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Obesity and its influence on the biomechanics of manual handling: a systematic review

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Introduction: Obesity is a growing health concern worldwide and low back pain (LBP) is the leading cause of disability globally. LBP is an area of concern in obese populations performing manual handling tasks, due to potentially higher muscle forces and altered lifting dynamics. The aim of this review was to investigate biomechanical differences between obese and non-obese groups performing manual handling activities.

Methods: An electronic search was undertaken of three databases using a series of keywords based on three concepts: obesity; manual handling and biomechanics. Studies were included if they were experimental, involved manual handling, compared an obese with non-obese population, and reported on one or more biomechanical measures. Studies were evaluated for the risk of bias.

Results: Of the 1,037 articles identified, 15 met the inclusion criteria. Body Mass Index (BMI) was most frequently used to differentiate between a control and obese population. There was consistent evidence of increased net moments, compression forces and shear forces at L5/S1 in handlers classified as obese compared to non-obese. Inconsistent or no evidence was found for differences between populations for sagittal trunk flexion and acceleration, knee flexion angle and load separation.

Conclusions: Obesity increases loads on the musculoskeletal structures of the spine when handling loads which likely increases the risk of back injuries. Limited evidence of changes in the kinematics of lifting in obese populations has implications for the delivery and content of training, and preventative measures necessary to reduce risks to obese workers.

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Temporal trend of social security disability benefits due to musculoskeletal disorders from 2008 to 2018 in Brazil

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Introduction: Musculoskeletal disorders (MSD) affect workers from different occupational groups. These problems are the leading cause of long-term sickness absence in Brazil. This study aims to analyse the trends of disability benefits due to musculoskeletal diseases granted in Brazil, from 2008 to 2018.

Methods: An ecological time-series study was carried out using public data from the Brazilian National Social Security Institute. All workers who had at least one contribution to the system in any month during the period of time mentioned above was considered as a person at risk. Cumulative incidences of disability benefits due to MSD were calculated and Joinpoint regression models were fitted to estimate trends and calculate Average Annual Percentage Change (AAPC) with the corresponding 95% confidence interval.

Results: Mean working population was approximately 64.5 million. 5,041,691 disability benefits were granted due to MSD, with an annual average of 458,336 benefits and an annual average incidence of 71.41 benefits for every 10,000 insured. The trend is stable throughout the analyzed period for MSD benefits unrelated to work (95% CI: -0.6 (-1.7; 0.6). The mean coefficient of benefits per MSD related to work was 11.41 benefits per 10,000 insured. There was a mean annual decrease of 12% (95% CI: -13.4; -10.6) of new benefits granted for work-related MSD.

Conclusion: The trends in the benefits of work disability due to MSD showed stability in cases unrelated to work and a significant decrease in work-related cases.

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No Uniform Recommendations For Return To Daily Life Activities Including Work And Sport After Knee Arthroplasty In The Netherlands

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Introduction: Uniform and multidisciplinary recommendations concerning the return to daily life activities including work and sport after knee arthroplasty (KA) are essential for setting realistic patient expectations. However, scientific evidence for such recommendations is limited, and recommendations are often only based on expert opinions of healthcare profes sionals.

Materials and Methods: We aimed to summarize the current recommendations regarding return to daily life activities, including work and sport, provided by Dutch hospitals and clinics to patients after KA. Recommendations of 43 Dutch hospitals and clinics that perform KA's were identified, representing the advice that is provided to 70% of the total Dutch KA patients annually. Recommendations were retrieved using their websites (n = 8), brochures (n = 40) and content from mobile phone applications (n = 9). Two researchers independently summarized the recom mendations.

Results: Recommendations for 24 activities were identified and summarized. Recommendations varied greatly between hospitals and clinics. For example, the recommendations for return to work were mentioned by 18 (42%) out of the 43 hospitals and clinics and varied from two weeks to four months. For return to heavy work, the range was six to twelve months.

Conclusions: Recommendations for return to daily life activities after KA are often missing and vary considerably between Dutch hospitals and clinics. These findings imply the need for more uniform recommendations for postoperative return to daily life activities including work and sports.