

**John M. Boltri, MD,  
and Alice A. House, MD**  
Department of Family  
Medicine, Mercer University  
School of Medicine,  
Macon, Ga

**Roxanne M. Nelson,  
MSLIS**  
Medical Library and  
Peyton T. Anderson  
Learning Resources Center,  
Mercer University School  
of Medicine, Macon, Ga

## Q / Which strategies work best to prevent obesity in adults?

### EVIDENCE-BASED ANSWER

**A / PHYSICAL ACTIVITY AND DIETARY MODIFICATION WORK BEST.** Family involvement, regular weight monitoring, and behavior modification also can help.

Regular physical activity decreases long-term weight gain (strength of recommendation [SOR]: **B**, 2 high-quality, randomized controlled trials [RCTs]). Decreasing fat intake (SOR: **B**, 1 high-quality systematic review) and increasing fruit and vegetable consumption (SOR: **B**, 1 high-quality RCT) also may decrease weight gain. Combined dietary and physical activity in-

terventions prevent weight gain (SOR: **B**, 1 high-quality systematic review).

Family involvement helps maintain weight (SOR: **B**, 2 small RCTs). Daily or weekly weight monitoring reduces long-term weight gain (SOR: **B**, 2 RCTs).

Clinic-based, direct-contact, and Web-based programs that include behavior modification may reduce weight gain in adults (SOR: **C**, 3 RCTs). Behavior modification delivered by personal contact is more effective than mail, Internet, or self-directed modification programs (SOR: **B**, 2 RCTs).

### Evidence summary

A recent systematic review of obesity prevention studies found 9 RCTs demonstrating that dietary and physical activity interventions can prevent weight gain, but lacking sufficient evidence to recommend a specific type of program.<sup>1</sup>

A systematic review of the effects of physical activity on weight reduction and maintenance analyzed 46 studies, including 8 RCTs that investigated interventions to reduce weight and 3 that examined measures to maintain it.<sup>2</sup> More than 80% of the studies showed a benefit from physical exercise. Prevention of weight gain appears to be dose-dependent. More exercise leads to less weight gain; a minimum of 1.5 hours per week of moderate exercise is needed to prevent weight gain.<sup>2</sup>

#### Less fat, more vegetables spur weight loss

The Women's Health Initiative studied 46,808 postmenopausal women between 50 and 79 years of age who were randomly assigned to an intervention or control group.<sup>3</sup> The intervention

group received intensive group and individual counseling from dietitians aimed at reducing fat intake to 20%, increasing consumption of vegetables and fruits to 5 or more servings per day, and increasing consumption of grains to 6 or more servings per day. The control group received dietary education materials. Neither group had weight loss or calorie restriction goals or differences in physical activity.

The intervention group had a mean decrease in weight 1.9 kg greater than the controls at 1 year ( $P < .001$ ) and 0.4 kg at 7.5 years ( $P < .01$ ). Weight loss was greater in women who consumed more fruits and vegetables and greatest among women who decreased energy intake from fat.

#### A family-based intervention lowers BMI in females

A family-based trial of weight gain prevention randomized 82 families to a group that was encouraged to eat 2 servings of cereal a day and increase activity by 2000 steps a day, or to a

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control group.<sup>4</sup> In the intervention group, body mass index (BMI) decreased by 0.4% in mothers ( $P=.027$ ), and BMI percentage for age decreased by 2.6% in daughters ( $P<.01$ ). Male family members showed no significant differences, however.

### Family ties, self-weighing improve weight control

A systematic review of family-spouse involvement in weight control and weight loss found that involving spouses tended to improve the effectiveness of weight control.<sup>5</sup>

Two studies, 1 an RCT, found an association between self-weighing and preventing weight gain.<sup>6,7</sup> Patients who weighed themselves daily or weekly were less likely to gain weight than patients who weighed themselves monthly, yearly, or never.

### Getting personal helps modify behavior

Three RCTs compared clinic-based, Web-based, and self-directed advice and counseling to prevent weight gain (2 studies) and maintain weight loss (1 study). In the first study, 67 patients were assigned to 4 months of clinic-based or home-based counseling to increase exercise and reduce fat intake, or to a control group.<sup>8</sup> Weight change was -1.9 kg in the clinic-based group, -1.3 kg in the home-based group, and +0.22 kg in the control group ( $P=.007$ ).

In the second study, 1032 overweight or obese adults with hypertension and/or dyslipidemia who completed a weight-loss program were randomly assigned to receive

monthly personal contact, unlimited access to a Web-based intervention, or a self-directed control group.<sup>9</sup> At 30 months, participants in the personal contact group had regained less weight than the Web-based or control groups (4.0, 5.1, and 5.5 kg, respectively;  $P<.01$ ).

A third RCT randomized 284 healthy 25- to 44-year-old women with BMI  $<30 \text{ kg/m}^2$  to group meetings, lessons by mail, or a control group that received an information booklet. The study found no significant difference among the 3 groups in weight maintenance at a 3-year follow-up; 40% maintained weight, and 60% gained more than 2 pounds.<sup>10</sup>

### Recommendations

Wide consensus supports screening by either BMI or height and weight. The US Preventive Services Task Force (USPSTF) recommends intensive counseling for everyone with a BMI  $\geq 30 \text{ kg/m}^2$  coupled with behavioral modification to promote sustained weight loss.<sup>11</sup> The USPSTF found insufficient evidence to support less intensive counseling for obese patients or counseling of any intensity for overweight patients.

The Canadian Task Force on Preventive Health Care found insufficient evidence to recommend for or against BMI measurement during routine health evaluations of the general population.<sup>12</sup>

The American Diabetes Association<sup>13</sup> and the American College of Preventive Medicine<sup>14</sup> recommend counseling and behavior modification for all adults to prevent obesity. **JFP**

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