

Evaluation of the effect of energy conservation techniques in the performance of activity of daily living tasks

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Objective: To determine whether energy conservation techniques during common activity of daily living tasks actually result in lower energy expenditure, and to document subjective comments regarding any differences in the perceived level of effort.

Design: Descriptive study comparing energy expenditure in three tasks with and without energy conservation techniques, taking into account the effect of age.

Setting: Occupational therapy department of a rehabilitation hospital in Hong Kong.

Subjects: One hundred and eight subjects (30 < 60 years; 78 ≥ 60 years) were recruited from staff and members of an elderly social centre in the community.

Measurements: Energy expenditure was measured using a portable indirect calorimetry system for three tasks (shopping, washing clothes and hanging laundry) with and without energy conservation techniques. Dyspnoea, fatigue and perceived exertion were measured using visual analogue scales.

Results: Reduction in energy expenditure using energy conservation techniques for shopping and hanging laundry was documented in younger subjects only (O_2 consumption fell from 13.8 ± 3.7 to 12.2 ± 3.8 mL/min per kg for shopping, $P < 0.001$ and 5.9 ± 1.2 to 5.0 ± 1.2 mL/min per kg, $P < 0.001$ for hanging laundry), although the older subjects experienced less perceived exertion with the energy conservation techniques. For washing clothes, no reduction in energy expenditure was observed in either age groups.

Conclusion: Measurable benefits were observed with use of labour-saving equipment and avoidance of overhead reaching in younger subjects only.

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