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**Format:** Abstract**Full text links**Med Sci Sports Exerc. 1988 Apr;20(2):167-71.**Effects of extremity loading upon energy expenditure and running mechanics.**Claremont AD<sup>1</sup>, Hall SJ.**Author information****Abstract**

Physiological and mechanical consequences of running with commercially available hand and/or **ankle weights** were examined. Five males and three females (age 30 to 56 yr) ran for 30 min on a treadmill (0% grade) at a self-selected pace (8.9 to 13.7 km.h<sup>-1</sup>), under randomized conditions of: (i) unloaded weights; (ii) hand weights; (iii) **ankle weights**; and (iv) hand + **ankle weights**. Respiratory gas exchange determinations, heart rates, and sagittal view film clips were obtained at selected time intervals. Highest energy expenditures and heart values were obtained for the fully loaded condition, with intermediate values measured for independent hand- and ankle-weighted trials. Increased energy expenditure due to loading ranged from 5 to 8%. Lower extremity kinematics were unaffected by loading. Angular velocity and excursion of the arm segments was significantly (*P* less than 0.05) reduced when hand weights alone were carried. The results indicate that commercial claims of marked increases in energy expenditure during running with hand/**ankle weights** are exaggerated. It appears that the small actual increases in energy expenditure, the potential for increased impact forces, and the relative discomfort of carrying weights discredit running with hand and/or **ankle weights** as a desirable exercise alternative.

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