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Chapter

Inability to Understand the Complexity of Maintaining Weight Loss and the Complications

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Abstract

Weight management can be aided by behavior management therapies, although weight is frequently regained. To avoid this, available interventions are necessary. Researchers did a comprehensive evaluation and integration of qualitative studies on people's weight control and sustaining perspectives. They looked for descriptive studies examining the reality of presently or formerly overweight individuals striving to sustain weight loss in bibliographic databases. Researchers developed the model of weight loss maintenance by thematically aggregating study data. There were 16 studies with 610 individuals from 5 nations. Because of the requirement to overcome established behaviors and the incompatibility of the new behaviors with the satisfaction of emotional factors, the model generated via our integration posits that implementing the action modifications essential for weight loss stability generates psychological “stress.” This stress must be managed or resolved for successful maintenance. Self-regulation, motivation renewal, and regulating influences can all help with stress management, while it can take a lot of work. Changes in behavior, nonobesogenic means of fulfilling needs, and maybe a shift in self-concept can all help with recovery.

Keywords: maintenance of weight loss, behavioral modification, evidence synthesis, weight loss difficulties, stability

1. Introduction

Obesity growth follows a simple formula: energy intake exceeds energy expenditure. Overweight and obesity, on the other hand, are the result of a complex series of interactions among genetic, psychological, and environmental variables. Whereas the overweight public has been offered hundreds, if not thousands, of weight-loss strategies, diets, potions, and devices, the multi-factorial causative agents of overweight challenges practitioners, researchers, and the overweight themselves to identify permanent, efficacious weight-loss and maintenance strategies [1]. The number of people who effectively lose weight and keep it off has been reported to be as low as 1–3%. In the genesis of overweight and obesity, heredity plays a role. Genes, on the other hand, cannot explain the rise in overweight people [2]. Rather, the behavioral and environmental variables that cause people to engage in too little physical activity and consume too much food
about their energy expenditure must bear the brunt of the responsibility. These are the issues that weight-loss initiatives aim to address [3]. This chapter examines the effectiveness and safety of weight-reduction techniques, as well as the combos of approaches that exist for healthy weight loss [4].

A complicated combination of environmental, biochemical, social, and cognitive factors, which are only partially understood, makes weight reduction maintenance difficult. Figure 1 illustrates their configuration; they react differently in different patients to an extent that is difficult to predict. This answers why many people regain most of the weight they lost following a successful diet plan. Nevertheless, a small percentage of people succeed in maintaining long-term weight loss, and research into this group, which achieves their aim despite significant urges to gain weight, may assist discover the variables that lead to this preferred result [5].

To increase patients’ commitment to long-term weight control, the much more current advancements of comprehensive lifestyle modification plans integrate food and physical activity guidelines with particular behavioral and cognitive methods [6]. They show that a significant portion of treated individuals may sustain a healthy body weight decrease over time. These encouraging findings have prompted the formation of multidisciplinary lifestyle modification teams to provide patients with moment longer overweight therapy [7].

The goals of this narrative review are to [8]

1. Provide such a meaning of fat loss
2. Data sets on lengthy losing weight maintenance
3. Characterize the characteristics of people who achieve a lengthy losing weight
4. Evaluation of scientific proof initiatives to increase weight reduction maintenance
5. Identify a holistic approach based on lifestyle interventions aimed at giving clients with moment longer management of their diabetes.

The components of good weight control will also be investigated, as the difficulties in sustaining weight reduction may contribute to the overweight condition. There is also a brief discussion of public policy approaches that may help prevent obesity and support people who are seeking to reduce or manage weight reduction [9].

Many types of research have been successful in inducing weight reduction in individuals; nevertheless, weight loss management has proven to be far more challenging [10]. According to a recent comprehensive analysis, weight-reduction systems have been able to produce a 9.5% weight loss from starting body weight on aggregate; unfortunately, only 54% of this loss weight was sustained one year following the treatments [11]. As a consequence, scientific proof guidelines for weight loss and maintenance techniques that people may apply are needed. Approaches based on the notion of energy equation may base on energy consumption (i.e., food) or energy expended (i.e., physical activity), or on habits that encourage improvements in either caloric intake or energy expended (i.e., self-monitoring of dietary intake) [12].

A theoretical model was developed in which elements such as nutritional intake, physical activity, and attitude were investigated for their impact on reducing weight and management. Since it was anticipated that activities connected to the energy
equation would impact weight reduction differentially than weight control, losing weight and weight control were handled as separate events within the theoretical model [13]. The paradigm also depicts the idea of recurrence, which is prevalent in this group and may be linked to the characteristics described in the paradigm [14].

Postrach et al. (2008) stated that for weight control, the first weight-loss strategy should be very broad and that most of the information and abilities gained during the weight-loss phase may be transferred to the weight-control period.

2. The maintenance of a weight loss

Several criteria for “successful weight loss maintain” have been developed during the last 10 years. Successful weight loss managers, according to Avnell, are “persons who have consciously dropped at least 10% of their body weight and maintained it off for at least one year.” A persistent weight reduction of roughly 5–10% of baseline body weight, according to Barners, indicates a high level of effectiveness. The 2013 American Heart Association (AHA), American College of Cardiology (ACC), and Term of Service (TOS) Guideline for the Management of Overweight and Obesity in Adults also recommends this aim as shown in **Figure 2** [15].

The preceding criteria all agree that good weight management does not need a huge weight decrease, but rather a modest 5–10% reduction. This level of weight reduction, from a clinical standpoint, dramatically lowers the risk of type 2 diabetes in susceptible people and removes the majority of the additional hazards linked to obesity [16]. Furthermore, even minor weight reduction has been shown to enhance mental wellbeing, including happiness, self-image, and bingeing [17].

Teixiera et al. [18] definition adds two more weight-maintenance markers. First and foremost, fat loss should be planned. Such a parameter is critical since various studies have found that inadvertent weight loss is widespread and might have unique causes and impacts than deliberate weight reduction. Weight loss must be sustained for at least one year. This criterion was established as an acceptable goal for study into the elements that enable people to sustain their weight loss. Nevertheless, the term “success” might imply a considerably extra duration of weight management, ideally throughout the rest of one's life [19].
2.1 Physical activity

The quantity of energy exerted vs the quantity of energy eaten influences weight fluctuations. As a result, weight gain will occur if the metabolic rate stays low but food levels of consumption are excessive. Some researchers suggest that decreases in regular exercise, both at work and in leisure, may have played a significant part in the rising obesity prevalence over the previous 30 years [20].

In addition, several epidemiological data imply that physical activity plays a key role in weight growth. Low levels of self-reported recreational physical activity were related to three-fold increased risk of substantial weight gain in males and even a four-fold larger hazard in women, according to [21] who used data from the National Health and Nutrition Examination Survey (NHANES) and he found that in a retrospective study of 34,079 middle-aged women (mean: 52.2 years), the chance of increased weight over three years was 11 percent higher in women who engaged in fewer than 7.5 metabolic equivalents (MET).

For overweight people who are healthful, enhanced physical activity and exercise are part of a complete weight-loss plan. The capacity to create and maintain an exercise regime is one of the strongest indicators of results of this case in the therapy of overweight [22]. Exercise and fitness regimens that are required to satisfy the forces' physical preparedness demands overall, and for weight management, in particular, can be boosted by the presence of engaging in physical activity in army facilities. The intensity, length, frequency, and kind of physical exercise for a specific individual will be determined by pre-existing medical issues, past activity levels, physical constraints, and personal preferences. Individuals who have more than one of the aforementioned mitigating situations may need to be referred for extra expert examination [23]. Physical activity has several advantages that can be experienced
even if weight loss is not achieved. One of the advantages, an increase in high-density low-density lipoprotein, has been demonstrated to be achievable with a minimum of 10–11 h of cardiovascular exercise each month as shown below in Figure 3 [24].

2.2 Alterations of habits and attitudes

By use of habit and varying levels of intensity in weight control is based on a weight of information indicating people develop or stay obese as a consequence of adjustable routines or activities, and that weight reduction and maintenance may be achieved by modifying those tendencies [25]. The main aim of psychological weight-control techniques is to promote a healthy lifestyle and reduce calorie intake via changing dietary patterns. Cognitive treatment can be given to a single person or a group of people. Individuals typically participate in 15–30 weekly sessions lasting 2–3 h each, with a weight-loss objective of 2–3 pounds each week. Behavioral techniques were formerly used as hold therapies to just change eating patterns and lower calorie intake. Nevertheless, these methods have lately been applied to induce weight reduction and as an element of routine maintenance in addition to low diets, nutritional support therapy, proper nutrition, fitness programs, supervision, pharmaceutical medications, and social protection as shown in Figure 4 [26].

2.3 Input efforts and self-control

One of the pillars of behavioral interventions is the identity of nutritional intake and physical exercise, which allows the client to establish a sense of social responsibility. Participants are advised to keep a usual dietary diary in which participants note what they did eat, how very much patients did eat, where and when they did

![Figure 3. Physical activity guideline.](image-url)
eat it, and the environment in which they started eating it. Individuals may also be required to keep a log sheet of their physical activity. Self-monitoring of food intake is frequently linked to a rapid decrease in energy consumption and, as a result, losing weight. This decrease in food intake is thought to be the consequence of greater food consciousness and/or fear of what the nutritionist or nutritional therapist may say about the participant's eating habits. Food diaries are also used to discover internal and social variables that lead to excess eating, as well as to choose and implement appropriate weight-loss techniques for the person [27].

The same might be said for regular exercise tracking, even though the little study has been done in this area. Self-control also allows therapists and clients to assess which approaches are effective and how changes in sleep and eating habits or exercise affect weight reduction [28].

2.4 Additional psychological approaches

Eating only prescheduled meals; just doing nothing while choosing to eat; ingesting meals only in one location and having left the table after consuming; buying groceries only from a list, and buying on an empty stomach are some of the additional techniques included in psychosocial therapeutic interventions. Motivational strategies are also used in the psychological treatment of overweight and fat people. Respondents may choose a strongly rewarding experience, such as engaging in a particularly pleasurable activity or acquiring a special item after achieving a goal. Overweight behavioral approaches are typically immediately effective. The long-term success of these therapies, on the other hand, is more debatable, with research indicating that many people regain their original body weight within 4–6 years of finishing therapy [29].

Among the strategies for enhancing the long-term advantages of cognitive behavior therapy are the following: [30].

1. Improving beginning loss of weight
2. Lengthening the duration of intervention of treatment
3. Focuses on the role of exercising
4. Merging ways of conducting with other therapies such as medication, surgical intervention, or strict diets

2.5 Environmental and resources factor

Rebuilding the environment that supports excess and inactivity might be an important aspect of weight loss and control. The house, the job, and the society are all part of the natural world (e.g., places of worship, eating places, stores, movie theaters). Environmental influences include the opportunities for low foods with highly nutritious, such as fruits, vegetables, nonfat dairy products, and other low-energy-density foods. Instead, of purchasing a piece of candy or packet of crisps and a Coke from a machine, environment rearrangement promotes known frequent dining options that create appetizing items with lower energy density and allow adequate time for eating a balanced diet. Modern lives and stressful work commitments can lead to obese habits that contribute to a less-than-ideal eating atmosphere, but modest modifications can help to break these patterns as shown in Figure 5 [31].

New findings concepts imply that environmental variables (e.g., high-energy/high-fat meals, fast food intake, television viewing, etc.) instead of physiological factors are driving the present obesity pandemic. Images and offers of high fat, high calorie, extremely tasty, easy, and economical meals are constantly bombarding people. Such meals come in serving amounts that greatly surpass the regulatory guidelines [32]. In addition, our current societal physical needs have altered, culminating in a mismatch in energy imbalance. Hectic lives exacerbate the impact of environmental variables by obstructing weight reduction attempts and encouraging fat accumulation. Prevention and treatment necessitate changes in environmental and societal policies, particularly in the areas of serving sizes, accessibility of healthy foods, and physical exercise encouragement [33].

Figure 5.
Overweight prevention through environmental modulation.
2.6 Dietary counseling

Obesity and overweight management need the active engagement of the individual. Nutritionists can give clients a basis of education that will enable them to make informed dietary choices [9]. Nutrition education is separate from nutrition counseling, even though the two have a lot in common. The motivational, emotional, and psychological concerns related to the current job of weight reduction and weight maintenance are more directly addressed in health promotion and nutritional management. It discusses the how and why of dietary behavior adjustments [34]. Nutrition education, on the other hand, gives fundamental knowledge on the scientific foundations of nutrition, allowing individuals to make educated decisions regarding food, cooking techniques, dining out, and serving size. Nutrition curriculums may also cover topics such as the importance of nutrition in illness prevention, sports nutrition, and nutrition for pregnant and nursing women. Successful nutrition education provides nutrition knowledge and its application to healthy lifestyles [35].

2.7 Diet

There are two phases to weight-management initiatives: weight reduction and weight management. While exercise is the most essential component of a weight-loss scheme that impacts the pace of losing weight, it is apparent that food restriction is the most essential element of a weight-loss strategy that affects the rate of weight loss [36]. Food consumption contributes to 100% of daily intake, but movement contributes to just 15–30% of the energy requirement. As a result, limiting energy intake may have the greatest effect on the energy equation given. The number of diets recommended is nearly infinite, but regardless of the nomenclature, all diets should include an increase in protein, below in carbohydrates, low in fat amounts, and should be high in fiber diets [9].

Several low-fat foods are also rich in dietary fiber, and some researchers link low-fat diets’ positive influences to their high proportion of dietary fiber-rich vegetables and fruits. High-fiber meals are recommended since they may lower calorie intake and affect metabolism. Nutritional fiber's positive benefits may be done through the following pathways: [37].

1. Caloric attenuation (most high-fiber meals are low in calories and fat).
2. Increased chewing and swallowing time decreases overall consumption.
3. Better stomach and intestinal movement and evacuation, with reduced absorption and reduced appetite and fullness.

2.8 Psychotherapist and consultation

Weight control is influenced by emotional and psychological variables. Counseling services are those that take into account emotional concerns related to binge eating and are designed to educate the patient about the existence of these disorders, their consequences, and the options for long-term treatment [38]. This technique is less complex, intensive, and long-lasting than counseling. Despite continuing counseling, it should be possible to assist patients to grasp the nature and extent of a destructive home or the phenomena of stress-related appetite. These services will be provided
by a counselor or therapist in individual or group sessions. These counselors, on the other hand, should be well-versed in the challenges that come with weight-loss regimens, such as binge-eating disorders. Individual case management, as well as group sessions, can be useful in the short term since patients can hear the perspectives of others with good weight difficulties while tackling their problems [39].

2.9 Surgical procedure

Although it is unlikely that many members would be candidates for obesity surgery, a review of weight-loss regimens would be incomplete without including this possibility. The minor weight reduction via psychological treatment and/or medicines does not change the overweight status of enormously obese people (those with a body mass index (BMI) of 35 or 40). Obesity surgery may result in large, long-term weight loss for certain people. Numerous studies have indicated significant reductions in the incidence and death of patients who are morbidly obese, and surgery is being offered to these people more frequently [40].

3. An analysis of nutrient intervention for weight loss maintenance

Associated with weight gain are considered the world’s largest fifth leading cause of mortality. In 2009, there were 2.5 billion obese persons worldwide, with 100 million overweight males and roughly 200 million overweight women. It is indeed common for eaters to return over 50% of their lost weight after a year, and also most eaters regain their original weight between 4 and 5 years. Researchers concur that maintaining even 10–15 percent of a person's losing weight is a major accomplishment [41]. Following weight reduction, weight stability is described as a bodyweight shift of up to 5% of the real body weight. Heat production decreases after fat burning, resulting in burning the fat barrier. The likelihood of increased energy consumption following weight reduction is caused by a decline in hormonal changes such as leptin and thyroid hormones. Adipocytes are subjected to cellular stress at this time, resulting in increased stored fat [42].

For work with various on weight control, with such a focus on dietary treatments such as meal replacement, diet component proportions, dietary habits, and special cuisines are the long-term maintaining of body weight which is considered a victory [43].

1. Meal replacement: Meal replacement is one of the most popular ways for avoiding excess weight. It is indeed secure, useful, and cost-effective, with no negative side effects. The degree of adherence is higher with this strategy, the nutritional intake is adequate, and the drop-out rate is low. Such dishes have a regulated calorie content and are also nutrient-dense. These nutritionally complete low-fat meals may be used to substitute major meals and snacks. While employing this strategy, there are many drawbacks. For starters, most study participants are volunteers, which means they are much more driven. Secondly, they might not be able to buy meal substitutes. Furthermore, if you eat the same meals every day, you may get nutritional tiredness [44].

2. Diet component proportions: Several studies tried many different macronutrient percentages to determine the best beneficial dietary combination for weight
management. Minimal carbohydrates, low glycemic index (LGI), low fat with strong Monounsaturated Fatty acids (MUFA), and protein-rich diets are examples of these types of diets. Nevertheless, there is indeed a lot of conflicting information in this field. In contrast to a reduced diet, a protein-rich Glycemic Index (GI) diet, increased Monounsaturated fatty acids diet (MUFA) and intensive support or nurse support, an increased carbohydrates/Protein diet, a limited carbohydrate diet, elevated monounsaturated fatty acids diet (MUFA), high carbohydrate index (GI) diet, increased carbohydrate with low glycemic index (GI) diet plus intensive support or nurse support, and fewer carbohydrates/Protein diet has no major effects on weight loss control [45].

3. Dietary habits: Individuals who have sustained their weight reduction longer than regainers stay up later less at night, engage in more physical activity following losing weight, consume fewer sweetener drinks, consume fewer calories through proteins, and receive more help and support. Dropping extra pounds during weight loss, keeping track of your weight, and eating nutritious meals are all thought to be essential elements in weight management. Those that do not acquire weight consume fewer calories than fat and obese persons. Other habits include eating more fiber, whole grains, veggies, and fruits while eating less fat and processed carbohydrates. When compared to others, weight regainers have distinct perceptions of hunger and cognitive processing. A higher level of adaptable eating regulation, as well as a lower level of uncontrolled eating and psychological discomfort, may have a role in weight management effectiveness [46].

4. Drawback of weight loss: reasons

Obesity is injurious to health, as we all understand. For a valid reason, healthful efforts have always highlighted the importance of weight management. Losing weight, on the other hand, is not a one-flavor recipe; there are numerous strategies to reach this aim. As a result, more is not necessarily better. Whenever it comes to diet reduction, getting too much go too soon might be dangerous to one's wellness [47]. It would be an exaggeration to suggest that excess weight reduction is not healthy. It is hazardous to your health! Excessive weight loss is described as a continuous loss of more than kg every week. Your system is doubtful to be capable of keeping up in such conditions, and indications are almost certain to arise. Just on appearance, certain symptoms, such as mild hair loss or feeling chilly more regularly, may appear to be innocuous. Certain adverse effects, on the other hand, might be extremely harmful to your biological and physiological health and quality of life [48].

The most serious side effects of excessive weight reduction are:

1. Muscle mass is lost—Not only do you lose fat whenever you lose weight, but you lose more muscle. A decrease in muscle mass is frequently accompanied by a decrease in metabolic rate, significantly unsettling the fat-to-muscle proportion. Poorer muscles make everyday chores like lifting heavy shopping or taking the stairs increasingly difficult. Although the number on the measure appears to be improving, your standard of living may not even be [49].

2. Electrolyte instability and nutritional inadequacies—Most of our body functions are controlled by materials found in nature. Anything mismatch in these compo-
nents’ proportions might be harmful, resulting in diseases including strokes and arrhythmia. Electrolytes, for instance, are essential for cellular development and vitality. If either fails, the entire body will not take much time to comply. Excessive losing weight precludes your system of the nourishment it requires to operate normally. Deficits in some nutrients, such as vitamin D and calcium, might raise your risk of developing certain health problems or incline you to damage. Anemia, which is defined by sensations of tiredness and collapsing episodes and can develop when your iron intake is inadequate, is one instance of a condition linked to nutritional insufficiency [50].

3. Energy levels are declining dramatically—Inadequate calorie consumption or excessive calorie expenditure will have a negative impact on energy balance. Aside from feeling completely tired, your thought functions and creativity may suffer. Your mindset may be altered as well; extreme weight loss is usually followed by irritability. Even if you are not dieting, you may experience remarkable weight reduction. There is typically a more significant underlying condition that demands addressed in situations of persistent weight loss when more than 10 percent of a total of your body composition is dropped over 6 months [50].

5. Conclusion

Long-term management of body weight is considered successful. While meal replacement can help with weight loss, it cannot ensure that you will keep it off. Minimal carbohydrate, limited GI, and medium fat meals are recommended in balanced eating, although it is unclear if they are effective in avoiding excess weight. It appears that ingesting fewer calories aids weight loss maintenance. Several unique activities have also been linked to weight loss persistence. Eating less sugar-sweetened drinks, staying up later at night, and eating more nutritious foods are just a few instances of such habits. There is no unique meal that can guarantee weight control. As a result, additional study is needed to create techniques for weight management, with an emphasis on long-term weight reduction control.

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