

Physiotherapy Briefings for Physicians

A Research Summary from the
Canadian Physiotherapy Association

MAY 2008

Obesity

Subject: exercise as a tool for prevention and mitigation of obesity
Physiotherapists are expert at assessing, planning, and implementing exercise programs for overweight and obese individuals.

The number of people in Canada who are overweight or obese is reaching epidemic proportions [1,2,3]. A strong base of evidence indicates that exercise combined with diet is effective as a weight loss and weight management strategy. Further, regular exercise has health benefits even if no weight is lost.

For instance, a 2004 review [4] integrated evidence on the diagnosis and treatment of obesity in adults with the authors concluding that **a combination of diet and exercise provides the best results (NNT = 7) for treatment of overweight/obese patients**. A weight loss of 10% positively affects prevention/treatment of hypertension (NNT = 3), diabetes (NNT = 9), and hyperlipidemia. A 2006 review [5] concluded that **exercise combined with diet results in greater weight reduction than diet alone** (WMD = -1.1 kg, 95% CI -1.5 to -0.6). Increased exercise intensity increased the magnitude of weight loss (WMD -1.5 kg, 95% CI -2.3 to -0.7). The review (43 studies totaling 3,476 overweight or obese participants) concluded that exercise is effective as a weight loss intervention, particularly when combined with dietary change. This review also concluded that **exercise improves cardiovascular disease risk factors even if no weight is lost**. Exercise as a sole intervention resulted in reductions in diastolic blood pressure (WMD -2mmHg; 95% CI -4 to -1), triglycerides (WMD -0.2 mmol/L; 95% CI -0.3 to -0.1), and fasting glucose (WMD -0.2 mmol/L; 95% CI -0.3 to -0.1).

Evidence indicates that **fewer than 25% of patients who attempt weight loss on their own incorporate exercise into their weight loss plans**, and that lack of ongoing physical activity may be responsible for the prevalence of weight regain after initial weight loss. Although physicians may counsel patients to lose weight, 75% of patients may not include exercise in their program, thereby lessening their chances of achieving and maintaining weight loss [6]. Physiotherapists recognize the impact of obesity on the musculoskeletal and cardiovascular systems, and regularly prescribe and oversee therapeutic exercise designed for the physical stresses associated with obese bodies. Further, in line with the evidence, physiotherapists recommend regular exercise for health benefits even if no weight is lost.

Although physicians may counsel patients to lose weight, 75% of patients may not include exercise in their program, thereby lessening their chances of achieving and maintaining weight loss. Physiotherapists can help.

Physiotherapy Briefings for Physicians is an initiative of the Physiotherapy Association of British Columbia. This topic was developed in consultation with the Canadian Physiotherapy Association.



As primary health professionals, physiotherapists are ideally suited to identify exercise strategies targeted to overweight individuals and to coordinate comprehensive obesity management programs. Physiotherapists have specific education in biomechanics, therapeutic exercise and exercise prescription, measurement, and physiological and anatomical mechanisms of health and disease. This diverse skill set and broad experience base positions physiotherapists to address obesity and related conditions [8].

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The 2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children [9] establish evidence-based procedures to guide the management and prevention of obesity at the individual and population level.

Recommendations include:

- “Health team to discuss and devise appropriate client-centred education, support and goals for comprehensive lifestyle modification therapy with client and, when appropriate, family members.”

Physiotherapists are integral members of the health assessment team.

- “Prescribe 30 minutes of daily activity of moderate intensity and, when appropriate, increase to 60 minutes or more daily.”
Physiotherapists design SAFE and APPROPRIATE daily activities for overweight/obese individuals. Many people with obesity will have musculoskeletal problems such as back pain that could interfere with their doing the recommended 30 to 60 minutes of exercise per day. An assessment and therapeutic treatment plan by a physiotherapist will help remove risk barriers to exercise.
- “Undertake regular reviews and reinforce goals for weight loss or maintenance, and prevention of weight regain.”
Physiotherapists motivate and support individuals to maintain their exercise program, increasing their chance of successfully implementing exercise lifestyle changes.

A systematic review of research [12] on the efficacy of exercise for treating overweight in children and adolescents (including 14 studies with 481 boys and girls of approx. 12 years) concluded that an aerobic exercise prescription of 155 – 180 minutes/week at moderate to high intensity is effective for reducing percent body fat in overweight children/adolescents (pooled SMD -0.4, 95% CI -0.7 to -0.1, $p = 0.006$). Further recent evidence suggests exercise benefits obese or overweight children beyond a reduction in weight. Bell et al. [13] found significant reductions in the risk for type 2 diabetes associated with increased fitness independent of weight loss. Nassis et al. [14] showed evidence that overweight and obese youth with higher fitness levels have decreased body fat. Woo et al. [15] demonstrated the efficacy of exercise to reduce obesity-related vascular dysfunction in overweight and obese youth.

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Fast Facts

- A 2005 review [7] examined randomized clinical trials comparing diet and exercise combined interventions vs. diet alone for long-term weight loss. The six studies reported follow-up one year after initial intervention. Diet associated with exercise produced a 20% greater initial weight loss than diet alone (13 kg vs. 9.9 kg; $z = 1.86 - p = 0.063$, 95% CI). Although both groups partially regained weight, **the combined intervention also resulted in a 20% greater sustained weight loss after 1 year** (6.7 kg vs. 4.5 kg; $z = 1.89 - p = 0.058$, 95% CI).
- A complete physiotherapy assessment may test anthropometric characteristics, aerobic capacity/ endurance, circulation, gait/ locomotion/balance, muscle performance, pain, range of motion, and posture – all of which may affect exercise prescription for an obese individual [10,11].

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