

# Primary Validation of the Submandibular Skinfold as an Anthropometric Measurement of Cardiometabolic Risk in People with Intellectual Disabilities

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## Abstract

The accumulation of body fat is an important cardiometabolic risk factor; however, there is no consensus about which measure is more reliable for the assessment of cardiometabolic risk in people with intellectual disabilities. The aim of the present study was to primarily validate the submandibular skinfold as an anthropometric measurement of cardiometabolic risk in children, adolescents, and adults with intellectual disabilities, using a cross-sectional study made up of 131 people (67.2% men) with mild and moderate intellectual disability. The cardiometabolic risk indicators used were: body mass index (kg/m<sup>2</sup>), neck circumference (cm), waist circumference (cm), calf circumference (cm) and waist-to-height ratio. Moderate correlations were demonstrated between the submandibular skinfold measure and the anthropometric measurements analyzed in the three age categories, showing the highest correlation ( $r = 0.70$ ) between the submandibular skinfold and BMI in the adolescent group and waist-to-height ratio in adults. The implementation of the submandibular skinfold measurement is suggested as an easy, fast, and minimally invasive anthropometric measurement as part of the physical and nutritional evaluation for the assessment of cardiometabolic risk in people with intellectual disabilities. © 2023 by the authors.

## Author keywords

anthropometric measurements; BMI; cardiometabolic risk; intellectual disability; obesity; submandibular skinfold