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The Efficacy of Meal Replacements for Managing Weight and Jump-Starting Weight Loss in Patients with Obesity

- by Dawn M Sweet, Ph.D. -

INTRODUCTION

As reported in a recent National Health and Nutrition Examination Survey (NHANES)[1], a continuous program designed to monitor the health and nutritional status of adults and children, roughly 41.9 percent of adults are persons with obesity. During the period of 1999-2020, the prevalence of obesity in the United States increased from 30.5 percent to 41.9 percent, reflecting a 37.4 percent increase in obesity among U.S. adults. During the same period, severe obesity increased from 4.7 percent to 9.2 percent, reflecting a 95.7 percent increase. Despite this upward trend, obesity is a preventable disease. As such, its comorbidities like heart disease and type 2 diabetes are also preventable.

Compared to healthy weight counterparts, annual medical costs for persons with obesity are significantly higher.[2] According to the Centers for Disease Control, medical costs in 2019 for adults with obesity was almost two thousand dollars more than healthy weight counterparts[1], with the estimated annual cost for treating patients with obesity close to 173 billion dollars.

While weight loss and weight management can be difficult, it may be particularly so for those who have made several attempts to lose weight with lesser degrees of success. Because of this, it is important for patients with obesity to partner with their health care professionals to develop an evidence-based, supervised clinical weight loss management program. One efficacious approach to successful weight loss and weight maintenance is the integration of meal replacements (MR) into a clinically supervised program.[3]

Our knowledge of the roles of nutrition, physical activity, and meal replacements have increased over the past several years. In particular, there is substantive and growing evidence-based research that demonstrates the efficacy of including meal replacements in weight loss programs for patients with obesity; many, if not all, successful weight loss programs integrate dietary lifestyle interventions to facilitate weight loss goals. Of particular interest is the role of meal replacements in a patient's weight loss journey, especially when meal replacements are part of a clinically supervised weight management program.

EVIDENCE FOR THE EFFICACY OF MEAL REPLACEMENTS

A standard treatment recommendation for patients with obesity is induction of a negative energy balance.[4] Integrating meal replacements into a person's weight loss program is an effective weight loss option for persons with obesity, particularly for those patients with type 2 diabetes and compromised cardiovascular health — common comorbidities for persons with obesity.[7,8] A meal replacement is a prepared liquid (for example, pudding shakes or drinks) or discrete foods (for example, protein bars) that are used in place of one or two daily meals. While several commercial-grade meal replacements exist, medically prescribed meal replacements are designed to deliver nutritional benefits to patients with obesity, providing them with the vitamins and minerals needed as part of a healthy diet.[5]

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The Almased Concept against Overweight and Obesity Related Health Risk (ACOORH) study investigated the effect of liquid meal replacements in two populations of persons with obesity: overweight persons who were prediabetics and overweight persons with cardiovascular risk factors.[6,7] In the ACOORH study investigating the effects of meal replacements on prediabetes, participants were randomly assigned to a control group with the lifestyle intervention only (N=45) or a lifestyle intervention plus meal replacement (N=96). The experimental group used meal replacements, beginning with replacing three meals per day during week one, two meals per day during weeks two-to-four, and one meal per day during weeks five through 26. Participants in the meal replacement group with the lifestyle intervention reduced their prevalence of prediabetes compared to the control group. The prediabetes conversion rate to normoglycemia was also associated with reductions in body weight and fat mass.

In a randomized control trial of 961 patients with obesity who were predominantly overweight and living with type 2 diabetes, adding a meal replacement as part of their weight loss strategy resulted in reductions in body weight, BMI, and systolic blood pressure compared to traditional low calorie weight loss approaches.[8]

Another ACOORH randomized control trial[7] included 463 participants with obesity and a minimum of one comorbid condition. Participants were randomly assigned to one of two groups, a control group with a lifestyle intervention (N=155) or a liquid meal replacement-based lifestyle intervention group (N=308). As part of the study, each group received information on a healthy diet and were instructed to increase their physical activity. During week one, participants in the experimental group replaced three meals per day during week one, two meals per day during weeks two-to-four, and one meal per day during weeks five through 26. When a meal replacement was included, participants lost a greater amount of weight and had more significant improvements in cardiometabolic metrics.

When meal replacements are included as part of a patient's weight loss program, patients see reductions in comorbidities and increased weight loss, even at the one-year mark. This suggests that in the context of common comorbidities such as prediabetes, diabetes, and cardiovascular risk factors, including a liquid meal replacement is efficacious and should be considered as a valuable option for helping patients with obesity manage their weight.

MEAL REPLACEMENTS COMPARED TO OTHER WEIGHT LOSS INTERVENTIONS

There are currently several weight loss strategies available to patients with obesity. For example, common strategies include low calorie diets (LCD), very low calorie diets (VLCD), low fat diets and low carbohydrate diets, to name a few.[9] While these diets do offer some benefits, using meal replacements in combination with them results in more significant weight loss than conventional calorie restriction approaches at three months and one year.[10] The convenience of meal replacements also adds to efficacy.

Evidence suggests using meal replacements (compared to more traditional calorie restrictive diets) results in significant weight loss at one year. For patients with obesity, this type of weight loss can significantly reduce health risks. In a systematic review and meta-analysis of the effectiveness of meal replacements for weight loss, meal replacements were compared across five contexts: (1) MR vs diet only, (2) MR diet + support vs diet + support, (3) MR diet + support vs diet, (4) MR diet + enhanced support vs diet + support, and (5) MR diet + support vs minimal intervention. Across all contexts the mean weight change for participants was, on average, higher when MRs were included as part of the program.[5]

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Even at the two-year and four-year marks, participants who received meal replacements as an intervention continued to lose more weight compared to their diet-only counterparts. In fact, the efficacy of meal replacements is so strong that in each of the five contexts noted above, all the studies in the meta-analysis[5] reported the meal replacement intervention was, in most cases, superior to the comparison groups.

One reason for the success of integrating meal replacements into a weight loss program is that it makes it easier for patients with obesity to adhere to the reduced energy diet because they are still able to consume food-based meals in addition to meal replacements. Consequently, patients with obesity do not have to forgo all of their food-based meals.

MEAL REPLACEMENTS AS PART OF A SUPERVISED CLINICAL WEIGHT LOSS

Despite the efficacy and proven safety of meal replacements, health care providers have historically underutilized them.[11] A recent study examined health care professionals' attitudes toward meal replacements and found that 70 percent of the professionals surveyed reported prescribing meal replacements as part of their patients' weight loss program; however, meal replacements are only prescribed to a median of seven percent of patients with obesity.[11] This begs the question, what can be done to encourage health care professionals to integrate meal replacements as part of their patients' weight loss program?

THE ROLE OF PRIMARY CARE

Primary care physicians are routinely tasked with managing a wide array of comorbidities associated with obesity.[12] Clinical guidelines now suggest that primary care physicians should play a key role in weight management treatments for patients.[13] One way primary care physicians can more effectively support their patients' weight loss is by becoming board certified through The American Board of Obesity Medicine (ABOM).[14]

Established in 2011, ABOM Diplomates have up-to-date, specialized knowledge of and competencies in the practice of obesity management. Sixty-six percent of Diplomates are Internal Medicine and Family Practice doctors who devote the equivalent of one full day a week to obesity care, thus confirming the critical role of primary care in evidence-based weight loss management.[14] Part of this evidence-based management includes meal replacements as part of an effective weight loss intervention.

CONCLUSION

Obesity is a challenging disease to treat. Patients with obesity experience higher costs for medical care, increased risks of comorbidities as well as numerous lifestyle challenges. There is strong evidence to suggest that weight loss programs that include meal replacements are more effective than more traditional weight loss approaches. As primary care physicians take on more responsibility for managing comorbidities associated with obesity, there is a case to be made for additional training to ensure patients are reaping the benefits of the most current thinking on weight loss.

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