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» **Journal Abstract**

Physiological responses to graded exercise test in youths with spastic tetraplegia subjected to upper extremity training

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The aim of the study was to assess the effects of exercise therapy of moderate intensity on cardiorespiratory functions in youths suffering from tetraplegia in cerebral palsy. Eight schoolboys, aged 17.5 ± 0.3 years, suffering from spastic tetraplegia were studied. They were subjected to graded cycle ergometer exercise, adapted for upper extremities, until exhaustion. The following variables were recorded: tolerated load, total work output and cardiorespiratory indices. Exercise therapy lasted two weeks and consisted of cycle ergometer arm exercises at a load equal to 75% HRmax. Every session lasted 20 min, once daily. Mean maximal oxygen uptake increased from 26.4 to 35.9 ml•kg⁻¹ and minute ventilation at maximum load from 48.0 to 68.0 breaths . min⁻¹, all differences being significant ($p < 0.01$). In conclusion, the therapy brought about a marked increase in power output, from 1.69 W•kg⁻¹ to 2.28 W•kg⁻¹ (pre- and post-training, respectively), evidencing improvements in mechanical conditions of muscle work and in aerobic capacity.

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