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Al-Refae S, Al-Hazzaa H, Al-Ghamidi A.

*Exercise Physiology Laboratory, King Saud University, Riyadh, Saudi Arabia.*

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DIFFERENTIATED PERCEPTION OF EXERTION AND ENERGY COST OF LEAN AND OBESE BOYS WHILE CARRYING LOADS

S.A. Al-Refae, H.M. Al-Hazzaa, FACSM, & A.A. Al-Ghamidi. Exercise Physiology Laboratory, King Saud University, Riyadh, Saudi Arabia

Differentiated ratings of perceived exertion, using Children Effort Rating Table, CERT, and oxygen consumption were determined while carrying loads during flat and grade (6%) walking in obese (OB, n=15) and lean (LE, n=15) boys. Subjects walked on treadmill for 6 min at 6 km.h<sup>-1</sup> while carrying no load (NL), a load equal to 15% of lean body mass (LBM), and a load equal to 15% of body mass (BM). Loads were distributed evenly on the trunk with a worn vest. Testing was performed in a counterbalanced order. Means ( $\pm$  SD) of age, weight, and fat content for OB vs. LE boys were: 10.59  $\pm$  0.14 vs. 10.62  $\pm$  0.18 yr; 47.7  $\pm$  5.4 vs. 28.6  $\pm$  3.4 kg; 37.2  $\pm$  3.9 vs. 14.3  $\pm$  2.8%, respectively. Central (C), and local (L) ratings were not different ( $P < .05$ ) from overall (O) rating in both groups during flat and grade walking with NL. Lean boys had higher ( $P < .05$ ) O rating than L rating during flat walking with both loads and during grade walking with LBM load. However, only during grade walking with LBM load had OB boys higher ( $P < .05$ ) O rating than L, and higher ( $P < .05$ ) O than L & C with BM load. There was a group by grade interaction where LE boys exhibited higher C, L, and O ratings during grade compared to flat walking with BM load. Oxygen consumption (ml.kg<sup>-1</sup>.min<sup>-1</sup>), while adjusting for O<sub>2</sub> cost of walking without load, was higher ( $P < .05$ ) in LE than in OB during grade walking with both LBM and BM loads. This could partially explain why LE boys had higher perceptual ratings during grade walking in comparison with flat walking.