

# NAMS PRACTICE PEARL

## ***Dietary Strategies for Weight Loss in Midlife Women***

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***As women go through menopause, their risk of gaining weight increases. Clinicians will generally recommend dietary change as the first step toward losing weight, but which diets work best? This Practice Pearl reviews whether certain dietary therapies are more effective than others in facilitating weight loss in postmenopausal women.***

The risk of developing obesity increases during menopause because of the decreased production of estradiol and the age-related slowing of the resting metabolic rate.<sup>1</sup> A sedentary lifestyle also contributes to weight gain during menopause. At present, approximately 40% of postmenopausal US women are obese.<sup>2</sup> Diet regimens are usually recommended as the first-line therapy for weight loss and weight-gain prevention.

***Low-fat diets.*** Three randomized, controlled trials (RCTs) have evaluated the effects of low-fat diets in promoting weight loss in postmenopausal women. Results from these studies demonstrate that low-fat diets are effective for weight loss after 4 to 12 months of treatment. For example, in one study, postmenopausal women who were obese lost 8.5% of body weight after 12 months of a low-fat, hypocaloric diet (< 30% fat; total daily energy intake of 1,200-2,000 kcal based on baseline weight).<sup>3</sup> Likewise, after 8 months of a low-fat diet (15% fat), weight was reduced by 7.7% in healthy postmenopausal women who were obese.<sup>4</sup> Applying this diet for shorter durations (4 mo) also results in weight loss.<sup>5</sup> In the Sex Hormones and Physical Exercise-2 trial, postmenopausal women who were overweight and obese were randomized to a low-fat, energy-reduced diet (20%-35% fat; 500 kcal/d deficit), exercise, or a control group. After 4 months, participants lost 6.1% of initial body weight with diet. Attrition rates were shown to be low, suggesting that these diets were well tolerated by postmenopausal women.

Only one study to date, the Women's Health Initiative Dietary Modification Trial, has examined whether low-fat diets are effective for weight *maintenance* in midlife women.<sup>6</sup> In this RCT, 19,541 postmenopausal women were prescribed a low-fat diet (20% fat), with no restriction on caloric intake, for 7 years. Body weight decreased by 1.7% during the first year of intervention, and participants maintained a weight loss of 1.0% after 7 years versus controls. These findings suggest that a low-fat eating pattern may be effective in helping women prevent weight gain after menopause.

***High-protein diets.*** High-protein diets have been shown to aid in muscle mass retention during weight loss. Three trials to date have examined the effect of high protein intake during calorie restriction on body weight and body composition in midlife women. In one trial, postmenopausal

women who were obese were randomized to one of three diet groups: a high-protein, hypocaloric diet (1.2 g protein/kg of body weight; 30% energy restriction); a low-protein, hypocaloric diet (0.8 g protein/kg of body weight; 30% energy restriction); or a no-intervention control group.<sup>7</sup> After 6 months, both intervention groups lost the same amount of weight (approximately 10%); however, the high-protein group lost half the amount of muscle mass as the low-protein group. Losing muscle mass (a key determinant of resting metabolic rate) can result in a reduced metabolic rate, which can make maintaining weight loss challenging.

These results are supported by the findings of another trial that demonstrated a mean weight loss of approximately 10% with a high-protein (30% protein; 400 kcal/d deficit) and a low-protein (15% protein; 400 kcal/d deficit) diet in postmenopausal women.<sup>8</sup> The low-protein group lost twice the amount of muscle mass compared with the high-protein group.

In a 3-month study, weight loss was also similar (approximately 10%) when a high-protein regimen (30% protein; 750 kcal/d deficit) was compared with a low-protein regimen (18% protein; 750 kcal/d deficit) in postmenopausal women who were obese.<sup>9</sup>

Taken together, these findings suggest that high-protein and low-protein diets are equally effective for facilitating weight loss in postmenopausal women, but high-protein diets may be more effective for the preservation of muscle mass. However, it should be noted that the high-protein diets resulted in lower bone mineral density (BMD)<sup>9</sup> and also prevented weight loss-induced improvements in insulin sensitivity.<sup>7</sup> These negative metabolic effects should be taken into consideration before recommending high-protein weight loss diets to postmenopausal women who are obese.

***Alternate-day fasting diets.*** Alternate-day fasting protocols have gained popularity as weight-loss regimens. This regimen typically involves a “fast day” in which one would consume approximately 500 calories as either a lunch or dinner, alternated with a “feast day” in which one can consume food ad libitum with no restrictions on types or quantities of foods. In a 6-month study of alternate-day fasting, postmenopausal women lost twice as much weight as premenopausal women.<sup>10</sup> More specifically, postmenopausal women lost 11% of body weight at the end of the study compared with premenopausal women who lost 5% of their body weight. Adherence to the fasting protocol was also much higher in postmenopausal women, which likely contributed to their weight loss success. This study also showed that BMD was not adversely affected by fasting. Although the findings are limited, these preliminary data suggest that fasting regimens might be a viable option for weight loss in midlife women.

***Regimens compared.*** Findings from RCTs show that low-fat hypocaloric diets, high-protein hypocaloric diets, and alternate-day fasting protocols all produce clinically significant weight loss (6%-10%) after 4 to 12 months of treatment in postmenopausal women. The rate of weight loss was similar for each of these diets. Adherence was high in most of the studies, suggesting that the diets are equally well tolerated. High-protein diets have the added benefit of retaining muscle mass during periods of weight loss, which can help sustain basal metabolic rate and promote long-term weight maintenance. However, higher-protein diets were shown to prevent any weight loss-induced improvements in insulin sensitivity, which could be detrimental for long-term metabolic health. Moreover, high-protein diets should be recommended with caution because they have been shown to promote decreased BMD.

**Future research directions.** To date, few RCTs have evaluated the efficacy of diet therapies to promote weight loss in postmenopausal women. Although dozens of studies have been conducted in premenopausal women, very few have focused exclusively on midlife women. More research in this group of women is warranted. It will also be necessary to determine whether other types of diets are effective for weight management in postmenopausal women (low-carbohydrate diets, Mediterranean diets, glycemic-load diets, and vegan/vegetarian diets). Although most diets are effective for short-term weight loss, long-term success is generally poor. Accordingly, investigating which diets are most effective for long-term weight maintenance in this population group is important. Future trials in this area should examine which diet therapies are most easily incorporated into the lifestyles of postmenopausal women to promote long-term weight management.

**Practical considerations.** The effectiveness of any diet is driven by average daily caloric intake and diet adherence rather than diet composition. Exercise (150-250 min/wk at a moderate intensity) and behavioral modifications (goal setting, self-monitoring, and stimulus control) also play important roles in maintaining weight loss. As a starting point, postmenopausal women should consult with a dietician or behaviorist specializing in weight management. Joining weight-loss programs (online or in person) such as Jenny Craig or Weight Watchers is also highly recommended.

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## Disclosure

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