

timer with their foot. Two trials were performed with the left and right foot in that exact order. Foot reaction time was recorded for each foot and both scores for each foot were then averaged as the mean score for each foot time.

Results: Pearson correlations (SPSS ver. 28) showed EOSS and ECSS balance scores had no significant relationship to the BMI or foot reaction time with the participants. There however was a negative relationship ($r = -0.72$; $p = 0.20$) between the right foot reaction time vs BMI of the participants.

Discussion: Our investigation did not show statistical significance. This may be due to low power based on a smaller sample size even though a strong negative correlation was discovered with the right foot reaction time and BMI. This study attempted to determine if there was a significant correlation between BMI, foot reaction time, and balance scores in elderly women. Compared to previous studies concluding that high BMI increases CoP scores, this study did not reflect past findings. Also, dominant foot reaction time was slower for those participants with higher BMI scores. A higher sample size could have increased the power of the study.

Application to the field: Reduction in body fat percentage have been known to improve mobility, decreasing postural sway. In elderly women, these variables could impact the chances of reducing falls and potential injuries.

All co-authors have no conflict of interest towards the relevance of this submission

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(P100009)

No measures of fear-avoidance following concussion can be recommended for use: a systematic review using the COSMIN Criteria

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Introduction: Concussion is a global concern across various populations. Fear avoidance behaviour is a prognostic risk factor for chronicity for musculoskeletal pain conditions, and is present in people with persistent post-concussion symptoms. Various patient-reported outcome measures (PROMs) have previously been used to quantify fear-avoidance behaviour in people following concussion. However, before being used, PROMs should be evaluated to ensure that they accurately measure the construct that they aim to quantify. The aims of this study were to: 1) identify PROMs that have assessed fear avoidance behaviour following concussion, and 2) assess the measurement properties of all identified PROMs.

Methods: A systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A search of seven online databases was performed from database inception to 5 November 2021. We included cross-sectional and longitudinal interventional or

observational studies published in peer reviewed journals that evaluated tool(s) that measure fear avoidance behaviour in participants with concussion. Two authors independently screened all articles and extracted relevant data. Assessment of methodological quality for included PROMs was performed following the COSMIN guidelines. The quality of the evidence was assessed using the GRADE approach. The assessment of PROM methodological quality and the quality of the evidence was assessed by two authors independently before a final consensus judgement was confirmed by the authorship team. This systematic review was prospectively registered on PROSPERO (CRD42021287565).

Results: A total of 1,397 records were identified by our search strategy, with 39 studies reported to have measured some aspect of avoidance behaviours. Only three PROMs had sufficient evidence to qualify for quality assessment: 1) modified Fear-Avoidance Beliefs Questionnaire (FABQ), Fear Avoidance Behaviour after Traumatic Brain Injury Questionnaire (FAB-TBI) and the Paediatric FAB-TBI Questionnaire (PFAB-TBI). There were no development studies identified for any of these PROMs. Both the modified FABQ and FAB-TBI had very-low level evidence of insufficient content validity and sufficient structural validity. The PFAB-TBI had very-low level evidence of insufficient content validity and the structural validity could not be assessed.

Conclusion: Quantifying fear avoidance behaviours in patients following concussion may help identify patients who require alternative management strategies. However, no current PROM can be recommended to assess fear-avoidance behaviours in a concussion population due to insufficient quality and very low levels of evidence. The development of PROMs that measure fear-avoidance behaviours in concussion, and are developed according to the COSMIN guidelines, are needed before the importance of fear-avoidance can be quantified.

Impact and application to the field: This review highlights that existing outcome measures to quantify fear-avoidance behaviours following concussion cannot be recommended for use due to either insufficient validity and/or a very-low-level of evidence. Furthermore, due to the poor quality of current measures, existing studies that have used these measures to quantify fear-avoidance behaviours following concussion are at risk of erroneous conclusions.

Conflicts of interest: The authors declare no competing interests.

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Three-year durability of pain and disability improvements in patients treated with Restorative Neurostimulation for chronic mechanical low back pain

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Introduction: Mechanical chronic low back pain (CLBP) can be caused by impaired neuromuscular control and degeneration of the multifidus muscles, the most important stabilizers of the lumbar spine. An implantable Restorative Neurostimulation system (ReActiv8® by Mainstay Medical) bilaterally stimulates the medial branches of the L2 dorsal rami to override underlying multifidus inhibition to facilitate motor control restoration. The ReActiv8-B randomized sham-controlled pivotal trial provided published evidence of safety, effectiveness, and durability of this therapy (clinicaltrials.gov/show/NCT02577354). Here we will report the three-year durability results.

Methods: Eligible patients had activity limiting mechanical CLBP with Visual Analog Scale (VAS) ≥ 6 cm; Oswestry Disability Index (ODI) ≥ 21 points despite medical management, including at least