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Clinical outcome measures for monitoring physical function in pediatric obesity: An integrative review

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Measuring physical function in children with obesity is important to provide targets for clinical intervention to reduce impairments and increase participation in activities. The objective of this integrative review was to evaluate measurement properties of performance-based measures of physical function in children with overweight and obesity. An integrative review of literature published between January 1990 to February 2014 in Cochrane Reviews, SPORTD iscus, CINAHL, PLoS, Medline and Scopus was conducted. The consensus-based standards for the selection of health status measurement instruments (COSMIN) were utilized to determine validity, reliability and responsiveness to evaluate the methodological quality of studies on measurement properties. Twenty-eight (28) studies were eligible and represented 66 performance-based measures of physical function. Assessments of repeatability and feasibility were not conducted in the majority of performance measures reported; only 6-min-timed walk (6MTW) was examined for test-retest repeatability. Measures of flexibility, strength, aerobic performance, anaerobic performance, coordination and balance demonstrated construct validity and responsiveness; however, findings were inconsistent across all performance-based measures. Multi-item tests of physical function demonstrated acceptable construct validity and responsiveness; however, internal consistency was not determined. There is moderate evidence that 6MTW is suitable for the measurement of physical function in children with obesity. However, evidence is low for the use of aerobic and anaerobic performance, muscle strength, Movement Assessment Battery for Children and Bruininks-Oseretsky Test of Motor Proficiency multi-item performance instruments and very low for flexibility, coordination and balance tests. Based on this review, measurement of physical function using 6MTW is recommended.

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