clients gave their contact details to receive a telephone call from the researcher.
- 3) If interested, the client was asked to sign a form giving informed consent to take part in the research.

#### 4.2.4 Phase Two Procedures

##### *Training of Assessors*

A two-and-a-half hour training session was conducted by JF with the assessors. During this session, assessors were given training in procedures for administering the PAWSS, and collecting feedback required by the researchers for pilot testing. Additionally, training in procedures for facilitating recruitment of participants, gaining informed consent, and carrying out the research alongside the usual workplace assessment was also provided. The training handouts given to assessors have been included in Appendix B, while Appendix C contains the version of the PAWSS measure that was used for the pilot testing.

##### *Pilot Testing*

Once consent was obtained, the assessor notified JF, and the consent form was collected and filed. The participant was assigned a unique participant ID number by the researcher, which the assessor then used on the PAWSS measure. Next, a longer appointment time for their workplace assessment was agreed with the participant in order to obtain any extra information for completion of the PAWSS. The length of extra time required for the PAWSS depended on the amount of information the assessor already had about the participant and their work situation. This information may have been from the case file, the usual workplace assessment or previous contact with the particular workplace or participant. The extra time taken was usually half an hour to three quarters of an hour, and the PAWSS measure and feedback questionnaires were completed with the client after the usual workplace assessment. As with the usual workplace assessment, information was gathered from various sources as required, including the workplace, the employer and the client (these sources were recorded on the pilot test form). Any people involved over and above the assessor and the participant were informed about the research, and any extra information over and above what is normally obtained for the usual workplace assessment was explicitly stated to be for research only, with the usual ethical procedures applying (for example voluntary participation — see section 4.3 ‘ethical considerations’ below). Once the PAWSS and feedback questionnaires had been completed, the measure, assessor feedback questionnaire and participant feedback questionnaire were collected by the researcher within three working days. No information collected for the research was kept by the

assessor, or passed on to any other parties. If they had indicated on the consent form that they would like this, participants were sent a summary of the information recorded about them for the research. This was sent to them by the researcher.

See Appendix D for the assessor and participant feedback questionnaires used when pilot testing the PAWSS measure.

#### *Adaption of Procedures for Chronic Pain Population*

Due to lack of referrals to the locality service, we were unable to recruit any people who were primarily experiencing chronic pain. To ensure this population was still included in the pilot testing phase, we contacted the local pain service to get clinicians with experience of vocational issues to provide feedback on proposed administration of the measure and any issues that may arise for people experiencing chronic pain.

#### *Refining the Measure*

Following pilot testing, the measure was refined based on feedback from assessors and participants.

### **4.3 Ethical Considerations**

This research was conducted in a real community setting, alongside a usual workplace assessment; hence the ethical considerations were discussed at length. Procedures were approved by two ethics committees: the Northern X Regional Health and Disability Ethics Committee (see Appendices E and F for approval letters) and the Accident Compensation Corporation Ethics Committee (see Appendix G and H for approval letters). Furthermore, necessary changes to the pilot phase procedure based on feedback obtained during the development phase were separately submitted and approved by both ethics committees before beginning the pilot phase of the research (see Appendices F and H). The following points were given particular consideration during the process of designing the procedures for the research.

### *Voluntary Informed Consent*

One of the key principles in ethical research is that each participant gives consent that is based on being fully informed of the procedures and implications of the research; and that they feel they are under no obligation to consent to participate in the research. In addition, it is important that participants feel that they will not be disadvantaged at all if they do not take part in the research. For this research, the following points were particularly important.

*Time to consider whether to take part after receiving information.* This was addressed through assessors being required to make sure potential participants had at least 24 hours with the information (more if required for the particular individual) to consider whether or not they were interested in taking part before being asked for consent.

*The opportunity to ask questions of the researcher.* For this, potential participants were given the option to have the researcher's contact details or to supply their details so a researcher could contact them.

*Full information about the research,* including that the decision about whether or not to take part in the research will not affect their usual workplace assessment or any follow-up care. This assurance was provided in the introductory letters and participant information sheets (Appendices I to L), and reinforced on the consent forms (Appendices M to P).

### *Protection and Partnership*

In this research, the principles of protection and partnership (AUT Ethics Knowledge Base, n.d.; Council for International Organizations of Medical Sciences, 2002) were relevant in that it was important participants had the opportunity to share their views about the measure and its acceptability to them. It was also important that they had access to, and retained control over, the use of the information that was collected for the research. To address this, participants were asked to contribute their thoughts about the PAWSS at the end of the pilot testing through a participant questionnaire. During training, assessors were informed that for ethical reasons they were not to retain or use any of the information collected for the research and it should not influence their usual assessment or reporting in any way, even if they thought it would be beneficial. The

participants were also informed on the information sheet that data collected for research would not be kept or used by the assessors, and asked on the consent form to indicate if they would like to have this information sent to *them* by a researcher for their own records. It was detailed in the information sheet that should the participant believe that the information collected for the research may be a beneficial addition to their usual workplace assessment, that they can then provide this information to the assessor again and discuss it with them, or request that a researcher passes on the information on their behalf.

### *Minimization of Harm*

It is important in research to ensure that the burden on participants of taking part in the research is as small as possible. This was one of the main reasons that it was decided to conduct the pilot testing alongside a usual workplace assessment, as this minimized the extra time and energy participants would have to spend if they chose to take part in the research. It also minimized the burden for the participant's workplace as they would not have to organise for extra time or resources to be used in order to allow the participant to have an additional assessment in the workplace.

It was also important that participants were not at any extra risk of harm through taking part in the research. One way there might have been a risk of harm was if the usual workplace assessment was affected by the research in a way that was negative to the participant. To minimize this risk, assessors were informed during training that the usual assessment should be done first, and that any reports and future dealing with the client should not be influenced by information collected for the research. It was also arranged that the assessor did not retain possession of the research information after the pilot test was complete, and that the participant could request to have a copy of the information for their own records from the researcher. In this way, the participant rather than the assessor retained possession of the information collected for the research.

### *Confidentiality*

In order to ensure confidentiality of participant identities, no identifying information was used in any reports of the research, and participants were allocated ID numbers which were used on all documents. The only place where the participant's details and the ID number appeared together was in the consent form, which was kept in a separate

locked cabinet to the rest of the research information (audio-recordings, transcripts and pilot test data). Audio-recordings will be destroyed on completion of the project, or in the case of individual interviews returned to the participants if they request this. Data will be kept for ten years at AUT University under the supervision of the KM and JF, and then destroyed.

## 5 RESULTS

This chapter will outline the findings for each phase of the research and briefly discuss interpretation of these findings. More in-depth interpretation and discussion of implications is then provided in the *Discussion* chapter. As with the previous chapter, each phase of the research is described in turn.

### 5.1 Phase One Findings

#### 5.1.1 Phase One Participants

Twenty-two participants took part in the first phase of the research. Six injured workers, five employer representatives, six health professionals and five ACC case managers. The characteristics of the participants are outlined below.

##### *Injured workers*

Six individual interviews were conducted with injured workers. The characteristics of these participants are outlined in Table 5.1.

**Table 5.1: Participant characteristics — injured workers**

<i>Participant</i>	<i>Gender</i>	<i>Age</i>	<i>Ethnicity</i>	<i>Condition</i>	Work physical demands			
					<i>Sitting</i>	<i>Standing</i>	<i>Moving</i>	<i>Heavy lifting</i>
1	Female	55–65	Maori Pakeha*	Musculoskeletal	✓		✓	
2	Female	45–55	Pakeha	Musculoskeletal		✓	✓	
3	Male	45–55	Pakeha	Musculoskeletal	✓	✓	✓	
4	Female	25–35	Maori Pakeha	Brain injury	✓			
5	Male	45–55	Pakeha	Pain	✓		✓	✓
6	Female	65+	Asian	Musculoskeletal	✓	✓	✓	

\* New Zealanders of European descent



### *Employer Representatives*

One focus group and two individual interviews were conducted. The focus group consisted of three employer representatives from large New Zealand employers (with several thousand employees) from retail / wholesale and transport industries. The individual interviews were with representatives from smaller employers from education and retail industries.

### *Health Professionals*

Two focus groups were conducted with health professionals. One focus group was with three professionals experienced in serious injury return-to-work intervention and workplace assessments. The other focus group was with three professionals experienced in musculoskeletal injury workplace assessments.

### *ACC Case Managers*

One focus group and one individual interview were conducted with ACC case managers. The focus group consisted of case managers employed in general case management. The individual interview was with a case manager who specialized in serious injury case management.

## *5.1.2 Acceptability, Appropriateness and Possible Uses of the Measure*

During data analysis of the focus groups and interview transcripts, comments relating to acceptability and possible uses of the measure were coded according to the topic they addressed and the part of the measure they referred to. The coded comments were then compared within and between stakeholder groups. Feedback from stakeholders was that the measure was acceptable and culturally appropriate, and there were a range of possible uses identified. This section covers the feedback from interview and focus group participants about how useful and acceptable to use they thought the measure would be and why, and its likely cultural appropriateness. Suggestions made by participants for potential uses of the measure are then discussed.

### *Acceptability of the Measure as a Rehabilitation Tool*

All participants supported the general structure of the PAWSS measure, and feedback was very similar from each of the stakeholder groups. They commented that it was inclusive, holistic, and easy to understand. Furthermore, funders and health

professionals described problems with current practices (particularly variation with regard to referral practices, assessment practices and reporting) that meant clients got variable quality of services — supporting the proposal for a standardized measure that had the potential to help resolve some of these issues. Data presented below are quotes from interviews and focus groups and illustrate the range of stakeholder feedback regarding acceptability.

*EMPLOYER: “[about item scoring] it’s good, because it gives you a sort of a strict, not a strict, like a guideline, this is where we’re talking, this is where you’re sitting at the moment, you know.”*

*CASE MANAGER: “[about cognitive items] cognitive function is a factor for everybody that’s had a brain injury or a spinal cord injury or tumour or something like that, but it’s [also] a factor for all of us.”*

*JF: “in terms of a way of assessing rehab needs at work, do you think that this is, that it would be acceptable to people?”*

*HEALTH PROFESSIONAL 1: “Oh I see, yeah I think it would. Yeah I think it’s ...”*

*HEALTH PROFESSIONAL 2: “Yeah it’s like a standard process ...”*

*HEALTH PROFESSIONAL 3: “It’s looking at the whole person, yeah.”*

*INJURED WORKER: “Covers most of it doesn’t it, their physical capabilities and the environment that they are going into. Cognitive is a good one because you do, and I know looking back, not so much at the time when the injury is there, but you know that pain has held you back and you probably didn’t perform as well as you should.”*

As these quotes highlight, stakeholders thought the PAWSS covered relevant return-to-work issues, and that the items represented aspects of work functioning that they would expect to see in a measure of work-ability. They also noted that although each item was potentially relevant for any person, some of these (for example cognitive items) are currently not routinely considered except in specific populations (for example brain injury).

The next quotes illustrate some of the issues funders brought up associated with non-standardized vocational rehabilitation assessment practices, and the way in which they thought a standardized measure may help to resolve these issues. The following case manager expressed frustration about not getting consistent information from health professionals about the work-related recovery of injured workers:

*CASE MANAGER: “they [health professionals] don’t provide us with progress reports or medical notes, and most of them do only if we request it so that’s keeping ACC out of the loop about how they’re going so if there was a better relationship between them and we were both on board, on the same page, that would eliminate some of the barriers for reintegrating into the workplace ... It’s like they haven’t read the work site assessment to see that there’s been other duties you know that may have been identified that they can do and well we can start graduating them back in.”*

Later in the same focus group, another case manager offered a suggestion for how the PAWSS may assist each stakeholder to understand more precisely what a worker’s limitations are, potentially helping to bring the different stakeholders “on the same page”:

*CASE MANAGER: [In the context of discussion about using PAWSS scores to communicate information about rehabilitation needs] “Because then you know which areas are stopping them, because it’s not everything, they’re certainly not struggling with every aspect of the work requirements, so then at least once you know you can put appropriate things in place.”*

### *Cultural Appropriateness of the Measure*

Feedback about the cultural appropriateness of the proposed PAWSS measure indicated that all stakeholders felt that the PAWSS fitted in well with the processes already in place to promote respect for different cultures. Aspects that were specifically mentioned as fitting in with or enhancing current processes were the option to have a support person attend the assessment, and the fact that the measure inherently considers the match between the specific work environment and the individual worker. Quotes from interviews and focus groups below were typical of the responses regarding cultural appropriateness.

*INJURED WORKER: “given NZ is a multicultural society and we have all these measures in place it’s appropriate to ask the question ... I guess the only thing for me because I’m Maori is that everything with us from a cultural perspective is a collaborative thing which is, ordinarily my mum comes to appointments with me or*

*my aunties and the whole, not the whole whanau, but other members of the family are extremely involved in the processes, my OT knows my mum quite well and that I guess is a cultural thing ... it would just mean an extra person which we are entitled to have anyway, a support person or whatever you want to call it who may participate because that's the other thing is sometimes I may think I'm doing quite well and other people don't agree ... and half the time I forget, saying I'm ok and mum's going well actually you did da did da.. and I go I forgot about that so I don't think its culturally offensive as such, but it would have to, the measure's a brilliant place which is a facility for an additional support person to be present because that's the Maori way it seems."*

This participant highlighted that in New Zealand there are already a number of processes in place that help to promote cultural respect, particularly with regard to Maori culture. She felt the PAWSS measure fitted in with those provisions.

The next quotes raise the idea that the cultural appropriateness of the measure may be largely related to allowing enough flexibility so that it can be used appropriately in each particular situation. These participants also highlighted the fact that each individual match between a person and their workplace carries with it cultural challenges, and that these have to be addressed in that context.

*HEALTH PROFESSIONAL: "I don't know I personally think that the work culture is its own culture and I think no matter what culture you come from you have to work within the culture of the workplace and, but the specific needs of the client will come at the very beginning I think as to whether or not they will actually accept the workplace that they've been put into or you know they are even willing to participate in it. Sometimes it's more around the other people that they work with, not necessarily their own needs."*

*JF: "The last thing being is there anything that jumps out at you as oh I don't think that would be appropriate or I don't think x culture would really like the way this is done, anything like that? So it's about cultural appropriateness."*

*CASE MANAGER: "Um, no I don't think so, and if you go back to some of the second page I think and it was about how people get responded to or how they're given instructions and that, that's where you can bring some of that stuff in, you know I mean, and really if people feel comfortable with you when you're working with them and finding out about them, and you're using appropriate supports to do that, whether its interpreting services or cultural support people, or extended family, you'll find out that Jimmy doesn't like to be told what to do by a woman, it's not just because of his brain injury it's a cultural thing as well, so then you can note what is required or what they will respond to, you know."*

*JF: "So it's about how you approach it really rather than the measure itself?"*

*CASE MANAGER: “Yeah. Same thing can happen for perhaps older people being told what to do by younger people, just in the normal work population, interesting.”*

### *Possible Uses of the Proposed Measure*

Stakeholders confirmed that the PAWSS appeared to be potentially useful as a tool for rehabilitation, and commented that they thought the PAWSS measure could also be useful in other ways: as a means of communication between employee, employer, health professional and ACC about limitations and needs; as a document that could be updated over time as supports are put in place, to show progress; and as a standard approach to assessing work needs and expectations. Each of the stakeholder groups interviewed identified some current problems with communication between the different stakeholders about the needs of the injured worker. This is illustrated in the following quote from an occupational therapist:

*HEALTH PROFESSIONAL: “we do have some really great, you know GPs [general practitioners] that do support our clinical judgements but then there have been some that have been really, that have been saying well no they should be able to work 20 hours and they are sitting on 8 ... but then the communication between us and them can be really hard, just because they’re so difficult to get hold of, and we’re not allowed to email them ... they don’t always get that regular report.”*

Several participants raised the idea that the PAWSS could potentially facilitate this communication. In the following quote, an employer participant talked about how the PAWSS measure could be useful as a communication tool:

*EMPLOYER: “I think it would be useful to explain to people where you’re at and where you’re going. And when I say people I was thinking about supervisors, managers and higher management, and probably it would also be useful for the person I think, for them to understand where they’re going, so that could be useful there. Um, and you know you could demonstrate to them that there is hope there and this what we’re doing and why we’re doing it.”*

This possible use of the PAWSS for communication between stakeholders was reinforced by the view of these injured workers, who talked about a tension between wanting an employer to know what their needs were, but not wanting to risk giving them access to detailed medical information:

*INJURED WORKER: "I think this type of assessment would be vital to them [employer] to know to either reassure them that everything's going well or in terms of the support team, if you've got an occupational therapist who'll say this isn't quite working and something needs to be changed so I think it would be reassuring for an employer to know that they're coping or to know that if they're not coping that there are strategies in place to deal with that to address that situation and this would be a safe way of communicating that."*

*INJURED WORKER: [responding to a question about whether the measure would be helpful in participant's situation] "I think so because that's something that's broken down in terms of like the medical reports and the medical certificates it's like I don't want them [employer] to have access to my medical records because that's too much detail but I think that they should know what's going on but at the same time they don't understand it either ... despite having been provided with literature about [injury] so having a specific scale like what you're talking about would be definitely really helpful."*

This case manager identified the potential of the PAWSS measure as a way of standardizing the approach to rehabilitation planning:

*JF: [after explaining the application and scoring of the measure] "Do you think that's a sensible way to approach it?"*

*CASE MANAGER: "Oh absolutely. If we can use standardized approaches that actually mean the same thing in any context, then yeah. ... It's a standardized approach that can be adapted to everybody, doesn't matter what their injury is ... Yeah, I mean I've seen people go sort of full out with someone, right got them a job, and yet they didn't actually ask them how are you going to get there, how long is it going to take and actually this is the expectation of the job."*

In this focus group, health professionals identified the PAWSS as a measure that could be easily incorporated into the current assessment systems:

*HEALTH PROFESSIONAL: "Um, I think it's a good way to go because it's a scoring that a lot of assessors already know, it gives you a fair bit of scope because you've got seven levels, and at the same stage it is fairly concrete, you know your 25 your 50 your 75 and most people can find a category within that that fits, the other thing is obviously when you do get down to some of the things like fatigue, there is going to be some that are going to be really tricky to, how do you score."*

*KM: "Try and make it as easy as possible."*

*JF: “Yeah, and that will be something that hopefully we’ll pick up in pilot testing as well, what’s easy to score, what’s not easy to score.”*

The only concern raised about introducing a measure like the PAWSS was a worry that the measure would highlight things that were needed but could not be provided under the current funding framework. This was discussed during one of the health professional focus groups:

*HEALTH PROFESSIONAL: “Here are all the interventions that we currently have or that are currently funded by ACC, let’s go back that way drive them in to these, because then you’re actually, it’s all very well to make all these great things up and then give it to the clinician who well, I can’t do anything about that under the current framework, or you know if it’s psychosocial or something you could have clinical psychology here, you could have strengthening, conditioning, you could have cognitive behavioural therapy, just return to work trial, alternate duties, how does it feed back into that which makes it useful?”*

*JF: “Yeah but also we don’t want to be limited by what’s available as well, we want to be able to say this is really important but it’s not available, let’s get it.”*

*HEALTH PROFESSIONAL: “That’s right, and that’s going to come out of that, you think well that’s really important, but it really doesn’t marry up to what we can currently offer, because we need something new.”*

This highlighted a conflict that health professionals face between the services they think should be provided ideally and what is available in practice. It also raised the question of whether it is an opportunity or a threat to introduce a tool that may highlight needs for which there are not currently resources to address.

### *5.1.3 Feedback on the Structure and Content of the Measure*

Stakeholders gave a range of feedback on the content and feasibility of the measure.

This feedback was compiled in a table (Table 5.2) and fell into four broad categories:

- 1) Points to *clarify* either because they were ambiguous or because they had not yet been defined;
- 2) Items or points within items to *modify* to make the measure more in line with their experience of work-ability or disability;
- 3) Items or points within items to *add* to make the measure more in line with their experience of work-ability or disability;
- 4) Points or questions to *incorporate* to make the measure more reflective of their experience of work-ability or disability.

Health professionals who work with different client groups did not always agree on what items or points were important to include. Particularly, there were differences in opinion between those who work with brain injury clients and those who work with general injury clients regarding whether the cognitive skills item should be further broken down, and whether fatigue should be two separate items: physical and cognitive fatigue, or only one item which covers both. Since it remained to be tested how the measure would work in practice, it was decided to leave the items as they were and see whether feedback from pilot testing raised these issues again.

Table 5.2 outlines revisions that were made to the PAWSS measure before beginning pilot testing. In addition, feedback from stakeholders regarding the best approach to administering the measure informed the design for the pilot phase (see *Methods and Design* chapter four for details). Appendix C shows the version of the PAWSS measure used for pilot testing based on the revisions from the development phase.



**Table 5.2: Summary of stakeholder critique of the measure**

SUGGESTION	ACTION
<b>Clarify</b>	
Language of scoring possibly too physically focused — e.g. would be good to include language like ‘strategies’ as well as ‘equipment’.	Language on scoring information was modified in accordance with this suggestion.
There are some items that can’t be scored until a few weeks into the job — e.g. fatigue, some cognitive, perceptual.	This will be explored in pilot testing.
Training for using the measure is needed.	Training procedure will be tested in the pilot phase and subsequent testing of the measure.
Is percentage of the time able to manage that aspect of working the most appropriate way to score, and clear enough?	Pilot testing will assess the practicality of this method of deciding on a score.
Specify what ‘support’ means (i.e. support from whom?) in scoring information.	Clarification of support (from whom) was added in the scoring decision-tree notes.
Should we score the modified job or the original job if job modification or gradual return to work is the case?	This will be explored in pilot testing phase.
Should we keep the numeric scoring system? That is, is this meaningful or are we assigning numbers when we could be doing it some other way (numbers may not be useful to injured workers in particular — i.e. what does 4 out of 7 mean?).	A numeric scoring system is useful for the moment as it is similar to the Functional Independence Measure (Keith et al., 1987), which clinicians are familiar with. Interpretations will be managed in the way information is presented to various stakeholders.
Is level 7 redundant? Do we need to differentiate independence without modification from independence with modification?	Level 7 was kept in for the time being. This will be explored in later testing with regard to psychometric properties of the measure.
What message is having level 7 at the top sending, given that many of us function quite well below that level?	This is something that will need to be taken into account when considering how the information from a PAWSS assessment is presented.

SUGGESTION	ACTION
<b>Modify</b>	
Fatigue — do physical fatigue and cognitive fatigue need to be separate items?	Physical and cognitive fatigue were each specified within the <i>fatigue</i> item on the version to be pilot tested. Whether they need to be separate items will be further explored during pilot testing.
<i>Cognitive Skills</i> as a name for a domain sends a message to clinicians that items in this domain don't apply to people who don't have neurological conditions.	Changed the name of <i>Cognitive Skills</i> domain to <i>Thinking and Problem Solving Skills</i> .
Ability to carry things should be explicitly mentioned in <i>getting around</i> item.	This was modified.
<i>Physical / Environmental</i> domain: include a prompt for considering combinations of tasks — e.g. when someone has to walk and carry something, has to hold something and open a door.	This was modified.
Need more explicit mention of balance in physical descriptions.	This was modified.
Pain needs to be more explicitly dealt with in the measure.	Pain was incorporated into the impairment evaluation that takes place before completing the PAWSS to ensure it is taken into account.
Some cognitive skills items are in other domains (e.g. motivation, initiation in social/environmental domain).	Domain items were re-structured to ensure the domain name reflects every item in the domain.
<i>Social / behavioural</i> domain needs to include something about employer and colleague relationships that change / are affected by someone being off work for a period of time or having significantly changed abilities (perhaps related to attitudes).	The <i>Interpersonal skills: staff</i> and <i>Interpersonal skills: management</i> items were modified to include changes to relationships brought about through being off work / changes in abilities.
Is personal presentation too prominent in the <i>Social / Behavioural</i> domain?	This item was broadened to become <i>work protocols</i> . This new item included personal presentation, but did not focus as much on this particular aspect.
Interpersonal items (last 3 in <i>Social/Behavioural</i> domain) should be worded more neutrally (i.e. focus not only on employee behaviour, but on the relationship dynamics).	This was modified.

SUGGESTION	ACTION
<b>Add</b>	
Insight into own strengths and difficulties often affects work functioning but is not represented in the measure.	This is included under <i>Knowledge, beliefs and expectations</i> item in the new <i>Contextual factors</i> domain.
Planning and organising skills (into <i>Cognitive Skills</i> domain) needs to be included.	<i>Self organisation and planning</i> item was added to the <i>Thinking and Problem Solving</i> domain.
Some provision for a more detailed cognitive assessment should be incorporated if it needs to be (e.g. for brain injury).	A note was added to the <i>Cognitive function</i> item that prompts to include further description if required. This will be explored further in pilot testing.
Emergency evacuation may need to be included in mobility.	This was modified.
<b>Incorporate if possible</b>	
How to acknowledge transition from partial, light or modified duties to full job requirements.	This will be explored during pilot testing.
External factors e.g. financial pressure, employer factors, family factors (including facilitators).	New domain <i>Contextual Factors</i> was added that included these things.
Contextual factors — e.g. work / home responsibilities balance, role of work in life, work satisfaction, routines.	New domain <i>Contextual Factors</i> was added that included these things.
Support factors outside the workplace as they related to ability to perform the job — e.g. living on own with impaired function is very tiring without support, and while housework, meals, etc are offered when first injured, often needed later on after returning to work due to increased energy expenditure and decreased time to get things done.	New domain <i>Contextual Factors</i> was added that included these things.
Acceptance (e.g. of appearance, limitations, etc).	This was included under <i>Knowledge, beliefs and expectations</i> in the new <i>Contextual Factors</i> domain.
Worries about competence (from worker and employer) e.g. negligence.	Worker worries were covered in new <i>Contextual Factors</i> domain. Employer worries about competence should be captured in <i>Interpersonal Relationships — Management</i> item and <i>Contextual Factors</i> domain.

SUGGESTION	ACTION
<b>Incorporate if possible</b>	
Risk of re-injury.	This will be explored in pilot testing.
Contribution of travelling time / distance to work demands.	This was specified in <i>Pacing and ability work through a normal day</i> item in <i>Physical / Environmental</i> domain.
Acknowledgement of strengths and strategies.	The best way to incorporate this will be explored in pilot testing.

## 5.2 Phase Two Results

### 5.2.1 Assessors

Four experienced workplace assessors took part as research assessors in the pilot phase of the research. These occupational therapists (OTs) were associated with two organisations (which acted as localities for the research); one organisation primarily serving clients with brain injury, and one organisation primarily serving clients with musculoskeletal injury and related disorders.

### 5.2.2 Participants

Five injured workers took part in the pilot testing. A total of six people consented to participate in the pilot test, but one withdrew consent before completing the measure with the assessor. According to the assessor, this was unrelated to the research, rather it was to do with their claim status with ACC. The characteristics of pilot test participants are illustrated in Table 5.3.

**Table 5.3: Summary of participant characteristics**

Gender	Age	Occupation type	Condition
Male	45–55	Professional	Musculoskeletal
Female	25–35	Administrative	Brain Injury
Female	45–55	Managerial	Brain Injury
Female	25–35	Trades	Musculoskeletal
Female	25–35	Professional	Brain Injury

Although the aim was to include three people with a chronic pain diagnosis who were undergoing a workplace assessment, the locality received no referrals of people with this diagnosis during the two months of recruitment. To address this, recruitment was extended for a further three weeks to try and recruit some participants from this population group; however none were referred during that time. Although four of the five workers who took part experienced significant pain as one of their symptoms (that is, pain that caused significant limitation in activity), it was considered important to ensure that potential issues specific to people returning to or continuing in work with a

chronic pain diagnosis were explored. To address this, the local pain service was contacted. Two clinicians within this service who were familiar with vocational issues for this population group agreed to discuss the PAWSS and provide feedback about the measure and its administration as it related to people with chronic pain (see *Pain Clinician Feedback* later in this chapter).

### 5.2.3 *Acceptability and Feasibility of the PAWSS*

All participants and assessors found the PAWSS measure acceptable, and all participants requested the information to be sent to them by the research team after the assessment for their own records. Assessor feedback indicated the measure was feasible and straightforward to use. A summary of the feedback from injured workers and assessors is given below.

#### *Injured Worker Feedback*

All the injured workers involved in pilot testing the measure said it was relevant to their work situation, and no-one said they felt uncomfortable about giving information for any of the items. All participants said they thought they themselves and the workplace assessor should be involved in the assessment, and all but one participant thought that their employer or workplace should be consulted for information to score the PAWSS. Some participants thought other people involved in their care should also be consulted, although suggestions regarding who these other people should be (that is, their role or relationship to person) were different for different people. The feedback from injured workers is summarised in Tables 5.4 and 5.5.

**Table 5.4: Injured worker feedback regarding acceptability of the PAWSS measure**

Participant ID	PAWSS relevant to work situation?	Any items that made you uncomfortable?	Anything missing from the measure?	(If something is missing) What is missing?
P1	Yes	No	Yes	Not specified
P2	Yes	No	No	Nothing missing
P3	Yes	No	Yes	No specific missing aspects identified. Comment given was that some items cannot be assessed before starting the job (information not available yet)
P4	Yes	No	Yes	No questions relating to disparity between previous career and current job
P5	Yes	No	No	Nothing missing

**Table 5.5: Injured worker feedback regarding who should provide information for the PAWSS assessment**

Participant ID	Who should be involved in providing information to make sure the PAWSS is completed accurately?					
	Me	My employer	Workplace assessor	Other health professional	Other person	Specify other health professional (HP) / other person
P1	✓	✓	✓	✓	✓	Other HP: Physio Other person: partner
P2	✓	✓	✓	✓	✓	Other HP: GP Other person: ACC
P3	✓	✓	✓	✓		Neurological physiotherapist
P4	✓	✓	✓		✓	Family
P5	✓		✓	✓		Orthopaedic specialist

### *Assessor Feedback*

Assessors reported they found the measure scoring easy to learn, especially given its similarity to the structure of the Functional Independence Measure (Keith et al., 1987). Assessors found assessment and scoring of items was generally straightforward, although sometimes items *pacing through the day* (referred to as item 4 in Table 5.6), *dealing with instruction, change and correction* (referred to as item 15 in Table 5.6),

and *dealing with the unexpected* (referred to as item 8 in Table 5.6) were difficult to score if the worker had been back at work for less than a month, and was returning with significant changes in ability, returning to a new job, or to a similar job but after several weeks or months off work. In these cases it was difficult to determine the level of functioning because the worker may not have been doing the job long enough post-injury to accurately assess their support needs on this aspect of work functioning. This finding concurred with feedback from participants in Phase 1, confirming that appropriate timing of assessment for the PAWSS was crucial to ensure particular items could be scored as intended.

At this stage, the consideration of the percentage of time a person was able to manage the aspect of work functioning seemed to be appropriate for differentiating between scores where applicable. There were no items that assessors felt should not be there, and no missing items were identified. Assessors were generally positive about the measure and found it acceptable to use. Feedback from assessors on the administration of the measure is summarised in Table 5.6.

**Table 5.6: Assessor feedback from using the measure**

Participant ID	Assessor	Time to complete measure (min)	Items which were difficult to score?	Items which were hard to get enough information for?	Reasons for difficulties scoring / getting information?
P1	1	45	4*, 15*	15	4, 15: Client has not been in job long enough to judge functioning
P2	3	25	None	None	n/a
P3	2	60	4, 8*	4	4: Client has not been in job long enough to judge functioning 8: Problem solving and multi-tasking are quite different skills
P4	4	30	4	4	Client has not been in job long enough to judge functioning
P5	1	30	4	4	Client has not been in job long enough to judge functioning

\*Item 4: “*Pacing and ability to work through a normal day*”; item 15: “*Dealing with instruction, change and correction*”; item 8 “*Dealing with the unexpected*”



Two particular issues were raised in the first phase that were further investigated during pilot testing — whether pacing should be broken into two items rather than one, and whether the cognitive item should be further broken down into more items. These items were each kept as they were for pilot testing, and this was found to work well. Finally, potential risk of re-injury and assessor acknowledgement of the worker's strengths and strategies were also raised in the first phase as issues that should be considered for inclusion in the PAWSS. Based on the pilot testing, these particular issues were deemed to be part of the clinical judgement process. This is one of the reasons the PAWSS needs to be completed by an experienced workplace assessor. However, this will also be specifically raised in training materials.

### *Pain Clinician Feedback*

The feedback from clinicians from the pain service was in line with the findings of the pilot testing with other populations regarding the content and administration of the measure. The need for the measure to be administered in a workplace assessment situation by someone with sufficient vocational skills and experience with the particular diagnosis population was re-confirmed. They also felt the measure was very likely to be applicable for people with chronic pain conditions, particularly since the PAWSS includes items related to cognitive skills, pacing through the day and interpersonal skills in the workplace, and these are the issues that often arise for people with chronic pain. However, one concern they raised was that people with chronic pain often approach assessments with prior negative experiences of medical and rehabilitation intervention. Therefore it would be crucial to ensure that, for this population in particular, the way in which it was presented to the worker was as an enabling rather than a disabling process. They also highlighted that the state of the employer–employee relationship may affect the motivation of the employer to want to return someone to the workplace. Since employers are instrumental in arranging workplace environment and processes, their feelings about having the worker back in the workplace may sometimes represent the difference between support or modification being available or not. This issue is discussed further in the following (*Discussion*) chapter.

### 5.2.4 Revising the Measure

Some discrepancies were noted between the way the measure was scored by assessors and the way the researchers would have expected the measure to be scored. These are detailed in the ‘findings’ column in Table 5.7. Following pilot testing, the measure and procedures were revised based on this information, and on the feedback from the assessors and injured workers (see Appendix Q for the PAWSS version 2.4 revised from pilot). Table 5.7 summarises the findings and associated responses or revisions to the measure.

**Table 5.7: Phase 2 Pilot findings and associated revisions to the measure**

Findings	Response / revisions
Some confusion from assessors regarding what counts as ‘support’ — e.g. if a person was using a taxi because they couldn’t drive to work is this scored as highest level of support (Level 1) for transport.	Include clearer instructions in the measure and training about what constitutes support for PAWSS scoring: i.e. professional services used appropriately without help should be considered modification rather than support.
Lack of clarity around the difference between impairment (e.g. fatigue) and difficulty with functioning (which is the result of impairment — e.g. not able to work a full working day due to fatigue). Assessors needed more training around what to take into account during scoring — i.e. what is functioning and therefore impacts PAWSS score.	<ul style="list-style-type: none"> <li>The PAWSS measure is a measure of functioning, not impairment, although all impairments need to be considered for their impact on function. There is a need to spend more time in training discussing the process of first determining the impairments, and then looking at how these affect functioning.</li> <li>The measure wording was further adapted after discussion with the both originators of the measure to ensure that ambiguity was minimized, that it was clearly function-focused.</li> </ul>
Scoring on items 4 (pacing through the day) and 5 (transport and travel) showed discrepancies between the score assigned and the score researchers would have expected to be assigned. Comments from assessors indicated this stemmed from ambiguity in the decision-tree questions for these items.	Decision-tree questions were adapted to remove ambiguity for these items. Other items were double-checked for similar problems and adapted if necessary.
Feedback from participants indicated they thought other people (in addition to those already involved) could be consulted for the information collected for the measure, although suggestions for who these other people should be was different for different people.	This can be explored in future development, particularly the possibility of consulting the participant about whether they think there are people who could provide important information that would not be picked up during a workplace visit.
Assessors reported that they were unsure how to determine a score when the client was likely to be put onto modified duties or a graduated return-to-work programme	<ul style="list-style-type: none"> <li>Incorporate clearer information regarding these circumstances into future training.</li> <li>Look at incorporating agreed minor modifications to the job into scoring level 6 (modified independence).</li> </ul>

Findings	Response / revisions
Assessors suggested that for someone who is either a) starting a completely new job, or b) returning to work with considerably different abilities, or after a long time off, the PAWSS should be done over more than one workplace visit, as some questions will be relevant from the start, while others (such as those in the social and behavioural domain) may be better able to be assessed approximately a month into the job.	This is important for administration of the measure. This consideration will be explored in future development.
Assessors tended to use the item descriptions on the scoring sheet in preference to the item descriptions provided with the decision trees.	In future the PAWSS should either include all information on the scoring sheet or make the scoring sheet so it is clearly a record sheet with no item descriptions — meaning people must refer to scoring information for item descriptions.
‘Contextual factors’ domain sometimes needed more explanation than assessors were expecting.	Incorporate more specific training focused on the contextual factors domain — especially since this is quite different to the rest of the PAWSS measure.
Item 8: ‘Dealing with the unexpected’ was confusing for assessors as it includes ‘multi-task’ in the description, which is a very different skill to problem solving.	Re-worded so meaning of this item and what it covers was clearer. ‘Multi-task’ was changed to ‘handle interruptions’.
Assessors found it more difficult to decide on the correct score for items in the ‘contextual factors’ domain.	This domain had only a scoring table, not decision-trees. Decision-trees have been added for this domain.
It is important to ensure that assessments using the measure consider the option for adaption of environment and / or work systems. The expectation of this consideration may not be clear in the decision-trees.	The first question in each decision-tree is whether the person requires support from another person to carry out the work function. This may mean that options for adaptation that reduce the need for support are not routinely considered. A way to facilitate consideration of these options will be further explored.
It is important to ensure that the way the assessment is approached facilitates the worker to see it as an enabling process rather than a disabling process.	The design of the PAWSS is such that it focuses on enablement through use of modification and support. However, it is important to continue to examine this throughout the development to ensure that administration of the measure is done in such a way that it is an enabling process for workers.

### 5.2.5 Time Taken to Complete the PAWSS

It was found that the time needed to complete the PAWSS after the workplace assessment was variable. The shortest time taken for completion was twenty-five minutes, and the longest time was sixty minutes. Assessors reported that the variation was due to the fatigue levels and information processing capacity of the injured worker. Furthermore, the better the assessor knew the worker and the workplace, the quicker the

measure was to complete. Over all the pilot assessments, the average time taken to complete was thirty-eight minutes. The most frequent completion time was thirty minutes.

#### *5.2.6 Summary*

Overall, the assessment process was found to be acceptable to injured workers and assessors, and the measure feasible to use. The majority of revisions were made to increase clarity and ensure that future assessor training addresses the areas where there were discrepancies in scoring.

## 6 DISCUSSION

This chapter will discuss the implications of the research findings, limitations of the current project, and suggestions for further research. Following this, the strengths of the methodology, and a number of points about return-to-work practice raised by the research with are discussed. Finally, overall conclusions will be summarised.

### 6.1 The Need for a New Measure of Work-ability for Rehabilitation Planning

The review of the literature identified six categories of factors that contribute to work-ability. These were physical function, psychological function, cognitive skills, social and behavioural skills, workplace factors and factors outside the workplace. A subsequent search for currently available measures of work-ability revealed that there were no measures that covered all these factors. A likely reason for this lack of coverage is that the currently available measures were designed to assess work-ability at a point in time for a particular purpose (for example for assessing job instability or the impact of an injury on productivity). These measures are often intended to be quick to administer and produce a useful summary score using the most efficient method, meaning that they strive to include the fewest number of items possible in order to obtain a valid estimate of work-ability. In contrast, to obtain information about support needs for planning future rehabilitation, each of the contributing factors arguably need to be individually assessed so we know which specific areas need to be targeted. Since none of the existing measures include all the factors that could contribute to work-ability, none of them could be used for the purpose of rehabilitation planning. The PAWSS addresses this gap, because rather than being designed to purely provide a summary score, it is designed to gather information on each specific area of work functioning so it can be used to assist with planning interventions to *improve* work-ability. Table 6.1 illustrates how each category of factors identified in the literature review are incorporated into the latest version of the PAWSS measure (Version 2.4, see Appendix Q).

**Table 6.1: Factors identified from literature review as incorporated into the PAWSS scale**

<b>Factors</b>	<b>Associated PAWSS domain</b>
Physical function	Physical / Environment; Contextual Factors
Psychological function	All except Physical / Environment
Cognitive skills	Thinking and Problem Solving
Social and behavioural skills	Social / Behavioural
Workplace factors	All domains
Factors outside the workplace	Contextual Factors

## **6.2 Using the PAWSS in Vocational Rehabilitation Practice**

Findings from the stakeholder focus groups and interviews, and results of the pilot testing, indicated that the PAWSS measure would be useful in vocational rehabilitation as a tool to help plan appropriate supports and interventions for people returning to work after injury. Furthermore, other potential benefits related to the vocational rehabilitation process were suggested. One of these was that the PAWSS may be useful as a tool to track progress, being updated as support is accessed and / or as interventions take effect. The other suggestion was as a communication tool that all stakeholders can refer to for information about current work-ability and support needs.

### *6.2.1 The PAWSS as a Standard Tool for Intervention and Support Planning*

In phase one, health professionals and case managers described current intervention and support provided to assist return to work after injury as variable, and sometimes lacking (see 5.1.2 *Acceptability, Appropriateness and Possible Uses of the Measure*). They felt that clients who got poorer service missed out on valuable support, which could impact on their return to work. Possible reasons they suggested were that firstly, assessment of issues related to work functioning may not always happen, and when they did, the assessments tended to vary with regard to how comprehensive they were. Secondly, subsequent communication of the assessment information to relevant stakeholders was inconsistent. These suggestions concur with the findings of Innes and Straker (2002) and Strong et al (2004) showing variation in content and quality of work-related assessments. One advantage to having a standardized measure that is specifically designed to assist with rehabilitation planning is that it could provide a prompt to assess

all the relevant areas that may be affecting a person's work functioning. Furthermore, a tool such as the PAWSS (in which the item score is related to support needs) may also prompt routine consideration of possible supports. This feedback indicated that the primary purpose of development of the PAWSS measure was supported by the relevant stakeholders, and it could also serve to address a number of current problems in the vocational rehabilitation process (see section 5.1.2).

### *6.2.2 The PAWSS as a 'Living Document'*

Stakeholders interviewed in the development phase of the research identified a possibility for the PAWSS to be used as a dynamic document that is first completed when someone is looking at a return to work, and then updated as progress is made with interventions and supports. This was raised again in the pilot phase results, where assessors identified that for people who a) were returning to work after a long period off work, b) had significantly changed abilities, or c) were starting a new job, some items could not be meaningfully assessed before starting (or restarting) the job. It would therefore be useful to update the PAWSS a few weeks after the individual has returned to work. Extending this concept further, the PAWSS could also potentially be tested as a measure of progress over time for conditions that entail a long recovery period, or to assess the impact of work-based interventions. Indeed, for the FIM, research has shown that a 'gain score' can be calculated from FIM scores (the 'gain score' reflects the change in FIM score that occurs between admission to a service and discharge from that service), and the gain score can be used to show patterns of functional outcomes for populations who access a health service (Stineman, Hamilton, Goin, Granger, & Fiedler, 1996). In order to explore whether the PAWSS could be updated over time, it is important that any future development of the PAWSS addresses this issue by testing whether or not it is valid and reliable when used as a longitudinal measure of work-ability rather than only as a one-off assessment. An appropriate option for testing this would be to look at its responsiveness to change (see 6.4 *Further Research* later in this chapter).

### *6.2.3 The PAWSS as a Communication Tool*

As shown in the phase one results, all the stakeholder groups interviewed identified some current difficulties regarding communication between health professionals, workers, employers and funders about the needs of the worker when returning to work.

Workers discussed a particular concern about not wanting the details of their medical records to be revealed to employers, but at the same time wanting the employer to understand what their limitations and needs were. Employers expressed a frustration that funders and medical practitioners may not understand their particular working environment, and that workers may not be fully aware of their abilities and limitations following an injury. Health professionals and case managers talked about their concerns that communication between the various parties involved in rehabilitation and return to work was sometimes difficult or lacking. This highlights another potential contribution of the PAWSS in the vocational rehabilitation process — as a standard, easy-to-understand overview of abilities, limitations and support needs that can be used by all stakeholders. Research by Pentland, Hellawell and Benjamin (1999) indicated that consultants and general practitioners found it useful to have FIM score summary data (with brief explanatory notes) in discharge reports, and that they found it understandable, even though they themselves may not be trained in the intricacies of how to assess functional independence using the FIM. Their findings suggest that scores from a standardized measure may be one way of communicating functional assessment data in a way that health professionals find meaningful. Since the PAWSS summarizes the level of support required for each item of work functioning, and this is communicated in the same structured format for each individual, it could potentially act as a relatively neutral way to communicate abilities and needs – not only to health professionals, but potentially to funders, employers and workers as well (as suggested in phase one findings). Once again, evaluation of the utility of this communication function could be incorporated into future testing of the measure.

#### *6.2.4 Possible Challenges Associated with the PAWSS*

##### *Drawing Attention to Limitations in Services*

In addition to the possible benefits related to introducing a measure such as the PAWSS into vocational rehabilitation processes, one challenge raised by stakeholders was that it may highlight for workers and employers where services are not available to them. Because it is intended to address all the areas of functioning that could affect work-ability, and the scoring system is focused on support needs, it could potentially cause problems by drawing attention to the fact that a worker needs support that is not currently available. This situation could arise either because the service does not exist or because the person is not eligible for funding for that service. Although this could be



seen as a risk, in contrast, it could also be seen as an opportunity to confront funders about providing services that are needed but not currently available. In this way, information provided by the PAWSS could be used to indicate where new services may be needed; whether existing funding allocation guidelines for a service is appropriate; or to monitor whether discontinued services should be re-established.

### *Keeping Work-ability Assessment as an Enabling Process*

One issue raised during phase two was the challenge of ensuring that the use of the PAWSS and associated processes are seen by the worker as enabling rather than disabling (see Table 5.7). To some extent, this will depend on the context in which it is used and the purpose it is used for. Although it is designed to be enabling in terms of focusing on support and rehabilitation needs, there is a chance that workers who take part in a PAWSS assessment may come to it following negative experiences related to return to work and see it as a challenge to their ability to carry out the job. In the future development stages, it will be important to bear this in mind so the measure can be designed in such a way that it is as enabling as possible, and to keep stakeholders involved in the development to give feedback on this aspect. The measure should also be examined at each stage to ensure that the language used, and the way in which it is administered, is in line with this aim. One way of doing this is to keep stakeholders very much involved throughout the development and testing process for the PAWSS, so their experiences of how the measure impacts on them can inform the research. Further discussion of the benefits of stakeholder involvement is provided later in this chapter.

### *Ensuring Appropriate Use of the PAWSS*

It may be advisable in future to have some process to maximise the likelihood that the PAWSS will be used in the way it is designed to be used. This is important because if the PAWSS is frequently used in a way that injured workers or funders find uninformative (at least) or damaging (at worst), support for and use of the measure is likely to decrease. Based on experiences with the development so far, it is likely that some formal training will be required for assessors to administer and score the measure in the intended way. Therefore, since it is intended that the measure would be freely accessible, it will be important to look at ways to ensure users are trained to use the PAWSS appropriately. For the FIM (Keith et al., 1987), clinicians must attend training by an accredited trainer to use the measure and then pass a test, after which they become

certified assessors for a limited period of time. In some countries there are also national databases of FIM certified organisations where all assessing staff are trained (for example <http://www.udsmr.org/>). Certification and maintenance of a database of certified assessors may be one way to distinguish between those who are trained to use the PAWSS appropriately and those who are not. The possibilities for how to go about this would need to be discussed in detail among the authors of the measure.

### **6.3 Limitations of this Research**

The design of the research was such that the qualitative interviews and pilot testing were limited to workers with certain diagnoses — that is, brain injury, musculoskeletal injury and chronic pain. Therefore the applicability of the PAWSS measure for other populations is still unknown. Furthermore, difficulty recruiting participants with chronic pain to take part in the pilot testing meant that the feasibility for use in this population was not tested as thoroughly as for the other two populations, and there may still be issues that have not been identified. While steps were taken to ensure there was some consultation with experts in the field about the applicability of the PAWSS for individuals with chronic pain, this was not equivalent to using it in a pilot test situation.

The three populations explored in this project typically experience quite different issues with work functioning. For example, people with a brain injury typically struggle most with issues related to cognitive and behavioural functioning (Bootes & Chapparo, 2002), while people with musculoskeletal injuries tend to have most difficulty with physical tasks and associated stressors (Gilworth et al., 2007; Gilworth et al., 2008). Furthermore, for people with chronic pain, there are often problems associated with sustaining working postures or movements, and ability to tolerate a full work day (Patel et al., 2007). The fact that the PAWSS was acceptable and feasible for all participants even with this diversity in typical return-to-work issues indicates that exploring its potential use in other populations is warranted. However, since the development work has been done only within injury populations, there is a possibility that unique challenges faced by some non-injury populations (such as those with chronic illnesses) may not be addressed by the PAWSS measure. Further exploratory research regarding the usefulness of the PAWSS measure in these populations is therefore important. Moreover, since the research to develop the PAWSS was done in New Zealand,

investigation into the appropriateness of the PAWSS in other cultural contexts is also needed.

## 6.4 Further Research

### *6.4.1 Assessing Reliability, Validity and Responsiveness to Change*

While the work to date has been vital to the development of the PAWSS measure, current findings do not substantiate its use as a clinical or research tool. This is because the reliability of the scoring and the validity of the instrument as a measure for the purposes discussed are not yet known.

Now that initial development and pilot testing has been completed, the measure will need to be tested for reliability and validity. The aspects of reliability and validity that are particularly crucial in relation to the clinical utility of the PAWSS measure are outlined below.

#### *Inter-rater reliability of the measure*

Inter-rater reliability is related to whether the items scores are the same when different assessors use the measure with the same individual in the same circumstances. While the ideal way to test this would be to get several assessors to complete the PAWSS with an individual at the same time in the same context to see if the scores assigned were the same, multiple assessments with the same person within a short timeframe is not a practicable option. Since a PAWSS assessment is generally carried out in the workplace during a normal work day, and has been shown to take up to an hour to complete, it would very likely be seen to be an unreasonable burden on the worker and their workplace to conduct multiple assessments. Instead, one option could be to video-tape a PAWSS assessment and get several professionals who are trained in scoring the PAWSS to watch the video and score the PAWSS based on the video-taped assessment. Another option could be to get a number of different people to score vignettes (or case studies) to see if different raters give the same PAWSS score with the same case information. This approach has been used in the past for assessing inter-rater reliability of instruments that require a level of clinical judgement (Fallon Jr. et al., 2006; Turner-Stokes, Nyein, Turner-Stokes, & Gatehouse, 1999).

### *Validity of the measure*

Face validity (whether the domains and items *appear* to be a good measure of work-ability) has already been established during phase one of the research. Further validity testing is needed to establish whether the PAWSS actually measures work-ability.

Table 6.2 outlines some options for further validity testing.

**Table 6.2: Suggested options for validity testing of the PAWSS measure**

Type of validity	Definition	Suggested process
Criterion validity	The extent to which an outcome can be calculated based on the information provided by the instrument (Bowling, 2005).	Test whether acceptable scores (e.g. Level 5 or above) for every item is associated with a successful return to work.
Construct validity	The extent to which the construct scores are shown to be related to the actual construct (Bowling, 2005).	Test whether low (high) scores on a certain number of items of the PAWSS measure are associated with a decrease (increase) in ability to carry out the job.
Predictive validity	The ability of the instrument to predict what will happen in the future based on information provided by the instrument (Bowling, 2005).	Test whether high scores on all items of the PAWSS can predict a sustained return to work (e.g. still working productively in the job at 12 month follow-up).

### *Validity for the Additional Purposes Suggested*

Alongside testing validity for its primary purpose — as a measure of work-ability to be used in rehabilitation planning — it would also be worthwhile including some evaluation of whether the PAWSS can or should be used for the *other* purposes suggested by stakeholders (that is, as a communication tool, and as a ‘living document’). For example, it would be valuable to include evaluation of whether the PAWSS could actually facilitate communication between stakeholders, and whether it would be useful for item scores to be updated over time. If these were found to be useful additional functions, validity testing in relation to these other purposes would have to be carried out in addition to testing validity of the measure for its primary purpose. For example, if the PAWSS was to be used in such a way that it would be administered multiple times on the same person (or the same group of people) to assess whether there was a change in work-ability, responsiveness of the measure to changes in actual work-ability would need to be tested. Investigating responsiveness to change would involve testing whether a change in a person’s ability to carry out the job is

associated with a change in PAWSS score of appropriate magnitude and in the appropriate direction. One option for doing this would be to take a baseline PAWSS assessment for each person, then re-administer the PAWSS when there is an observable change in work-ability for that person to see if the PAWSS score reflects the change. Another option would be to do a baseline PAWSS assessment for a group of people, then deliver to them an intervention that has already been shown to be effective in changing work-ability, administering the PAWSS to each person again following the intervention to see if the PAWSS score reflects the expected change (Husted, Cook, Farewell, & Gladman, 2000).

#### 6.4.2 Outstanding Questions about Scoring

##### *Investigating Summary Scores*

One of the issues raised in the literature review was a question around how much weight each aspect of work functioning may have towards the overall work-ability of an individual. It is worth looking at this issue in a little more depth in relation to the PAWSS measure. At this stage, it seems logical that the relative importance of each aspect of work functioning would depend on the demands of the particular job. For example, for someone who works as a labourer, optimal physical functioning may be vital to the job, while the ability to think and problem solve may be less crucial (and vice versa for an accountant). The PAWSS deals with this issue by asking about the proportion of their working time a person requires support in each aspect of functioning. For two people with exactly the same impairment, their scores on an item in the PAWSS (for example *physical and motor skills*) could be different depending on the way that impairment interacted with the demands of their particular job. For example, a labourer with a broken ankle is likely to get a low score for the PAWSS item *physical and motor skills*, because the broken ankle severely affects his ability to carry out the physical aspects of his job. An accountant with a broken ankle who works at a desk all day could very well have a high score for *physical and motor skills*, as he can carry out all the physical functions of his job despite his injury. However, while it is fairly clear how to interpret individual PAWSS items, it is still unclear at this stage how best to derive an overall PAWSS summary, or indeed whether this would be meaningful. Further research looking at the relationship of each item to the overall work-ability construct, and whether this varies for different workers scored using the PAWSS is needed. Moreover, research into the best way(s) of presenting the information provided

by the PAWSS should include consideration of the most meaningful way to give a summary score.

### *Could Ceiling Effects be an Issue?*

One potential issue that may be raised in further testing is that since the scoring structure is based on the FIM (Keith et al., 1987), it may have some of the same scoring issues. One of the well-documented problems with the FIM is that it has a ‘ceiling effect’. In other words, there is a point at which it is no longer possible to distinguish differences in functional independence using the FIM, because the highest scoring level has already been achieved, and therefore improvements (or *any* differences in functioning as long as the person is still independent) are not detected (Hall et al., 1996). The highest score for an item on the FIM or the PAWSS can be achieved if the individual can perform the functional task without assistance from another person. For the types of functioning measured by the FIM (personal care, sphincter control, mobility, locomotion, communication and social cognition), changes in function even for a person who can perform the task without assistance may still be of interest for rehabilitation, as quality of life can be considerably enhanced through improving function even at this high level. However, it is anticipated that for the PAWSS, this is unlikely to cause similar problems, because in contrast to the FIM, it would not usually be clinically important to distinguish between different levels of functioning on the PAWSS once a person is independent. Rather, once a person has the ability to carry out the aspect of work functioning without intervention or assistance, vocational intervention is usually considered unnecessary. Indeed, findings from phase one suggested that some stakeholders even questioned the value of distinguishing between *independence with modification* and *independence without modification* in the workplace (see Table 5.2).

## **6.5 Utility of Stakeholder Involvement in Measure Development**

Although an extensive review of the research literature to identify factors that contribute to work-ability and its assessment was conducted before beginning the research, results of this research show that stakeholder involvement still contributed considerably to the development of a suitable measure. Stakeholder participation through qualitative focus groups and interviews was invaluable for determining the most feasible way of administering the measure given current resources and systems. Furthermore, stakeholders were able to provide feedback with regard to the wording of item and domain names, how items were described, and what prompts were needed to assist correct interpretation. Stakeholders also highlighted the importance of explicitly incorporating contextual factors such as outside supports and competing demands into the measure. Without this stakeholder involvement, it is likely that the measure would have been much more difficult to use, and much less comprehensive, perhaps omitting crucial factors that affect work functioning. It is also likely that the measure would not have been tested in a suitable environment, as researchers would not have known how it would work best with current resources and systems. Indeed, following the first phase of the research, considerable adaptations were made to the procedures provisionally planned for the pilot phase. This highlights the value of seeking information about the phenomenon of interest from the experience of each type of stakeholder during the early phases of measure development.

Pilot testing provided further valuable information about practical issues and training required for assessors, in particular revealing areas where assessors interpreted the item descriptions or scoring information differently to the way in which researchers expected them to. It also raised issues which need to be specifically addressed in training, such as the distinction between impairment and function. The issues picked up during pilot testing could potentially make a huge difference to the success of reliability and validity studies, highlighting the importance of pilot testing as part of the measure development process, and reinforcing the argument for this as ‘best practice’ (Bowling, 2005).

In addition to ensuring the measure included all aspects of work-ability and could be effectively administered, participation of stakeholders in these early stages of measure development through the qualitative phase and pilot testing also served to establish a partnership between researchers and stakeholders. Often participants feel that research

is done *to* them rather than *with* them, and this can create issues around acceptance of the outcomes and products of the research, particularly when people feel that they could have contributed but were not offered the opportunity (Truman, 2000). For projects such as this where the end-point is a tool that must be accepted by the stakeholders in order to be used effectively, establishing a partnership with stakeholders can be vital to a successful outcome. If stakeholders do not feel as though their experience and expertise was utilized during development, they may well be reluctant to use the resulting measure, as they may feel it is not appropriate, or not relevant to their situation. Furthermore, healthcare (and particularly rehabilitation) works best as an interaction between the knowledge of the clinician and that of the patient (Grypdonck, 2006), and starting off in the tradition of partnership establishes the intention to continue in this way. Therefore, a secondary function of the focus groups and interviews with the relevant stakeholders was establishing the partnership relationship, which was maintained throughout the pilot testing by incorporating the views and feedback of both the assessors and the injured workers in the findings. In accordance with this partnership principle, the instrument itself is designed to be administered as an interaction between the assessor, the worker and their employer. Indeed, there are many items which cannot be assessed without engaging with the worker and incorporating their perspective of the situation.

The practice of involving stakeholders at all stages of research and service development is gaining attention and support worldwide. One example of a publicly funded programme is INVOLVE in the United Kingdom, which actively promotes public involvement in health research. INVOLVE aims to keep members of the public involved at all stages of research, from conceptualization to dissemination (NHS National Institute for Health Research, n.d.). The intention in the PAWSS research is to follow through with this principle as development and testing continues, seeking stakeholder feedback and consultation on the design of future research, and on how the information from a PAWSS assessment would be best disseminated and used.



## **6.6 Issues for Return-to-work Practice: Independence, Normality and the Role of Management**

### *6.6.1 Independence and Normal Work Functioning*

The scoring system for each item of the PAWSS spans from Level 7, indicating that a person is entirely independent in that aspect of work functioning with no modification and no involvement from another person required, to Level 1 at the other extreme, where the person needs constant supervision from someone else or is effectively unable to carry out the job due to issues with work functioning in that area. A number of issues were raised during the development phase with regard to the use of this scoring system and the way we view independence in the workplace.

Findings from phase one (see Table 5.2) questioned whether Level 6 (independence with modification) and Level 7 (independence without modification) ought to be merged into one scoring level, that is, whether the score should just state that the person is independent on that aspect of work functioning, regardless of whether minor modification or extra effort is required. This seemed to reflect a feeling that it may be unfair to score someone lower simply because they require minor modification, if they are coping fine and able to manage the job independently. Stakeholders also questioned what message is being communicated to injured workers when they are assigned a score of Level 5 out of 7 on an item of the PAWSS, as to score Level 5 you have to be functioning pretty well (requiring only minimal supervision or someone to set up the environment), and to know he or she is still two levels from the ‘top score’ may be disheartening. This raises a broader issue regarding the way people may view the implications of the PAWSS scoring in terms of what may be considered to be ‘normal’ work functioning. If assessed using the PAWSS, it is likely that many people, regardless of whether they had sustained an injury, would be scored lower than Level 7 on *at least* one item. Therefore ‘normal’ does not necessarily equate to ‘most independent’.

The issue about what level of independence is considered normal or acceptable also raises a question about the way we view independence itself. Swain, French and Cameron (2003) argue that the definition of independence as self-reliance is flawed. Independence can also be defined as the capability to act in a way that means one is free from being under the control or influence of others (similar to self-determination). In

the case of the latter definition, independence in some situations and some contexts may actually be achieved through involvement from other people (Swain et al., 2003). For example, people often employ others for coaching, legal services or specialist advice because they believe that by involving other people in this way, they are increasing their self-determination and control over aspects of their lives. Similarly, people exist within family and community systems and would involve others in many life endeavours (for example for child rearing, community working bees, and caring for the sick and elderly, to name a few ) in order to increase their level of self-determination and control in their lives. In the case of working life, we can look to the example of somebody who is supported in their work through someone else setting up the work environment and providing minimal supervision. This person may be unable to carry out the functions of their job without this support; however he or she is capable of maintaining control over his or her work functioning once we introduce the involvement of the other person. If we use the wider definition of independence, a score of Level 5 on the PAWSS would not be saying that the person lacks independence, but simply that for this person, optimum functioning and control over their work is achieved through a level of involvement from another person who sets up the work environment and provides minimal supervision. Taking this into the context of the wider community, the involvement of another person to maintain optimal work functioning for an individual may serve to *increase* that individual's self-determination and control in the wider context of his or her life. As a wage-earner, he or she is both reducing economic dependence on society, and making a contribution to the services and infrastructure in the community as a taxpayer (Swain et al., 2003). Most of us live as a part of family and community systems, and the workplace can be argued to be one of these systems. When human beings live in this way, we are never truly self sufficient as we rely on the involvement of other people for many things throughout our lifetimes.

When implementing a measure such as the PAWSS, its purpose and implications would need to be clearly communicated to employers, workers, assessors and funders. Particularly, the message that functioning at a lower level than Level 7 on some aspects is usual in employment; and that scoring is intended to serve the purpose of clearly defining the level of support at which a worker is able to function optimally. Sometimes, of course, the level of support required for functioning will not match the capacity of the workplace to accommodate this — and it is in these circumstances that the PAWSS score may serve to indicate where a situation is not sustainable. However,

in contrast, it may also serve to facilitate some discussion with regard to work roles and *interdependence* in the workplace. This argument may also be reason to reconsider the description of score levels for the PAWSS, perhaps looking at using language more along the lines of ‘does not require support from another person’ rather than ‘independent’, in the descriptions of Level 6 and Level 7.

#### *6.6.2 Job Modification and the Role of Management*

One of the barriers to return to work discussed in the literature is the attitude of employers and supervisors to job modification. Particularly within small organisations, where there is seen to be less flexibility in job roles because of having fewer task options, there is sometimes resistance to considering job modification as a means of getting people back into the workplace (Anderson, Kines, & Hasle, 2007). Therefore, even people who are scoring Level 5 or Level 6 on items of the PAWSS may not be able to return to the workplace because the supports and modifications are not available. Furthermore, some employees find that although they have returned to the workplace, the arrangement of alternative duties has been done without considering the impact on their role in the workplace and the morale and well-being of themselves and their colleagues, leading to severely reduced job satisfaction (Gates, 2000). This is concerning, as the evidence suggests that people who are offered suitable modified work are much more likely to return to work than those who are not, and modified work programmes significantly reduce the number of lost work days (Krause et al., 1998). The PAWSS measure includes consideration of adaptation of workplace and work systems in the scoring, although the focus is still very much on the worker in the assessment of work-ability. Therefore there remains a question around the role of management to consider job modification — that is, should managers and supervisors be required to routinely and seriously consider how adaptation of the work environment and systems could contribute to an employee’s work-ability. In the supported employment industry, job development is one of the cornerstones of successful job placement for people with disabilities. Job development refers to the practice of re-designing workplace systems to create a job position that can be done by a worker with a significant disability (Griffin, Hammins, & Geary, 2007). In this process, employers partner with vocational professionals to look at the design of their workplace systems and consider ways that work roles could be modified to both accommodate a worker with a disability and be advantageous to the employer and their existing workers

(Griffin et al., 2007). A classic example is incorporating someone with an intellectual disability into the workplace doing very basic tasks, which they enjoy because they can learn the routine and perform the job well, while other employees no longer have to do some of the tasks they find monotonous or boring. This arguably creates a satisfying job for someone who could not do a standard job, while increasing the job satisfaction (and often the productivity) of the other workers (Geary, Griffin, & Hammins, 2007). Indeed, there are even some jobs (such as factory line or highly-structured production jobs) where the ability to endure monotonous tasks is valued above adaptive thinking and capacity to learn quickly (Baron, Riddell, & Wilkinson, 1998). Another example of where modification in the workplace can be advantageous is when a practice is introduced into the workplace to benefit a worker who would struggle without it, but as a spin-off the new practice actually makes the job easier or increases productivity for the other employees. While I am not suggesting that job development or highly structured jobs should be routinely used for injury rehabilitation, this alternative way of looking at work systems could offer an insight into the way jobs could be modified. In this way, workplaces could incorporate people with a range of abilities into their workplace, including those people returning to work after an injury who may require a different level of support, or minor job modification. For example, if the work systems are designed in such a way that only a full-time employee can effectively do the job, is this truly the only way, or can the workplace practices be adapted or re-designed to ensure that part-time employees have equally rewarding roles?

Another opportunity to be considered is the application of new technologies to reduce the level of support from other people required by workers — shifting from support of other people to support of technologies (Roulstone, 1998). Introducing a measure such as the PAWSS could open up the opportunity for discussion of the way the workplace is set up with regard to more adaptable work roles and alternative ways of getting the work done. This would arguably benefit not only people returning to work after an injury, but it would make the workplace more accessible to other people with non-standard job requirements, such as new parents and people living with a chronic illness.

### *6.6.3 Employer-Employee Relationships and Return to Work*

A further issue raised by stakeholders, and also discussed in the literature, is the effect of good employer-employee relationships on employer motivation to adapt the work

environment to accommodate an injured worker. Evidence from the literature suggests that the relationship between the employer and their injured employee may be a big factor in whether workplace modifications are researched and implemented so the employee can return to work (Franché, Baril, Shaw, Nicholas, & Loisel, 2005; MacEachen, Clark, Franché, Irvin, & Workplace-based Return to Work Literature Review Group, 2006). On one hand, planning modified work itself can be a source of tension because of lack of role clarity and worries about causing harm to the injured worker due to limited knowledge about the injury by the employer, and this can serve to decrease the likelihood that modifications will be implemented (Franché et al., 2005). However, sometimes employers are surprisingly flexible. One qualitative study involving owners of small enterprises found that owners often modified roles creatively even when they had previously stated that (theoretically) modified work was not possible (Franché et al., 2005). According to a systematic review of qualitative literature by MacEachen et al (2006), this process is likely to have been influenced by the relationship between the business owner and the employee. A good relationship between employer and employee feeds into the ‘goodwill’ between the parties which in turn encourages collaboration in the return-to-work process (MacEachen et al., 2006). The influence of employer-employee relationships on the availability of job modifications and support for return to work is outside the scope of measurement for the PAWSS, so it may be important to keep this in mind when undergoing validity testing as a factor that may need to be taken into account.

## 6.7 Conclusions

### 6.7.1 *Strengths of the PAWSS measure*

The PAWSS measure offers a novel standardized assessment of work-ability that can be used to plan future rehabilitation. Completion of the PAWSS seems likely to require multiple people to contribute information (see *Results, Phase 1* and *Table 5.5*). Therefore, use of the tool would potentially encourage involvement of a number of stakeholders and facilitate communication and collaboration in the return-to-work process. Furthermore, the development and pilot testing of the measure showed that stakeholders are positive about its potential implementation, and see it as a valuable tool for vocational rehabilitation.

### 6.7.2 *Next Steps*

Early development and pilot testing of the PAWSS showed positive results. However, before the measure can be used in practice it must be tested for reliability and validity. In particular, formal testing of inter-rater reliability and criterion, construct or predictive validity is crucial to ensure that the PAWSS can be said to be a clinically useful instrument. In addition, early development and pilot testing suggested that the PAWSS could be used as a ‘living document’ and as a communication tool between stakeholders. These purposes should also be evaluated and tested for reliability, validity and responsiveness to change (where relevant) to determine clinical utility.

### 6.7.3 *Opportunities and Challenges*

Should the PAWSS be shown to be reliable and valid, it could benefit all the stakeholders in the return-to-work process by providing a standardized measure of work-ability that can assist with rehabilitation planning. This would address a number of the issues with current processes that have been identified by these stakeholders — such as variable standards and practices regarding assessment of work functioning, and lack of communication between stakeholders. It could also provide an opportunity for health professionals to more precisely specify service needs — that is, identifying particular aspects of work functioning for which the person requires support or intervention. For researchers and policy makers, the PAWSS could be used to investigate the efficacy of interventions that are designed to increase work-ability with regard to improvement on specific aspects of work functioning. In terms of challenges, it may raise issues for health professionals and policy makers since transparency with regard to what a worker needs would increase with a standard measure, and this could potentially highlight cases where the needed resources are not available. However, this could also be an opportunity to assess where services are needed but not currently provided, and determine the number of people for whom these services could be of benefit, to inform decisions regarding provision of services that are not currently available.

In addition to issues directly associated with using the measure, the PAWSS may also open up opportunities and challenges with regard to re-defining the way we think about normal work functioning, and could provide a platform for discussion about work systems that are more inclusive of a diverse range of worker abilities. In particular,

questioning the assumption that normal work functioning equates to independent performance in a 'standard' job role is something that may be questioned. Finally, the role of management in creating an enabling environment and allowing for and implementing adaptations to the work environment and systems could be explored.

With the involvement of stakeholders in the return-to-work process, the PAWSS has been developed from its original draft form into a measure of work-ability which addresses the range of areas of work functioning that are seen to be important to work-ability. Furthermore, through pilot testing, it has been shown to be acceptable and feasible to administer, and is now at a stage where it can be formally psychometrically tested.

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## PAWSS proposed structure

Domain	Item	Contents
<b>Physical / environment</b>	1 Motor function (upper limb function, dexterity, etc)	The physical motor function, required to do the job
	2 Sensory and perceptual function	The sensory and perceptual function, required to do the job
	3 Getting around in the work environment (mobility, etc)	The mobility to move around as required in the work environment
	4 Stamina / Fatigue	Stamina to work through the normal working day
	5 Transport	Ability to manage transport / travel including: Transport to and from work, any travel components of the job e.g. driving
<b>Cognitive</b>	1 Cognitive function	Memory, attention, concentration, etc to manage the job in hand
	2 Dealing with the unexpected	Ability to multi-task, problem solve, etc
	3 Safety awareness (work related)	Ability to manage safety of themselves and others in the work environment
	4 Communication (work related)	Communication: verbal, written, reading, comprehension, intelligibility
	5 Mood and mental functioning	Ability to do the requirements of the job without serious disruption due to mood or other issue with mental health and functioning
<b>Social / behavioural</b>	1 Self-organisation including time keeping	Timeliness within the work environment. Work organisation, initiation, motivation
	2 Personal presentation	Appropriate dress, behaviour and personal presentation within the work environment
	3 Interpersonal skills: staff and work colleagues	Interpersonal skills, professional and social interaction with staff and work colleagues
	4 Interpersonal skills: client / customer	Interpersonal skills, professional and social interaction with clients / customers
	5 Dealing with instruction, change and correction	Appropriate reaction to supervisory instruction and/or correction regarding work activities. Ability to correct errors, accept changes in work tasks, etc

## Overall structure for scoring

<b>Independent</b>	
<b>Level 7</b>	<b>Complete independence</b> No problem at any level with managing the requirements of the job
<b>Level 6</b>	<b>Modified independence</b> Some consideration for time or effort * Or requires adaptation / equipment above the ordinary provided for the job in order to function independently. Able to self-prompt / correct or to structure their own environment. Minimal reduction in work productivity
<b>Supported working</b>	
<b>Level 5</b>	<b>Supervision / set-up</b> Requires someone else to set-up equipment Or externally structured work environment. Monitoring – with only occasional prompting / correction
<b>Level 4</b>	<b>Minimal support</b> Able to manage >75% of the time in that aspect of the job Regular planned intervention or support only <b>Work productivity only mildly affected</b>
<b>Level 3</b>	<b>Moderate support</b> Able to manage more than half the time in that aspect of the job Infrequent** unplanned intervention on top of regular monitoring <b>Work productivity moderately affected</b>
<b>Level 2</b>	<b>Maximal support</b> Able to manage less than half the time in that aspect of the job Frequent unplanned intervention on top of regular monitoring <b>Work productivity severely affected</b>
<b>Level 1</b>	<b>Constant support – or effectively unable</b> Effectively unable or manages less than 25% of the time Unplanned intervention many times a day

\*NB Level 6: 'safety' not included as maintaining safety is included as an item on its own merit.

\*\* Frequency of unplanned interventions not rigidly defined in terms of time – varies for different items  
And possibly also for different interventions. Define individually for each item if needed.

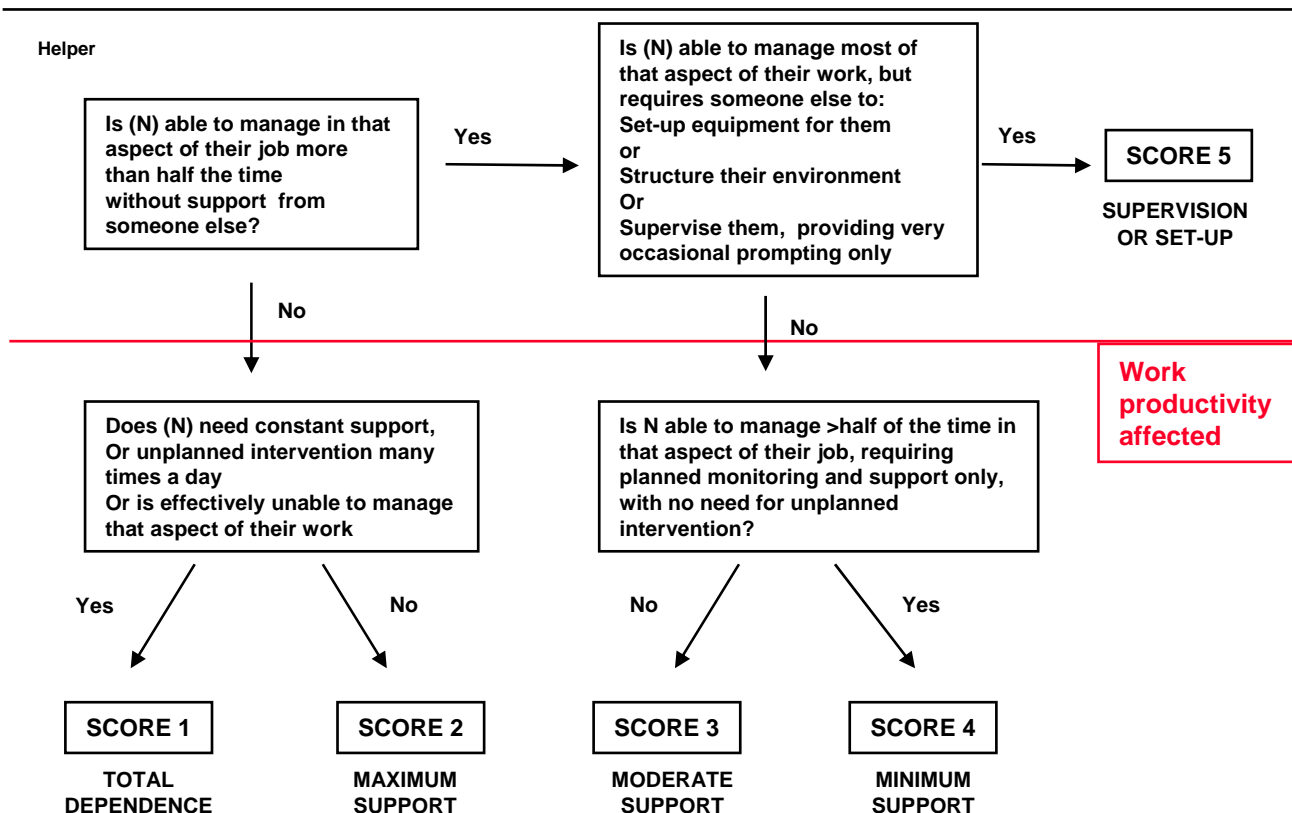
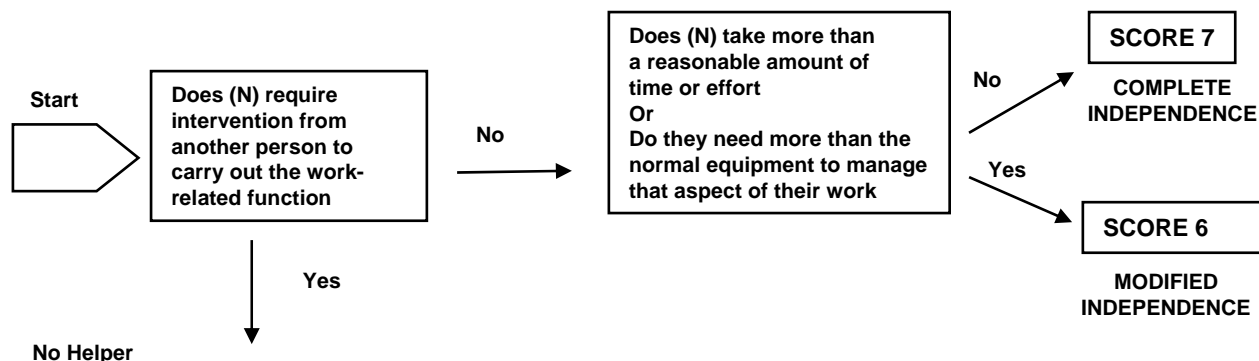
E.g. Level 3 - Not every day; Level 2: - Most days; Level 1 - Many times a day



## FRAMEWORK FOR SCORING

Appendix A

Work-related function includes:  
Description of functional abilities required within the person's normal work environment  
Or, if not in work, within the proposed work environment



### Notes:

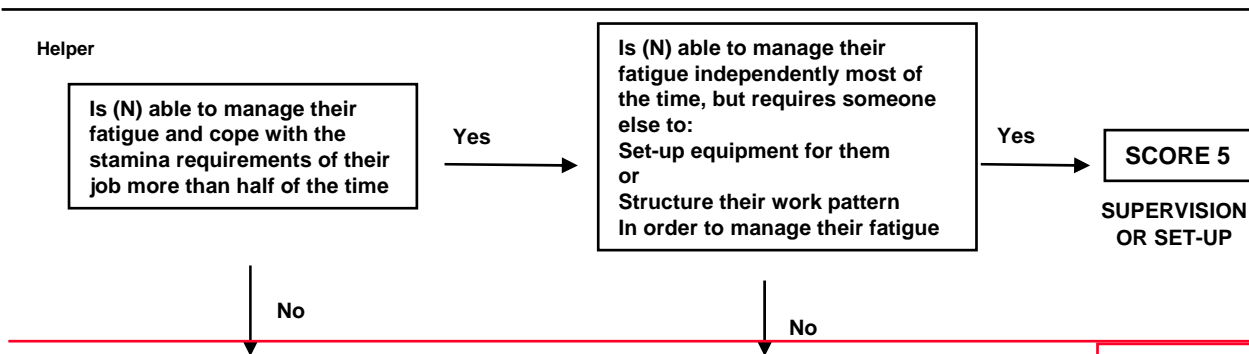
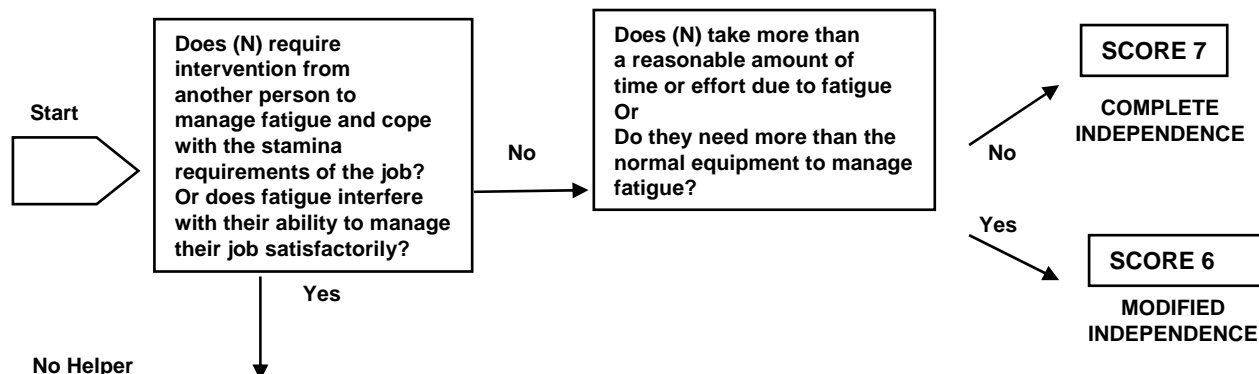
- Level 7: No problem – can manage all of that aspect of their job independently
- Level 6: Manages all of that aspect, but takes more than the reasonable amount of time or effort, or requires special equipment. Able to self-prompt and correct. There is minimal reduction in work productivity
- Level 5: Able to do most of that aspect of their work, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional prompting / correction
- Level 4: Able to manage >75% of the time. Has regular planned monitoring/support/intervention only  
Work productivity mildly affected (unable to do some parts of their job)
- Level 3: Able to manage >half of the time in that aspect of their work  
Requires unplanned intervention on top of regular monitoring/support, but infrequently (not every day)  
Work productivity moderately affected (unable to do a significant part of their job)
- Level 2: Able to manage <half of the time.  
Requires frequent unplanned intervention on top of regular monitoring (most days)  
Work productivity severely affected (Unable to do a substantial part of their job)
- Level 1: Effectively unable or requires constant supervision with intervention (several times a day)

## STAMINA AND FATIGUE

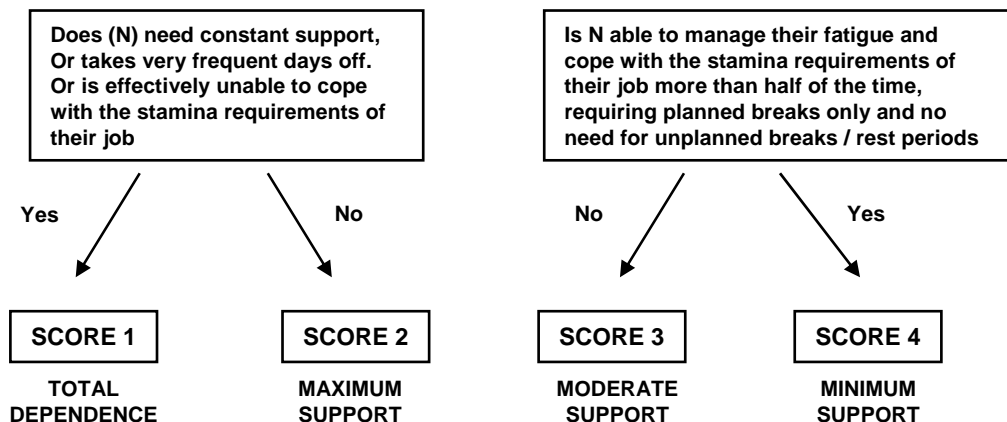
Appendix A

Stamina and fatigue includes:

Having the stamina to be able to work effectively throughout the working hours,  
or to manage fatigue effectively to avoid work disruption due to need for breaks or days off



**Work productivity affected**



### Notes:

- Level 7: No problem – can cope with all the stamina requirement of their job without need for rests.
- Level 6: Copes with stamina requirements of their job, but takes more than the reasonable amount of time or effort due to fatigability, or requires special labour-saving equipment. Manages fatigue effectively. There is minimal reduction in work productivity
- Level 5: Able to cope with the stamina requirements of their job most of the time, but requires help from someone else to set-up equipment, or to structure their work pattern to manage fatigue
- Level 4: Able to manage >75% of the time. Has regular planned breaks / rest periods only  
Work productivity only mildly affected – unable to do some parts of their job due to fatigue
- Level 3: Able to manage >half of the time and can manage more than half of their work  
Requires infrequent unplanned breaks on top of their planned rest periods/ reduced hours.  
Or takes only occasional days off (< once a month). – unable to do a significant part of their job due to fatigue  
Work productivity moderately affected
- Level 2: Able to manage <half of the time.  
Requires frequent unplanned breaks or rest. Or takes frequent unplanned days off (>once a month)  
Work productivity severely affected – unable to do a substantial part of their job due to fatigue
- Level 1: Effectively unable to do their job due to fatigue, or requires constant support

## Vignettes: Stamina and fatigue

Level	Example
<b>Independent</b>	
<b>7</b>	Charles used to be tired at the end of the day, but since he has started to use the gym regularly each morning he can now work throughout the day without any difficulty.
<b>6</b>	Caroline is now back at work full time. She finds it very tiring and generally comes home and slumps into bed at the end of the day, but has managed so far not to take any days off.
<b>Support required</b>	
<b>5</b>	Jim is finding it much easier to cope with his daily workload since his boss arranged for him to be able to lie down for half an hour during his lunch break.
<b>Work productivity affected</b>	
<b>4</b>	Keith's employer has put him on a graded work programme, so that he has three short days to conserve his stamina. He does not get as much done, but at least he is now managing to stick to his programme without taking days off.
<b>3</b>	Jodi is on a short-day work scheme, but still needs to take ad hoc rest periods from time to time. However, she has only had to take one half day off in the last 8 weeks.
<b>2</b>	Mary is a lot more fatigued since her latest relapse of MS, and so far has had to take two extra days off this month.
<b>1</b>	Ned has tried to start work again after his recent stroke, but even on his part time programme, he has had to leave work early.

## The Participation and Work ability Support Scale: Testing a new measure – pilot phase

Research assessor training

### Contents of this training

- Introduction to the research
- Conducting research
  - The purpose of pilot testing
  - Information and guidelines for conducting research
- The new measure:
  - Introduction to the PAWSS
  - How to use the PAWSS
  - Practice examples
- Accessing support

# Testing a new measuring of work functioning following injury

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## Introduction to the research

## Recap: purpose of the research

- While various measures of work ability exist:
  - There are no measures that take into account all aspects of work functioning we need to know for effective rehabilitation and support planning
  - Most are not designed for support planning (i.e. are intended for assessing whether minimum requirements for RTW are met, screening for potential job loss, etc)
- This research aims to develop and test a measure of work ability that is designed specifically to provide the information about work ability needed for vocational rehabilitation and support planning.

# The stages of the research

## 1. Development phase

- International literature search to identify the factors that affect work ability according to research
- Focus groups and interviews with a) injured workers, b) health professionals, c) employers, and d) ACC operational staff for their views and feedback on proposed measure content
- Refinement of the measure to reflect the information gathered from these sources

## 2. Pilot phase

- Testing the new measure for feasibility, practical issues and acceptability

## 3. Inter-rater reliability testing

- Checking that different raters will give the same score with the same information

# Conducting research

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Information and guidelines for acting in a research role

## Why pilot test?

- It is important when developing a new measure to identify potential problems / issues before deciding on the format that will be formally tested, to ensure it is:
  - Usable
  - Acceptable to the people who will be administering it
  - Acceptable to the people who will be assessed using it
- We use this information to refine the measure before formally testing it.

## Your role as a research assessor

- Test the new measure in a real situation
- Feed back good, bad and interesting points of using the measure and let researchers know where things should be adapted
- Provide information on how you, as an experienced workplace assessor, go about administering and scoring the measure in a real situation.
  - So training for formal testing of the measure can be as consistent and comprehensive as possible

## Research in real situations

- Must follow ethical procedures that protect the participant from potential harm:
  - Informed consent
  - Information gathered for research is only used for research
  - Research data is only retained by researchers who are involved in analysis
- Must be separate from 'usual care' as much as possible

## Pilot testing the new measure

Recruitment and informed consent (see information sheet and consent form)

Book extra time with the client when arranging the workplace assessment to complete the PAWSS and associated client questionnaire (suggest half hour)

Workplace assessment: gather any extra information required for the PAWSS after completing the usual workplace assessment

Complete the PAWSS and short pilot test questionnaires to pass on to researchers

Pass all research information on to researchers within 3 days of the assessment (Jo to arrange collection with assessors)



## Guidelines to follow for recruitment of research participants

- Participation must be informed and voluntary. This means:
  - Information must be given first
  - Time must be allowed to make a decision (at least 24 hours, more if needed for a particular individual)
  - Some people may need someone to go through the information sheet with them
  - They must have the opportunity to ask questions of the research team
    - This may mean giving contact details for the research team OR asking if they would like a researcher to contact them
- It should be clear to potential participants that there will be no difference in usual care whether or not they choose to participate in the research

## Discussion: how to introduce research information to potential participants

- What are the ways you could introduce research information to potential participants?
  - Discussing the research and telling them they are welcome to look through the information and see if they might like to participate
  - Including the research information with other information given to them when booking an assessment
  - Other ideas? When and how could you introduce the research information?

## Guidelines to follow when acting as a research assessor

- Wherever possible, ask for any extra information required for the research after recording the information required for the usual assessment
- It is important that you do not allow information that was collected for research purposes only to influence your usual report or your future actions regarding the client, *even if you think it would be beneficial*.
  - The client may want you to consider the research information and give consent for this, but this must be initiated by them.

## Other parties involved

- It is possible you may need to ask a client's employer or another party for information that relates only to the research. If this occurs you should:
  - Inform them that you are collecting the information for research
  - Answer any questions they have about it as best you can
  - Let them know that the information is not required for your contracted report, so them providing it is totally voluntary.
- If they want more information about the research, give them the contact details of the research team.

# The Participation and Work-ability Support Scale (PAWSS)

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Pilot version

## The purpose of the PAWSS

- Holistic assessment of the ability of a worker to perform their job to enable timely and effective work modification / rehabilitation
- Provide an overview of how much support somebody needs in each aspect of workplace functioning.
- Help identify aspects of work functioning where the worker
  - Requires support
  - Requires rehabilitation
  - Is unable to function in that aspect of the job at the present time

## Components of the PAWSS

- Impairment set
  - Records impairment associated with the injury, including physical and cognitive changes, pain, changes in mood, etc.
- PAWSS domains 1-3: work functioning:
  - Physical / Environmental aspects of work functioning
  - Thinking / Problem solving aspects of work functioning
  - Social / Behavioural aspects of work functioning
- PAWSS domain 4: contextual factors:
  - How contextual factors outside the workplace are impacting on ability to function in the workplace

## The Impairment Set

- Two versions of the Impairment Set and how to use
  - Neurological
  - Musculoskeletal
- Other information we will need (asked in pilot questionnaire):
  - Sources the information was derived from
  - Any information that is missing

## The PAWSS domains 1-3

- Scored using decision trees
- ‘Unable to score’ option if the information is not available
- Other information we will need (asked in pilot questionnaire)
  - How much time it took to administer / score
  - How easy the required information was to obtain
  - Sources of the information used to score
  - Any items that were difficult to score
  - Any items that were problematic
  - Any items that are missing

## The PAWSS contextual factors domain

- Explanation of scoring this domain
- For pilot, will want to record the same things as for domains 1-3 (asked in pilot questionnaire), plus:
  - How the score was derived

## Practice using the PAWSS

- Some vignettes for specific items to assign score using decision tree
- A case example for discussion

## Practice examples (in pairs)

### Examples

1. Pam has some difficulty managing to balance on the stepladder to reach files on high shelves. Because of this, her supervisor has advised she makes a list of files she needs from these high places, and at a planned time each day, a colleague gets them down for her. This is fine as Pam is able to plan in advance what she needs.

2. Beth has reduced sensation in her left hand and as a result finds it difficult to handle some objects. Beth sometimes has to carry heavy files, so borrows a trolley from the maintenance staff to do this. Beth has difficulty maneuvering the trolley, and on Tuesdays when the office is particularly busy, other staff have to occasionally intervene to prevent her bumping into people.

3. Bob is now in a wheelchair since his spinal cord injury. Fortunately his office is on the ground floor, but there is one step up to the front entrance. They are waiting for permanent ramps to be put in, but in the meantime, the security staff put down his temporary ramps for him each morning.

4. Mary is a lot more fatigued since her latest relapse of MS, and so far has had to take two extra days off this month.

5. Jonathan is waiting for a taxi-card to be set up. In the meantime he is reliant on his mother driving him to work and has to work his arrival around her Womens' Guild meetings. Quite a few days he does not get to work until after lunch – if at all

# Practice examples

## Examples

6. Simon finds it difficult to sustain his attention when completing data entry for customer order forms. He used to miss information because of difficulty concentrating and office distractions. However, last month Simon put up room dividers around his workstation and reorganized his computer display so fewer fields appear on each page of the order form. Simon now completes that data entry with no problems.

7. Amy finds it difficult to decide which tasks take priority and plan her work day effectively. She has agreed with her supervisor that he will provide a daily priority list for Amy to work through, which helps her stay productive.

8. Sophie collects trolleys at the local supermarket and copes fine with collecting them from the designated trolley parks. Although she has been asked to many times, Sophie does not collect trolleys if they are left anywhere other than the trolley parks. Until this is resolved, a colleague who is often in the carpark anyway has been assigned to move any stray trolleys to the closest designated park

9. Val works in a kitchen cooking meals for a large residential facility. She is a competent cook, but since her injury suffers muscle cramps at work a couple of times a week. When this occurs she is distracted from cooking for up to 15minutes, which has led to things burning or boiling over, and someone else having to come in and help her deal with these hazards.

10. Steven is a university lecturer. Since suffering a head injury, many students have complained that his lectures are difficult to follow and other staff are concerned that his lectures are missing important course content.

# Practice examples

## Examples

11. Tony is a sales assistant working in a different sales area each week. At the beginning of each week, Tony's manager helps him to learn a script for politely introducing himself and the sales area to customers. This helps Tony present himself appropriately to customers.

12. Morris has aspersers syndrome and finds face-to-face interaction difficult. There is an electronic text internal messaging system at Morris' work which colleagues are happy for him to use for interactions, and Morris finds this much more comfortable.

13. Come up with an example of from your own experience that would score at level 5 for interpersonal skills (management)

14. Ken installs appliances for clients and has been working reduced hours to manage pain following an injury. However, even on reduced hours Ken still experiences a lot of pain after the first couple of hours, and is often impatient with clients asking him to do things. Most days he works, this leads to a complaint that his manager has to handle.

15. Todd responds well to change and correction provided he is given some extra time to adapt and left to himself while he does this. This arrangement is not a problem for his manager.

# Practice examples

## Examples

16. Ali's mobility is still restricted from his injury, and cooking a meal takes several times longer compared to before the injury. Since Ali has returned to work, he hasn't been able to start cooking early in the day like he was doing, and he often doesn't have dinner ready until after 9pm. Ali can't afford to eat out, and approx 2 days a week the effort of cooking is such that he doesn't eat a proper meal, affecting his performance at work the next day.

17. Josie worked full-time before her injury, however since the injury she has been unable to build up her stamina to a point where she is able to do full-time work. On part-time work, Josie earns only a few dollars more a week than it costs to have her 2 year old in daycare, and she would much rather be at home with her son.

18. Abi was working prior to her injury, but due to complications she needed to take a lot more time off work than she anticipated, meaning her daughter took on a job to cover the bills while she looked after her grandchildren. Now Abi is ready to go back to work, but that would leave her grandchildren with no-one to care for them during the day.

19. Zack has struggled to build his physical strength back up to the level that his job requires, following a serious injury. It has been extremely hard work, but Zack's love for his job and feeling of achievement after a day's work have motivated him to keep going.

# Trickier cases for discussion

## Examples

Adrian has learned how to safely use the chemicals he needs for each part of his cleaning job. Every time there is a change to the routine, he is re-trained by his supervisor. Since a recent accident in the store-room where the chemicals are handled, Adrian is more reluctant to spend time in there, and occasionally gets chemical dilutions wrong because he is distracted and rushed. Adrian's supervisor therefore has to be vigilant and intervene when he sees Adrian has made a mistake.

Adam is emotionally labile and laughs loudly when he is anxious. Adam has strategies for controlling his anxiety, but when he does get anxious talking to customers it sometimes causes confusion, and a colleague in the same work team has to step in and explain Adam's difficulty. A colleague has to intervene on about a quarter of the jobs he works on.

Pamela is a physiotherapist. She has found it exhausting recently talking to clients so chooses to stay quiet much of the time and get a colleague to explain treatment. Clients still find this disconcerting as they don't feel they can talk to her and don't know what she is going to do next. The practice manager has received a number of verbal complaints.

Nicola drives to work, and has an adapted vehicle and a disabled parking space at the workplace. However, due to family commitments, Nicola's husband needs to use the car approximately once a fortnight. Nicola is currently unsure about how she will get to work on these days.



## Case example

- Jane
  - 25 year old woman
  - Seriously injured in MVA 2 years ago, been in rehab since.
  - Very limited work experience. No office experience except for voluntary work.
  - Has been doing some voluntary work part time for 3 weeks, and may be offered a job in a similar role, subject to a satisfactory workplace assessment.

## Jane's impairment set

- Stiffness and limited movement in lower limbs
  - Walking difficult and slow – only short distances (up to 200m) at a time
  - Can climb up to 3 stairs, but needs rail
  - Stiffness gets worse if doesn't attend gym programme 3-4 days a week
- Muscle fatigue and pain due to spasticity – mild
- Difficulty with speech – motor. People learn to understand her better as they get to know her
- Emotionally labile – particularly inappropriate laughter when anxious or upset
  - Has quite good cognitive management of this, with only occasional incidents

## Jane's situation – additional info

- Needs more than usual time to get up/showered/dressed in morning – unable realistically to attend regular activities that start before 9:30am.
- Dexterity affected: slower than average on computer keyboard, but good at attending to task, which makes her only marginally slower than average on task.
- Keen to work, and has good personal resources. Currently somewhat socially isolated, so keen to get to know new people.
- Limited work experience and amount of time spent thinking about work has led to a strong want for a job and company that fits with her idea of what is 'good' and of 'reasonable social status'. This includes government departments, like the place where she is currently doing a little voluntary work.
- Transport: able to take the bus as the buses that go from her home are frequent and accessible. Sometimes she needs to ask the bus driver to come closer in to the curb.
- Jane is very conscious of safety and her physical limitations.

## Jane's potential job

- Data entry for a government department
- 10am-3:30pm Mon-Fri
- processing forms that come in detailing company data and test results for food safety certificate applications.
  - Forms are processed in batches from an inbox at Jane's desk, then she takes a completed batch across to the next person's inbox.
  - Certain number of batches are required to be completed each day. Trial suggests Jane is not achieving this yet, but is getting faster every week and supervisor expects her to meet this target rate within first month.
- Computer-based, using specific software that is written for the department. Jane is computer literate and beginning to learn software in volunteer position – no problems so far.
- Email communication only required with clients – for clarification of information on forms if necessary (approx 5-10% of forms).

## Jane's workplace

- 150m from bus stop which is a stop for one of the buses that leaves from outside Jane's flat.
- One step into the building with a rail, lift to first floor where the office is.
- Toilets and staff kitchen on same level as office.
- Office is carpeted and all on the same level.
- Stairs only in emergency. Stairs have rail and Jane would be able to manage going down stairs in a one-off situation (but very slow).

## Jane's current situation

- Knows supervisor quite well through her volunteer work and communicates well with her. Getting to know colleagues but more limited in communication.
- Good understanding of workplace culture and fairly confident about social and professional contact with other people.
- Assessment suggests memory, attention, and planning and organising skills sufficient for a structured job.
- Only problem-solving aspect of the job is when information on the form is different to what is expected – still coming to grips with what to do in these situations so asks supervisor about queries at end of each batch, but gaining confidence.
- Supervisor has found during the volunteer work that Jane deals with instructions and changes well as long as explanation is provided. She is happy to do this, despite it taking a little longer than it does with some other staff.

## Accessing support

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## Research support

The investigators are available to support you in your role:

- Main contact Jo Fadyl (in office 4 days a week: Mon-Wed, Fri)
  - (09) 921 9999 ext 7675 or [joanna.fadyl@aut.ac.nz](mailto:joanna.fadyl@aut.ac.nz)
- Next contact is the study Principle Investigator Kath McPherson
  - (09) 921 9999 ext 7110 or [kathryn.mcpherson@aut.ac.nz](mailto:kathryn.mcpherson@aut.ac.nz)
- If you are concerned about any aspect of your role / unsure about what to do in a particular situation, *please do* contact us
- Any concerns about the research itself should first be discussed with the investigators. If participants are concerned, there are also some independent contacts provided on the information sheet.

## Vignettes: Physical and motor skills

Level	Example
<b>Independent</b>	
7	Jane has no difficulty managing the physical and motor aspects of her work, but her poor short term memory makes her performance somewhat erratic.
6	Joe is an accountant and is one-handed since injuring his brachial plexus when he fell off his motorbike. With a one-handed keyboard he can manage all his spreadsheets and computer work independently and his work is of the same high standard as previously, although it may take him a bit longer to produce his weekly reports
<b>Support required</b>	
5	Jenny has tenosynovitis in her right elbow and wrist. Her boss has arranged for her to have timed breaks from typing every hour or so, and she can now manage to work a full day.
<b>Work productivity affected</b>	
4	Pam has some difficulty managing to balance on the stepladder to reach files on high shelves. Because of this, her supervisor has advised she makes a list of files she needs from these high places, and at a planned time each day, a colleague gets them down for her. This is fine as Pam is able to plan in advance what she needs.
3	Jane had a whiplash injury. She has returned to work as a nurse on light duties, and is generally managing pretty well, but if she needs to reach anything from a high shelf, she has to ask a colleague for help. This doesn't happen every day, but it can make things slower when they are busy.
2	John has returned to his job in the postal sorting office, and has been put on lighter duties since he hurt his back. He can manage the lighter parcels, but has to ask colleagues to help with any awkward or heavy items, which occurs most days.
1	James is now moving around carefully with crutches following a spinal cord injury. Since going back to work as a social worker, his manager has arranged for him to do more sedentary work, but James finds that even this work requires frequent unplanned physical tasks – for example childcare and intervention in domestic disputes in the office. As a consequence, James always has to make sure a colleague is available when he sees clients, meaning he is not independent in his job.

Vignettes: Sensory and perceptual skills

Level	Example
<b>Independent</b>	
7	Paul is paraplegic due to a spinal cord injury and now uses a wheelchair. Paul has no sensory or perceptual difficulties, and his employer has made some minor modifications to make the workplace more accessible and Paul has successfully returned to his job coordinating wine tastings.
6	Betty is visually impaired and works cleaning floors for a large facility. Although she often cannot visually tell the difference between floors that have been cleaned and those that have not, she is very systematic in her routine and makes sure every part of the floor has been cleaned. Her employers find that she takes a bit longer than previous employees, but are very pleased with the standard of her work.
<b>Support required</b>	
5	Jerry is blind and works in an outbound call centre. His supervisor makes a recording of each new script on a CD before he starts work that day, so that Jerry can listen to it each morning while the other staff are learning from the written script.
<b>Work productivity affected</b>	
4	Marie is partially-sighted. With the help of a special computer screen and touch keys on her keyboard, she can manage in her secretarial job, but a colleague routinely scans her letters and helps with her filing at the end of each day
3	Beth has reduced sensation in her left hand and as a result finds it difficult to handle some objects. Beth sometimes has to carry heavy files, so borrows a trolley from the maintenance staff to do this. Beth has difficulty maneuvering the trolley, and on Tuesdays when the office is particularly busy, other staff have to occasionally intervene to prevent her bumping into people.
2	Alec works as an assistant gardener for private customers. Alec's boss gives him a briefing at the beginning of each job, however Alec still has a lot of difficulty telling the difference between some plants and on most days he also has to ask his boss to check he has the right plants before he starts a job.
1	Alan works in a busy kitchen. Since an injury, he has had no sensation in his left hand, and has cut himself several times without noticing. This has caused major disruption as all the food he has come into contact with has had to be discarded due to potential contamination.

Vignettes: Access to and around the workplace

Level	Example
<b>Independent</b>	
7	Charles now is now back on his feet after his car accident, and has no problems moving around at work.
6	Jed is back at work after Guillain Barre' syndrome. He can get around the whole building OK. It is quite an effort to get up stairs, but he looks on this positively and sees it as a challenge
<b>Support required</b>	
5	Bob is now in a wheelchair since his spinal cord injury. Fortunately his office is on the ground floor, but there is one step up to the front entrance. They are waiting for permanent ramps to be put in, but in the meantime, the security staff put down his temporary ramps for him each morning.
<b>Work productivity affected</b>	
4	Chris is able to get about freely in his office, but he needs help to get his wheelchair out of the car and to get from the staff car park up to his office so a colleague comes down each morning and evening to help him.
3	Richard can get around in his own office most of the time, but is unable to get up to the fourth floor laboratory where he used to do some laboratory work approximately once a week. Until the facilities can be rearranged for him, he is somewhat restricted in that aspect of his work
2	In his job as office messenger, Carl used to run around the whole building. Now that he is restricted to the ground floor, he can only run errands that do not involve going to the upper two floors of the building. Unfortunately, most days there are errands that required someone to access the upper two floors.
1	David's office is on the fourth floor and there is no lift in the office building. His manager is looking into re-arranging the office accommodation to give him a ground floor office, but in the meantime he is unable to return to work

Vignettes: Pacing and ability to work through a normal day

Level	Example
<b>Independent</b>	
7	Charles used to be tired at the end of the day, but since he has started to use the gym regularly each morning he can now work throughout the day without any difficulty.
6	Caroline is now back at work full time. She finds it very tiring and generally comes home and slumps into bed at the end of the day, but has managed so far not to take any days off.
<b>Support required</b>	
5	Jim is finding it much easier to cope with his daily workload since his boss arranged for him to be able to lie down for half an hour during his lunch break.
<b>Work productivity affected</b>	
4	Keith's employer has put him on a graded work programme, so that he has three short days to conserve his stamina. He does not get as much done, but at least he is now managing to stick to his programme without taking days off.
3	Jodi is on a short-day work scheme, but still needs to take ad hoc rest periods from time to time. However, she has only had to take one half day off in the last 8 weeks.
2	Mary is a lot more fatigued since her latest relapse of MS, and so far has had to take two extra days off this month.
1	Ned has tried to start work again after his recent stroke, but even on his part time programme, he has had to leave work early.



Vignettes: Transport and travel

Level	Example
<b>Independent</b>	
7	Derrick goes to work on public transport and he is completely independent
6	Jane now drives to work and disabled parking has been provided for her in the staff car park. She has to leave extra time to get up to her office but can manage without help
<b>Support required</b>	
5	Jeremy has set up a contract with a local taxi firm to take him to and from work. However, if he needs to go to the other office across town, the firm books a taxi for him
<b>Work productivity affected</b>	
4	Brian takes a taxi to work each day, and managed an overnight trip to Manchester last week - his wife was able to see him onto the train. However, international trips that were previously a small but regular part of his work are now beyond him
3	Susan can manage to get to work quite well on Mondays, Thursdays and Fridays when her husband can drive her to the office door, but on Tuesdays and Wednesdays she has to wait for dial-a-ride, which often runs late, meaning someone needs to cover her work until she gets to the office.
2	Jonathan is waiting for a taxi-card to be set up. In the meantime he is reliant on his mother driving him to work and has to work his arrival around her Womens' Guild meetings. Quite a few days he does not get to work until after lunch – if at all
1	Liam cannot use public transport and does not have anyone to drive him to work. He is hoping that his recovery will be sufficient to get him on a taxi-card scheme

## Vignettes: Cognitive skills

Level	Example
<b>Independent</b>	
7	Tracy, although she finds it difficult to remember things, works effectively and independently using the appointment scheduling software that is linked to the email system in her workplace.
6	Simon finds it difficult to sustain his attention when completing data entry for customer order forms. He used to miss information because of difficulty concentrating and office distractions. However, last month Simon put up room dividers around his workstation and reorganized his computer display so fewer fields appear on each page of the order form. Simon now completes that data entry with no problems.
<b>Support required</b>	
5	Bridget is able to complete the tasks required for her job, but finds planning and prioritizing difficult since her stroke. Bridget's supervisor writes her a prioritized task list for each day which Bridget is able to complete without supervision.
<b>Work productivity affected</b>	
4	Charlie's job requires him to change tasks several times during the day. However, he has a tendency to become involved in a task and forget to change. He has so far been unable to self-prompt to change tasks. An alarm system for his computer is being set up by IT, however until that is ready, Charlie's supervisor (who sits opposite him) has arranged to prompt him when it is time to change tasks.
3	Emma is able to file most things correctly, but sometimes gets confused about where things go. A more senior colleague who sits next to Emma has been assigned to help her make these decisions when they arise, which is several times a week. Additionally, Emma's manager audits one or two files once a week. Twice last month, Emma's manager has had to coach Emma about some of her decisions, as he has found mistakes during his audits that Emma has had to go back and re-file.
2	Matthew's workplace assessment identified several strategies that he needs to use to keep himself on task and prevent him distracting other workers. However, Matthew doesn't yet use these strategies consistently and on most work days his manager has to intervene when he gets off-task and remind him to use the strategies.
1	Jodi is responsible for delivering goods to customers, but gets confused trying to read a map and often gets lost. Jodi's supervisor has been unable to attend to other parts of her job due to customer complaints that goods Jodi was supposed to deliver have not arrived.

Vignettes: Self-organisation and Planning

Level	Example
Independent	
7	Harry is a good time-keeper and effectively plans his work to meet deadlines.
6	Julia's manager has organized for her to have a mobile phone which can be set to go off at several times during the day. Once a day, Julia sets up the alarms to remind her when to go for her breaks and when to start work again.
Support required	
5	Amy finds it difficult to decide which tasks take priority and plan her work day effectively. She has agreed with her supervisor that he will provide a daily priority list for Amy to work through, which helps her stay productive.
Work productivity affected	
4	Since his head injury, Bernard has found it difficult to organize himself to meet deadlines. Another member of the team has agreed to take over the time-planning aspects of Bernard's projects, and Bernard is able to work to these plans with minimal supervision.
3	Joe is a teacher and has a colleague who has agreed to help him to complete lesson plans until he is back on full duties. Joe is generally able to follow these, but once every couple of weeks misplaces the plan, meaning his colleague has to keep a copy and help with the class while they sort this out.
2	Alice finds it difficult to settle down to work and, although she is good at her job, is often disorganized and requires frequent prompting from her supervisor to do high-priority tasks.
1	Despite trying several prompting strategies, Larry consistently fails to come back from breaks on time, and misses up to two hours a day from the time he should be on the job.

Vignettes: Dealing with the unexpected

Level	Example
<b>Independent</b>	
7	Marie works as a sales assistant and occasionally has people asking for items the shop doesn't sell. Marie knows she needs to refer this to her supervisor, and does so appropriately.
6	Max requires extra time to get up to speed when product lines change. His manager allows him to spend time looking at the product information at the end of the day when it is not so busy.
<b>Support required</b>	
5	Claire is good at her role in the factory line and normally does her job with minimal supervision. However, sometimes a big order comes in and staff need to do a larger variety of tasks than normal. Claire is able to cope with this as long as she sits next to a colleague who can prompt her if she gets stuck. This does not affect overall productivity for Claire or her colleague.
<b>Work productivity affected</b>	
4	Sophie collects trolleys at the local supermarket and copes fine with collecting them from the designated trolley parks. Although she has been asked to many times, Sophie does not collect trolleys if they are left anywhere other than the trolley parks. Until this is resolved, a colleague who is often in the carpark anyway has been assigned to move any stray trolleys to the closest designated park
3	Victoria works arranging attendance and room allocation for case meetings within a healthcare environment. Victoria finds it challenging to manage these resources as often people have busy schedules, but performs well with regular supervision meetings and takes pride in doing her job well. A couple of times a month, there is an emergency with a patient and an unplanned meeting must be held. Victoria gets upset when this happens because of the extra work involved to rearrange things around it. On these occasions, Victoria's manager has to step in and talk the situation through with Victoria so she can carry on with her work.
2	Peter works in a call centre dealing with enquiries. Peter finds it difficult to adapt when an enquiry differs from the scripted information. Because of this, it has been arranged that he can transfer calls to another member of the team on these occasions. However, on most days there are one or two calls like this that occur when no-one is available to transfer the call to.
1	Jason is responsible for sorting incoming mail and allocating it to the right department. Jason worries that he cannot decide where some items should go, meaning his supervisor often has to look through a considerable amount of mail. Because of this, urgent mail is often received late.

Vignettes: Maintaining safety

Level	Example
<b>Independent</b>	
7	Philip is careful moving around the office since his knee injury. He is vigilant about possible hazards and always acts in a safe manner.
6	Deborah knows she is inclined to leave confidential files on her desk instead of locking them away, so she has a system of checking her desk twice and making sure the key to the filing cabinet is put away every time she leaves the office, even if she is just popping out for a snack.
<b>Support required</b>	
5	Alex is adapting to severe hearing loss, and is waiting for a flashing lights system to be installed in his workplace to accompany the current auditory fire alarm. Until this is in place, each shift he is allocated a colleague who will alert him if the alarm goes off.
<b>Work productivity affected</b>	
4	Marion is able to operate all the machinery in the lab safely, but the setting controls are out of her reach and she is not able to safely use a stepladder due to balance difficulties. Ashe has arranged for a colleague who works in the same lab to assist her to change the settings at the beginning of each week.
3	Val works in a kitchen cooking meals for a large residential facility. She is a competent cook, but since her injury suffers muscle cramps at work a couple of times a week. When this occurs she is distracted from cooking for up to 15minutes, which has led to things burning or boiling over, and someone else having to come in and help her deal with these hazards.
2	Louise works as a personal trainer. Since having a mild head injury, she gets distracted by other things going on around the gym when she is coaching a client. A few times a week recently, gym staff have had to intervene because a client has been performing an exercise incorrectly.
1	Andrew is a construction worker. He is currently unable to turn his head because of a neck injury and workmates are constantly worried about his lack of awareness of hazards on the worksite.

## Vignettes: Communication

Level	Example
<b>Independent</b>	
7	Sarah works from home answering email enquiries about products. Although Sarah has difficulties with spoken language, she conducts her job entirely by written communication. Sarah's manager is happy with Sarah's professional manner in all communications.
6	Raymond lost hearing in his left ear due to an explosion. He often meets clients in environments with a lot of background noise, and has to explain they need to be on his right side for him to hear them during a conversation. He manages this well and clients are generally happy to oblige.
<b>Support required</b>	
5	Dean has a mild speech impairment and is usually understandable to people. A few times a year, someone new to the language finds him difficult to understand he has agreed with his boss that if this happens he asks a colleague to help out.
<b>Work productivity affected</b>	
4	Sue works in an office and is waiting for a headset for the telephone, as she is unable to hold the receiver. While she is waiting for this, she has an answer phone, and a colleague checks messages for her once a day.
3	Graham's boss has noticed that his email communication can come across as being impolite, and Graham gets regular coaching on his written communications. A couple of times a month, Graham's boss has to intervene due to misunderstandings arising from Graham's email communication.
2	Janet has frequent misunderstandings with clients about what they have asked for. Her supervisor keeps close watch on her interactions with clients, and most days there is an incident where he has to step in.
1	Steven is a university lecturer. Since suffering a head injury, many students have complained that his lectures are difficult to follow and other staff are concerned that his lectures are missing important course content.

Vignettes: Work protocols

Level	Example
Independent	
7	Eddie dresses and behaves appropriately in the work environment.
6	Carla's mother assists her each evening to pick out appropriate clothes for work the next day.
Support required	
5	Liz works as a librarian, doing some shelving and some customer service work each day. Liz still finds shelving physically demanding, and often when she finishes, she is sweaty and tired. Because of this, Liz's supervisor has arranged for her to do the customer service shift before starting shelving.
Work productivity affected	
4	Tony is a sales assistant working in a different sales area each week. At the beginning of each week, Tony's manager helps him to learn a script for politely introducing himself and the sales area to customers. This helps Tony present himself appropriately to customers.
3	Freddy finds it takes longer to put on his protective clothing before a shift, especially towards the end of the week when he is getting physically tired. Although he knows he needs to start work on time to take over a shift so the previous person can leave, he feels it is unfair that he needs to start earlier because of his injury. As a result, he is 15-20 minutes late starting work a couple of times a week, upsetting colleagues and supervisors.
2	Sheryl works in real estate showing properties to prospective buyers. She is so tired after work she often forgets to wash her work clothes. Sheryl's boss has given Sheryl several blouses to try and deal with the problem, but it has continued to be an issue. On most days, Sheryl's boss has to provide a spare blouse and ask Sheryl to go away and change.
1	Frank has difficulties with attention and coordination and often comes back from the toilet with his trousers done up wrong or with wet patches on his clothing. Frank's colleagues and supervisor have to tell Frank several times a day that this has happened, and sometimes he sees clients without realizing the problem with his presentation.

## Vignettes: Interpersonal relationships – work colleagues

Level	Example
<b>Independent</b>	
7	Daniel always behaves appropriately with staff and is well-liked by his colleagues and his superiors.
6	Morris has aspersers syndrome and finds face-to-face interaction difficult. There is an electronic text internal messaging system at Morris' work which colleagues are happy for him to use for interactions, and Morris finds this much more comfortable.
<b>Support required</b>	
5	Sara works in a large organization and has previously had difficulty introducing herself to new staff because of anxiety. Her manager has arranged for Sara to be introduced to new staff by a colleague, which has facilitated better relationships between Sara and the rest of the team.
<b>Work productivity affected</b>	
4	Fiona has worked hard to overcome her tendency to get angry with colleagues when they express opinions she doesn't agree with. She deals with this well with the help of regular coaching sessions to review her way of thinking about interactions.
3	Tanya knows she has a tendency to want to take control of projects, which irritates others who have been leading the projects while she has been off work. She has strategies that she uses to monitor this and works well in a team when she uses them. Every few weeks, her manager has to intervene when Tanya has lapsed in her strategy use.
2	Selena finds it difficult to assess how much personal information to disclose to work colleagues. She has been given coaching on this by her manager, but she still finds it difficult to judge, meaning other staff feel extremely uncomfortable with her at times, affecting the working relationship. Most days Selena experiences difficulties with her colleagues.
1	Several staff have complained about Murray making inappropriate conversation while they are trying to work, despite previous reprimands from his manager for this behaviour. It is a serious interruption to the work environment.



## Vignettes: Interpersonal skills - clients

Level	Example
<b>Independent</b>	
7	Neil is well-liked by his clients and gets no more than the usual amount of negative feedback.
6	Nathan is a teacher who finds meeting parents an unpleasant part of his job and can get impatient with these interactions. Nathan is aware of this and spends extra time preparing what he will say to parents about their children in order to make the conversations rewarding for the parents. Nathan manages this well and the parents are unaware of these feelings.
<b>Support required</b>	
5	Katie works as a receptionist. Occasionally when she is on the phone, she uses words that her supervisor considers unprofessional. She has agreed with her manager if he hears this happen, he makes a gesture to Katie and she rephrases for the customer, making a note for next time.
<b>Work productivity affected</b>	
4	Natalie has found it really hard to make sales because, although she is good at giving information, she is nervous about suggesting a customer should buy a product. Natalie is working on this using role-play scenarios with her manager at the start of the week, and is starting to make more sales.
3	Carl can deal with common enquiries from customers on the shop floor, although is a little slower than others. However, every so often (once a week or so) he gets anxious with a customer asking for a lot of assistance, and has to ask someone else to help out.
2	Ken installs appliances for clients and has been working reduced hours to manage pain following an injury. However, even on reduced hours Ken still experiences a lot of pain after the first couple of hours, and is often impatient with clients asking him to do things. Most days he works, this leads to a complaint that his manager has to handle.
1	Logan works in a school as a grounds assistant. He often approaches students for a conversation, however students have said they find his manner frightening and the school has received complaints from parents.

Vignettes: Dealing with instruction, change and correction

Level	Example
<b>Independent</b>	
7	Joanne responds appropriately to instruction, change and correction, although she sometimes requires help to adapt her workstation to cope with new ways of doing things.
6	Todd responds well to change and correction provided he is given some extra time to adapt and left to himself while he does this. This arrangement is not a problem for his manager.
<b>Support required</b>	
5	Christina is fine taking correction from her direct manager, but has previously been difficult to manage when this person is away. The management team have arranged that Christina receives a memo from her direct manager on the first day he is away, instructing her to take correction from the appropriate person. Christina responds well to this.
<b>Work productivity affected</b>	
4	Nicholas is an electrical apprentice. His supervisor has found that Nicholas is resistant to making changes when new regulations come in a couple of times a year, stating that he thinks they are unnecessary. His supervisor therefore spends some time with Nicholas when a change occurs going through the requirements, to make sure he implements the changes.
3	Marcus gets flustered by new instructions and correction, so his manager routinely allows extra time to explain changes to Marcus. Once every couple of months, Marcus' manager changes her mind about how things should be done after explaining the changes to Marcus, and has to spend a lot of time talking this through with him so Marcus can deal with this.
2	Juliet has been working for her company for 25 years and maintains that she knows which ways of doing things will or won't work. Every few months when her manager changes the way things are done, he introduces changes slowly for Juliet. However, during these times, Juliet often gets upset at the changes and refuses to implement them. Juliet eventually comes around with some effort on her manager's part, but this puts some strain on the company.
1	Grant appears to have little understanding of why his manager asks him to do things differently to how he is doing. Grant's manager finds it very difficult to get Grant to respond to instructions or correction.

# The PAWSS

(Participation And Work-ability Support Scale)

Version 2.3

Modified 02.02.09

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**Pilot test:**

**Date:** \_\_\_\_\_

**Participant ID:** \_\_\_\_\_

## Background:

The PAWSS is a measure designed to:

- a) assess the individual's ability to work and support needs in the context of their normal work environment, following the onset of acquired disability, and
- b) support decision-making with regard to vocational rehabilitation

It has 15 items across three domains of work functioning:

- Physical / Environment
- Thinking and problem solving
- Social / Behavioural.


There are also an additional 4 items related to contextual factors outside the workplace that could affect work functioning.

It should be rated with respect to the individual's ability to work in their normal work environment (or their proposed work environment if not currently employed). It is therefore sensitive to the circumstances of their employment

Item	Contents	
1. Physical and motor abilities		
SCORE:	<div><div>Info sources:</div><div>ACC referral</div><div>Medical file</div><div>Standardized test</div></div> <div><div>Clinical observation</div><div>Employer</div><div>Worker / client</div><div>Other (state)</div></div> <div>➡</div>	NOTES:  The physical and motor function required to do the job, including upper limb function, dexterity, balance, etc.
2. Sensory and perceptual abilities		
SCORE:	<div><div>Info sources:</div><div>ACC referral</div><div>Medical file</div><div>Standardized test</div></div> <div><div>Clinical observation</div><div>Employer</div><div>Worker / client</div><div>Other (state)</div></div> <div>➡</div>	NOTES:  The sensory and perceptual function required to do the job.
3. Access to and around the workplace (including safety)		
SCORE:	<div><div>Info sources:</div><div>ACC referral</div><div>Medical file</div><div>Standardized test</div></div> <div><div>Clinical observation</div><div>Employer</div><div>Worker / client</div><div>Other (state)</div></div> <div>➡</div>	NOTES:  The mobility to move around as required in the work environment. Safety aspects include ability to be seen, ability to make use of safety equipment.
4. Pacing and ability to work through a normal day		
SCORE:	<div><div>Info sources:</div><div>ACC referral</div><div>Medical file</div><div>Standardized test</div></div> <div><div>Clinical observation</div><div>Employer</div><div>Worker / client</div><div>Other (state)</div></div> <div>➡</div>	NOTES:  Stamina to work through the normal working day. Includes contribution of travel time/distance to fatigue.
5. Transport		
SCORE:	<div><div>Info sources:</div><div>ACC referral</div><div>Medical file</div><div>Standardized test</div></div> <div><div>Clinical observation</div><div>Employer</div><div>Worker / client</div><div>Other (state)</div></div> <div>➡</div>	NOTES:  Ability to manage transport / travel including: to and from work, any travel components of the job e.g. driving

Scores: 1 (effectively unable) – 7 (independence without modification)  
PLEASE REFER TO DECISION TREE TO DETERMINE SCORES





## Thinking and Problem solving

Item	Contents	
<b>6. Cognitive skills</b>	<b>Memory, attention, concentration, etc to manage the job (this item may include an extended description, if required)</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>7. Self organisation and planning</b>	<b>Ability to plan and organise as required for the job. Includes work organisation, initiation, motivation.</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>8. Dealing with the unexpected</b>	<b>Ability to deal with unexpected events, handle interruptions, problem solve, etc</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>9. Safety awareness (work related)</b>	<b>Ability to manage safety of themselves and others in the work environment</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>10. Communication (work related)</b>	<b>Communication: verbal, written, reading, comprehension, intelligibility</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 

Item	Contents	
<b>11. Work protocols</b>	<b>Ability to adhere to normal working practices, including appropriate dress, personal presentation, time keeping, appropriate reaction to supervisory instruction.</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>12. Interpersonal relationships (work colleagues)</b>	<b>Interpersonal skills, professional and social interaction with work colleagues, including consideration of changed relationships due to time away from workplace / changed abilities.</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>13. Interpersonal relationships (management)</b>	<b>Interpersonal skills, professional interaction with management, including consideration of changed relationships due to time away from workplace / changed abilities.</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>14. Interpersonal skills (client / customer)</b>	<b>Interpersonal skills, professional and social interaction with clients / customers</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>15. Dealing with instruction, change and correction</b>	<b>Appropriate reaction to supervisory instruction and/or correction regarding work activities. Ability to correct errors, accept changes in work tasks, etc</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 

Scores: C1 (severe negative effect) – C5 (positive effect)  
PLEASE REFER TO SCORING FRAMEWORK

## Contextual Factors\*

Item	Contents	
<b>16. Supports outside the workplace</b>	<b>Access to home help, financial resources, social support, etc needed to facilitate required work functioning</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>17. Attitudes and feelings towards work</b>	<b>Attitudes and feelings about work and the work environment that affect presence at work and work productivity</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>18. Competing demands</b>	<b>Management of family, societal and legal issues that are in conflict with work commitments (including legal claims and financial compensation)</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 
<b>19. Knowledge, beliefs and expectations</b>	<b>Knowledge, beliefs, expectations and coping strategies associated with ability to return to work and function in the workplace</b>	
SCORE:	<u>Info sources:</u> ACC referral Medical file Standardized test	Clinical observation Employer Worker / client Other (state) 

\*Switch to scoring system for items 16-19



## Overall structure for scoring (items 1-15) – refer to item decision trees

<b>Independent</b>	
<b>Level 7</b>	<b>Independence without modification</b> No problem at any level with managing the requirements of the job
<b>Level 6</b>	<b>Independence with modification</b> Some consideration for time or effort * Or requires adaptation / strategies / equipment above the ordinary provided for the job in order to function independently. Able to self-prompt / correct or to structure their own environment. Minimal reduction in work productivity
<b>Supported working</b>	
<b>Level 5</b>	<b>Supervision / set-up</b> Requires someone else to set-up equipment or prompt on strategies Or externally structured work environment. Monitoring – with only occasional prompting / correction
<b>Level 4</b>	<b>Minimal support</b> Able to manage >75% of the time in that aspect of the job Regular planned intervention or support only Work productivity only mildly affected
<b>Level 3</b>	<b>Moderate support</b> Able to manage more than half the time in that aspect of the job Infrequent** unplanned intervention on top of regular monitoring Work productivity moderately affected
<b>Level 2</b>	<b>Maximal support</b> Able to manage less than half the time in that aspect of the job Frequent unplanned intervention on top of regular monitoring Work productivity severely affected
<b>Level 1</b>	<b>Constant support – or effectively unable</b> Effectively unable or manages less than 25% of the time Unplanned intervention many times a day
<b>Unable to score</b>	Unable to score due to insufficient information. More information required.

\*NB Level 6: 'safety' not included as maintaining safety is included as an item on its own merit.

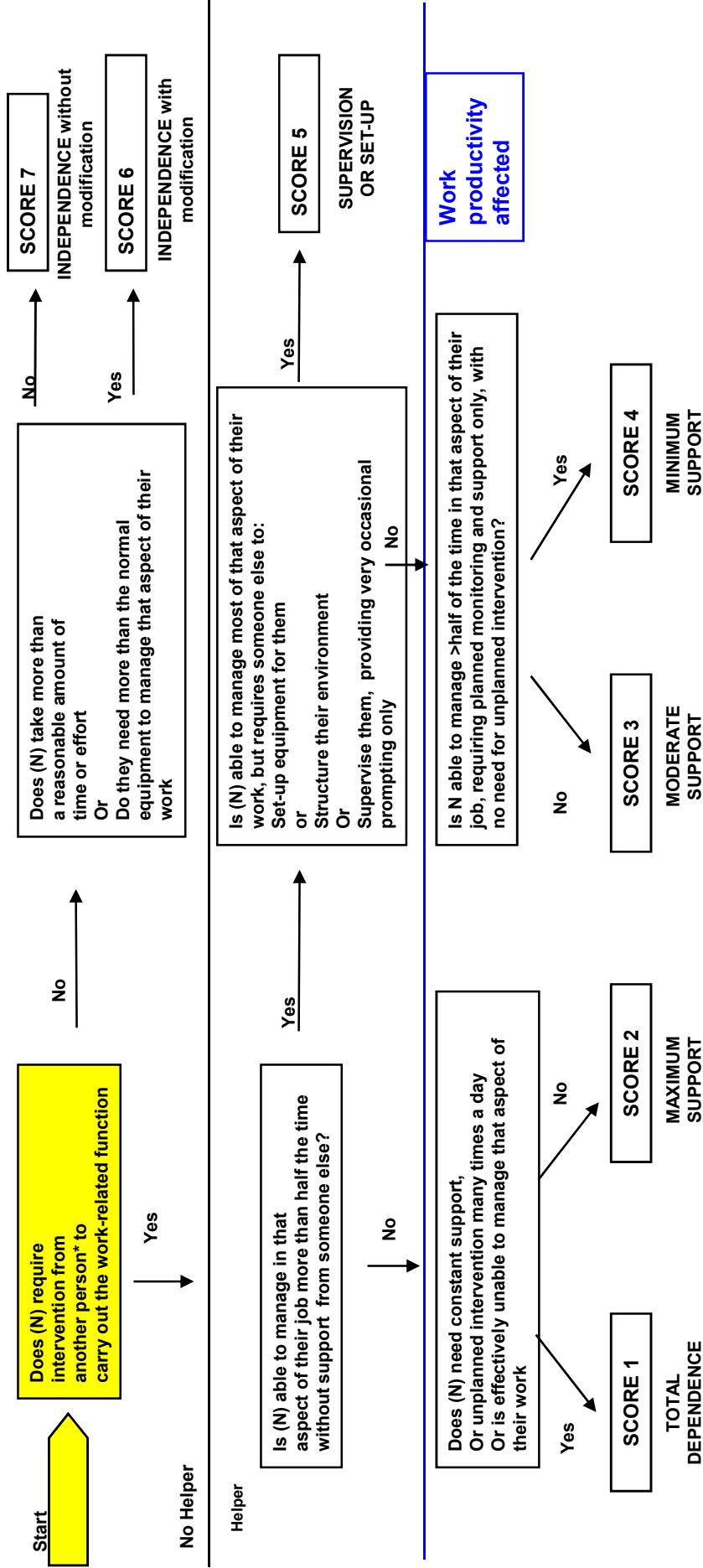
\*\* Frequency of unplanned interventions not rigidly defined in terms of time – varies for different items  
And possibly also for different interventions. Define individually for each item if needed.  
E.g. Level 3 - Not every day; Level 2: - Most days; Level 1 - Many times a day

## Scoring items 16-19

<b>C5: Positive effect</b>	Contextual factor is a positive facilitator
<b>C4: No effect</b>	Contextual factor offers no barrier to return to (or continuing in) work
<b>C3: Mild negative effect</b>	Contextual factor offers a mild barrier to return to (or continuing in) work, which can be overcome using strategies or interventions that are readily available
<b>C2: Moderate negative effect</b>	Contextual factor offers a moderate barrier to return to (or continuing in) work which may be overcome using strategies or interventions that may or may not be available
<b>C1: Severe negative effect</b>	Contextual factor offers a severe barrier – effectively preventing return to (or continuing in) work. Or could only be overcome by strategies or interventions not currently available
<b>Unable to score</b>	Unable to score due to insufficient information. More information required

## FRAMEWORK FOR SCORING

Work-related function includes:  
Description of functional abilities required within the person's normal work environment  
Or, if not in work, within the proposed work environment



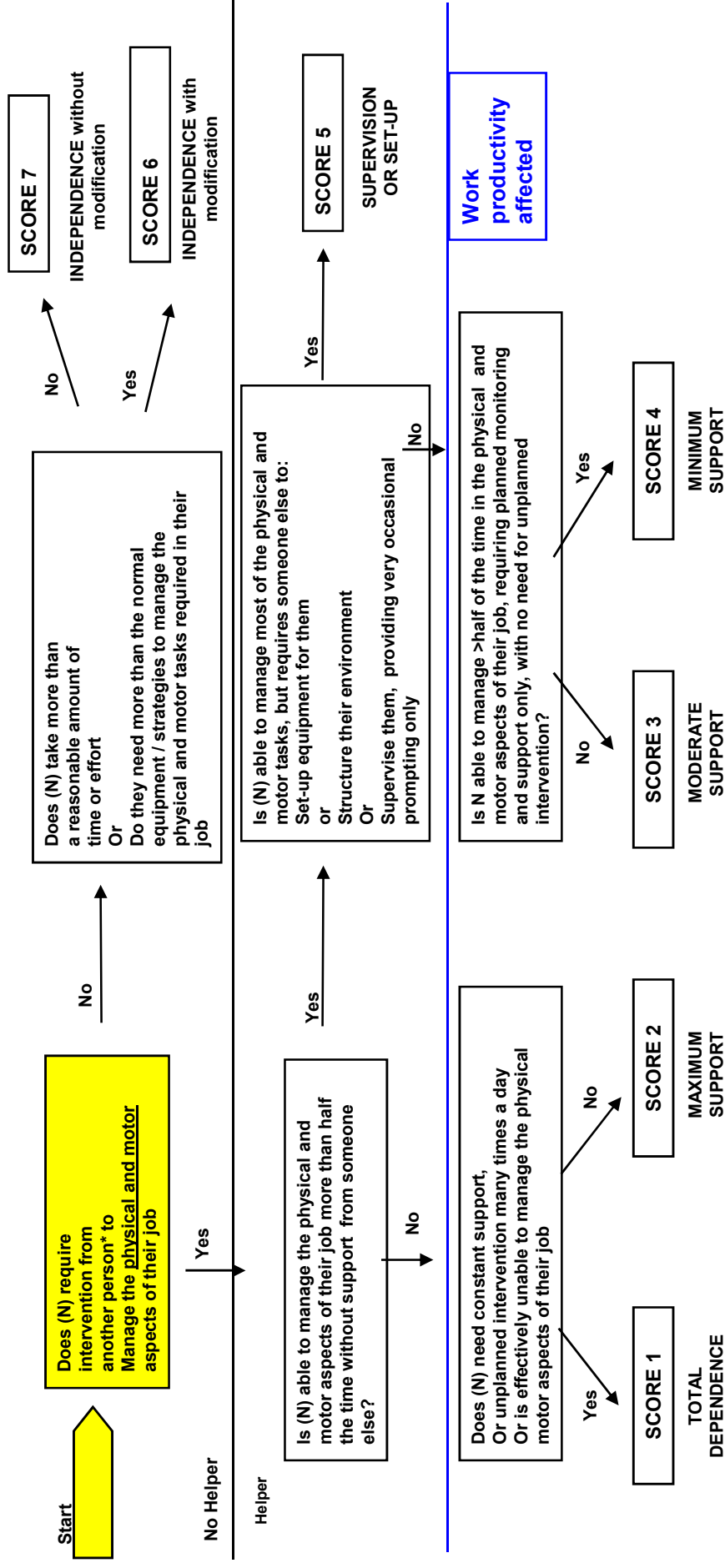
### Notes:

- Level 7:**  
No problem – can manage all of that aspect of their job independently
- Level 6:**  
Manages all of that aspect, but takes more than the reasonable amount of time or effort, or requires special equipment. Able to self-prompt and correct.  
*There is minimal reduction in work productivity*
- Level 5:**  
Able to do most of that aspect of their work, but requires help from someone else to set-up equipment / correction a structured environment, with supervision but only very occasional prompting / correction
- Level 4:**  
Able to manage >75% of the time. Has regular planned monitoring/support/intervention only  
Work productivity mildly affected ( unable to do some parts of their job)
- Level 3:**  
Able to manage >half of the time in that aspect of their work  
Requires unplanned intervention on top of regular monitoring/support, but infrequently (*not every day*)  
Work productivity moderately affected (*unable to do a significant part of their job*)
- Level 2:**  
Able to manage <half of the time. Requires frequent unplanned intervention on top of regular monitoring (*most days*)  
Work productivity severely affected (*Unable to do a substantial part of their job*)
- Level 1:**  
Effectively unable or requires constant supervision with intervention (*several times a day*)
- \*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

## 1. PHYSICAL AND MOTOR SKILLS

Physical and motor abilities includes:

- The physical strength and motor tasks required to do their job, e.g. upper limb function (dexterity, reaching, lifting, operating machinery), balance etc.



### Notes:

#### Level 7:

No problem – can manage all the physical and motor tasks associated with their job independently

#### Level 6:

Manages all of the physical and motor tasks, but takes more than the reasonable amount of time or effort, or requires special equipment or strategies. Able to self-prompt and correct.

*There is minimal reduction in work productivity*

#### Level 5:

Able to do most of the physical and motor aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

#### Level 3:

Able to manage >half of the time the physical and motor tasks associated with their job  
Requires infrequent unplanned intervention/help on top of regular monitoring, *(not every day)*  
*Work productivity moderately affected – unable to do a significant part of their job*

#### Level 2:

Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring *(on most days)*  
*Work productivity severely affected – unable to do a substantial part of their job*

#### Level 1:

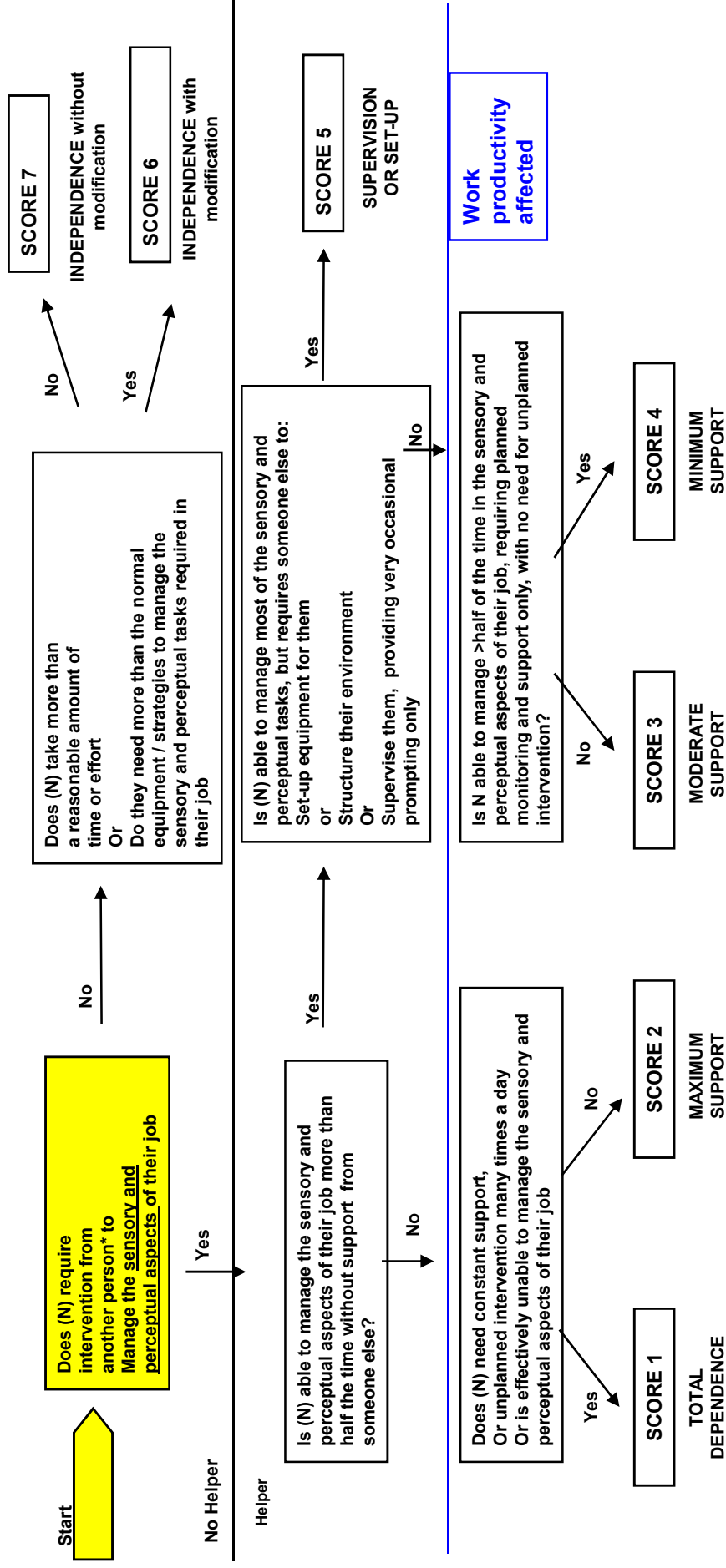
Effectively unable or requires constant supervision with intervention/help *many times a day*

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

## 2. SENSORY AND PERCEPTUAL SKILLS

Sensory and perceptual abilities includes:

Vision, hearing, touch, taste, smell required for doing the job. Also includes effects of noise, light and temperature, and perceptual functioning e.g. perception of differences between objects.



### Notes:

#### Level 7:

No problem – can manage all the sensory and perceptual tasks associated with their job independently

#### Level 6:

Manages all of the sensory and perceptual tasks, but takes more than the reasonable amount of time or effort, or requires special equipment or strategies. Able to self-prompt and correct.

There is *minimal reduction in work productivity*

#### Level 5:

Able to do most of the sensory and perceptual aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
Work productivity *only mildly affected* – *unable to do some parts of their job*

#### Level 3:

Able to manage >half of the time the sensory and perceptual tasks associated with their job  
Requires infrequent unplanned intervention/help on top of regular monitoring, (*not every day*)  
Work productivity *moderately affected* – *unable to do a significant part of their job*

#### Level 2:

Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring (*on most days*)  
Work productivity *severely affected* – *unable to do a substantial part of their job*

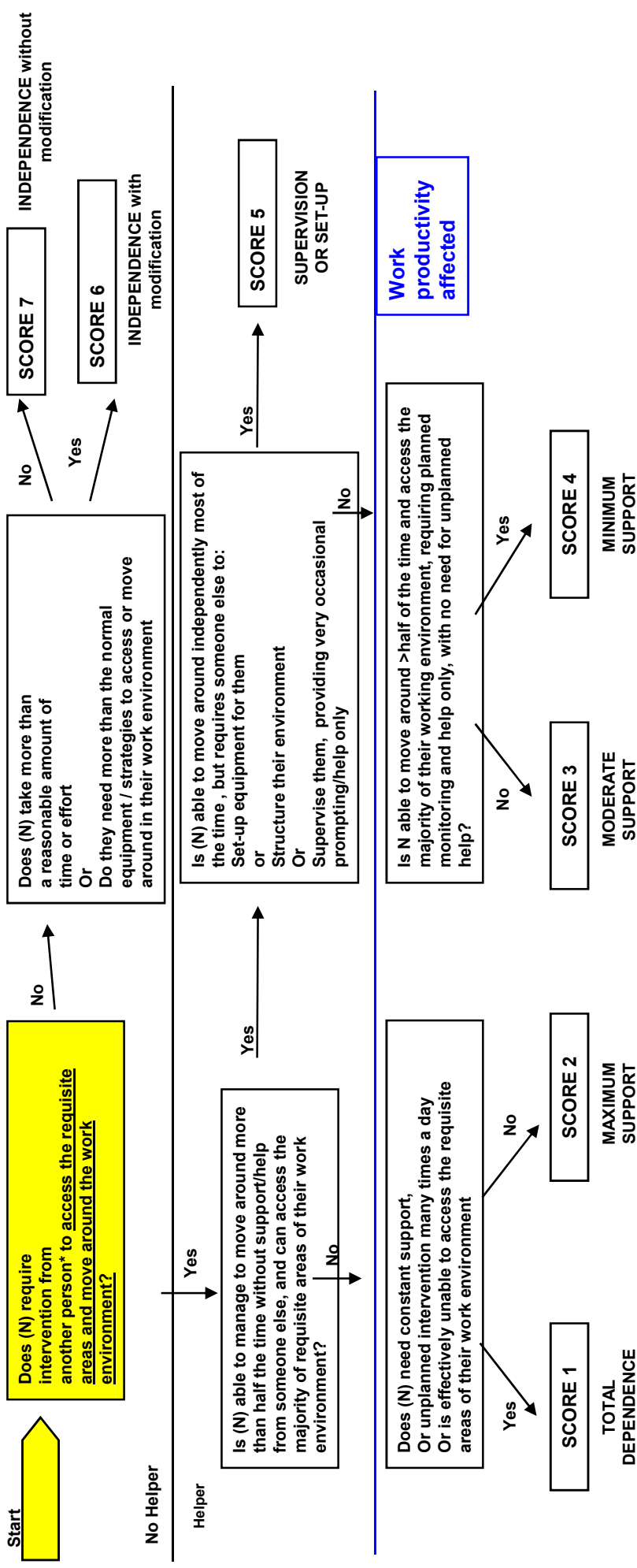
#### Level 1:

Effectively unable or requires constant supervision with intervention/help *many times a day*  
*\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support*

### 3. ACCESS TO AND AROUND THE WORKPLACE

Access to and around the workplace includes:

Being able to move around in the work environment and access all areas/ facilities required to do their job e.g. carrying necessary items, combinations of moving around and other activities (such as carrying items while opening doors), confined spaces, working from heights, emergency evacuation, location of necessary facilities (e.g. toilets, refreshments, meeting rooms). Safety aspects include ability to be seen, ability to make use of safety equipment.



Notes:

**Level 7:**

No problem – can move around and access all the requisite areas of their work environment independently

**Level 6:**

Manages to access all requisite areas, but takes more than the reasonable amount of time or effort, or requires special equipment.

There is minimal reduction in work productivity

**Level 5:**

Able to move around and access most of the requisite area, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only occasional help

**Level 4:**

Able to manage >75% of the time. Has regular planned intervention/help only

Work productivity only mildly affected – unable to do some parts of their job

**Level 3:**

Able to manage >half of the time and can access most of the requisite areas.

Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

Work productivity moderately affected – unable to do a significant part of their job

**Level 2:**

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

Work productivity severely affected – unable to do a substantial part of their job

**Level 1:**

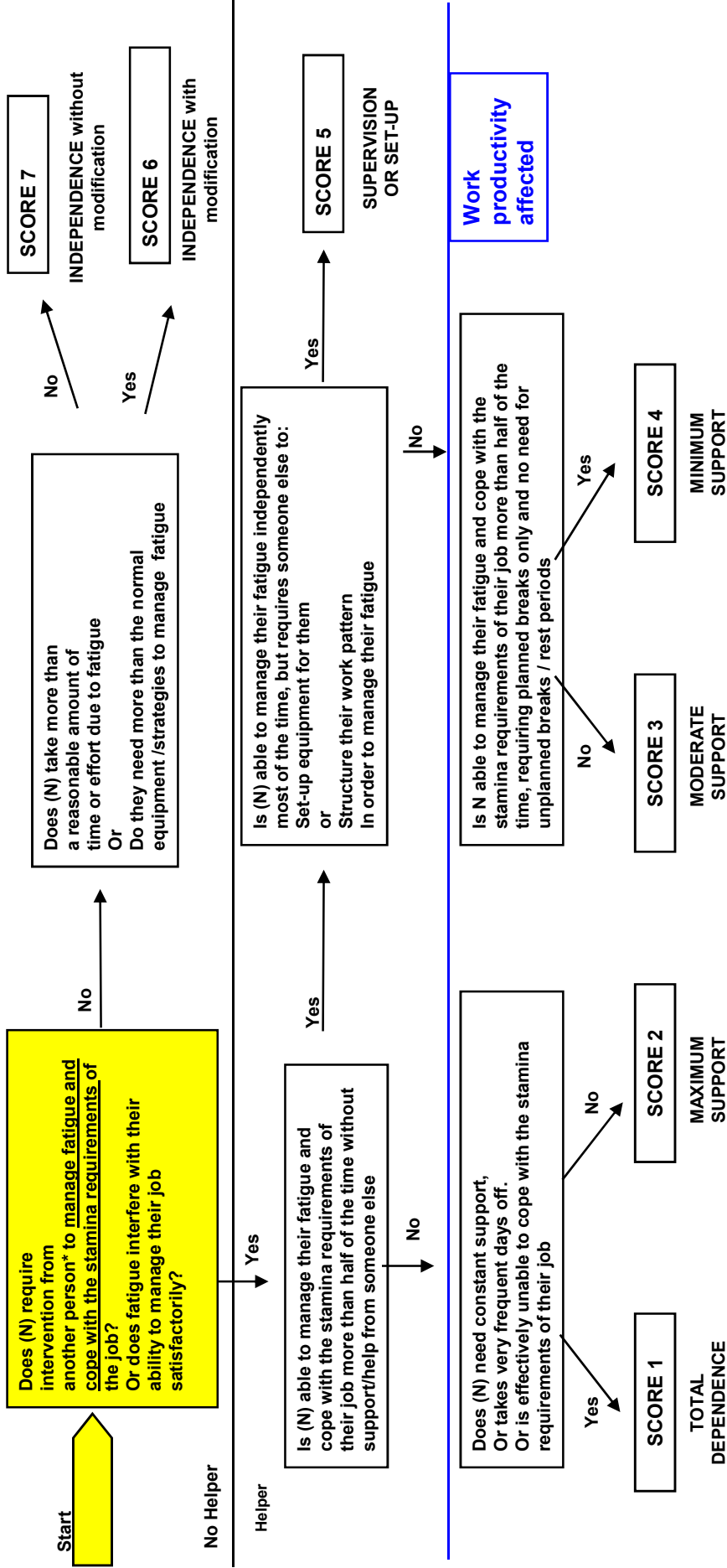
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support



#### 4. PACING AND ABILITY TO WORK THROUGH A NORMAL DAY

Pacing and ability to work through a normal day includes:  
Having the stamina to be able to work effectively throughout the working hours,  
or to manage fatigue effectively to avoid work disruption due to need for breaks or days off



**Notes:**

**Level 7:**

No problem – can cope with all the stamina requirement of their job without need for rests

**Level 6:**

Copes with stamina requirements of their job, but takes more than the reasonable amount of time or effort due to fatigue, or requires special labour-saving equipment. Manages fatigue effectively.  
*There is minimal reduction in work productivity*

**Level 5:**

Able to cope with the stamina requirements of their job most of the time, but requires help from someone else to set-up equipment, or to structure their work pattern to manage fatigue

**Level 4:**

Able to manage >75% of the time Has regular planned breaks / rest periods only  
*Work productivity only mildly affected – unable to do some parts of their job*

**Level 3:**

Able to manage >half of the time and can manage more than half their work. Requires infrequent unplanned breaks on top of their planned rest periods/ reduced hours. Or takes only occasional days off (< once a month).  
*Work productivity moderately affected – unable to do a significant part of their job*

**Level 2:**

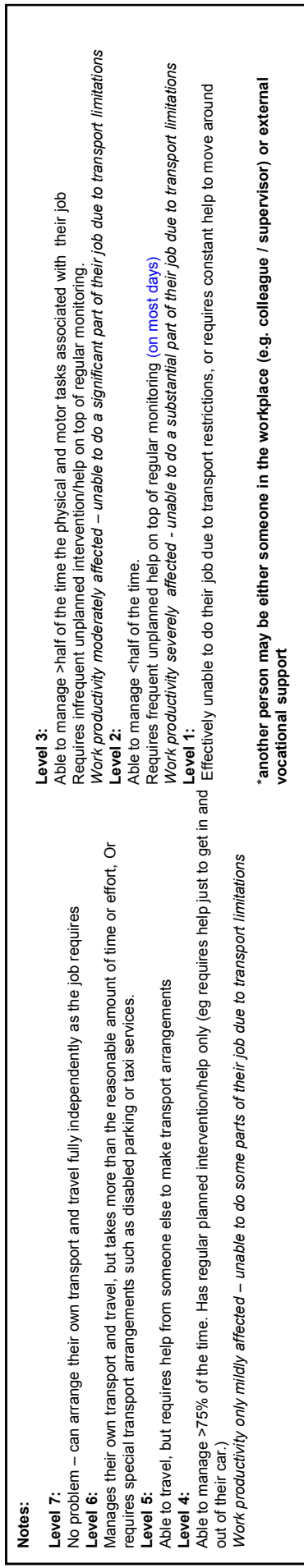
Able to manage <half of the time.  
Requires frequent unplanned breaks or rest. Or takes frequent unplanned days off (>once a month)  
*Work productivity severely affected – unable to do a substantial part of their job*

**Level 1:**

Effectively unable to do their job due to fatigue, or requires constant support.

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

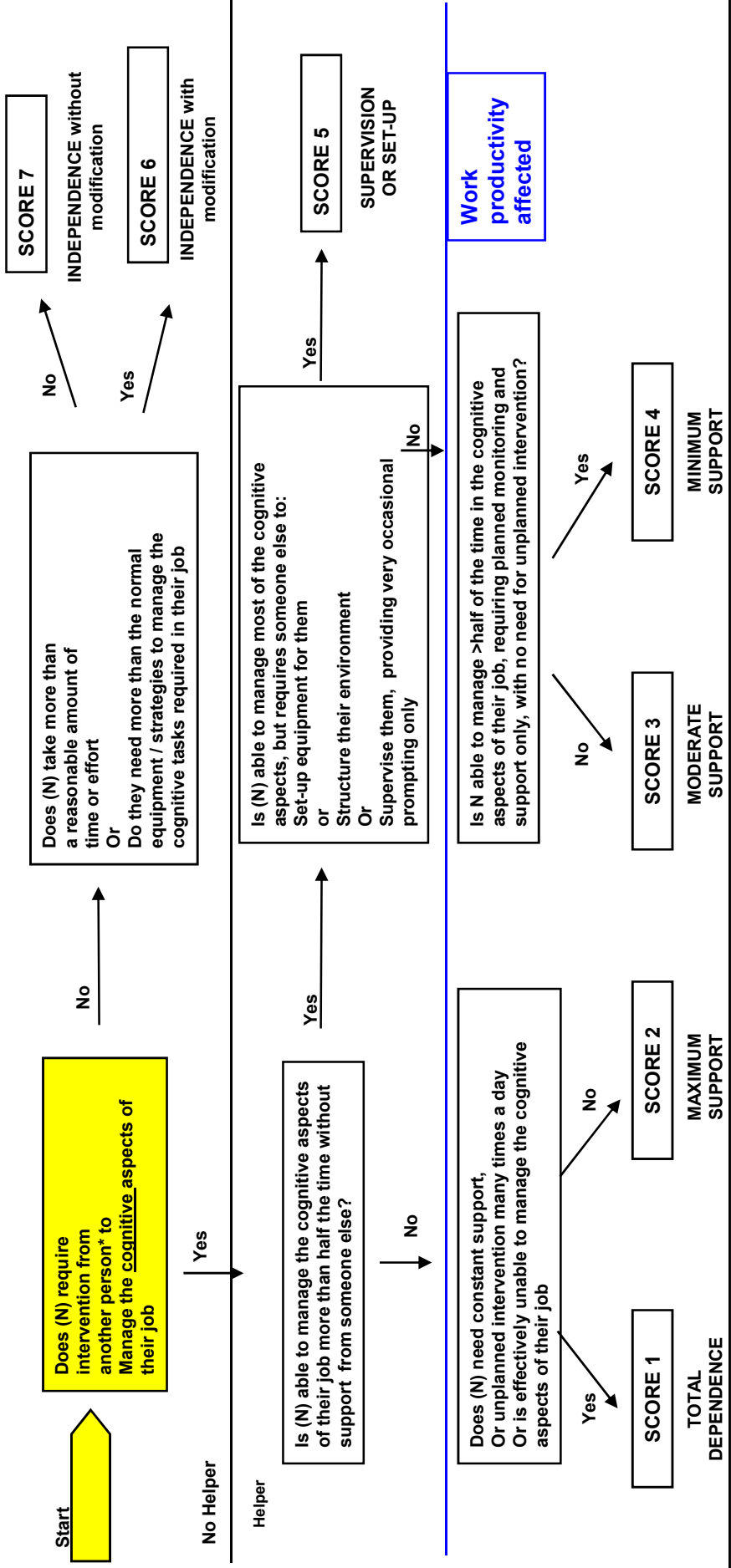
Being able to get to work and to manage all travel aspects of the work including local, national and international travel, if that is part of the job. Also driving, if the job requires this.





6. COGNITIVE SKILLS

Cognitive skills includes:  
The cognitive tasks required to manage in their job effectively, e.g. memory, attention, concentration.  
Equipment may include electronic diary/ computer etc if over and above what is usually provided for the job.

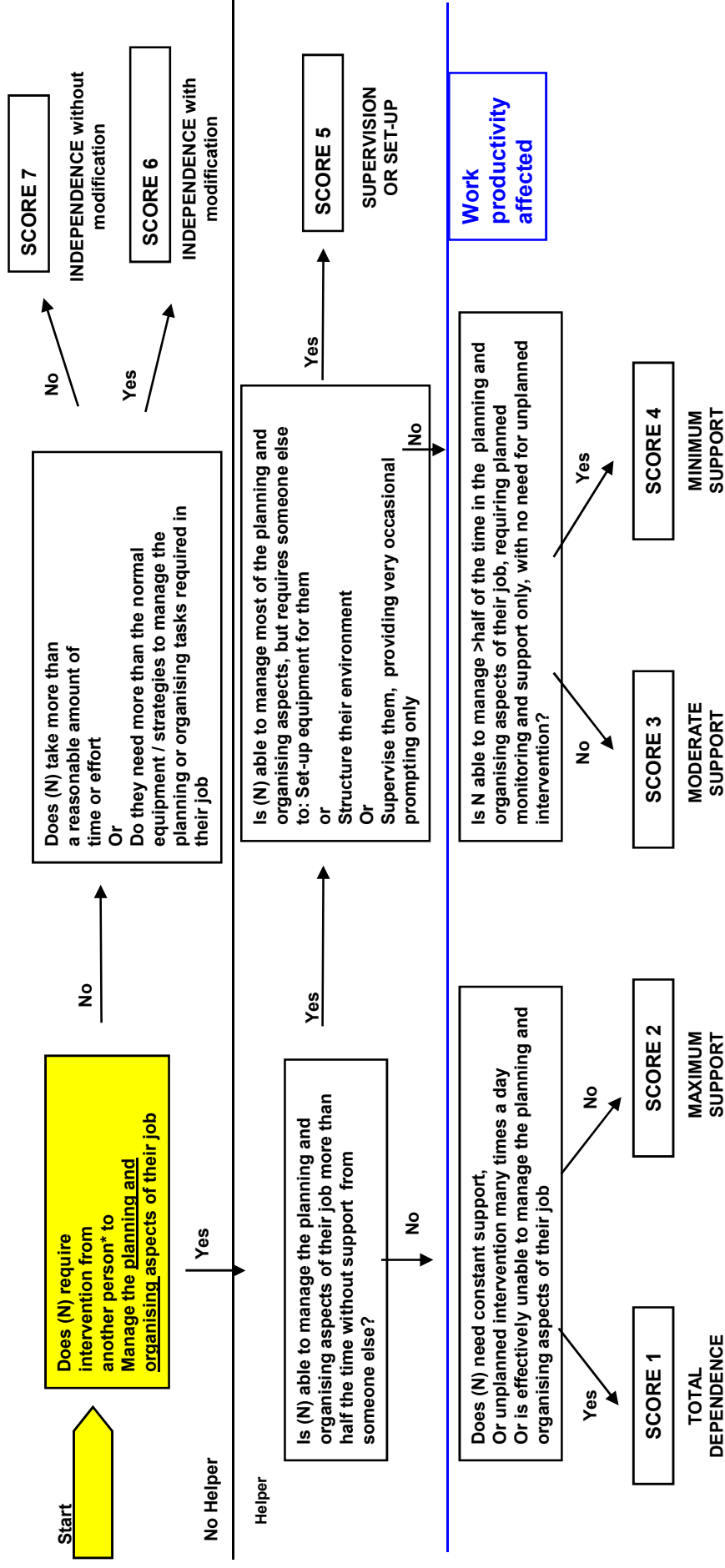


Notes:

- Level 7:** No problem – can manage all the cognitive tasks associated with their job independently
  - Level 6:** Manages all of the cognitive tasks, but takes more than the reasonable amount of time or effort, or requires special equipment or strategies. Able to self-prompt and correct.  
*There is minimal reduction in work productivity*
  - Level 5:** Able to do most of the cognitive aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help
  - Level 4:** Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*
  - Level 3:** Able to manage >half of the time the cognitive tasks associated with their job  
*Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)  
Work productivity moderately affected – unable to do a significant part of their job*
  - Level 2:** Able to manage <half of the time.  
*Requires frequent unplanned help on top of regular monitoring (on most days)  
Work productivity severely affected – unable to do a substantial part of their job*
  - Level 1:** Effectively unable or requires constant supervision with intervention/help many times a day
- \*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

## 7. SELF ORGANISATION AND PLANNING

Self organisation and planning includes:  
Planning and organising required for the job. Includes work organisation, initiation, motivation, working to deadlines



### Notes:

#### Level 7:

No problem – can manage all the planning and organising tasks associated with their job independently

#### Level 6:

Manages all of the planning and organising tasks, but takes more than the reasonable amount of time or effort, or requires special equipment or strategies. Able to self-prompt and correct.

*There is minimal reduction in work productivity*

#### Level 5:

Able to do most of the planning and organising aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

#### Level 3:

Able to manage >half of the time the planning and organising tasks associated with their job  
Requires infrequent unplanned intervention/help on top of regular monitoring, *(not every day)*  
*Work productivity moderately affected – unable to do a significant part of their job*

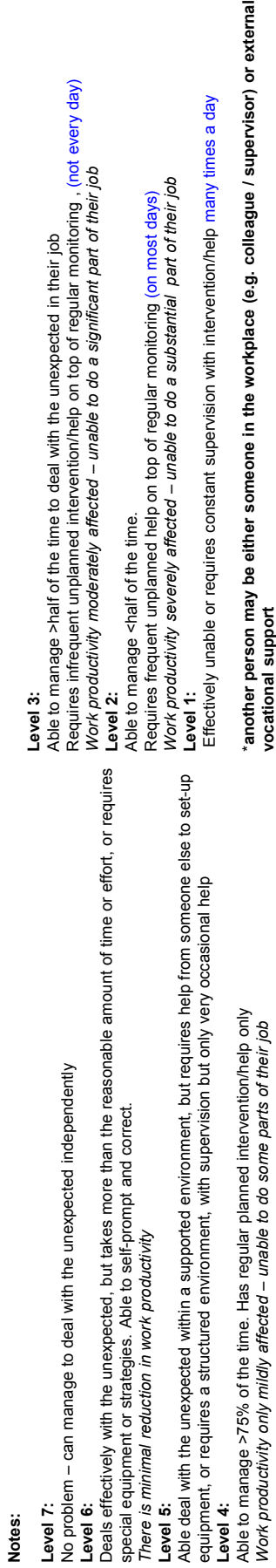
#### Level 2:

Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring *(on most days)*  
*Work productivity severely affected – unable to do a substantial part of their job*

#### Level 1:

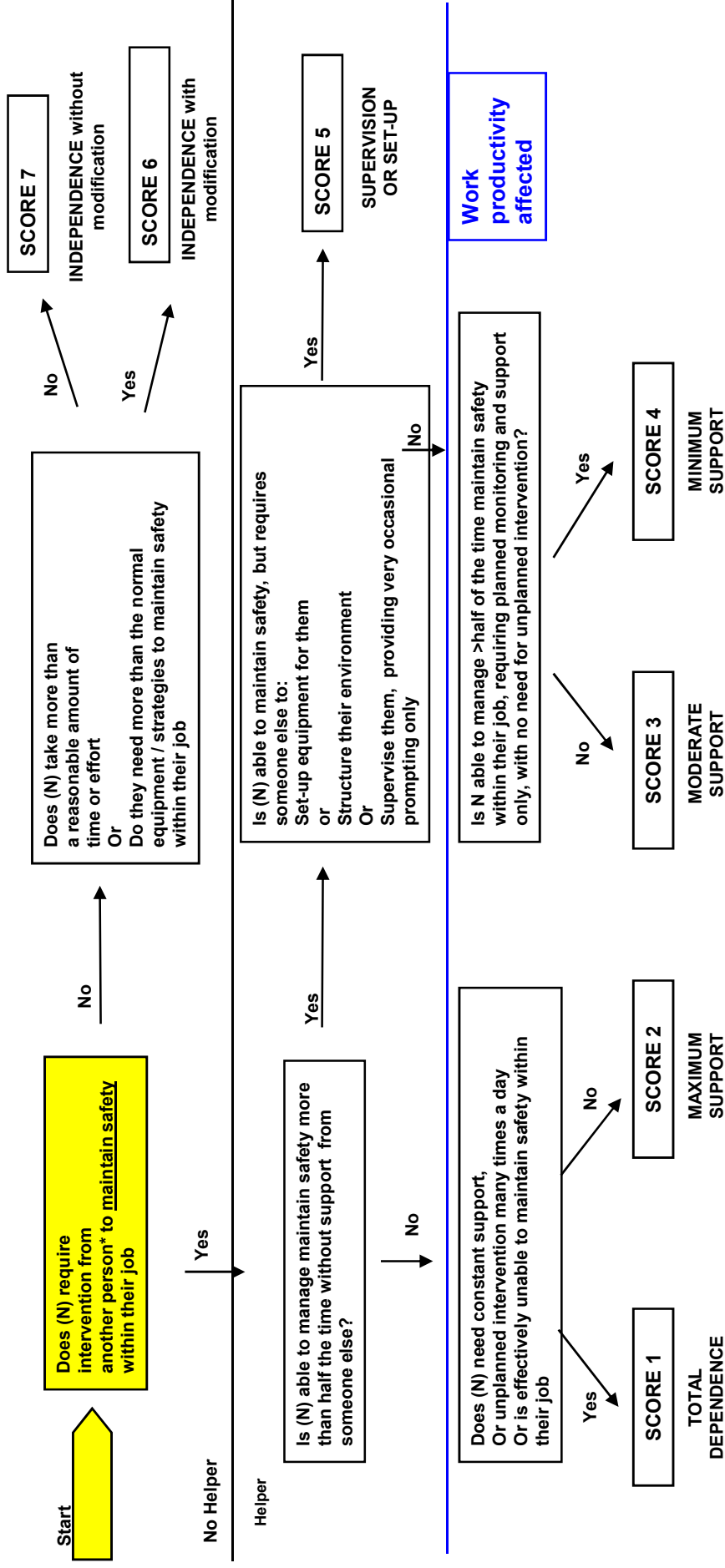
Effectively unable or requires constant supervision with intervention/help *many times a day*  
*\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support*

e.g. problem-solving, multi-tasking, working on their own initiative when things change



## 9. SAFETY AWARENESS (WORK RELATED)

Maintaining work-related safety includes:  
Being able to maintain the safety of themselves and others within their job



### Notes:

#### Level 7:

No problem – can maintain safety within their job independently

#### Level 6:

Able to maintain safety, but takes more than the reasonable amount of time or effort, or requires special equipment or strategies. Able to self-prompt and correct.

*There is minimal reduction in work productivity*

#### Level 5:

Able maintain safety within a structured environment, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

#### Level 3:

Able to manage >half of the time to maintain safety

Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

*Work productivity moderately affected – unable to do a significant part of their job*

#### Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

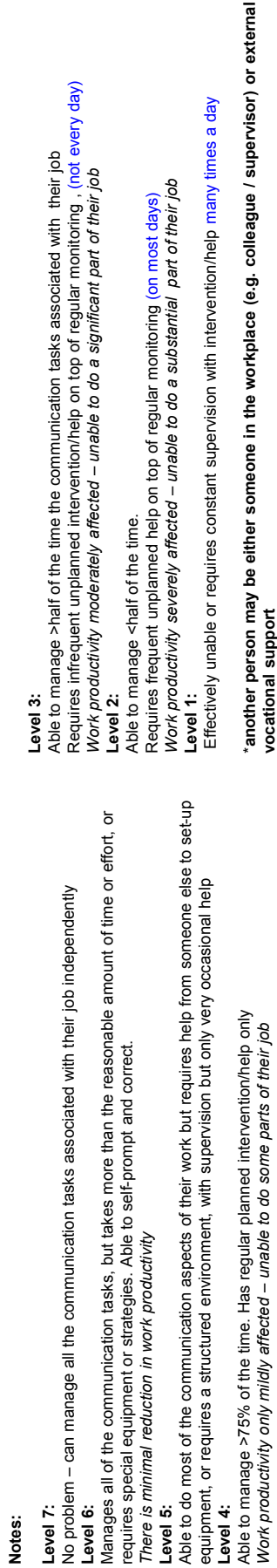
*Work productivity severely affected – unable to do a substantial part of their job*

#### Level 1:

Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

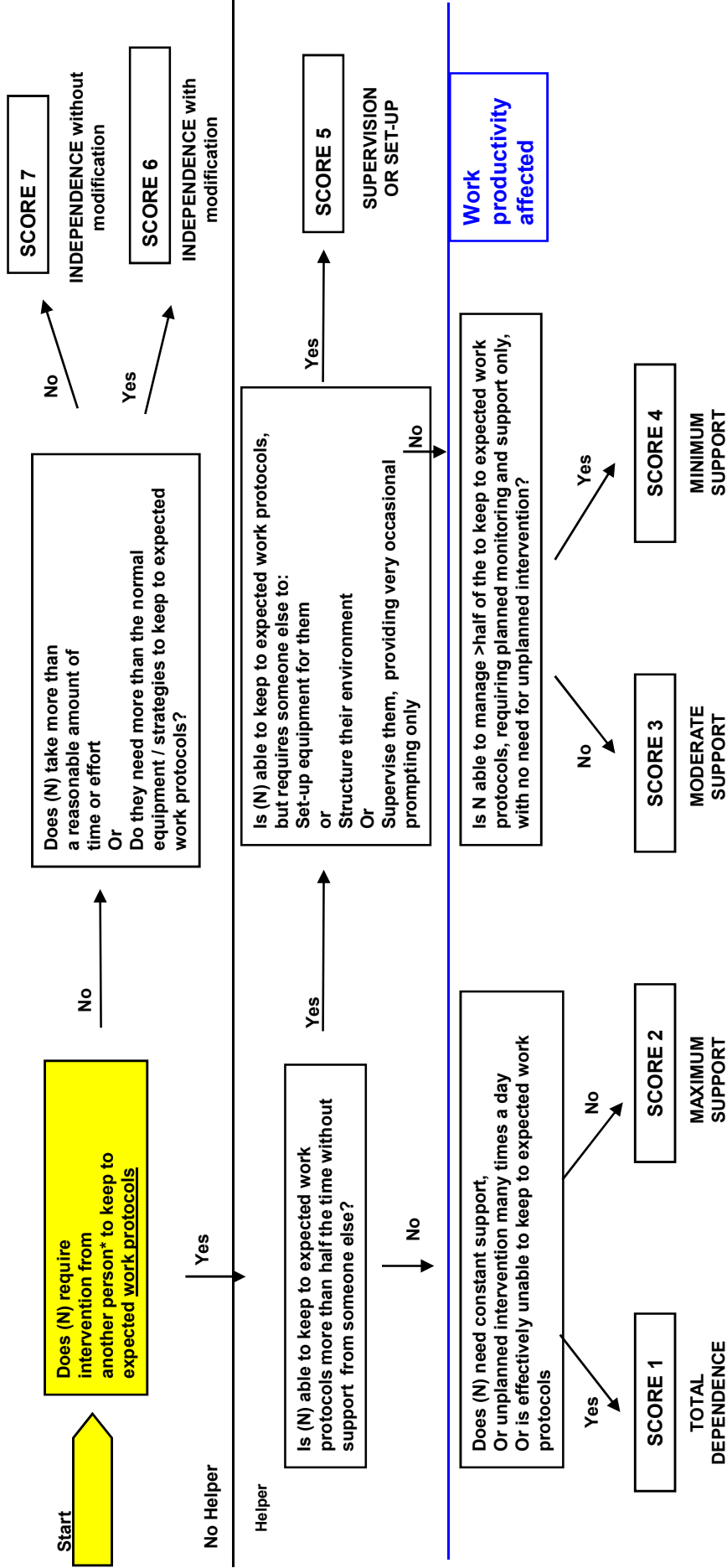
Being able to communicate effectively with others in the course of their job in terms of Comprehension, expression, intelligibility both for verbal and written communication.



## 11. WORK PROTOCOLS

Work protocols includes:

Ability to adhere to the normal working practices, including appropriate personal presentation, time keeping, etc



Notes:

**Level 7:**

No problem – can keep to expected work protocols independently

**Level 6:**

Keeps to expected work protocols, but takes more than the reasonable amount of time or effort, or requires special equipment or strategies. Able to self-prompt and correct.

There is minimal reduction in work productivity

**Level 5:**

Able to keep to expected work protocols, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

**Level 4:**

Able to manage >75% of the time. Has regular planned intervention/help only

Work productivity only mildly affected – unable to do some parts of their job

**Level 3:**

Able to manage >half of the time to keep to expected work protocols.

Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

Work productivity moderately affected – unable to do a significant part of their job

**Level 2:**

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

Work productivity severely affected – unable to do a substantial part of their job

**Level 1:**

Effectively unable or requires constant supervision with intervention/help many times a day

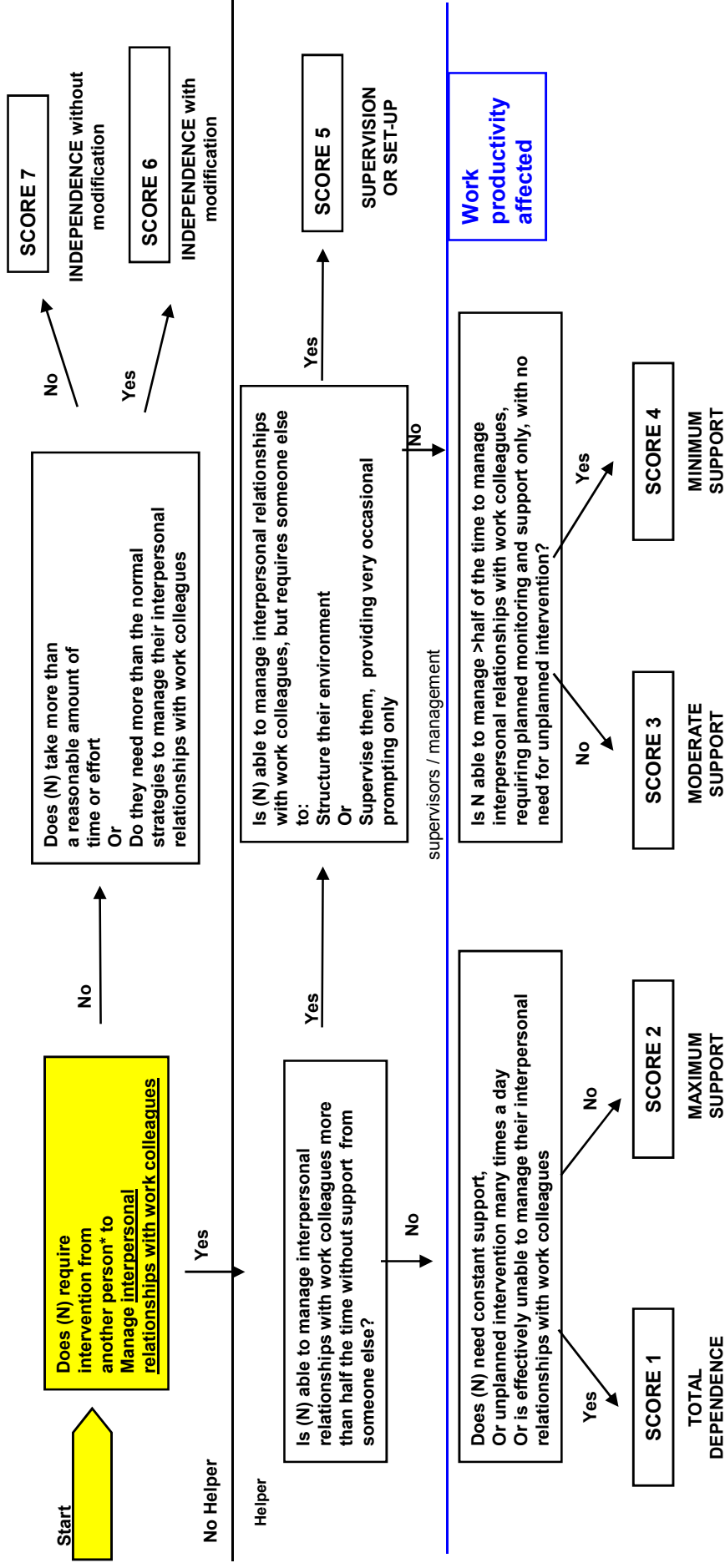
\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support



## 12. INTERPERSONAL RELATIONSHIPS (WORK COLLEAGUES)

Interpersonal relationships (work colleagues) includes:

Interpersonal skills, professional and social interaction with work colleagues, including consideration of changed relationships due to time away from workplace / changed abilities



### Notes:

#### Level 7:

No problem – can manage interpersonal relationships with work colleagues independently

#### Level 6:

Manages interpersonal relationships with work colleagues, but takes more than the reasonable amount of time or effort, or requires strategies. Able to self-prompt and correct.

There is minimal reduction in work productivity

#### Level 5:

Able to manage interpersonal relationships with work colleagues, but requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
Work productivity only mildly affected – unable to do some parts of their job

#### Level 3:

Able to manage >half of the time to manage interpersonal relationships with work colleagues.  
Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

Work productivity moderately affected – unable to do a significant part of their job

#### Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

Work productivity severely affected – unable to do a substantial part of their job

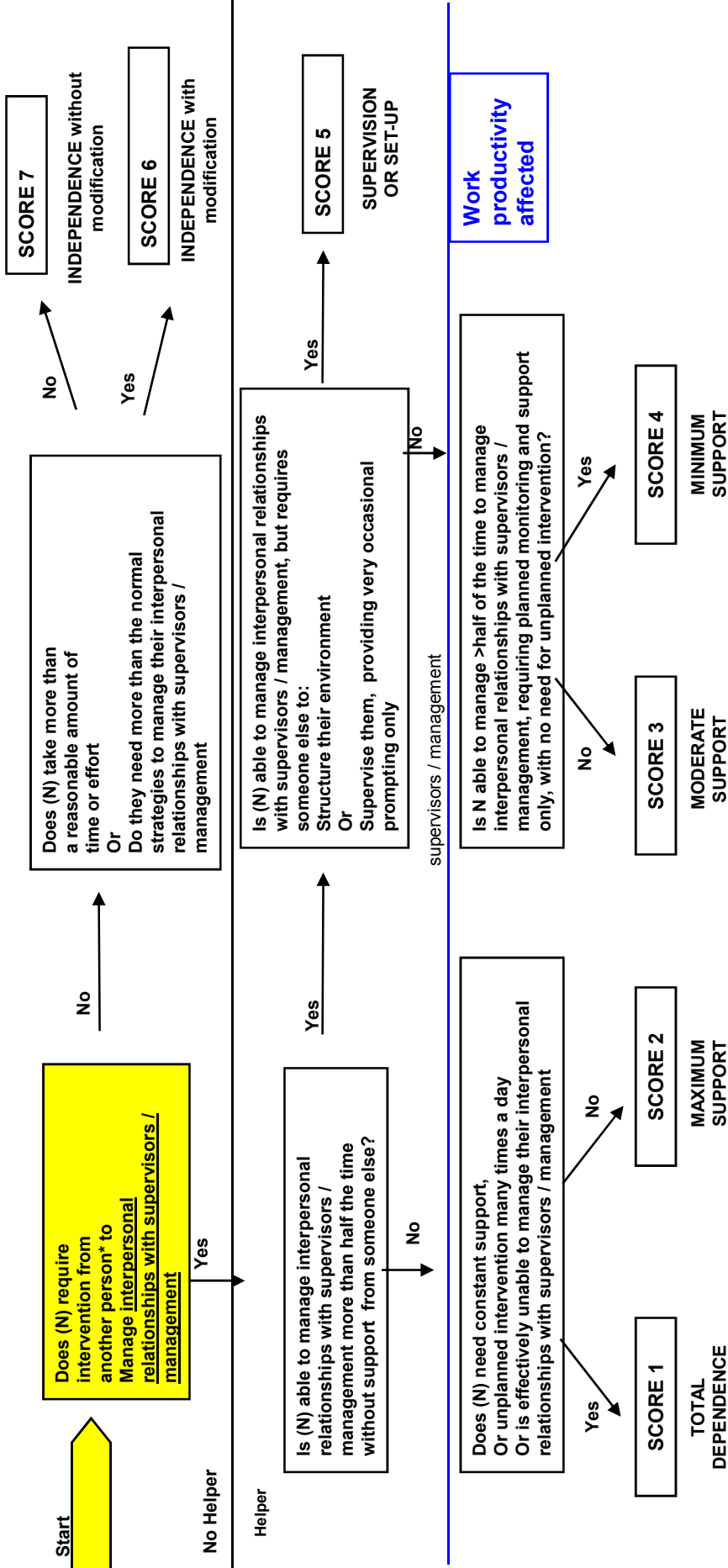
#### Level 1:

Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

13. INTERPERSONAL RELATIONSHIPS (SUPERVISORS / MANAGEMENT)

Interpersonal relationships (supervisors / management) includes:  
Interpersonal skills, professional and social interaction with supervisors and/or management, including consideration of changed relationships due to time away from workplace / changed abilities



**Notes:**

**Level 7:**  
No problem – can manage interpersonal relationships with supervisors / management independently

**Level 6:**  
Manages interpersonal relationships with supervisors / management, but takes more than the reasonable amount of time or effort, or requires strategies. Able to self-prompt and correct.  
*There is minimal reduction in work productivity*

**Level 5:**  
Able to manage interpersonal relationships with supervisors / management, but requires a structured environment, with supervision but only very occasional help

**Level 4:**  
Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

**Level 3:**  
Able to manage >half of the time to manage interpersonal relationships with supervisors / management. Requires infrequent unplanned intervention/help on top of regular monitoring, *(not every day)*  
*Work productivity moderately affected – unable to do a significant part of their job*

**Level 2:**  
Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring *(on most days)*  
*Work productivity severely affected – unable to do a substantial part of their job*

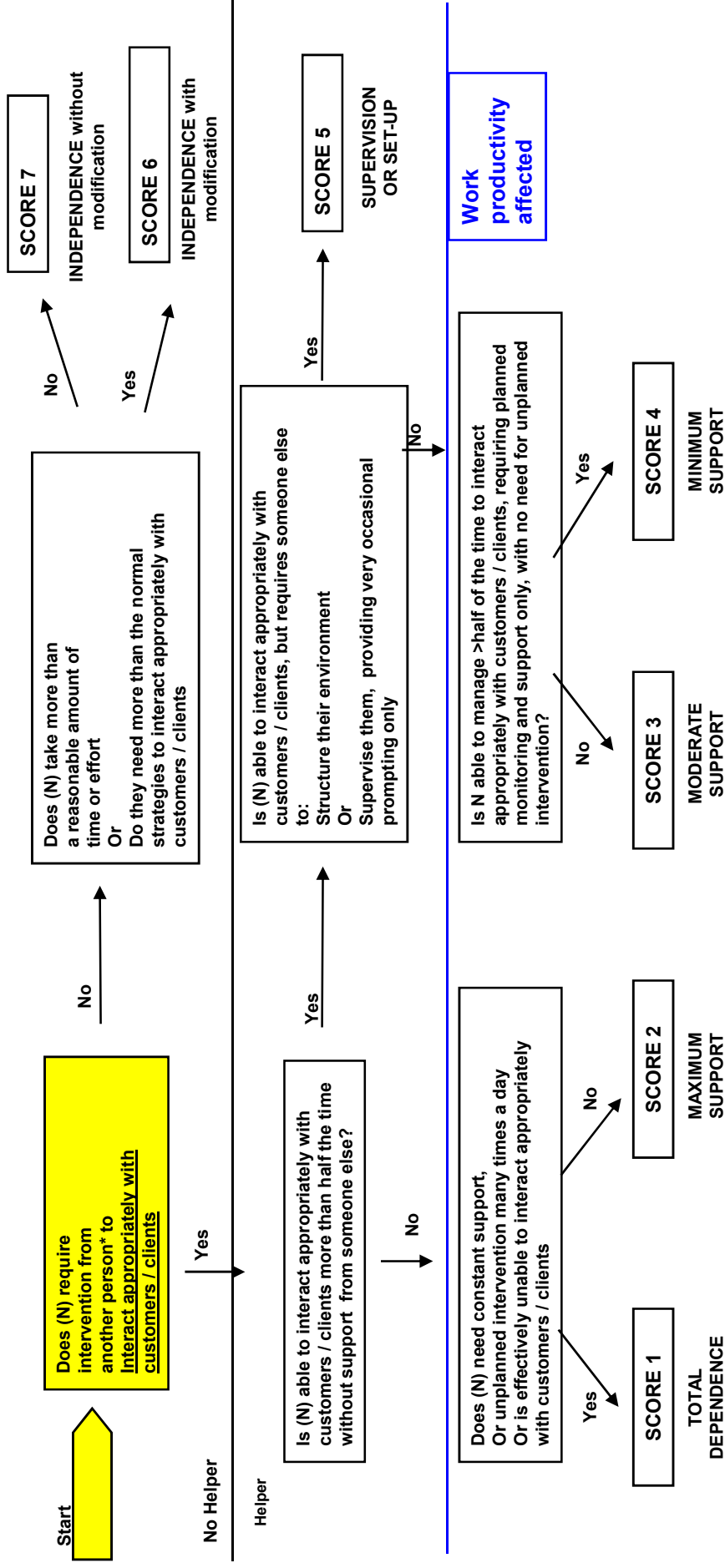
**Level 1:**  
Effectively unable or requires constant supervision with intervention/help *many times a day*

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support



## 14. INTERPERSONAL SKILLS (CUSTOMERS / CLIENTS)

Interpersonal relationships (customers / clients) includes:  
Interpersonal skills, appropriate professional and social interaction with customers / clients



### Notes:

#### Level 7:

No problem – interact appropriately with customers / clients independently

#### Level 6:

Interacts appropriately with customers / clients, but takes more than the reasonable amount of time or effort, or requires strategies. Able to self-prompt and correct.

*There is minimal reduction in work productivity*

#### Level 5:

Able to interact appropriately with customers / clients, but requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

#### Level 3:

Able to manage >half of the time interact appropriately with customers / clients.  
Requires infrequent unplanned intervention/help on top of regular monitoring, *(not every day)*  
*Work productivity moderately affected – unable to do a significant part of their job*

#### Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring *(on most days)*  
*Work productivity severely affected – unable to do a substantial part of their job*

#### Level 1:

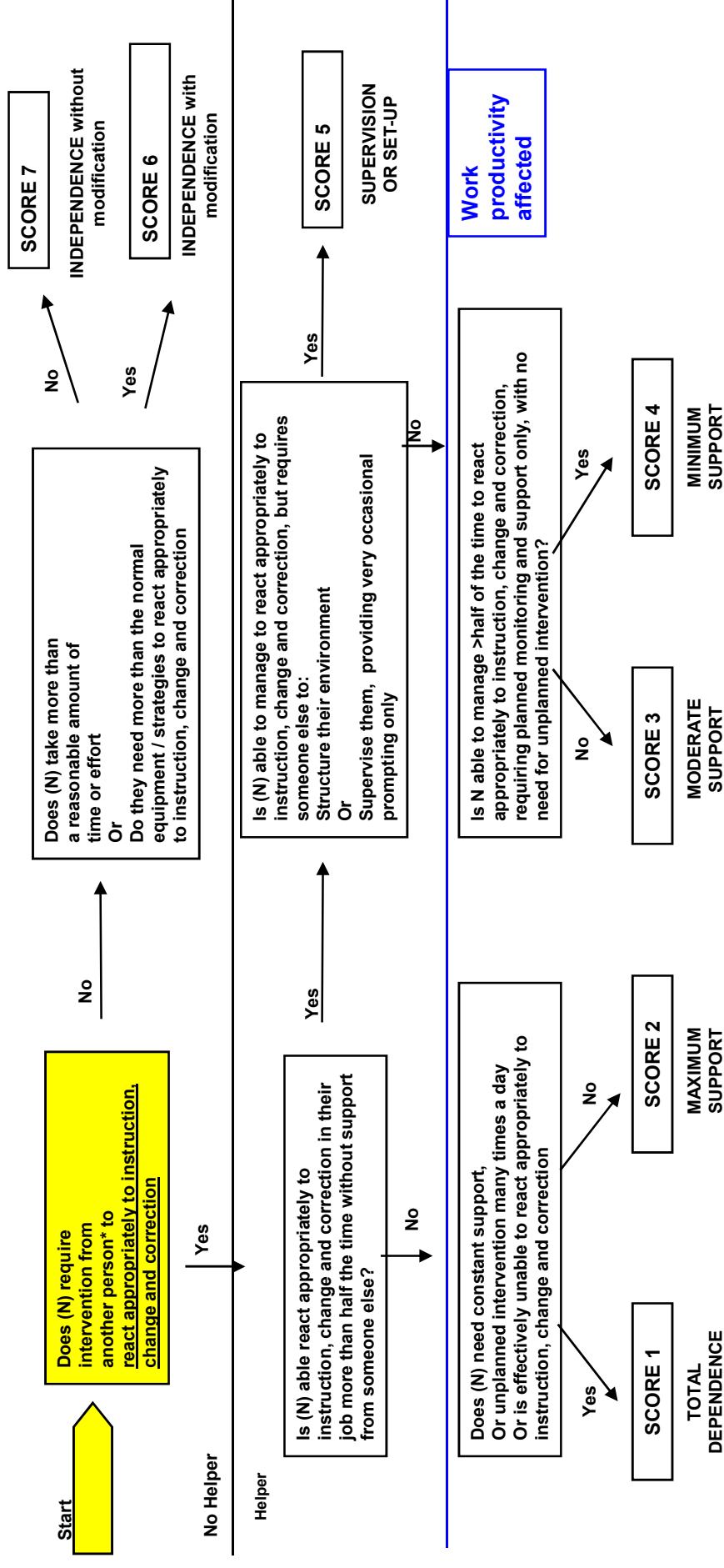
Effectively unable or requires constant supervision with intervention/help *many times a day*

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

## 15. DEALING WITH INSTRUCTION, CHANGE AND CORRECTION

**Dealing with instruction, change and correction includes:**

Appropriate reaction to supervisory instruction and/or correction regarding work activities, ability to correct errors, accept changes in work tasks, etc.



*Work productivity only mildly affected – unable to do some parts of their job*

Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

**Pilot test questions: assessor**

<b>Participant ID:</b>	<b>Time taken to complete PAWSS (min):</b>
Any items that could not be completed? Item numbers and reasons.	
Any items that were difficult to assign a score? Item numbers and reasons.	
Any items that seemed problematic for the client (in terms of acceptability)? Item numbers and information.	
Any other issues or comments?	

## Pilot test questions: injured worker

Participant ID:		
Do you think the things the PAWSS assesses are <u>relevant to your work situation</u> ?	Yes	No
Comments:		
Are there any items that you feel <u>uncomfortable giving information</u> about?		
Yes	No	
Comments (please tell us which items):		
Is there anything you think is <u>missing from the PAWSS measure</u> ?		
Yes	No	
Comments (please tell us what should be included):		
Who do you think should be involved in providing information to make sure the PAWSS is completed accurately?		
Me	Yes	No
My employer	Yes	No
Workplace assessor	Yes	No
Other health professional (please state who)	Yes	No
Other person (please state who)	Yes	No
Any other comments?		

19 June 2008

Professor Kathryn McPherson  
School of Rehabilitation & Occupation Studies  
Auckland University of Technology  
Private Bag 92006  
**Auckland**

Dear Kathryn

**NTX/08/04/035**      **Supports needed for returning to work: Developing and testing a new measure of work-ability: PIS/Cons V#2, 14/04/08**  
Principal Investigator: Professor Kathryn McPherson, Auckland University of Technology  
Co-Investigator: Ms Joanna Fadyl

Thank you for the signed copy of the agreement between researcher and the ACC, received today. The above study has been given ethical approval by the **Northern X Regional** Ethics Committee. A list of members of this committee is attached.

**Approved Documents**

- Participant Information Sheet/Consent Form Phases 1 & 2, V#2 dated 14 April 2008
- Participant Information Sheet/Consent Form Phase 3, V#2 dated 14 April 2008
- Participant Information Sheet/Consent Form (Stakeholder) Phase 1, V#2 dated 14 April 2008
- Participant Information Sheet/Consent Form (Case Manager Assessor) Phase 2, V#2 dated 14 April 2008
- Participant Information Sheet/Consent Form (Case Manager Assessor) Phase 3, V#2 dated 14 April 2008
- Verbal Consent Form Phases 1 & 2, V#2 dated 14 April 2008
- Verbal Consent Form Phase 3, V#2 dated 14 April 2008

**Certification**

The Committee is satisfied that this study is not being conducted principally for the benefit of the manufacturer or distributor of the medicine or item in respect of which the trial is being carried out.

**Accreditation**

The Committee involved in the approval of this study is accredited by the Health Research Council and is constituted and operates in accordance with the Operational Standard for Ethics Committees, April 2006.

**Progress Reports**

The study is approved until 31 October 2009. However, the Committee will review the approved application in twelve months time and notify the Principal Investigator if it withdraws approval. It is the Principal Investigator's responsibility to forward a progress report covering all sites prior to ethical review of the project by **19 June 2009**. The form should be forwarded to you two months prior to this date but, if not, the report form is available on <http://www.ethicscommittees.health.govt.nz> (forms – progress report). Please note that failure to provide a progress report may result in the withdrawal of ethical approval. A final report is also required at the conclusion of the study.

### **Final Report**

A final report is required at the end of the study. The report form is available on <http://www.ethicscommittees.health.govt.nz> (progress report) and should be forwarded along with a summary of the results. If the study will not be completed as advised, please forward a progress report and an application for extension of ethical approval one month before the above date.

### **Requirements for SAE Reporting**

The Principal Investigator will inform the Committee as soon as possible of the following:

- all serious adverse events occurring during the study which are considered related to the study.

All SAE reports must be signed by the Principal Investigator and include a comment on whether he/she considers there are any ethical issues relating to this study continuing due to this adverse event. It is assumed by signing the report, the Principal Investigator has undertaken to ensure that all New Zealand investigators are made aware of the event.

### **Amendments**

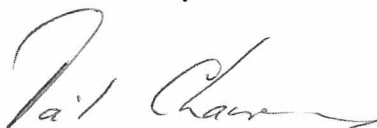
All amendments (advertisements, posters, website material) to the study must be advised to the Committee prior to their implementation, except in the case where immediate implementation is required for reasons of safety. In such cases the Committee must be notified as soon as possible of the change.

**Please quote the above ethics committee reference number in all correspondence.**

The Principal Investigator is responsible for advising any other study sites of approvals and all other correspondence with the Ethics Committee.

**It should be noted that Ethics Committee approval does not imply any resource commitment or administrative facilitation by any healthcare provider within whose facility the research is to be carried out. Where applicable, authority for this must be obtained separately from the appropriate manager within the organisation.**

Yours sincerely



**Pat Chainey  
Administrator  
Northern X Regional Ethics Committee**



**Northern X Regional Ethics Committee**

Ministry of Health  
3rd Floor, Unisys Building  
650 Great South Road, Penrose  
Private Bag 92 522  
Wellesley Street, Auckland  
Phone (09) 580 9105  
Fax (09) 580 9001

e-mail: [pat\\_chainey@moh.govt.nz](mailto:pat_chainey@moh.govt.nz)

26 November 2008

Professor Kathryn McPherson  
School of Rehabilitation & Occupation Studies  
Auckland University of Technology  
Private Bag 92006  
**AUCKLAND**

Dear Kathryn

**NTX/08/04/035**      **Supports needed for returning to work: Developing and testing a new measure of work-ability: PIS/Cons V#2, 14/04/08: Prot/amend 28/10/08: PIS/Cons Ph.2 V#1 30/9/08**

Principal Investigator: Professor Kathryn McPherson, Auckland University of Technology  
Co-Investigator: Ms Joanna Fadyl

Thank you for your letter dated 28 October 2008.

The following amendment was reviewed by the Northern X Regional Ethics Committee at its meeting on 11 November 2008.

Ethical approval has been given for :

- Protocol amendment – letter dated 28/10/08
- P.I.S. Cons Ph. 2, V#1 dated 30 September 2008.
- Consent Form for clients requesting that information collected for research be considered by their workplace assessor for their rehabilitation plan.

Received:  
Locality Assessment Forms for IPH and Ergowise

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'Pat Chainey'.

**Pat Chainey**  
**Administrator**  
**Northern X Regional Ethics Committee**

12 May 2008

Dear Kath,

### **ACC Research Ethics Committee Decision Notification**

Testing a new measure of work-ability. Prof Kath McPherson, AUT. Ref 125. Research request. (re-submission)

The ACC Research Ethics Committee considered and approved this study at its meeting 7 May 08.

In its discussion, the Committee made the following points:

1. Regarding the provision of informed consent in the case of Moderate to serious TBI, it was noted that if a claimant is in such a situation as being unable to give informed consent, their inclusion in the study was of negligible value and they would not be included. Therefore the issue of inclusion without informed consent should not arise in this study.
2. In terms of the matter of restriction on publication which was raised by the Northern Regional Ethics Committee, it was noted that this is not a decision for the Committee and you should work with ACC Research Services to clarify the issue.

Ethical approval for this study is given for one year at which time the Committee will ask you to complete a Monitoring Form. If for any reason the proposal is changed in any significant way the ACC Research Ethics Committee must be advised immediately.

The Committee wishes you well and trusts that the research will have productive outcomes.

**Yours sincerely**

Jim Robertson, Secretary  
**PP Sharron Cole, Co - Chair**  
**ACC Research Ethics Committee**



6 November 2008

Professor Kathryn McPherson  
Division of Rehabilitation and Occupation Studies  
Akoranga Campus  
90 Akoranga Drive  
Northcote  
AUCKLAND 1020

Dear Kath

**ACC Research Ethics Committee Decision Notification**

**RE: Testing a new measure of work-ability. Approval request #149.**

Thank you for your re-submission outlining changes to your research proposal.

The ACC Research Ethics Committee considered this study at its meeting on 5 November 2008. The request was approved.

During discussion the committee noted the following points and suggestions for improving the patient information sheet:

- Some language could be changed to improve clarity for patients, for example, the removal of double negatives.
- The Year of the Injury Prevention, Rehabilitation, and Compensation Act is 2001.

It was also noted that all workplace assessors should be required to sign a confidentiality agreement.

The Committee would appreciate receiving a copy of the Northern X Regional Ethics Committee's approval for our records.

The Committee trusts that the research will have productive outcomes.

Yours sincerely

Fiona Conlon, Secretary  
**PP Alison Douglass, Co - Chair**  
**ACC Research Ethics Committee**

<<date>>

<<name>>

<<address 1>>

<<address 2>>

<<address 3>>

Dear <<first name>><<last name>>

**An invitation to participate in a Research Study: “Supports needed for returning to work: A New Measure”**

ACC is supporting researchers at AUT University to develop and test a new measure of work-ability which aims to a) determine work-ability after injury and b) determine related rehabilitation and workplace support needs. ACC has identified you from their records as a possible participant in this research.

AUT University will conduct the research in phases, and you are being invited to participate in one or both of the first 2 phases:

Phase 1: For phase 1, AUT University will conduct interviews in the next couple of months with a range of stakeholders (including injured people, ACC case managers, employers and vocational rehabilitation professionals) to find out what is important for an injured person for being able to return to work. If you choose to participate in an interview, only you and the interviewer (and perhaps a support person if you choose) would be present, and you will be asked about what things **you** think are important to be able to return to work after an injury. Please see the enclosed information sheet for further details about the study and about the interviews.

Phase 2: For phase 2, AUT University will test the new work-ability measure with a small number of injured people. If you choose to participate in testing the new measure, you will be asked questions about your current ability in relation to aspects of your job, or potential job. Your individual results will not be available to ACC or your employer and it will have no effect on your current rehabilitation. Please see the enclosed information sheet for further details about the study and about being involved in testing the work-ability measure.

Your participation is completely voluntary. Whether or not you decide to take part has no effect on the status of your claim, or your relationship with ACC. **Your comments will be kept confidential by the university researchers and will not be shared with ACC or your employer.** ACC will only receive a summary report which will not identify any individuals.

If you have any other questions please phone the principal researcher, Kath McPherson at AUT (09 921 9999 ext 7110) or if you would like to talk with some at ACC, please call Sarah Clark at ACC (04 918 4099).

If, after reading the information, you would be willing to take part in this research, please complete the consent form included with this letter and return it to the researchers in the envelope provided.

Thank you for taking the time to read this letter. It is only with the assistance of people like you that ACC can improve our services and the outcomes for our claimants.

Yours sincerely

ACC signatory

Department

**This study has received ethical approval from the Northern X Regional Ethics Committee**

## **Participant Information Sheet**

### **Developing and testing a new measure of work-ability after injury** Phases 1 and 2: Developing the measure

Principal Investigator	Kath McPherson	Phone: 921 9999 ext. 7110
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#### **Invitation**

Kia ora, talofa lava and hello. You are invited to take part in some research into a new measure of how people will cope at work after an injury. We appreciate your time in reading this information. This information sheet will explain the research study. Please feel free to ask any questions about the study or about anything you do not understand. Please remember:

- Your participation in this study is entirely voluntary (your choice). You do not have to take part in this study, and whether you take part or not will in **no way** affect your claim/compensation.
- If you do agree to take part you are free to withdraw at any time, without having to give a reason.
- The study is being carried out by researchers based at AUT University. **This team is independent from ACC or any provider of services.**

**What is the purpose of the study?** Matching the current abilities of the worker to the demands of their job is important for planning supports and rehabilitation to get people back to work after an injury. It would therefore be useful to have a standard measure of work-ability that could provide information about what workplace supports and/or rehabilitation planning is needed. We are keen to find out what you think about what is important to be able to cope in the workplace after an injury.

**What happens in the study?** If you agree to take part in this stage of the research, we would ask you if you are willing to take part in an interview about what things you think are important to be able to return to work after an injury. If you do the interview, this would take approximately one hour and would be at a location convenient for you.

We would also ask if you would be willing to complete the measure with a researcher, independent assessor or professional case manager (who works for ACC but is not involved in your claim or rehabilitation). If you take part in testing the measure, this would involve a conversation with the assessor. This would take approximately one hour, and take place at a location convenient for you. If you choose to, you may also have a support person present. It will have no effect on your usual rehabilitation, and no information is passed on to ACC or anyone else but the researchers. The professional case manager will have signed a special consent form with a confidentiality agreement. If you discover new information while taking part in the research that you think would be helpful to your rehabilitation, you can choose to discuss this information with your case manager or health professional yourself, or request a researcher pass on the information (with your written consent).

We would also ask for your consent for the person that completes the measure with you to have access to your ACC case notes for the purpose of completing the measure. Because we

want to talk to people from a range of different backgrounds, not everyone who agrees will be asked to take part in an interview or testing the measure. However, everyone who agrees to take part will be invited to comment on the new measure by mail or telephone if preferred.

**How are people chosen to be asked to be part of the study?** People are approached for this study through the research office at ACC.

**Who is eligible to participate?** We want to talk to adults who have had to take time off work because of an injury. We hope to talk to people with a variety of backgrounds and experiences. You are not eligible to take part in this study if you are unable to take part in an interview with a researcher.

**What are the risks of this study?** There should not be any risk to you from this study. However, it is possible you may feel uncomfortable talking about experiences related to your injury that may have been difficult for you. We hope that you will feel comfortable during the interview or measure testing, however if you feel that any question or topic may cause you distress, you do not have to answer it. No information that can be linked to you will be passed on to anyone outside the research team.

**How will this study help?** The information we gain from this study will help us to better assess what can be done to help people to manage work, or return to work after an injury. This information will help ACC, health professionals and employers provide support for people after injury. Finally, the information you give will help other people manage at work or return to work after injury.

**What are the costs of participating in the project?** There will not be any cost to you except your time – about one hour. Any cost of travel to the location of the research will be compensated.

**How will my privacy be protected?** All information you give will be kept confidential and your name will not be known to anyone but the researchers named on this information sheet. We will keep all information locked in a cabinet. Any reports will make sure that you cannot be identified. Additionally, it is formally agreed with ACC that participation in this study will not affect any claim decisions for participants.

It is possible that you may raise concerns about your experiences during the research. If concerns do arise, these will be reported to ACC or the relevant party as part of a summary report and will not contain any information that could identify you as an individual.

**What will happen with the results?** We will write a report for ACC about the study. We may also present the information at a conference or in a journal. No information that could identify you will be used in reporting the research. The measurement tool produced will be freely available (i.e. no commercial gain).

**Will I be able to have a copy of the results?** If you would like a summary of the results it will be sent to you at the end of the study. The final results will not be available until about 12 months after you take part.

**Compensation.** No harm is likely to happen to you from taking part in this study. However, in the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act.

ACC cover is not automatic and your case will need to be assessed by ACC according to the provisions of the 2002 Injury Prevention, Rehabilitation and Compensation Act. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors such as whether you are an earner or non-earner. ACC usually provides only partial reimbursement of costs and expenses and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators. If you have any questions about ACC, contact your nearest ACC office.

**If you have any concerns or questions?**

If you have any questions please feel free to contact one of the researchers:

Kath McPherson                      Phone: (09) 921-9999 ext. 7110  
E-mail: [kathryn.mcpherson@aut.ac.nz](mailto:kathryn.mcpherson@aut.ac.nz)

Jo Fadyl                                Phone: (09) 921-9999 ext 7675  
E-mail: [joanna.fadyl@aut.ac.nz](mailto:joanna.fadyl@aut.ac.nz)

If you have any queries or concerns regarding your rights as a participant in this research study, you can contact an independent Health and Disability Advocate. This is a free service provided under the Health & Disability Commissioner Act:

Telephone (NZ wide):	0800-555-050
Free Fax (NZ wide):	0800-2787-7678 (0800 2 SUPPORT)
Email:	<a href="mailto:advocacy@hdc.org.nz">advocacy@hdc.org.nz</a>

**Statement of ACC approval**

This study has received approval from ACC although as noted above, the study is being done by a team of independent researchers.

**Statement of Ethics Approval**

This study has received ethical approval from the Northern X Regional Ethics Committee.

## **Participant Information Sheet (Stakeholder)**

### **Developing and testing a new measure of work-ability after injury** Phase 1: Developing the measure

Principal Investigator	Kath McPherson	Phone: 921 9999 ext. 7110
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#### **Invitation**

Kia ora, talofa lava and hello. You are invited to take part in some research into a new measure of how people will cope at work after an injury. We appreciate your time in reading this information. This information sheet will explain the research study. Please feel free to ask any questions about the study or about anything you do not understand. Please remember:

- Your participation in this study is entirely voluntary (your choice). You do not have to take part in this study, and whether you take part or not will not result in any disadvantage to you.
- If you do agree to take part you are free to withdraw at any time, without having to give a reason.
- The study is being carried out by researchers based at AUT University. **This team is independent from ACC or any provider of services.**

**What is the purpose of the study?** Matching the current abilities of the worker to the demands of their job is important for planning supports and rehabilitation to get people back to work after an injury. It would therefore be useful to have a standard measure of work-ability that could provide information about what workplace supports and/or rehabilitation planning is needed. We are keen to find out what you think about what is important to be able to cope in the workplace after an injury.

**What happens in the study?** If you agree to take part in this stage of the research, we would ask you if you are willing to take part in an interview or focus group about what things you think are important for people to be able to return to work after an injury. If you do take part, this would take approximately 1 – 1 ½ hours and would be at a location convenient for you.

Because we want to talk to people from a range of different backgrounds, not everyone who agrees will be asked to take part in an interview or testing the measure. However, everyone who agrees to take part will be invited to comment on the new measure by mail or telephone if preferred.

**How are people chosen to be asked to be part of the study?** People are approached for this study through the research office at ACC, through local organisations that support people returning to work after an injury, or through your indication during previous contact with the research team that you would like to take part in future vocational rehab research.

**Who is eligible to participate?** We want to talk to 1) health professionals involved in vocational rehabilitation, 2) employers and 3) ACC operational staff. We hope to talk to people with a variety of backgrounds and experiences. You are not eligible to take part in this study if you are unable to take part in an interview or focus group with a researcher.

**What are the risks of this study?** There should not be any risk to you from this study. However, it is possible you may feel uncomfortable talking about some experiences. We hope that you will feel comfortable during the interview or focus group, however if you feel that any question or topic may cause you distress, you do not have to answer it. No information that can be linked to you will be passed on to anyone outside the research team.

**How will this study help?** The information we gain from this study will help us to better assess what can be done to help people to manage work, or return to work after an injury. This information will also help ACC, health professionals and employers provide support for people after injury.

**What are the costs of participating in the project?** There will not be any cost to you except your time – about 1 – 1 ½ hours. Any cost of travel to the location of the research will be compensated.

**How will my privacy be protected?** All information you give will be kept confidential and your name will not be known to anyone but the researchers named on this information sheet. We will keep all information locked in a cabinet. Any reports will make sure that you cannot be identified.

**What will happen with the results?** We will write a report for ACC about the study. We may also present the information at a conference or in a journal. No information that could identify you will be used in reporting the research. The measurement tool produced will be freely available (i.e. no commercial gain).

**Will I be able to have a copy of the results?** If you would like a summary of the results it will be sent to you at the end of the study. The final results will not be available until about 12 months after you take part.

**Compensation.** No harm is likely to happen to you from taking part in this study. However, in the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act. ACC cover is not automatic and your case will need to be assessed by ACC according to the provisions of the 2002 Injury Prevention, Rehabilitation and Compensation Act. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors such as whether you are an earner or non-earner. ACC usually provides only partial reimbursement of costs and expenses and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators. If you have any questions about ACC, contact your nearest ACC office.

**If you have any concerns or questions?**

If you have any questions please feel free to contact one of the researchers:

Kath McPherson                      Phone: (09) 921-9999 ext. 7110  
E-mail: [kathryn.mcpherson@aut.ac.nz](mailto:kathryn.mcpherson@aut.ac.nz)

Jo Fadyl                                  Phone: (09) 921-9999 ext 7675  
E-mail: [joanna.fadyl@aut.ac.nz](mailto:joanna.fadyl@aut.ac.nz)

If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact your professional organisation.

**Statement of ACC approval**

This study has received approval from ACC although as noted above, the study is being done by a team of independent researchers.

**Statement of Ethics Approval**

This study has received ethical approval from the Northern X Regional Ethics Committee.



## **Participant Information Sheet**

### **Developing and testing a new measure of work-ability after injury** Phase 2: Pilot testing the measure

Principal Investigator	Kath McPherson	Phone: 921 9999 ext. 7110
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#### **Invitation**

Kia ora, talofa lava and hello. You are invited to take part in some research into a new measure of how people will cope at work after an injury. We appreciate your time in reading this information. This information sheet will explain the research study. Please feel free to ask any questions about the study or about anything you do not understand. Please remember:

- Your participation in this study is entirely voluntary (your choice). You do not have to take part in this study, and whether you take part or not will in **no way** affect your ACC claim/compensation.
- If you do agree to take part you are free to withdraw at any time, without having to give a reason.
- The study is funded by ACC, but it is being carried out by researchers based at AUT University. **This research team is independent from ACC or any provider of services.**

**What is the purpose of the study?** Matching the current abilities of the worker to the demands of their job is important for planning supports and rehabilitation to get people back to work after an injury. It would therefore be useful to have a standard measure of work-ability that could provide information about what workplace supports and/or rehabilitation planning is needed. We are keen to find out what you think about what is important to be able to cope in the workplace after an injury.

#### **What happens in the study?**

If you take part in this stage of the research, you would complete the new measure with an assessor (who is a health professional), along with your normal workplace assessment and return to work plan. This would involve a little extra time (up to an extra hour) and possibly a more in-depth conversation with the assessor about aspects of your work and your injury. This would happen at the place and time you would normally have your workplace assessment. If you choose to, you may also have a support person present. It will have no effect on your usual rehabilitation, and no information is passed on to ACC or anyone else but the researchers. If you discover new information while taking part in the research that you think would be helpful to your rehabilitation, you can choose to discuss this information with your case manager or health professional yourself, or request a researcher pass on the information (with your written consent).

We would also ask for your consent for the person that completes the measure with you to have access to your ACC case notes for the purpose of completing the measure.

#### **How are people chosen to be asked to be part of the study?**

People are being asked if they would like to take part in the research in addition to their usual workplace assessment, if they are scheduled to have a workplace assessment with one of the professionals who are helping to test the new measure.

**Who is eligible to participate?** We want to talk to adults who have had to take time off work because of an injury. You are not eligible to take part in this study if you are unable to take part in a workplace assessment with an assessor.

**What are the risks of this study?** There should not be any risk to you from this study. However, it is possible you may feel uncomfortable talking about experiences related to your injury that may have been difficult for you. We hope that you will feel comfortable during the measure testing, however if you feel that any question or topic may cause you distress, you do not have to answer it. No information that can be linked to you will be passed on to anyone outside the research team.

**How will this study help?** The information we gain from this study will help us to better assess what can be done to help people to manage work, or return to work after an injury. This information will help ACC, health professionals and employers provide support for people after injury. Finally, the information you give will help other people manage at work or return to work after injury.

**What are the costs of participating in the project?** There will not be any cost to you except your time – up to one hour. Any extra cost of travelling to the location of the research will be compensated.

**How will my privacy be protected?** All information you give will be kept confidential and your name will not be known to anyone but the researchers named on this information sheet. We will keep all information locked in a cabinet. Any reports will make sure that you cannot be identified. Additionally, it is formally agreed with ACC that participation in this study will not affect any claim decisions for participants.

It is possible that you may raise concerns about your experiences during the research. If concerns do arise, these will be reported to ACC or the relevant party as part of a summary report and will not contain any information that could identify you as an individual.

**What will happen with the results?** We will write a report for ACC about the study. We may also present the information at a conference and/or in a scientific journal. No information that could identify you will be used in reporting the research. The measurement tool produced will be freely available (i.e. no commercial gain).

**Will I be able to have a copy of the results?** If you would like a summary of the results it will be sent to you at the end of the study. The final results will not be available until about 12 months after you take part.

**Compensation.** No harm is likely to happen to you from taking part in this study. However, in the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act. ACC cover is not automatic and your case will need to be assessed by ACC according to the provisions of the 2002 Injury Prevention, Rehabilitation and Compensation Act. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors such as whether you are an earner or non-earner. ACC usually provides

only partial reimbursement of costs and expenses and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators. If you have any questions about ACC, contact your nearest ACC office.

**If you have any concerns or questions?**

If you have any questions please feel free to contact one of the researchers:

Kath McPherson	Phone: (09) 921-9999 ext. 7110 E-mail: <a href="mailto:kathryn.mcpherson@aut.ac.nz">kathryn.mcpherson@aut.ac.nz</a>
Jo Fadyl	Phone: (09) 921-9999 ext 7675 E-mail: <a href="mailto:joanna.fadyl@aut.ac.nz">joanna.fadyl@aut.ac.nz</a>

If you have any queries or concerns regarding your rights as a participant in this research study, you can contact an independent Health and Disability Advocate. This is a free service provided under the Health & Disability Commissioner Act:

Telephone (NZ wide):	0800-555-050
Free Fax (NZ wide):	0800-2787-7678 (0800 2 SUPPORT)
Email:	<a href="mailto:advocacy@hdc.org.nz">advocacy@hdc.org.nz</a>

**Statement of ACC approval**

This study has received approval from ACC although as noted above, the study is being done by a team of independent researchers.

**Statement of Ethics Approval**

This study has received ethical approval from the Northern X Regional Ethics Committee.



## Consent Form

### **Supports needed for return to work: A new measure Phases 1 & 2: Developing the measure**

Principal Investigator: Prof Kath McPherson      Phone: (09) 921 9999 ext. 7110

Researcher: Jo Fadyl      Phone: (09) 921 9999 ext. 7675

- I have read or had read to me, and I understand, the information sheet dated 14<sup>th</sup> April 2008 for volunteers taking part in this study testing a new measure of work ability after injury. I have had the opportunity to ask questions. I am satisfied with the answers I have been given.
- I have been informed that I can use whanau support or a friend to help me ask questions and understand the study.
- I understand that taking part is entirely voluntary (my choice) and that I may withdraw from the study at any time and this will in no way affect my future compensation/claim.
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.
- I am aware that the exception to confidentiality will be if the interviewer has significant concerns about the safety of myself or others.
- I understand the compensation provisions for this study.
- I have had time to consider whether to take part and I know who to contact if I have any questions about the study.

	<i>Please Tick</i>
1. I would be willing to take part in an interview about what is important to be able to return to work after an injury	Yes <input type="radio"/> No <input type="radio"/>
2. I would be willing to take part in testing the new measure by completing it with a researcher or independent assessor	Yes <input type="radio"/> No <input type="radio"/>
3. IF YES TO 2: I give consent for the researcher or independent assessor to access my ACC case notes for the purpose of completing the measure.	Yes <input type="radio"/> No <input type="radio"/>
4. I have family/whanau member/s who would like to be involved	Yes <input type="radio"/> No <input type="radio"/>
5. I wish to receive a summary of the results	Yes <input type="radio"/> No <input type="radio"/>

I \_\_\_\_\_ (print full name) consent  
to take part in this study.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

**Participant Contact Details:**

Address:.....

.....

Phone Number:.....

So we can identify the range of people volunteering for this research, please could you also  
answer the following questions:

Which broad ethnic group(s) do you identify with?

- ☐ New Zealand Māori
- ☐ New Zealand European / Pakeha
- ☐ Pacific
- ☐ European
- ☐ North American
- ☐ Asian
- ☐ Other (please specify) \_\_\_\_\_

Please indicate your age bracket:

- ☐ 18-25
- ☐ 25-35
- ☐ 35-45
- ☐ 45-55
- ☐ 55-65
- ☐ 65 or over

Please indicate which of these applies to your usual work day:

- ☐ Mostly sitting
- ☐ Mostly standing
- ☐ Mostly moving around
- ☐ Mostly a mix of sitting and standing
- ☐ Mostly a mix of sitting and moving around
- ☐ Mostly a mix of standing and moving around
- ☐ An equal mix of sitting, standing and moving around
- ☐ Other (please specify) \_\_\_\_\_



## Consent Form (Stakeholder)

### **Supports needed for return to work: A new measure Phase 1: Developing the measure**

Principal Investigator: Prof Kath McPherson      Phone: (09) 921 9999 ext. 7110

Researcher: Jo Fadyl      Phone: (09) 921 9999 ext. 7675

- I have read or had read to me, and I understand, the information sheet dated 14<sup>th</sup> April 2008 for volunteers taking part in this study developing a new measure of work ability after injury. I have had the opportunity to ask questions. I am satisfied with the answers I have been given.
- I have been informed that I can use whanau support or a friend to help me ask questions and understand the study.
- I understand that taking part is entirely voluntary (my choice) and that I may withdraw from the study at any time and this will not result in any disadvantage to me.
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.
- I am aware that the exception to confidentiality will be if the interviewer has significant concerns about the safety of myself or others.
- I understand the compensation provisions for this study
- I have had time to consider whether to take part and I know who to contact if I have any questions about the study.

	<i>Please Tick</i>
1. I would be willing to take part in an <b>interview</b> about what is important to be able to return to work after an injury	Yes <input type="radio"/> No <input type="radio"/>
2. I would be willing to take part in a <b>focus group</b> about what is important to be able to return to work after an injury	Yes <input type="radio"/> No <input type="radio"/>
3. I wish to receive a summary of the results	Yes <input type="radio"/> No <input type="radio"/>

I \_\_\_\_\_ (print full name) consent  
to take part in this study.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

**Participant Contact Details:**

Address:.....

.....

Phone Number:.....

So we can identify the range of people volunteering for this research, please could you also  
answer the following questions:

Which broad ethnic group(s) do you identify with?

- ☐ New Zealand Māori
- ☐ New Zealand European / Pakeha
- ☐ Pacific
- ☐ European
- ☐ North American
- ☐ Asian
- ☐ Other (please specify) \_\_\_\_\_

Please indicate your age bracket:

- ☐ 18-25
- ☐ 25-35
- ☐ 35-45
- ☐ 45-55
- ☐ 55-65
- ☐ 65 or over

Please indicate which of these applies to your usual work day:

- ☐ Mostly sitting
- ☐ Mostly standing
- ☐ Mostly moving around
- ☐ Mostly a mix of sitting and standing
- ☐ Mostly a mix of sitting and moving around
- ☐ Mostly a mix of standing and moving around
- ☐ An equal mix of sitting, standing and moving around
- ☐ Other (please specify) \_\_\_\_\_



## Consent Form

### **Supports needed for return to work: A new measure Phase 2: Pilot testing the measure**

Principal Investigator: Prof Kath McPherson Phone: (09) 921 9999 ext. 7110

Researcher: Jo Fadyl Phone: (09) 921 9999 ext. 7675

- I have read or had read to me, and I understand, the information sheet dated 30<sup>th</sup> September 2008 for volunteers taking part in this study testing a new measure of work ability after injury. I have had the opportunity to ask questions. I am satisfied with the answers I have been given.
- I have been informed that I can use whanau support or a friend to help me ask questions and understand the study.
- I understand that taking part is entirely voluntary (my choice) and that I may withdraw from the study at any time and this will in no way affect my future compensation/claim.
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.
- I am aware that the exception to confidentiality will be if the interviewer has significant concerns about the safety of myself or others.
- I understand the compensation provisions for this study.
- I have had time to consider whether to take part and I know who to contact if I have any questions about the study.

	<i>Please Tick</i>
1. I would be willing to take part in testing the new measure by completing it with an assessor	Yes <input type="radio"/> No <input type="radio"/>
2. IF YES TO 2: I give consent for the assessor to access my ACC case notes for the purpose of completing the measure.	Yes <input type="radio"/> No <input type="radio"/>
3. I have family/whanau member/s who would like to be involved	Yes <input type="radio"/> No <input type="radio"/>
4. I wish to receive a summary of the assessment information recorded for the research for my own records	Yes <input type="radio"/> No <input type="radio"/>
5. I wish to receive a summary of the results	Yes <input type="radio"/> No <input type="radio"/>



I \_\_\_\_\_ (print full name) consent  
to take part in this study.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

**Participant Contact Details:**

Address:.....

.....

Phone Number:.....

So we can identify the range of people volunteering for this research, please could you also  
answer the following questions:

Which broad ethnic group(s) do you identify with?

- ☐ New Zealand Māori
- ☐ New Zealand European / Pakeha
- ☐ Pacific
- ☐ European
- ☐ North American
- ☐ Asian
- ☐ Other (please specify) \_\_\_\_\_

Please indicate your age bracket:

- ☐ 18-25
- ☐ 25-35
- ☐ 35-45
- ☐ 45-55
- ☐ 55-65
- ☐ 65 or over

Please indicate which of these applies to your usual work day:

- ☐ Mostly sitting
- ☐ Mostly standing
- ☐ Mostly moving around
- ☐ Mostly a mix of sitting and standing
- ☐ Mostly a mix of sitting and moving around
- ☐ Mostly a mix of standing and moving around
- ☐ An equal mix of sitting, standing and moving around
- ☐ Other (please specify) \_\_\_\_\_

## **Consent Form**

### **Request to have information collected for research considered by my workplace assessor for my rehabilitation plan**

- I \_\_\_\_\_ (print full name) give consent for information collected as part of the research project: “Supports needed for return to work: A new measure: Pilot testing the measure” to be considered for my rehabilitation in addition to my usual workplace assessment.

- I would like the following parts of the research information considered (please tick):
  - All the information collected as part of the research
  - The following parts of the research information

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\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

I \_\_\_\_\_ (workplace assessor) agree that it is appropriate to consider the research information in this person’s rehabilitation plan.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

# The PAWSS

(Participation And Work-ability Support Scale)

Version 2.4  
Modified 18.02.09

## Developed by:

**Prof Lynne Turner-Stokes**  
King's College London, UK  
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**Prof Kathryn McPherson**  
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**Joanna Fadyl (2<sup>nd</sup> edition)**  
Auckland University of Technology, NZ  
Email: [joanna.fadyl@aut.ac.nz](mailto:joanna.fadyl@aut.ac.nz)

## Background:

The PAWSS is a measure designed to:

- a) assess the individual's ability to work and support needs in the context of their normal work environment, following the onset of acquired disability, and
- b) support decision-making with regard to vocational rehabilitation

It has 15 items across three domains of work functioning:

- Physical / Environment
- Thinking and problem solving
- Social / Behavioural.

There are also an additional 4 items related to contextual factors outside the workplace that could affect work functioning.

It should be rated with respect to the individual's ability to work in their normal work environment (or their proposed work environment if not currently employed). It is therefore sensitive to the circumstances of their employment

# Physical / environment

Item	Contents
1. Physical and motor skills	The physical and motor skills required to do the job, including upper limb function, dexterity, balance, etc.
2. Sensory and perceptual skills	The sensory and perceptual skills required to do the job
3. Access to and around the workplace (including safety-related access)	The mobility to move around as required in the work environment. Safety aspects include ability to be seen, ability to make use of safety equipment.
4. Pacing and ability to work through a normal day	Ability to manage fatigue and stamina to work through a normal working day. Includes contribution of travel time/distance.
5. Transport	Ability to manage transport / travel including: to and from work, any travel components of the job e.g. driving

# Thinking and problem solving

Item	Contents
6. Cognitive skills	Skills related to memory, attention, concentration, etc to manage the job
7. Self organisation and planning	Ability to plan and organise as required for the job. Includes work organisation, initiation, motivation.
8. Dealing with the unexpected	Ability to deal with unexpected events in the workplace, handle interruptions, problem solve, etc
9. Safety awareness (work related)	Ability to manage safety of themselves and others in the work environment
10. Communication (work related)	Communication: verbal, written, reading, comprehension, intelligibility

# Social / behavioural

Item	Contents
11. Work protocols / etiquette	Ability to adhere to normal working practices, including appropriate dress, personal presentation, time keeping.
12. Interpersonal relationships (work colleagues)	Interpersonal skills, professional and social interaction with work colleagues, including consideration of changed relationships due to time away from workplace / changed abilities.
13. Interpersonal relationships (management)	Interpersonal skills, professional interaction with management, including consideration of changed relationships due to time away from workplace / changed abilities.
14. Interpersonal skills (client / customer)	Interpersonal skills, professional and social interaction with clients / customers
15. Dealing with instruction, change and correction	Appropriate reaction to supervisory instruction and/or correction regarding work activities. Ability to correct errors, accept changes in work tasks, etc

# Contextual factors\*

Item	Contents
16. Supports outside the workplace	Access to home help, financial resources, social support, etc needed to facilitate required work functioning
17. Attitudes and feelings towards work	Attitudes and feelings about work and the work environment that affect presence at work and work productivity
18. Competing demands	Management of family, societal and legal issues that are in conflict with work commitments (including legal claims and financial compensation)
19. Knowledge, beliefs and expectations	Knowledge, beliefs, expectations and coping strategies associated with ability to return to work and function in the workplace

**\*This domain follows a slightly different scoring system.**



## Overall structure for scoring (items 1-15) – refer to item decision trees

<b>Independent</b>	
<b>Level 7</b>	<b>Independence without modification</b> No problem at any level with managing the requirements of the job
<b>Level 6</b>	<b>Independence with modification</b> Some consideration for time or effort * Or requires adaptation / strategies / equipment above the ordinary provided for the job in order to function independently. Able to self-prompt / correct or to structure their own environment. Minimal reduction in work productivity
<b>Supported working</b>	
<b>Level 5</b>	<b>Supervision / set-up</b> Requires someone else to set-up equipment or prompt on strategies Or externally structured work environment. Monitoring – with only occasional prompting / correction
<b>Level 4</b>	<b>Minimal support</b> Able to manage >75% of the time in that aspect of the job Regular planned intervention or support only Work productivity only mildly affected
<b>Level 3</b>	<b>Moderate support</b> Able to manage more than half the time in that aspect of the job Infrequent** unplanned intervention on top of regular monitoring Work productivity moderately affected
<b>Level 2</b>	<b>Maximal support</b> Able to manage less than half the time in that aspect of the job Frequent unplanned intervention on top of regular monitoring Work productivity severely affected
<b>Level 1</b>	<b>Constant support – or effectively unable</b> Effectively unable or manages less than 25% of the time Unplanned intervention many times a day
<b>Unable to score</b>	Unable to score due to insufficient information. More information required.

\*NB Level 6: 'safety' not included as maintaining safety is included as an item on its own merit.

\*\* Frequency of unplanned interventions not rigidly defined in terms of time – varies for different items  
And possibly also for different interventions. Define individually for each item if needed.  
E.g. Level 3 - Not every day; Level 2: - Most days; Level 1 - Many times a day

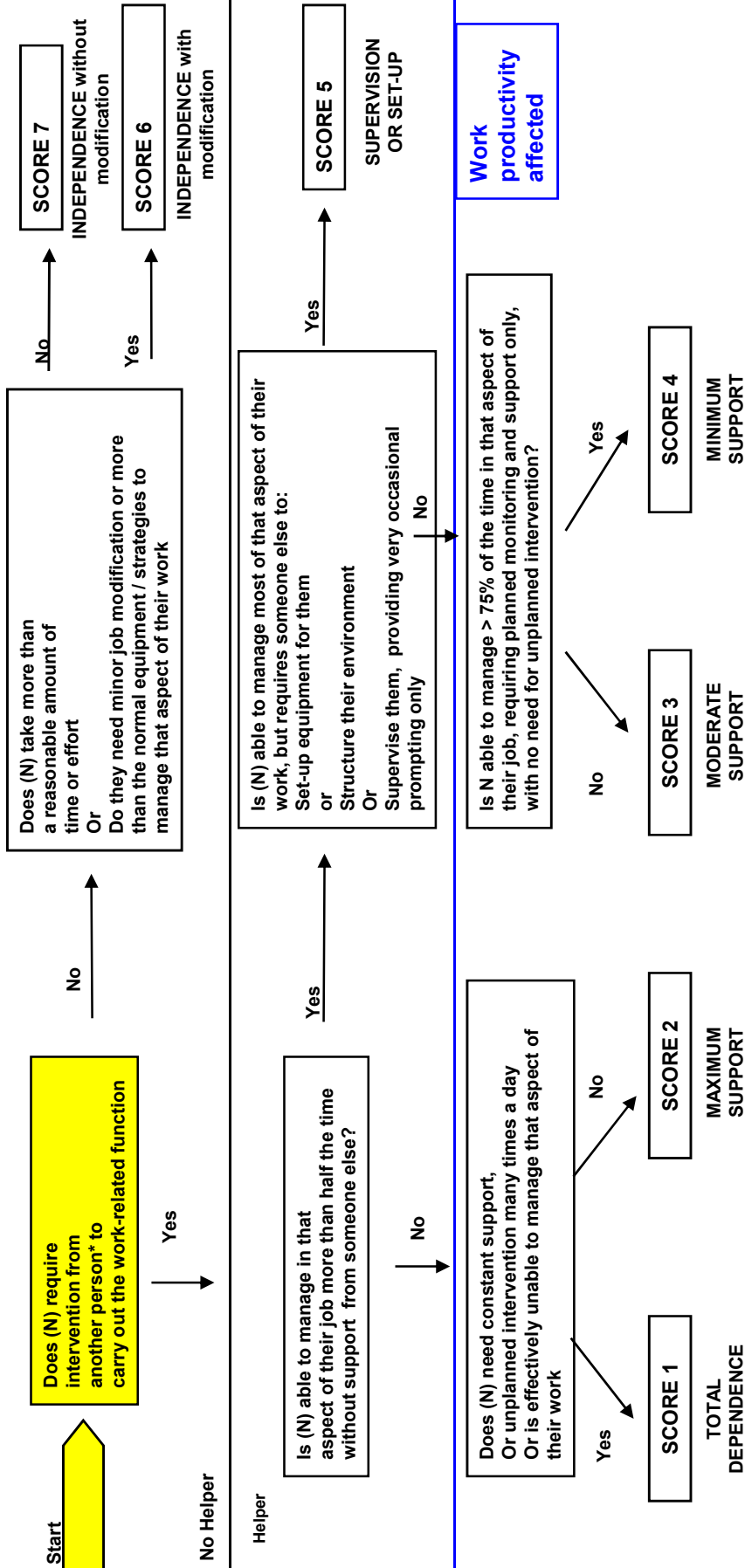
# **Scoring items 16-19 - refer to item decision trees**

<b>C5: Positive effect</b>	Contextual factor is a positive facilitator
<b>C4: No effect</b>	Contextual factor offers no barrier to return to (or continuing in) work
<b>C3: Mild negative effect</b>	Contextual factor offers a mild barrier to return to (or continuing in) work, which can be overcome using strategies or interventions that are readily available
<b>C2: Moderate negative effect</b>	Contextual factor offers a moderate barrier to return to (or continuing in) work which may be overcome using strategies or interventions that may or may not be available
<b>C1: Severe negative effect</b>	Contextual factor offers a severe barrier – effectively preventing return to (or continuing in) work. Or could only be overcome by strategies or interventions not currently available
<b>Unable to score</b>	Unable to score due to insufficient information. More information required

## FRAMEWORK FOR SCORING

Work-related function includes:

Description of functional abilities required within the person's normal work environment  
Or, if not in work, within the proposed work environment



### Notes:

#### Level 7:

No problem – can manage all of that aspect of their job independently

#### Level 6:

Manages all of that aspect, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct. There is *minimal reduction in work productivity*

#### Level 5:

Able to do most of that aspect of their work, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional prompting / correction

#### Level 4:

Able to manage >75% of the time. Has regular planned monitoring/support/intervention only  
Work productivity mildly affected ( unable to do some parts of their job)

Work productivity severely affected (Unable to do a substantial part of their job)

Effectively unable or requires constant supervision with intervention (several times a day)

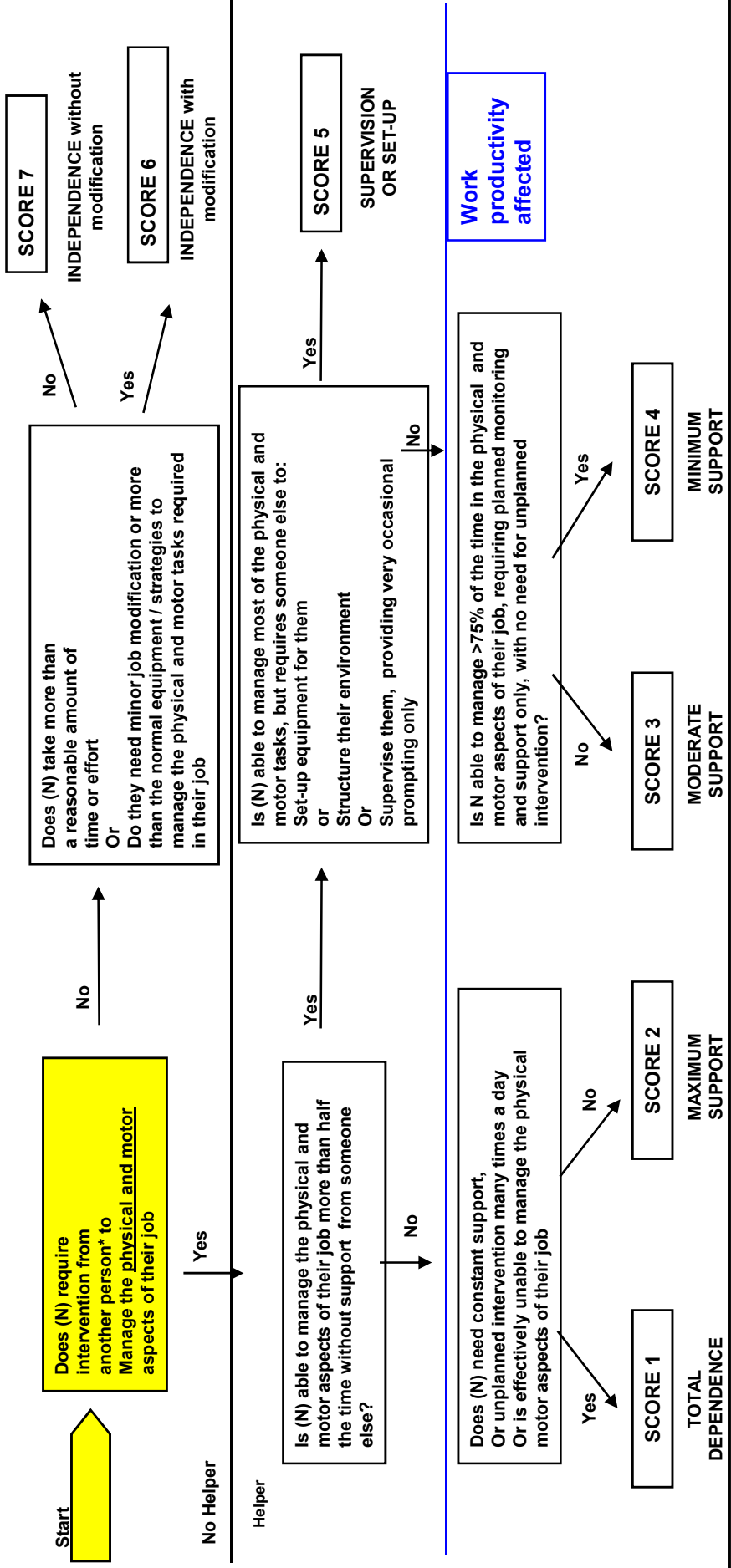
Level 1:

Level 3:  
Able to manage >half of the time in that aspect of their work  
Requires unplanned intervention on top of regular monitoring/support, but infrequently (not every day)  
Work productivity moderately affected (unable to do a significant part of their job)  
Level 2:  
Able to manage <half of the time. Requires frequent unplanned intervention on top of regular monitoring (most days)  
Level 1:  
Effectively unable or requires constant supervision with intervention (several times a day)  
\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

1. PHYSICAL AND MOTOR SKILLS

Physical and motor abilities includes:

The physical strength and motor tasks required to do their job, e.g. upper limb function (dexterity, reaching, lifting, operating machinery), balance etc.



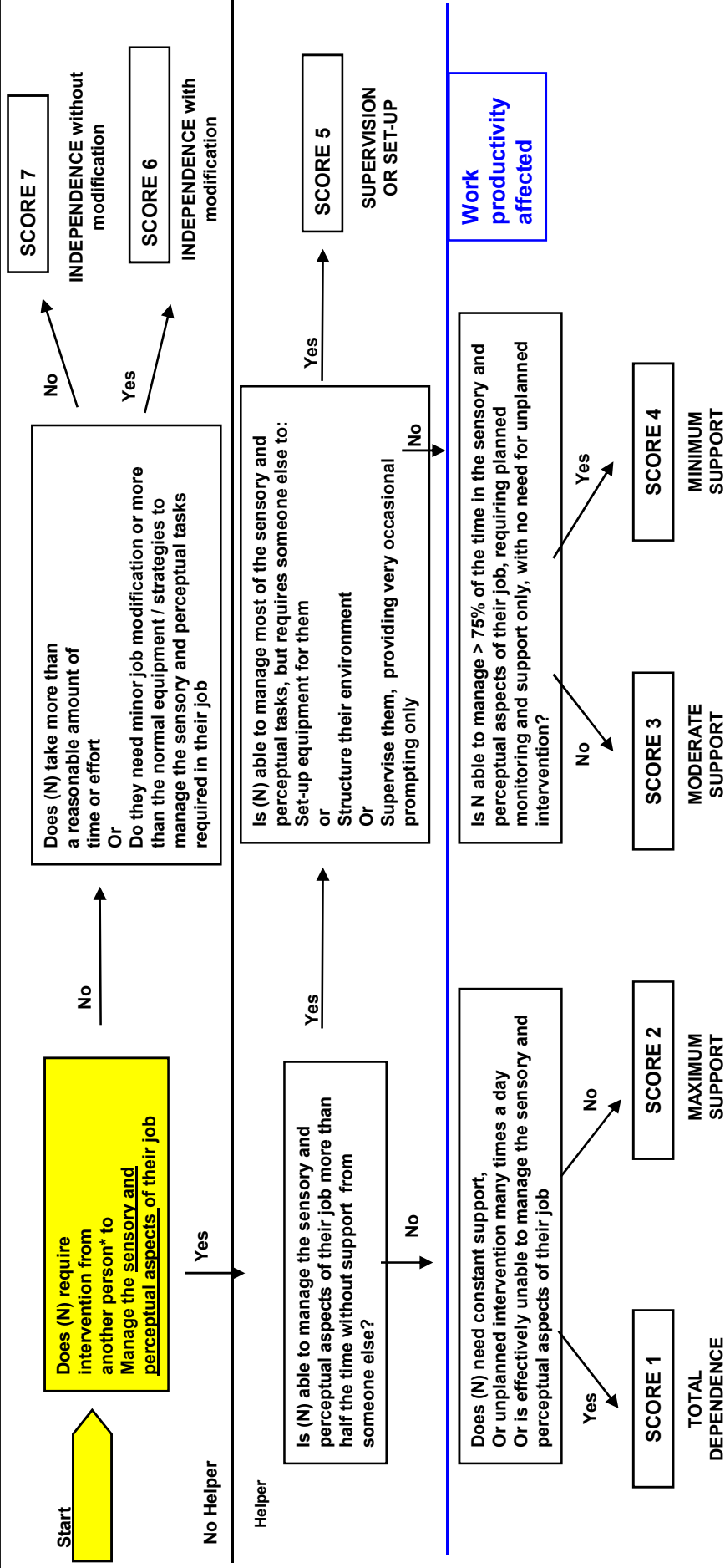
Notes:

- Level 7:** No problem – can manage all the physical and motor tasks associated with their job independently
  - Level 6:** Manages all of the physical and motor tasks, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct. *There is minimal reduction in work productivity*
  - Level 5:** Able to do most of the physical and motor aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help
  - Level 4:** Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*
  - Level 3:** Able to manage >half of the time the physical and motor tasks associated with their job  
*Requires infrequent unplanned intervention/help on top of regular monitoring , (not every day)*  
*Work productivity moderately affected – unable to do a significant part of their job*
  - Level 2:** Able to manage <half of the time.  
*Requires frequent unplanned help on top of regular monitoring (on most days)*  
*Work productivity severely affected – unable to do a substantial part of their job*
  - Level 1:** Effectively unable or requires constant supervision with intervention/help many times a day
- \*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

## 2. SENSORY AND PERCEPTUAL SKILLS

Sensory and perceptual abilities includes:

Vision, hearing, touch, taste, smell required for doing the job. Also includes effects of noise, light and temperature, and perceptual functioning e.g. perception of differences between objects.



### Notes:

**Level 7:**

No problem – can manage all the sensory and perceptual tasks associated with their job independently

**Level 6:**

Manages all of the sensory and perceptual tasks, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct.

*There is minimal reduction in work productivity*

**Level 5:**

Able to do most of the sensory and perceptual aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

**Level 4:**

Able to manage >75% of the time. Has regular planned intervention/help only

*Work productivity only mildly affected – unable to do some parts of their job*

**Level 3:**

Able to manage >half of the time the sensory and perceptual tasks associated with their job

Requires frequent unplanned intervention/help on top of regular monitoring, *(not every day)*

*Work productivity moderately affected – unable to do a significant part of their job*

**Level 2:**

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring *(on most days)*

*Work productivity severely affected – unable to do a substantial part of their job*

**Level 1:**

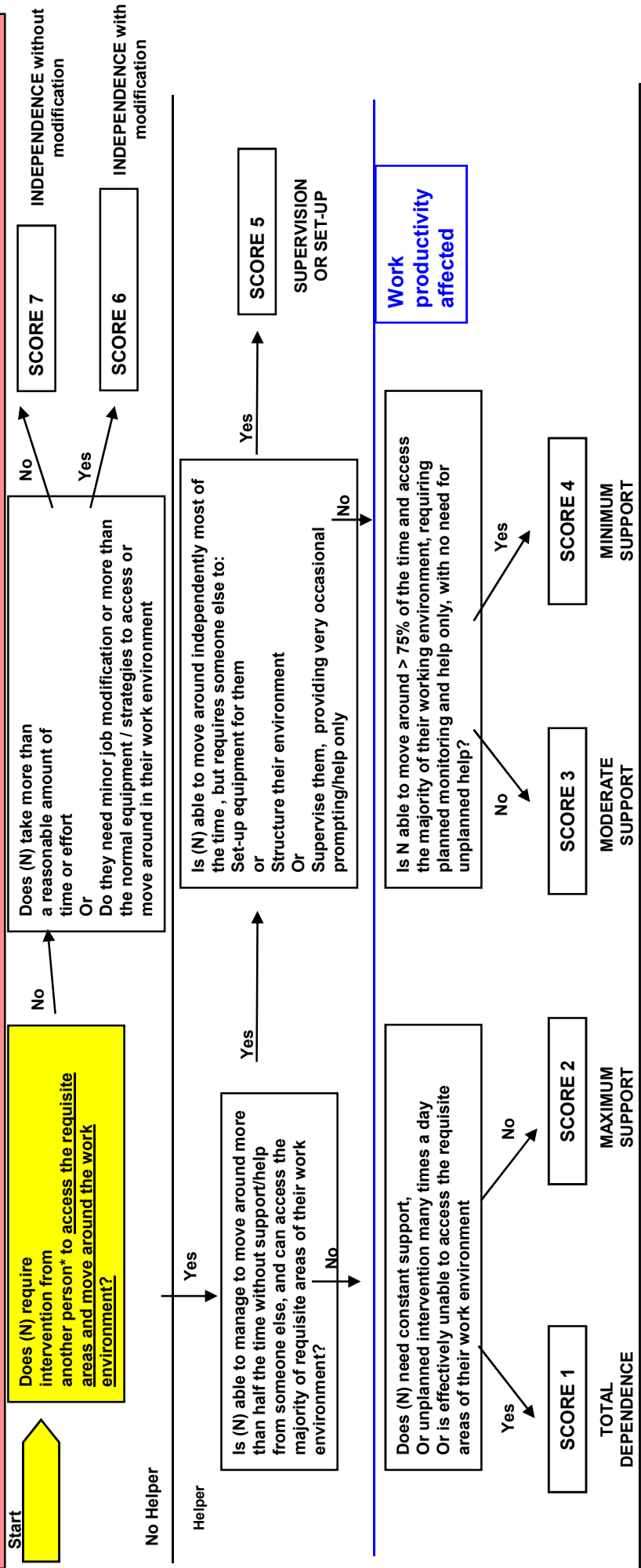
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

3. ACCESS TO AND AROUND THE WORKPLACE

Access to and around the workplace includes:

Being able to move around in the work environment and access all areas/ facilities required to do their job e.g. carrying necessary items, combinations of moving around and other activities (such as carrying items while opening doors), confined spaces, working from heights, emergency evacuation, location of necessary facilities (e.g. toilets, refreshments, meeting rooms). Safety aspects include ability to be seen, ability to make use of safety equipment.



**Notes:**

**Level 7:**  
No problem – can move around and access all the requisite areas of their work environment independently

**Level 6:**  
Manages to access all requisite areas, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies.  
*There is minimal reduction in work productivity*

**Level 5:**  
Able to move around and access most of the requisite area, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only occasional help

**Level 4:**  
Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

**Level 3:**  
Able to manage >half of the time and can access most of the requisite areas.  
Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)  
*Work productivity moderately affected – unable to do a significant part of their job*

**Level 2:**  
Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring (on most days)  
*Work productivity severely affected – unable to do a substantial part of their job*

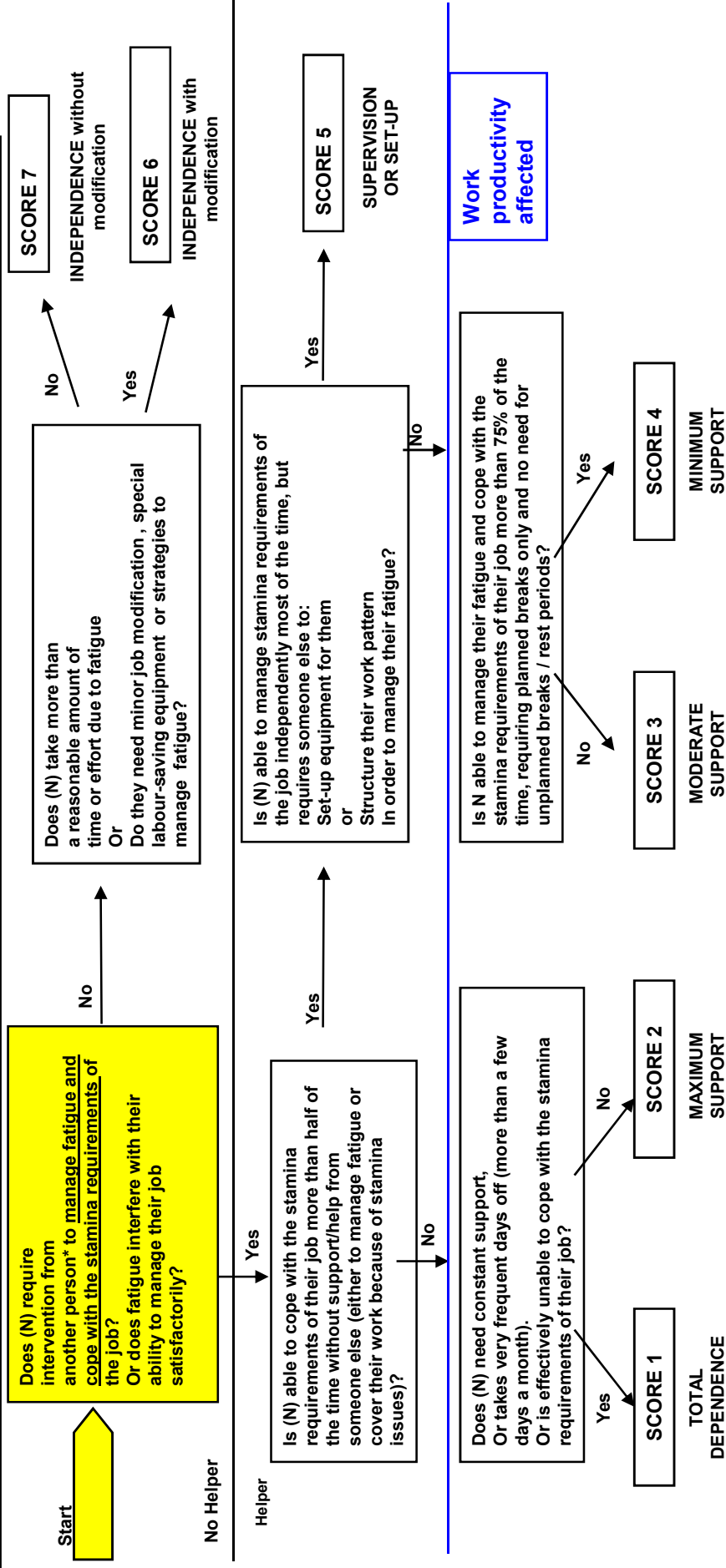
**Level 1:**  
Effectively unable or requires constant supervision with intervention/help many times a day  
*\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support*



#### 4. PACING AND ABILITY TO WORK THROUGH A NORMAL DAY

Pacing and ability to work through a normal day includes:

Having the stamina to be able to work effectively throughout the working hours, or to manage fatigue effectively to avoid work disruption due to need for breaks or days off. Take into account also management of fatigue associated with travelling to/from work.



##### Notes:

**Level 7:** No problem – can cope with all the stamina requirement of their job without need for rests

**Level 6:** Copes with stamina requirements of their job, but takes more than the reasonable amount of time or effort due to fatigue, or requires minor job modification or special labour-saving equipment. Manages fatigue effectively. There is minimal reduction in work productivity

**Level 5:** Able to cope with the stamina requirements of their job most of the time, but requires help from someone else to set-up equipment, or to structure their work pattern to manage fatigue

**Level 4:** Able to manage >75% of the time Has regular planned breaks / rest periods only

**Level 3:** Able to manage >half of the time and can manage more than half their work. Requires infrequent unplanned breaks on top of their planned rest periods/ reduced hours. Or takes only occasional days off (< once a month). Work productivity moderately affected – unable to do a significant part of their job

**Level 2:** Able to manage <half of the time. Requires frequent unplanned breaks or rest. Or takes frequent unplanned days off (>once a month) Work productivity severely affected – unable to do a substantial part of their job

**Level 1:** Effectively unable to do their job due to fatigue, or requires constant support.

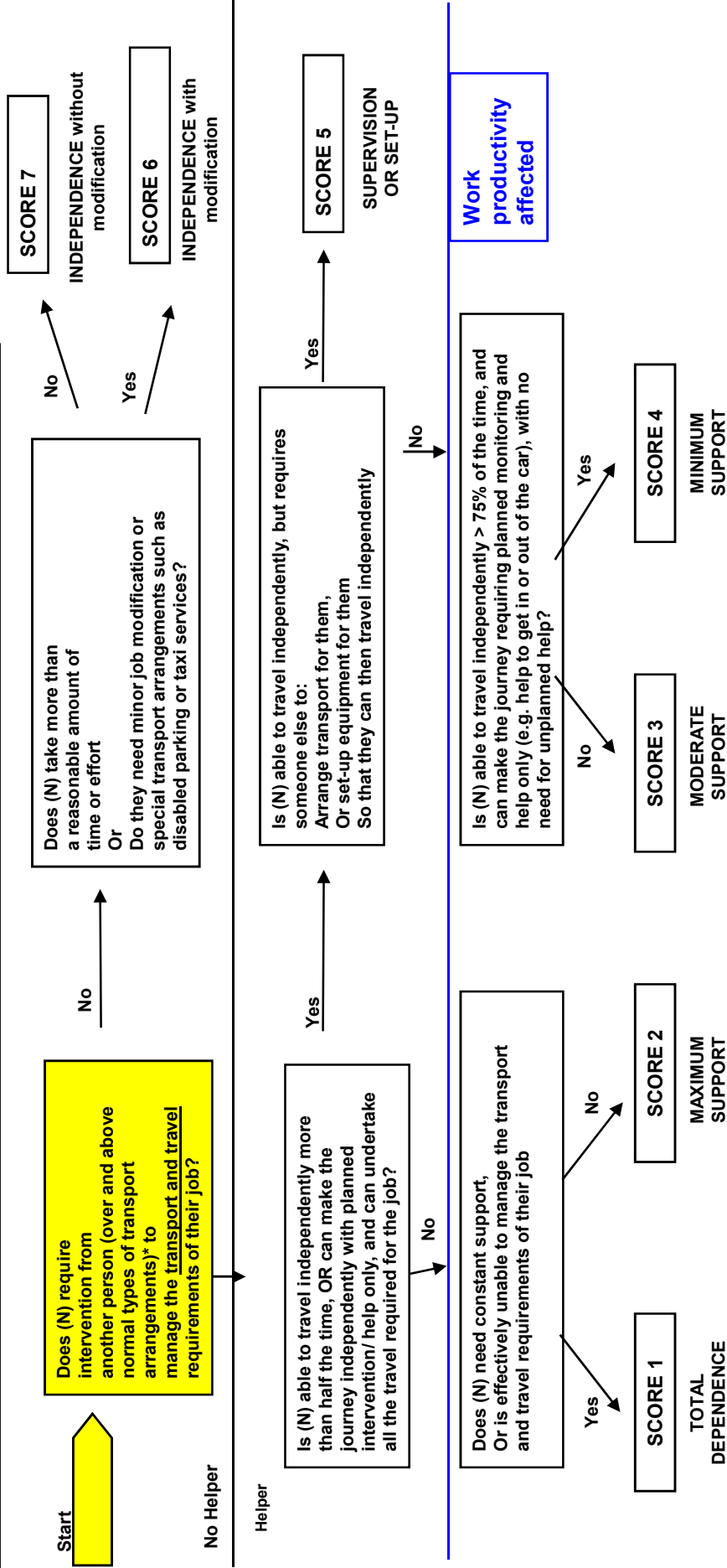
\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

Work productivity only mildly affected

5. TRANSPORT AND TRAVEL

Transport and travel includes:

Being able to get to work and to manage all travel aspects of the work including local, national and international travel, if that is part of the job. Also driving, if the job requires this.



Notes:

Level 7:

No problem – can arrange their own transport and travel fully independently as the job requires

Level 6:

Manages their own transport and travel, but takes more than the reasonable amount of time or effort, Or requires minor job modification or special transport arrangements such as disabled parking or taxi services.

Level 5:

Able to travel, but requires help from someone else to make transport arrangements

Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only (eg requires help just to get in and out of their car.)

Level 3:

Able to manage >half of the time the transport requirements associated with their job  
Requires infrequent unplanned intervention/help on top of regular monitoring.  
*Work productivity moderately affected due to transport limitations*

Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (*on most days*)

*Work productivity severely affected - unable to do a substantial part of their job due to transport limitations*

Level 1:

Effectively unable to do their job due to transport restrictions, or requires constant help to move around

\*E.g. carpool systems or sharing transport are a normal type of transport arrangement.

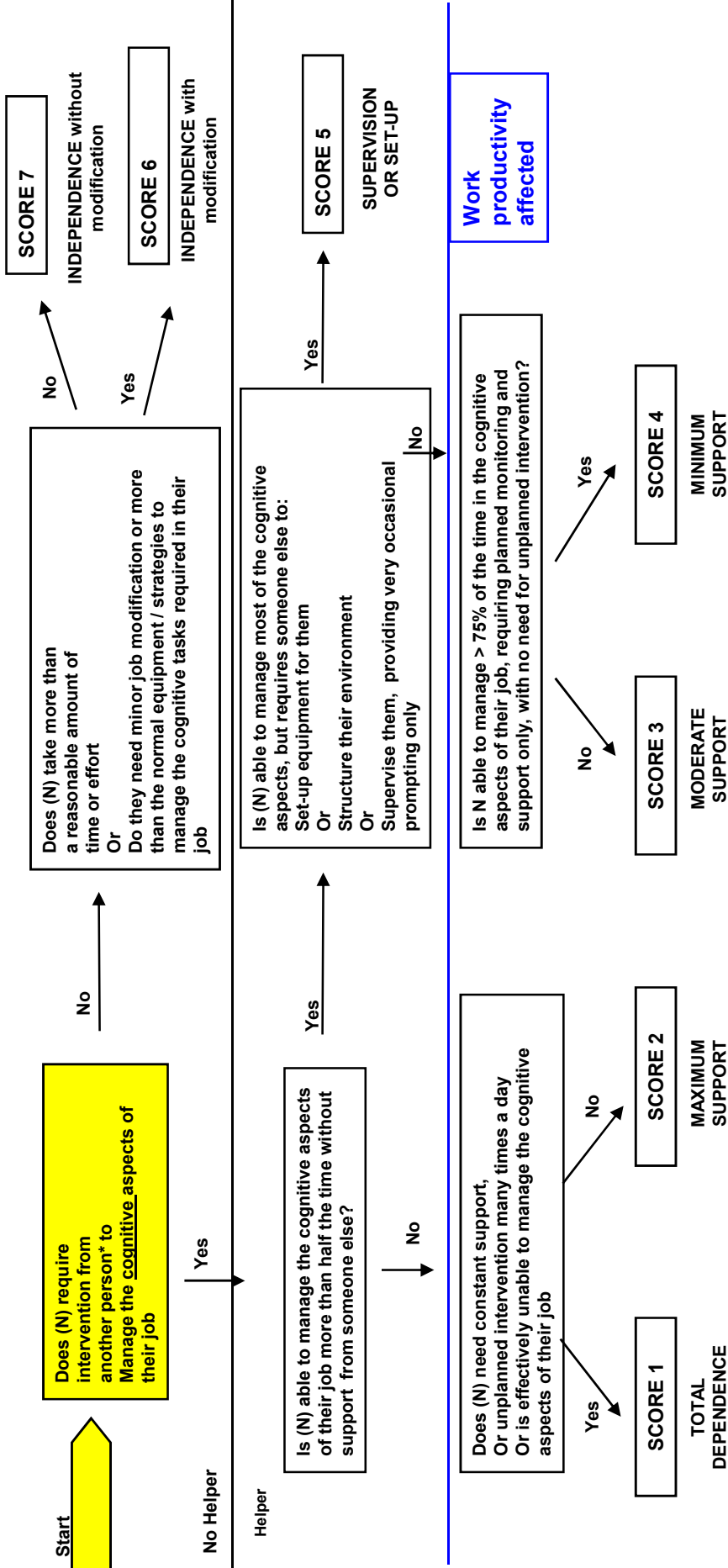


6. COGNITIVE SKILLS

Cognitive skills includes:

The cognitive tasks required to manage in their job effectively, e.g. memory, attention, concentration.

Equipment may include electronic diary/ computer etc if over and above what is usually provided for the job.



Notes:

Level 7:

No problem – can manage all the cognitive tasks associated with their job independently

Level 6:

Manages all of the cognitive tasks, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct.

There is minimal reduction in work productivity

Level 5:

Able to do most of the cognitive aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only

Work productivity only mildly affected – unable to do some parts of their job

Level 3:

Able to manage >half of the time the cognitive tasks associated with their job

Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

Work productivity moderately affected – unable to do a significant part of their job

Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

Work productivity severely affected – unable to do a substantial part of their job

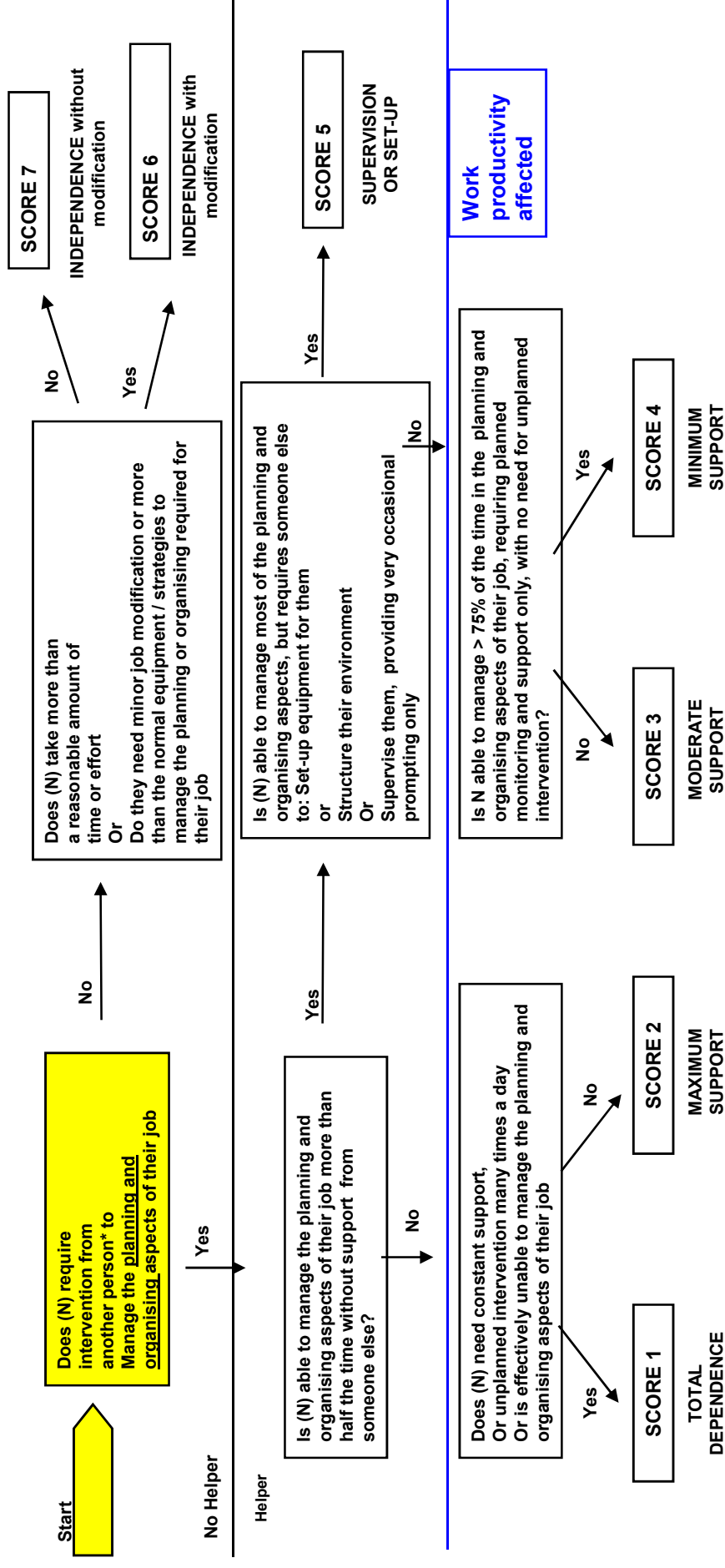
Level 1:

Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

**Self organisation and planning includes:**

**Planning and organising required for the job. Includes work organisation, initiation, motivation, working to deadlines**



**Level 7:**  
No problem – can manage all the planning and organising tasks associated with their job independently

**Level 6:**  
Manages all of the planning and organising tasks, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct.  
*There is minimal reduction in work productivity*

**Level 5:**  
Able to do most of the planning and organising aspects of their work but requires help from someone else to set up equipment, or requires a structured environment, with supervision but only very occasional help

**Level 4:**  
Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected – unable to do some parts of their job*

**Level 3:**  
Able to manage >half of the time the planning and organising tasks associated with their job  
Requires infrequent unplanned intervention/help on top of regular monitoring , (not every day)  
*Work productivity moderately affected – unable to do a significant part of their job*

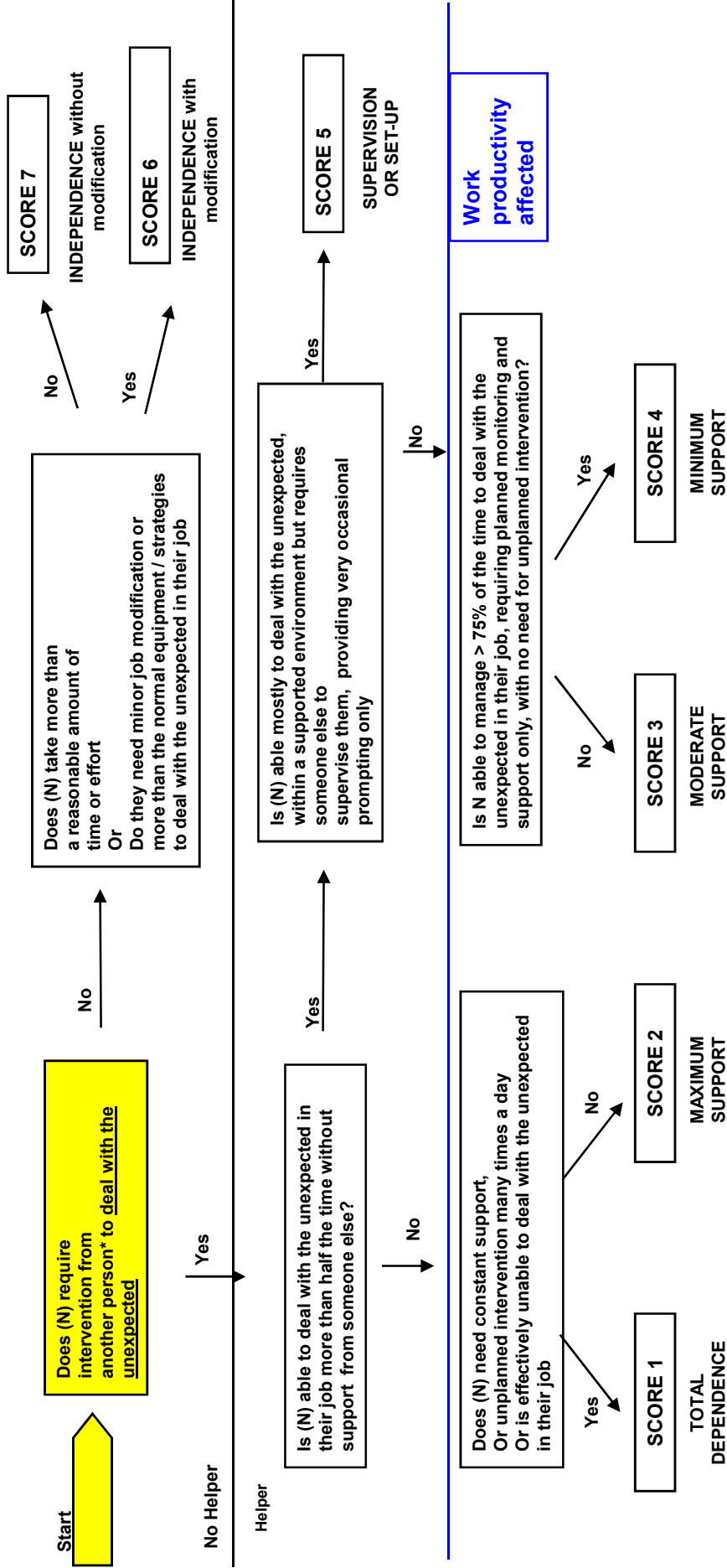
**Level 2:**  
Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring (on most days)  
*Work productivity severely affected – unable to do a substantial part of their job*

**Level 1:**  
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or vocational support

## 8. DEALING WITH THE UNEXPECTED

Dealing with the unexpected includes:  
e.g. problem-solving, handling interruptions, working on their own initiative when things change



### Notes:

**Level 7:** No problem – can manage to deal with the unexpected independently

**Level 6:** Deals effectively with the unexpected, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct.

**Level 5:** There is minimal reduction in work productivity

**Level 4:** Able to deal with the unexpected within a supported environment, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

**Level 3:** Able to manage > half of the time to deal with the unexpected in their job

**Level 2:** Requires frequent unplanned help on top of regular monitoring (on most days)

**Level 1:** Effectively unable or requires constant supervision with intervention/help many times a day

**Level 3:** Able to manage > half of the time to deal with the unexpected in their job

**Level 2:** Requires frequent unplanned help on top of regular monitoring (on most days)

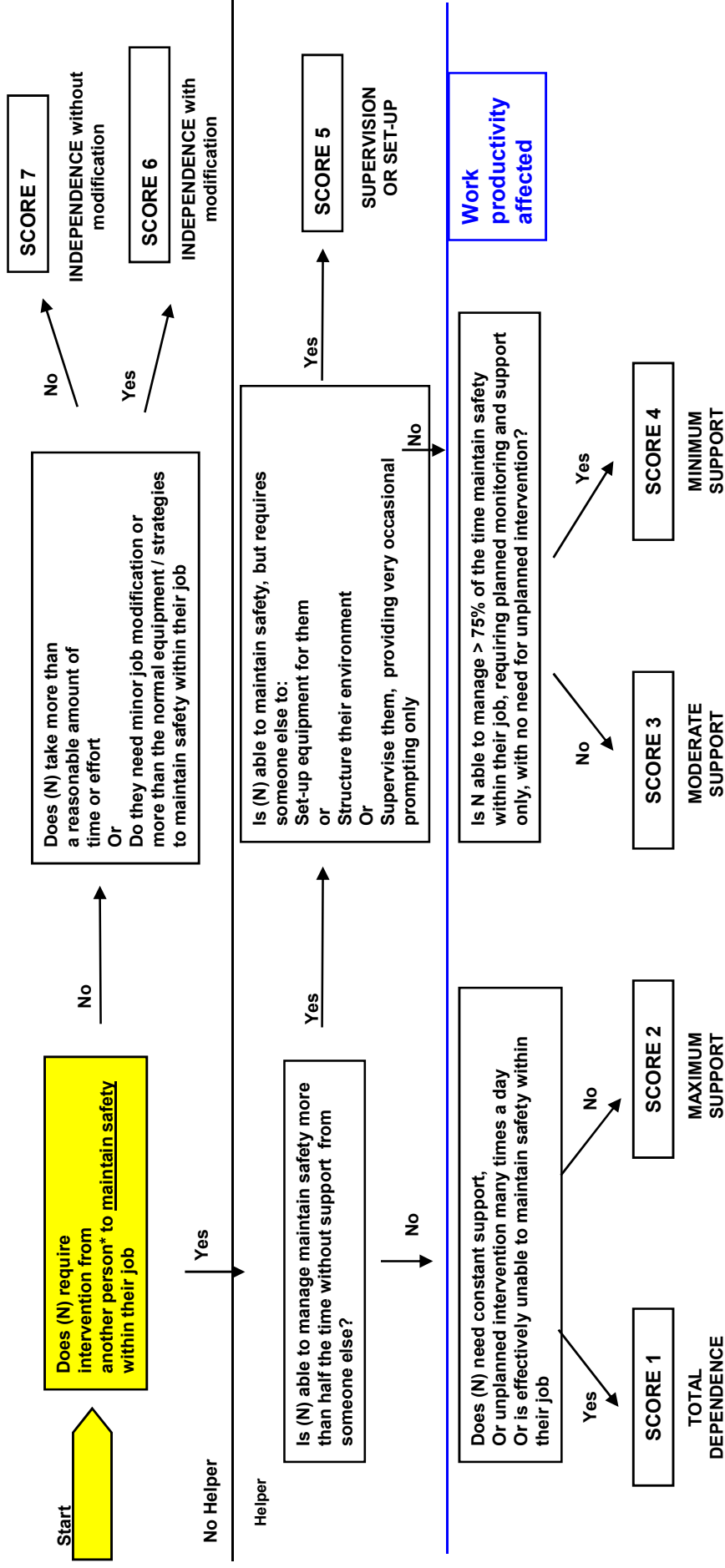
**Level 1:** Effectively unable or requires constant supervision with intervention/help many times a day

**Level 0:** Another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support. Appropriately accessed professional services e.g. therapy for developing skills are defined as strategies UNLESS that person is specifically providing support in the workplace.

## 9. SAFETY AWARENESS (WORK RELATED)

Maintaining work-related safety includes:

Being able to maintain the safety of themselves and others within their job



### Notes:

#### Level 7:

No problem – can maintain safety within their job independently

#### Level 6:

Able to maintain safety, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct.

There is *minimal reduction in work productivity*

#### Level 5:

Able maintain safety within a structured environment, but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only

Work productivity *only mildly affected*

#### Level 3:

Able to manage >half of the time to maintain safety

Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

Work productivity *moderately affected*

#### Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

Work productivity *severely affected – unable to do a substantial part of the job*

#### Level 1:

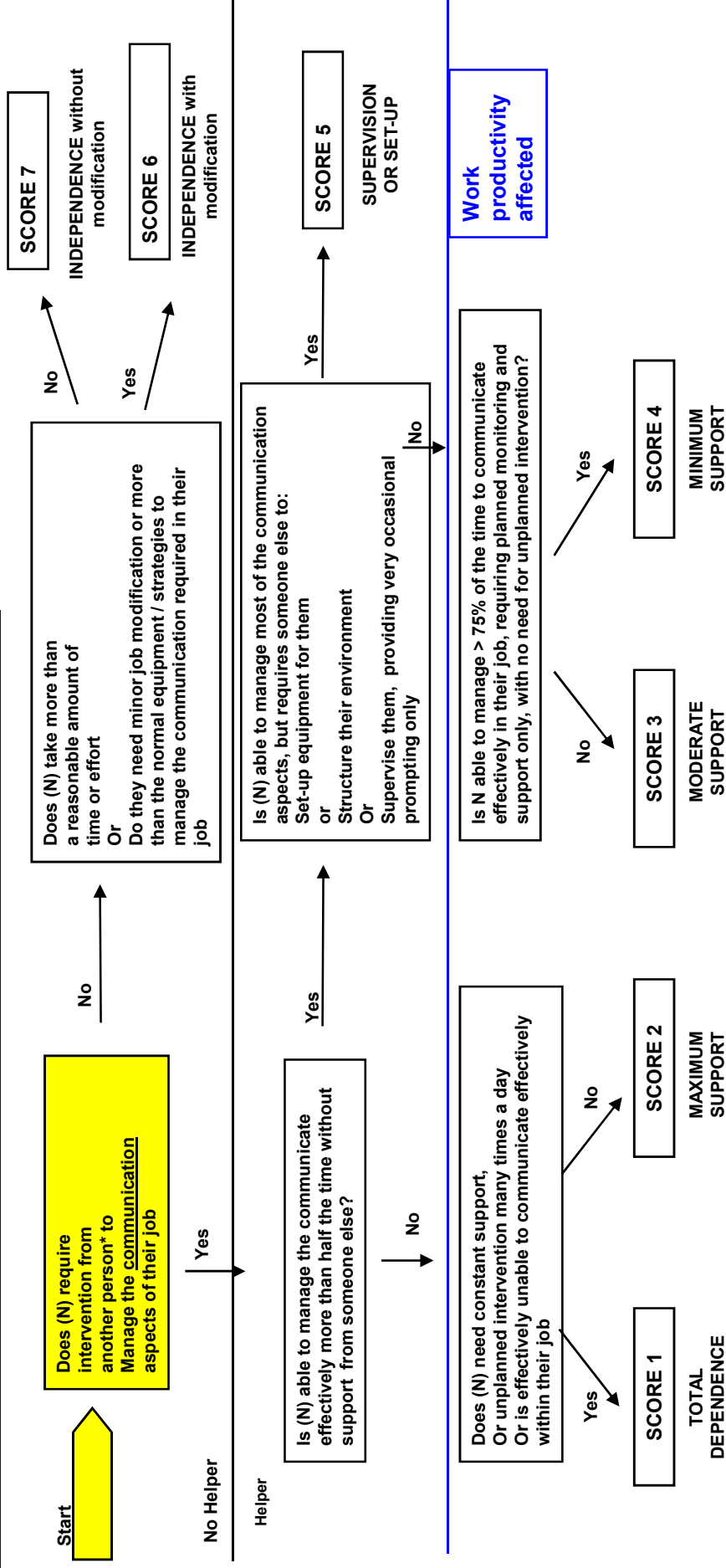
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support

## 10. COMMUNICATION (WORK RELATED)

### Communication includes:

Being able to communicate effectively with others in the course of their job in terms of Comprehension, expression, intelligibility both for verbal and written communication.



### Notes:

#### Level 7:

No problem – can manage all the communication tasks associated with their job independently

#### Level 6:

Manages all of the communication tasks, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct.

There is *minimal reduction in work productivity*

#### Level 5:

Able to do most of the communication aspects of their work but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only

*Work productivity only mildly affected – unable to do some parts of their job*

#### Level 3:

Able to manage >half of the time the communication tasks associated with their job

Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)

*Work productivity moderately affected – unable to do a significant part of their job*

#### Level 2:

Able to manage <half of the time.

Requires frequent unplanned help on top of regular monitoring (on most days)

*Work productivity severely affected – unable to do a substantial part of their job*

#### Level 1:

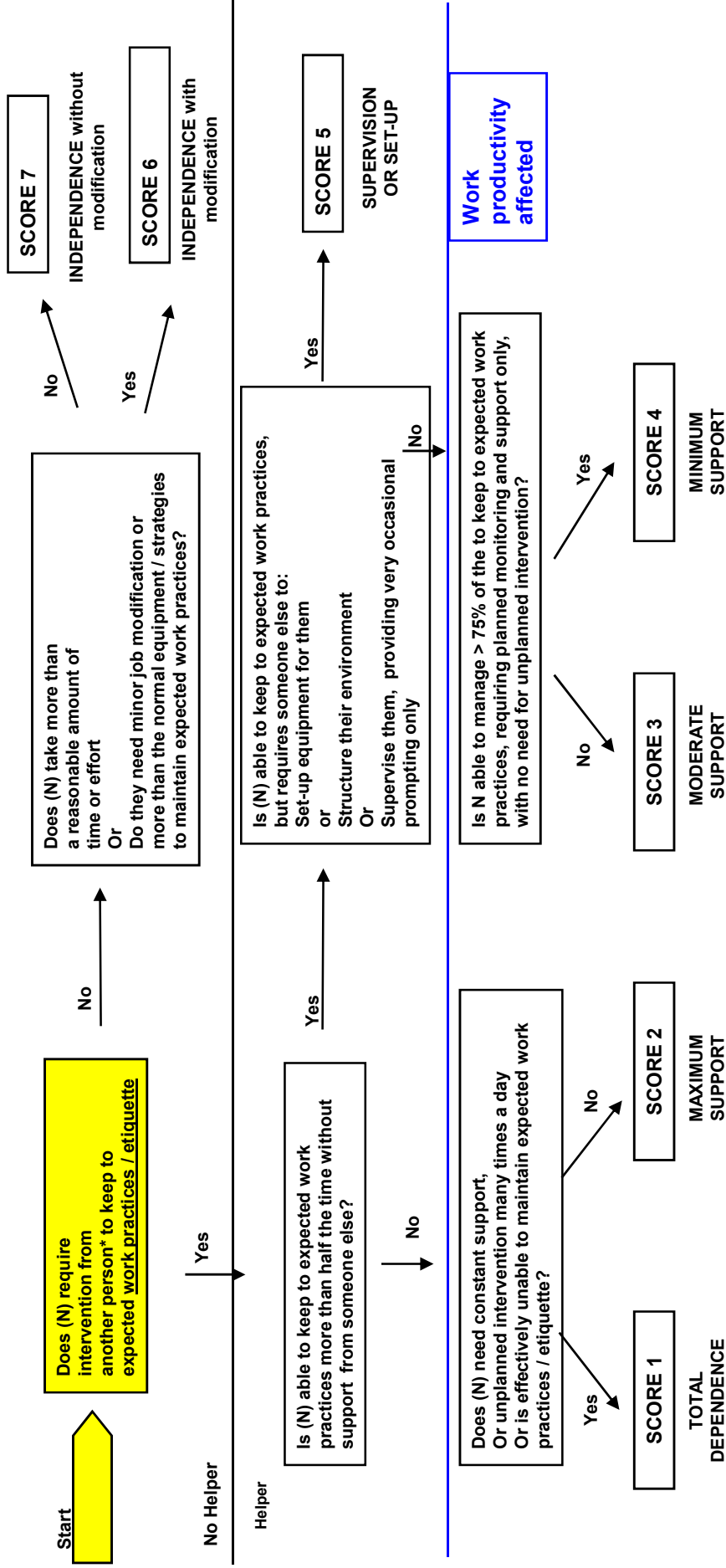
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support. Appropriately accessed professional services e.g. therapy for developing skills are defined as strategies UNLESS that person is specifically providing support in the workplace.

## 11. WORK PRACTICES / ETIQUETTE

Work practices / etiquette includes:

Ability to adhere to the normal working practices, including appropriate dress, personal presentation, time keeping, etc

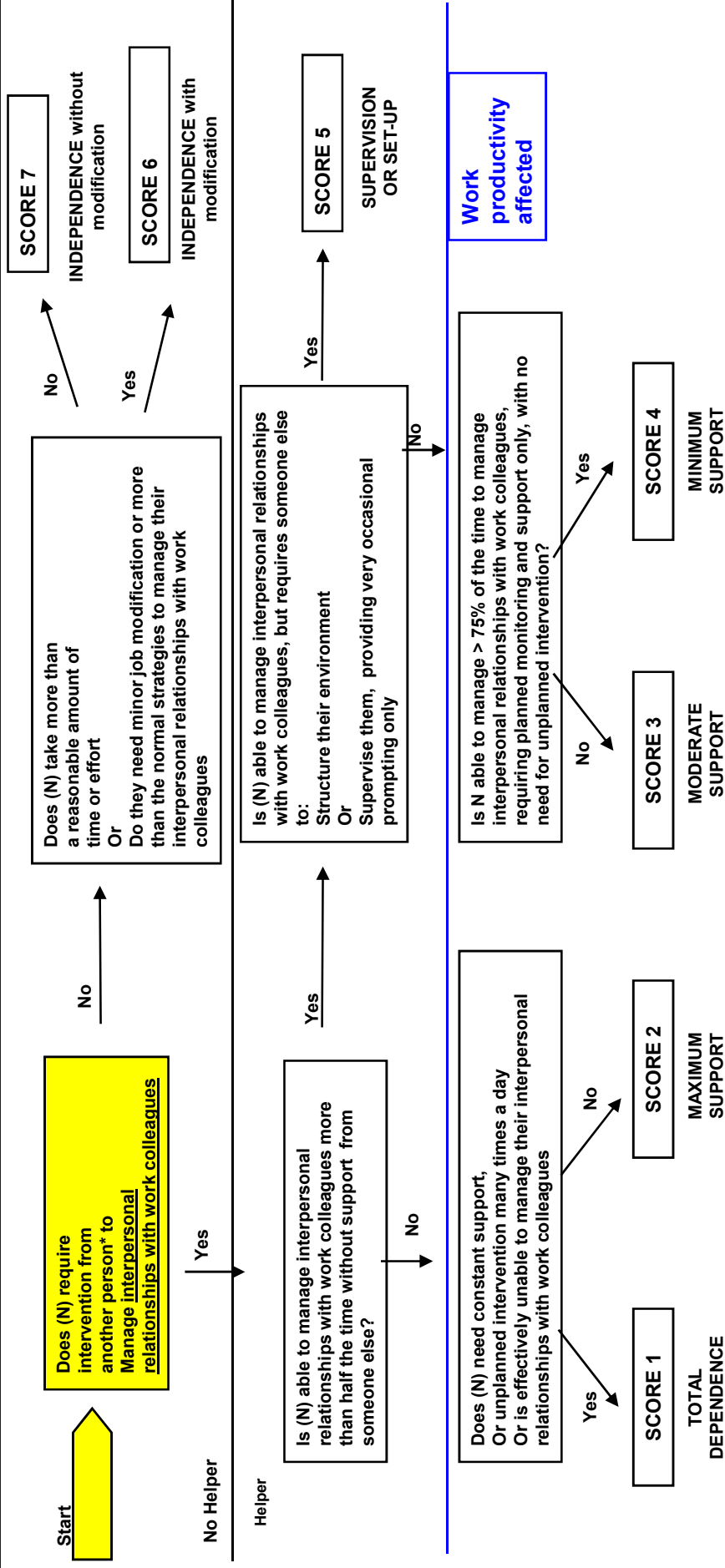




## 12. INTERPERSONAL RELATIONSHIPS (WORK COLLEAGUES)

Interpersonal relationships (work colleagues) includes:

Interpersonal skills, professional and social interaction with work colleagues, including consideration of changed relationships due to time away from workplace / changed abilities



### Notes:

#### Level 7:

No problem – can manage interpersonal relationships with work colleagues independently

#### Level 6:

Manages interpersonal relationships with work colleagues, but takes more than the reasonable amount of time or effort, or requires minor job modification or strategies. Able to self-prompt and correct.

There is *minimal reduction in work productivity*

#### Level 5:

Able to manage interpersonal relationships with work colleagues, but requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only

*Work productivity only mildly affected*

#### Level 3:

Able to manage >half of the time to manage interpersonal relationships with work colleagues. Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)  
*Work productivity moderately affected*

#### Level 2:

Able to manage <half of the time. Requires frequent unplanned help on top of regular monitoring (on most days)  
*Work productivity severely affected*

#### Level 1:

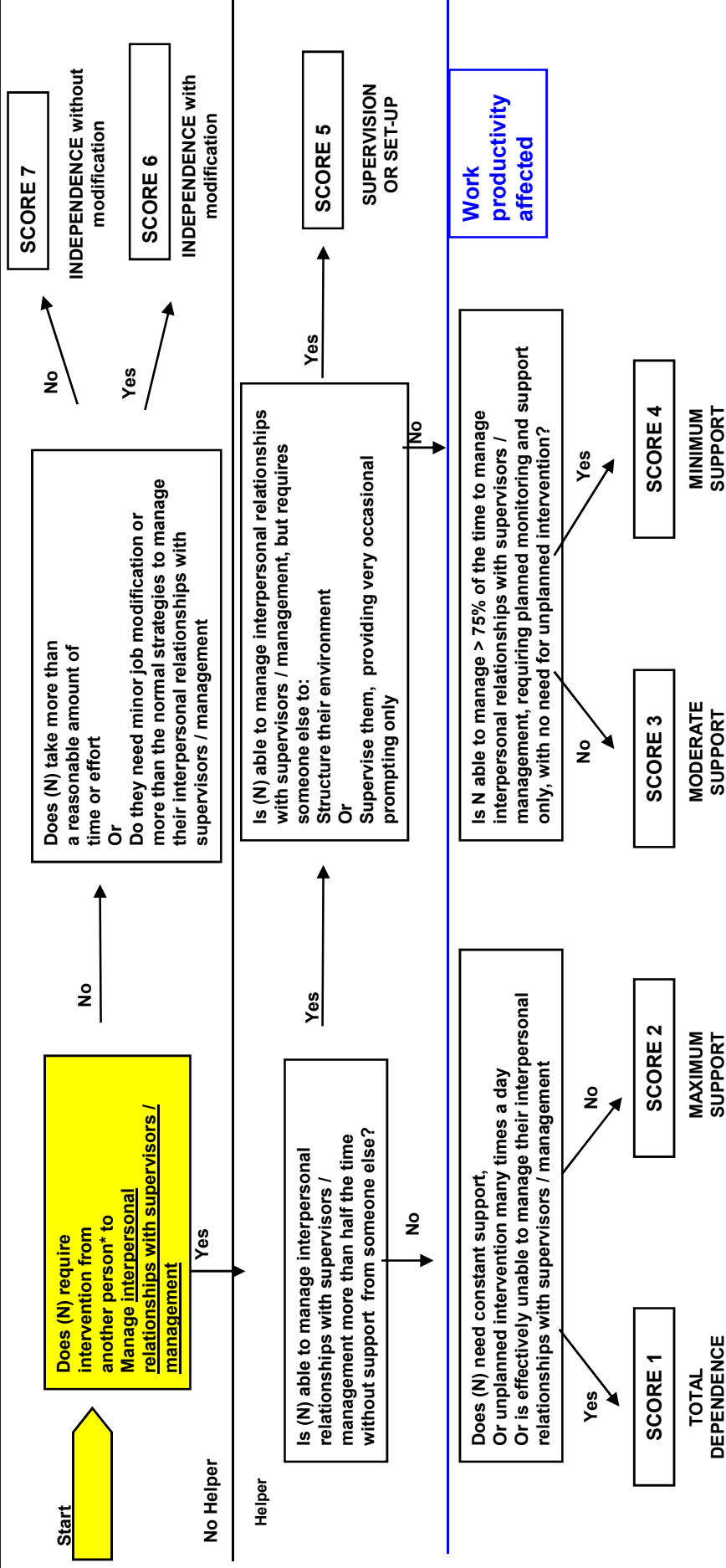
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support. Appropriately accessed professional services e.g. therapy for developing skills are defined as strategies UNLESS that person is specifically providing support in the workplace.

### 13. INTERPERSONAL RELATIONSHIPS (SUPERVISORS / MANAGEMENT)

Interpersonal relationships (supervisors / management) includes:

Interpersonal skills, professional and social interaction with supervisors and/or management, including consideration of changed relationships due to time away from workplace / changed abilities



#### Notes:

##### Level 7:

No problem – can manage interpersonal relationships with supervisors / management independently

##### Level 6:

Manages interpersonal relationships with supervisors / management, but takes more than the reasonable amount of time or effort, or requires minor job modification or strategies. Able to self-prompt and correct. There is *minimal reduction in work productivity*

##### Level 5:

Able to manage interpersonal relationships with supervisors / management, but requires a structured environment, with supervision but only very occasional help

##### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected*

##### Level 3:

Able to manage >half of the time to manage interpersonal relationships with supervisors / management. Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)  
*Work productivity moderately affected*

##### Level 2:

Able to manage <half of the time. Requires frequent unplanned help on top of regular monitoring (on most days)  
*Work productivity severely affected*

##### Level 1:

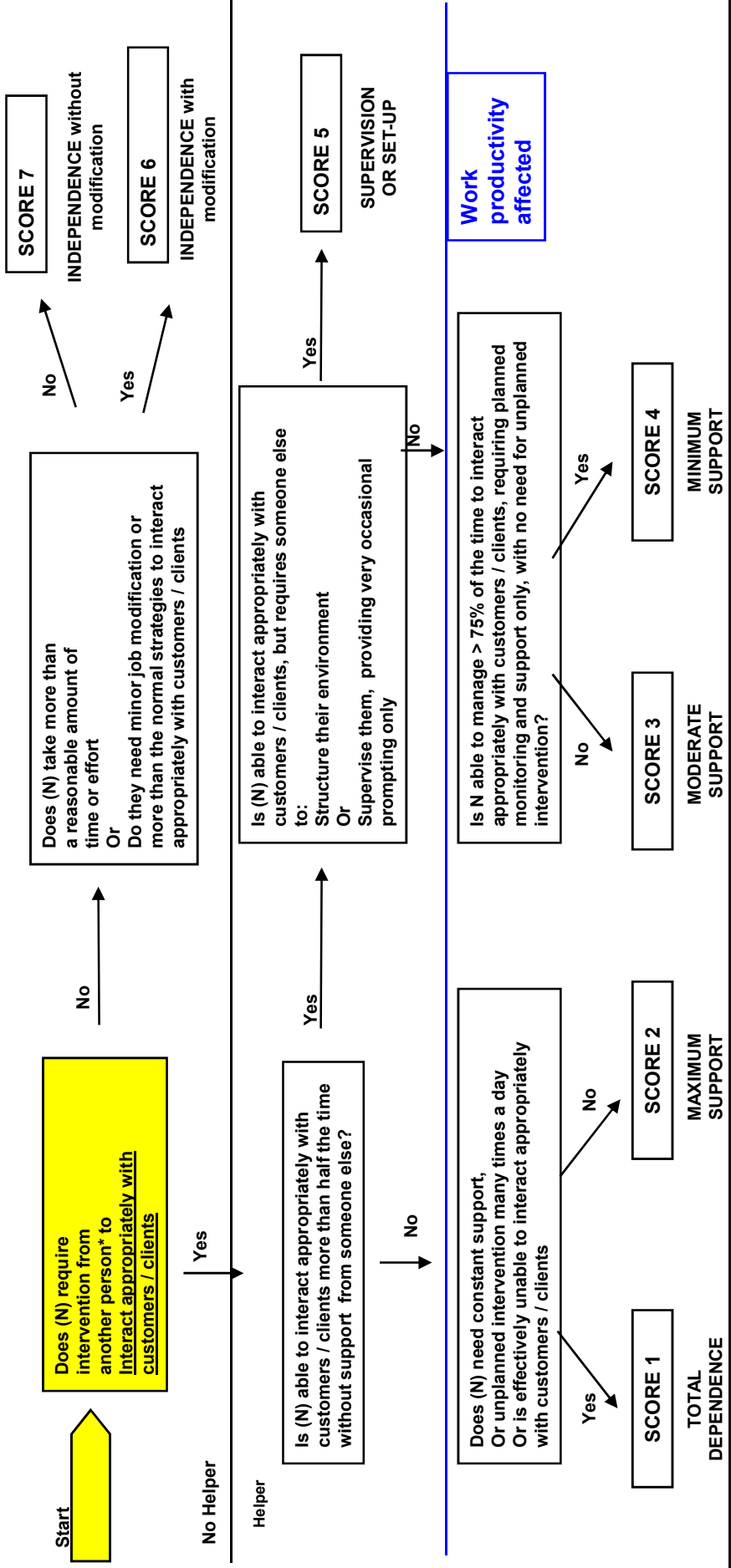
Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support. Appropriately accessed professional services e.g. therapy for developing skills are defined as strategies UNLESS that person is specifically providing support in the workplace.



14. INTERPERSONAL SKILLS (CUSTOMERS / CLIENTS)

Interpersonal relationships (customers / clients) includes:  
Interpersonal skills, appropriate professional and social interaction with customers / clients



**Notes:**

**Level 7:**  
No problem – interact appropriately with customers / clients independently

**Level 6:**  
Interacts appropriately with customers / clients, but takes more than the reasonable amount of time or effort, or requires minor job modification or strategies. Able to self-prompt and correct.  
*There is minimal reduction in work productivity*

**Level 5:**  
Able to interact appropriately with customers / clients, but requires a structured environment, with supervision but only very occasional help

**Level 4:**  
Able to manage >75% of the time. Has regular planned intervention/help only  
*Work productivity only mildly affected*

**Level 3:**  
Able to manage >half of the time interact appropriately with customers / clients.  
Requires infrequent unplanned intervention/help on top of regular monitoring , *(not every day)*  
*Work productivity moderately affected*

**Level 2:**  
Able to manage <half of the time.  
Requires frequent unplanned help on top of regular monitoring *(on most days)*  
*Work productivity severely affected*

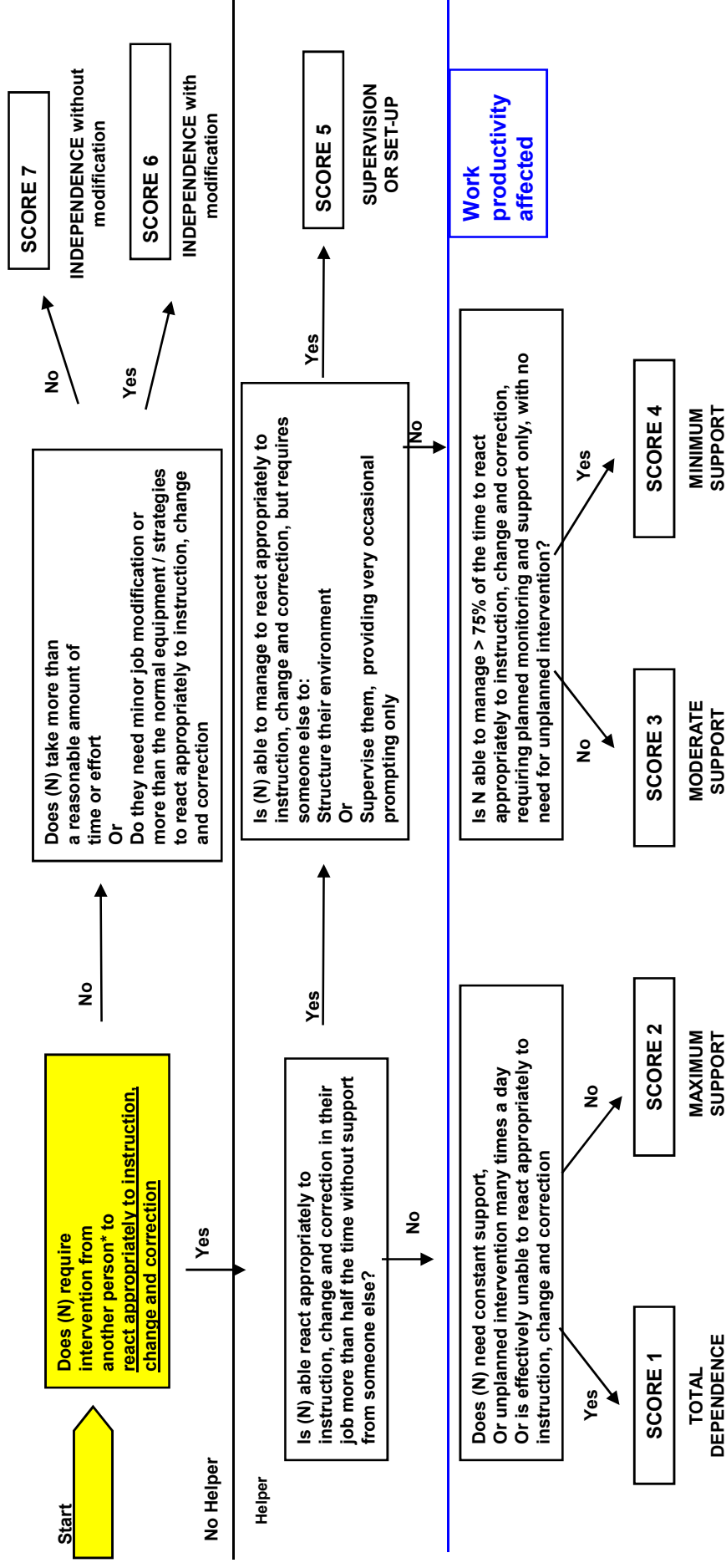
**Level 1:**  
Effectively unable or requires constant supervision with intervention/help *many times a day*

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support. Appropriately accessed professional services e.g. therapy for developing skills are defined as strategies UNLESS that person is specifically providing support in the workplace.

## 15. DEALING WITH INSTRUCTION, CHANGE AND CORRECTION

Dealing with instruction, change and correction includes:

Appropriate reaction to supervisory instruction and/or correction regarding work activities, ability to correct errors, accept changes in work tasks, etc



### Notes:

#### Level 7:

No problem – can react appropriately to instruction, change and correction independently

#### Level 6:

Reacts appropriately to instruction, change and correction, but takes more than the reasonable amount of time or effort, or requires minor job modification or special equipment or strategies. Able to self-prompt and correct. There is minimal reduction in work productivity

#### Level 5:

Able to react appropriately to instruction, change and correction but requires help from someone else to set-up equipment, or requires a structured environment, with supervision but only very occasional help

#### Level 4:

Able to manage >75% of the time. Has regular planned intervention/help only  
Work productivity only mildly affected – unable to do some parts of their job

#### Level 3:

Able to manage >half of the time to react appropriately to instruction, change and correction. Requires infrequent unplanned intervention/help on top of regular monitoring, (not every day)  
Work productivity moderately affected – unable to do a significant part of their job

#### Level 2:

Able to manage <half of the time. Requires frequent unplanned help on top of regular monitoring (on most days)  
Work productivity severely affected – unable to do a substantial part of their job

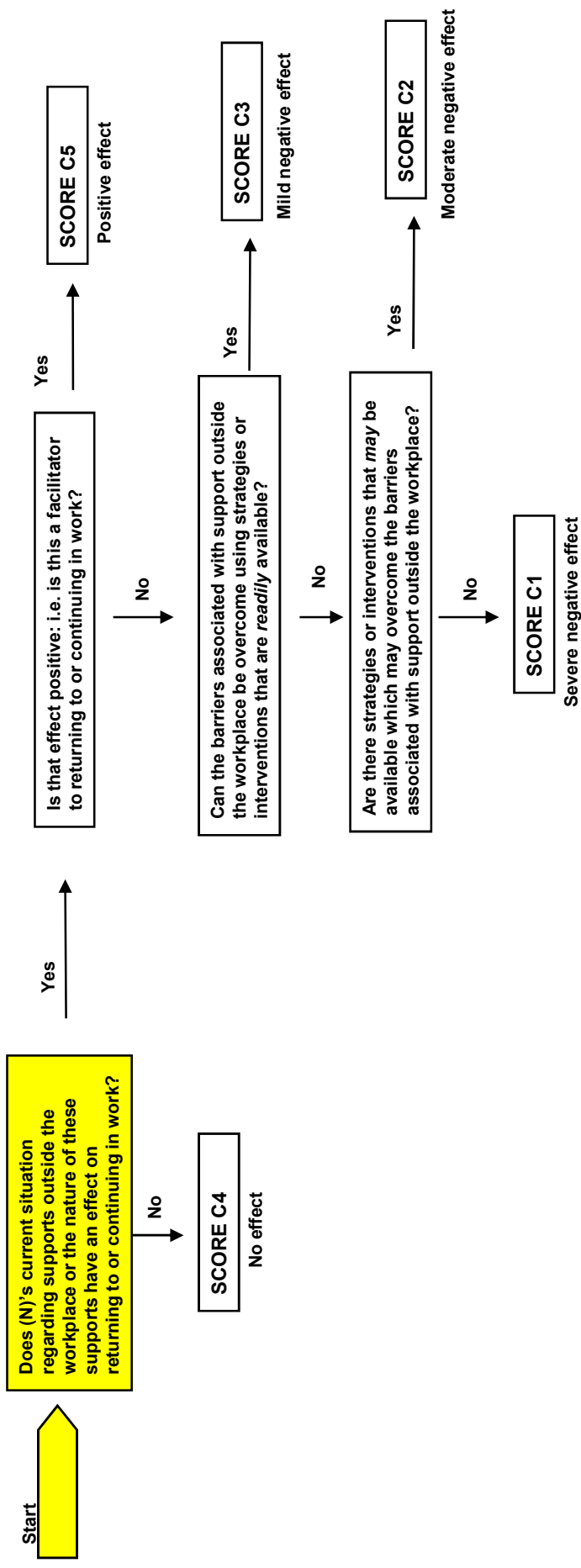
#### Level 1:

Effectively unable or requires constant supervision with intervention/help many times a day

\*another person may be either someone in the workplace (e.g. colleague / supervisor) or external vocational support. Appropriately assessed professional services e.g. therapy for developing skills generally are defined as strategies UNLESS that person is providing support in the workplace.

## 16. SUPPORTS OUTSIDE THE WORKPLACE

Access to home help, financial resources, social support, etc needed to facilitate required work functioning



### Notes:

#### Level C5:

Supports outside the workplace are a positive facilitator for returning to or continuing in work.

#### Level C4:

Issues with supports outside the workplace have no impact on returning to or continuing in work

#### Level C3:

Issues with supports outside the workplace offer a mild barrier to return to (or continuing in) work, which can be overcome using strategies or interventions that are readily available

#### Level C2:

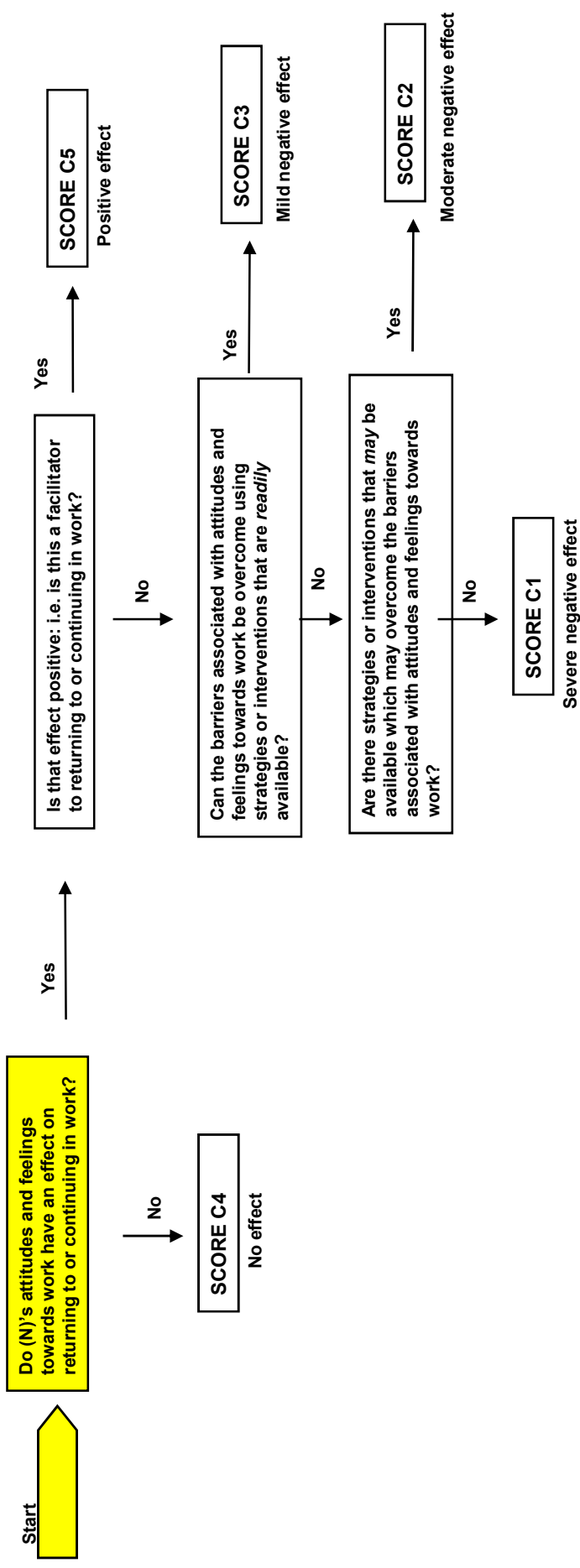
Issues with supports outside the workplace offer a moderate barrier to return to (or continuing in) work which may be overcome using strategies or interventions that may or may not be available

#### Level C1:

Issues with supports outside the workplace offer a severe barrier – effectively preventing return to (or continuing in) work. Or could only be overcome by strategies or interventions not currently available

## 17. ATTITUDES AND FEELINGS TOWARDS WORK

### Attitudes and feelings about work and the work environment that affect presence at work and work productivity



#### Notes:

##### Level C5:

Attitudes and feelings towards work are a positive facilitator for returning to or continuing in work.

##### Level C4:

Issues with attitudes and feelings towards work have no impact on returning to or continuing in work

##### Level C3:

Issues with attitudes and feelings towards work offer a mild barrier to return to (or continuing in) work, which can be overcome using strategies or interventions that are readily available

##### Level C2:

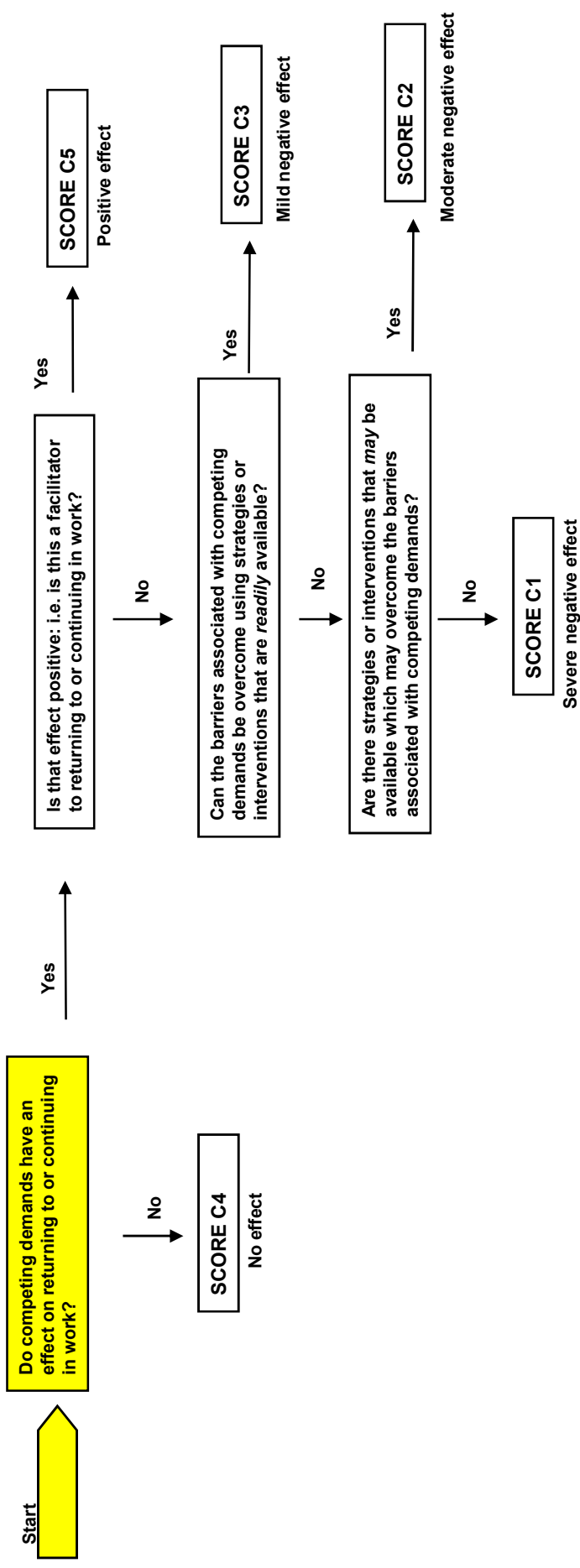
Issues with attitudes and feelings towards work offer a moderate barrier to return to (or continuing in) work which may be overcome using strategies or interventions that may or may not be available

##### Level C1:

Issues with attitudes and feelings towards work offer a severe barrier – effectively preventing return to (or continuing in) work. Or could only be overcome by strategies or interventions not currently available

## 18. COMPETING DEMANDS

Management of family, societal and legal issues that are in conflict with work commitments (including legal claims and financial compensation)



### Notes:

#### Level C5:

Demands are a positive facilitator for returning to or continuing in work.

#### Level C4:

Issues with competing demands have no impact on returning to or continuing in work

#### Level C3:

Issues with competing demands offer a mild barrier to return to (or continuing in) work, which can be overcome using strategies or interventions that are readily available

#### Level C2:

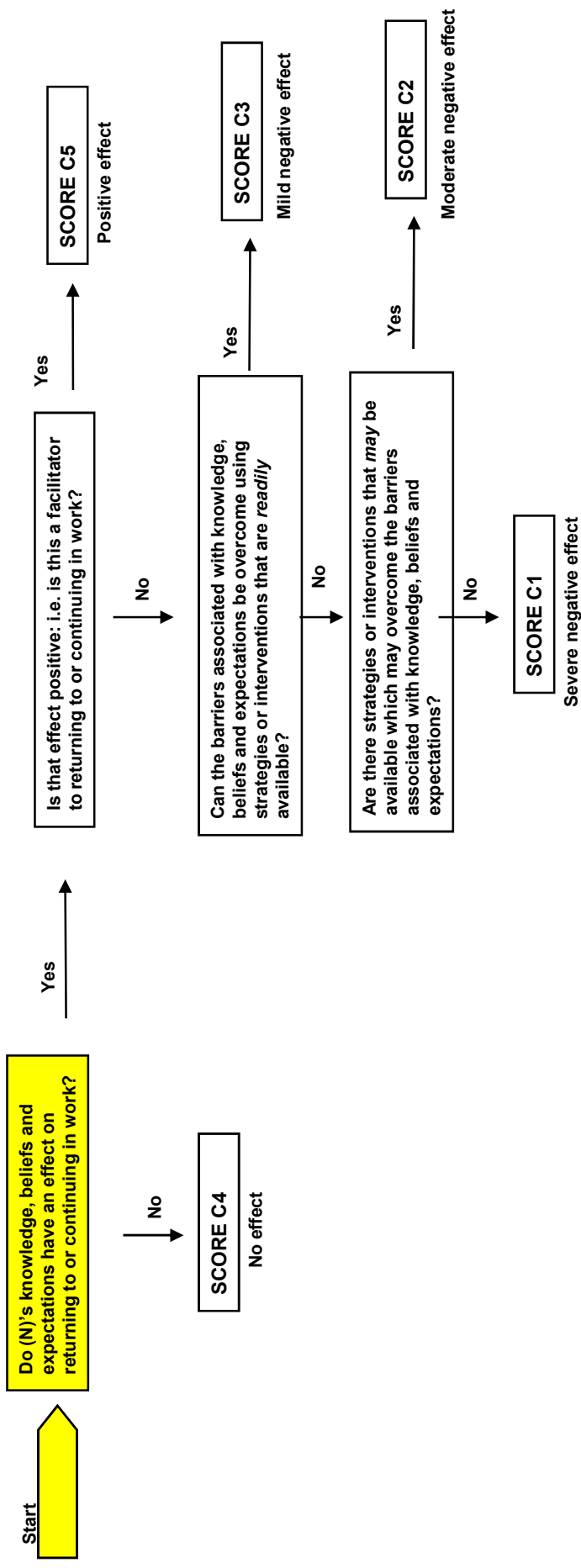
Issues with competing demands offer a moderate barrier to return to (or continuing in) work which may be overcome using strategies or interventions that may or may not be available

#### Level C1:

Issues with competing demands offer a severe barrier – effectively preventing return to (or continuing in) work. Or could only be overcome by strategies or interventions not currently available

## 19. KNOWLEDGE, BELIEFS AND EXPECTATIONS

### Knowledge, beliefs, expectations and coping strategies associated with ability to return to work and function in the workplace



#### Notes:

##### Level C5:

Knowledge, beliefs and expectations are a positive facilitator for returning to or continuing in work.

##### Level C4:

Issues with knowledge, beliefs and expectations have no impact on returning to or continuing in work

##### Level C3:

Issues with knowledge, beliefs and expectations offer a mild barrier to return to (or continuing in) work, which can be overcome using strategies or interventions that are readily available

##### Level C2:

Issues with knowledge, beliefs and expectations offer a moderate barrier to return to (or continuing in) work which may be overcome using strategies or interventions that may or may not be available

##### Level C1:

Issues with knowledge, beliefs and expectations offer a severe barrier – effectively preventing return to (or continuing in) work. Or could only be overcome by strategies or interventions not currently available