

Jumping Jacks Test: A Valid and Reliable Cardiorespiratory Endurance Assessment Tool

LJA Gaspar^{*1} and ON Gomez²

¹Lourdes College, Inc.

²University of Management and Technology Hochiminh City, Vietnam

**lover.gaspar@lccdo.edu.ph*

Physical Education (PE) teachers face the challenge of providing safe and relevant fitness assessment strategies for their students. However, common cardiorespiratory endurance tests like the step test and multi-stage fitness test present concerns and dangers. These tests often lack equity and may lead to falls or unsafe exercise levels. To address these issues, an alternative cardiorespiratory endurance test, the Jumping Jacks Test (JJT), was developed and validated in this study. The study employed a psychometric research design, involving content and construct validity (convergent and discriminant), as well as reliability assessment. Using purposive sampling, a panel of 10 PE professionals provided positive feedback on the JJT's purpose, relevance, and practicality, making it suitable for schools with limited resources. The test's psychometric properties were assessed using the Cooper Run Test for convergent validity and the Ruler Drop Reaction Time Test for discriminant validity, participated by 10 Junior High School, 10 Senior High School, and 10 College students. The JJT achieved a content validity index (CVI) of 1.00, indicating its effectiveness in measuring cardiorespiratory endurance. PE professionals consistently rated the JJT as relevant and appropriate. It showed strong convergence with the Cooper Run Test for Junior High School (JHS) and Senior High School (SHS) students ($\rho = .632$), validating its effectiveness for these age groups. While the correlation was weaker for college-level participants, the JJT remained valid overall. The JJT demonstrated acceptable discriminant validity ($\rho = -0.23$), distinguishing cardiorespiratory endurance from reaction time. The JJT is a valid and reliable measure of cardiorespiratory endurance for students. Its safety, simplicity, and efficiency make it suitable for various age groups and fitness levels. The test's psychometric properties, including its high CVI and stability reliability, further support its use in Physical Education classes and fitness assessments. The JJT represents a valuable addition to the field, benefiting students, PE teachers, fitness trainers, and researchers alike.

Keywords: Content Validity, Cooper Run Test, Convergent Validity, Discriminant Validity