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Variations in Perceived Exertion during Climbing Stairs and Elevated Walking

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ABSTRACT

Background: Stair climbing and walking on a ramp are considered low-impact activities. However, the quantification and effect of physiological and cardiovascular responses are lacking. Understanding these differences is crucial for developing targeted exercise protocols that will give overall health benefits and help regulate vital physiological covariates.

Aim: To compare the changes in rate of perceived exertion by comparing heart rate and blood pressure before and after exertion in adults while climbing stairs and walking on an elevated ramp.

Methodology: A total of 30 subjects participated in the activity, which was divided into two groups: 15 subjects walked on the elevated ramp, and 15 subjects climbed the stairs. Once the subject is ready, they are asked to complete the IPAQ short version questionnaire, and a modified Borg rating scale is administered to assess their breathing rate. A pulse oximeter, a sphygmomanometer, and an RPE scale were used to determine the exertion rate in the adults.

Result: A total of 30 subjects were recruited, with 15 subjects using stairs and 15 subjects using a ramp to assess the rate of perceived exertion. There was a significant difference in exertion rate, as measured by respiratory rate and blood pressure, between the two activities.

Conclusion: The study concludes that while ramp walking and stair climbing have similar health advantages, stair climbing is a more strenuous kind of exercise. To optimise benefits and adherence, exercise prescription should take into account cardiovascular health, individual fitness levels, and personal preferences, as well as long-term adaptations to these activities.

Keywords: Perceived stress, heart rate, stair climbing, ramp walk, respiratory rate.

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