



## COVER SHEET

---

**This is the author version of article published as:**

Byrne, Nuala M. and Meerkin, Jarrod D. and Laukkanen, Raija and Ross, Robert and Fogelholm, Mikael and Hills, Andrew P. (2006) Weight loss strategies for obese adults: Personalized weight management program vs standard care. *Obesity* 14(10):pp. 1777-1788.

**Copyright 2006 The North American Association for the Study of Obesity**

Accessed from <http://eprints.qut.edu.au>

## Original Articles

# Weight Loss Strategies for Obese Adults: Personalized Weight Management Program vs. Standard Care

Nuala M. Byrne<sup>\*</sup>, Jarrod D. Meerkin<sup>\*</sup>, Raija Laukkanen<sup>†</sup>, Robert Ross<sup>‡</sup>, Mikael Fogelholm<sup>§</sup> and Andrew P. Hills<sup>\*</sup>

<sup>\*</sup> School of Human Movement Studies, Queensland University of Technology, Kelvin Grove, Australia;

<sup>†</sup> Polar Electro Oy, Kempele, Finland; Department of Public Health Science and General Practice, University of Oulu, Oulu, Finland;

<sup>‡</sup> Queen's University, School of Physical and Health Education, Kingston, Ontario, Canada; and

<sup>§</sup> The UKK Institute for Health Promotion Research, Tampere, Finland.

Address correspondence to Nuala M. Byrne, School of Human Movement Studies, Queensland University of Technology, Victoria Park Road, Kelvin Grove, Q4059 Brisbane, Queensland, Australia.  
E-mail: [n.byrne@qut.edu.au](mailto:n.byrne@qut.edu.au)

**Objective:** The objective of this study was to evaluate the effect of a 32-week personalized Polar weight management program (PWMP) compared with standard care (SC) on body weight, body composition, waist circumference, and cardiorespiratory fitness in overweight or obese adults.

**Research Methods and Procedures:** Overweight or obese ( $29 \pm 2$  kg/m<sup>2</sup>) men and women ( $n = 74$ )  $38 \pm 5$  years of age were randomly assigned into either PWMP (men = 20, women = 21) or SC (men = 15, women = 18). Both groups managed their own diet and exercise program after receiving the same standardized nutrition and physical activity advice. PWMP also received a weight management system with literature to enable the design of a personalized diet and exercise weight loss program. Body weight and body composition, waist circumference, and cardiorespiratory fitness were measured at weeks 0, 16, and 32.

**Results:** Eighty percent of participants completed the 32-week intervention, with a greater proportion of the dropouts being women (PWMP: 2 men vs. 7 women; SC: 2 men vs. 4 women). At 32 weeks, PWMP completers had significantly ( $p < 0.001$ ) greater losses in body weight [ $6.2 \pm 3.4$  vs.  $2.6 \pm 3.6$  (standard deviation) kg], fat mass ( $5.9 \pm 3.4$  vs.  $2.2 \pm 3.6$  kg), and waist circumference ( $4.4 \pm 4.5$  vs.  $1.0 \pm 3.6$  cm). Weight loss and fat loss were explained by the exercise energy expenditure completed and not by weekly exercise duration.

**Discussion:** More effective weight loss was achieved after treatment with the PWMP compared with SC. The results suggest that the PWMP enables effective weight loss through tools that support self-monitoring without the requirement of more costly approaches to program supervision.

**Key Words:** weight loss • exercise • diet • weight management • intention-to-treat

<http://www.obesityresearch.org/cgi/reprint/14/10/1777>