

**PSYCHOPHYSIOLOGY ALTERATION AND VASOMOTOR
RESPONSES OF OVERWEIGHT SUBJECT TO STIMULI USED
IN CONVENTIONAL VASCULAR RESPONSE TESTING**



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VASCULAR RESPONSE TESTING

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ABSTRACT

This study was to investigate the effect of overweight on psycho-physiological alteration and vasomotor responses of the left arm and leg. Ten overweight males (age 20-40yr, BMI = 25.0 to 29.9 kg per m²) and 10 control males (age 20-40yr, BMI = 18.5 to 24.9 kg per m²) volunteered for this study. The left arm and leg of both subject groups were acutely stimulated with hot water (42°C), cold water (12°C), exercise and cuff occlusion of blood flow. The volume changes in the vasomotor responses were determined using a volumeter. Results in the psychophysiological parameter assessment before and after exercise showed that the overweight had warned tactile reaction time at the 7th cervical level with the left big toe response (TRTlbtC₇), the right big toe response and the tapping speed test of the left index finger which were all significantly greater than the control. The physical performance of the controls in relation to oxygen consumption was significantly higher than the overweight. Vasomotor responses of blood vessels of the left lower and upper extremities in the controls were significantly higher than the overweight subjects after stimulation by hot water (42°C), cold water (12°C) and exercise. A significant reduction of Ankle Brachial Pressure Index (ABPI) in the overweight subjects was found which was similar to the vasomotor responses. These findings suggest that being overweight is associated with reductions in physical performance and vasomotor responses. This may indicate the risk of atherosclerotic vascular disease. Even though there are many factors inducing the risk of atherosclerotic vascular disease such as smoking and hypertension, being overweight is the one of the most important factors leading to the disease. However, being overweight can be avoided by regularly doing aerobic physical activity and carefully controlling body weight to appropriate levels.

KEY WORDS: VASOMOTOR RESPONSE / EXERCISE / OVERWEIGHT
/ PSYCHOMOTOR TASK

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