

# Weight Loss Methods

Body Mass Index (BMI) is a way to define overweight and obesity. The index is a mathematical formula in which a person's body weight in kilograms is divided by the square of his or her height in meters [kg/m<sup>2</sup>]. The BMI is more highly correlated with body fat than any other mathematical ratio of height and weight; however, athletes and individuals with high percentage of muscle in their bodies may have a BMI in the overweight range because of the heavier weight of muscle tissue (fat floats and muscle sinks in water).



BMI	Defined as:
18-25	Normal weight
25-29.9	Overweight
>30	Obese

Overweight is defined as increased weight in relation to height. Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass.



## Waist Circumference:

The distribution of body fat is important from a chronic disease perspective. Those who have more body fat inside the abdomen have an increased risk for elevated triglycerides, high blood pressure and glucose intolerance. There is less risk for chronic diseases with fat accumulating in the lower body. Waist circumference correlates with chronic disease risk. Men with a waist larger than 40 inches (102 cm) or women with a waist larger than 35 inches (88cm) have increased intra-abdominal fat with a greater risk of chronic disease.

When someone is a few pounds overweight and is motivated to lose weight, there are safe and effective methods to lose a few pounds and to maintain a weight loss. Exercise is a safe way to reduce excess body fat.

## 1. DiETING with the Exchange Diet

The American Diabetes Association breaks food down into six categories called exchanges:

- Starch/bread
- Meat
- Vegetables
- Fruit
- Milk
- Fat



### How to use the exchange plan:

The number of exchanges per day is determined by the number of calories needed each day. It is different for each person and depends on height, weight and the amount of energy expended. The most accurate way to determine the number of exchanges you need is with the help of a registered dietitian, health professional or a trained fitness professional. For more information about the exchange diet, contact:

<http://www.diabetes.org/home.jsp>

This Exchange diet is used to treat diabetes and other chronic diseases. The exchange system also works well for use in weight management. It is a balanced system, with foods from each group, and can be followed indefinitely. The diet is an easy way to monitor intake of carbohydrates, fat and protein, as well as portion sizes.



### DiETING using calorie control portions

**Meal Replacement Plan.** Using a product with a fixed number of calories in each portion to replace a meal is the rationale behind this plan, whether the product is a liquid formula or a packaged item. This takes the guesswork out of meal planning, and the person can be assured of not consuming too many calories. By controlling portion sizes, fat and carbohydrate intake, a person can control calories.

The replacement items are balanced and contain a mix of protein, carbohydrates and fat, as well as other nutrients. Four different types of meal replacements are available:

- Powder mixes
- Shakes
- Bars
- Prepackaged meals



The usual plan is to use a meal replacement for one or two meals a day while having sensible meals that combine lean meat, starch, vegetables and fruit for the other meals during the day. An intake of five fruits and vegetables is recommended. A meal replacement program is more effective for losing weight than a conventionally structured weight loss diet. Meal replacements offer a convenient and nutritionally beneficial weight loss alternative to conventionally structured weight loss diets.

## 2. Exercise

Maintaining, gaining and losing weight are tied to energy balance. Positive energy balance leads to weight gain, negative energy balance leads to weight loss and maintaining weight means an energy balance has been reached. Physical activity and caloric intake balance each other. Exercise is excellent in helping to maintain a zero energy balance. Exercise can build lean body mass, which burns more calories than fat. Walking, running and doing physical activity can burn two to three times more calories than a similar amount of time sitting. Weight loss is easier to achieve by dieting, and exercise adds little to the weight loss of diet alone.



The strength of exercise is in maintaining a weight loss attained through diet. There is an improvement in overall physical fitness with an exercise program that may reduce blood pressure and improve insulin sensitivity. An exercise program with 150 to 200 minutes of moderate physical activity each week combined with a diet for weight loss can result in the maintenance of reduced body fat, particularly intra-abdominal fat.

## 3. Behavior Change

Eating right and losing weight can be difficult. To lose weight and keep it off, changes in lifestyle and daily habits are necessary. Long-term lifestyle changes require more than simply watching what one eats and how much one exercises. It requires changing one's approach (thinking, feelings and actions) to eating and physical activity. Behavior change is one of the most widely used strategies for helping people to lose weight and maintain a healthy lifestyle. Studies have demonstrated several tools that are effective in helping people make this change toward a healthy way of living. These behavior change tools focus on maladaptive eating and exercise patterns that can lead to weight gain, and these tools are designed to reduce the cues in our environment that predispose us to weight gain. These tools help to increase awareness of eating and activity patterns, to normalize eating patterns, to reduce exposure to cues for unhealthy eating or activity patterns, and to alter responses to difficult situations.

Some common behavior change tools include:

- (1) Making lifestyle changes a priority
- (2) Establishing a plan for success
- (3) Setting goals for eating and exercise
- (4) Keeping a record of eating and physical activity every day
- (5) Avoiding a food chain reaction  
(learning the social and environmental cues around you that encourage unhealthy eating or sedentary behavior and avoiding/distracting yourself from these triggers)
- (6) Rewarding yourself with nonfood "prizes" for each met goal.





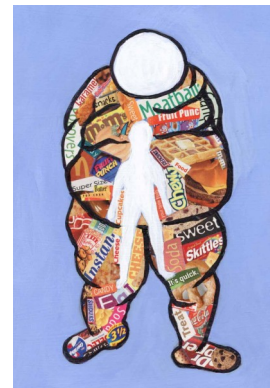
## Medication

### 4. Medication and Surgical Treatment

Medication is indicated when BMI is higher than 30 kg/m<sup>2</sup> or when it is higher than 27 kg/m<sup>2</sup> and cardiovascular risk factors are present and safer methods have proven unsuccessful. The use of medication is always combined with a diet and lifestyle instruction under continued medical supervision. The medication and dosage are tailored individually to the patient. A person can expect a 7 percent to 10 percent weight loss with the use of medication.

#### Phentermine

Phentermine first received approval from the Food and Drug Administration (FDA) in 1959 as an appetite suppressant for the short-term treatment of obesity. Phentermine affects certain neurotransmitters in the brain that decrease appetite, causing the person to eat less. When phentermine was approved, obesity was thought to be caused by bad eating habits. Psychologists tell us that habits can be learned or retrained over a few (up to 12) weeks. Thus, phentermine was tested over this period. We now understand obesity to be a chronic medical problem in which weight is maintained at a higher than healthy level, much as blood pressure control is dysregulated in a person with high blood pressure. Phentermine can be just as effective for weight loss when used every other month. In this way, phentermine can still be used successfully to control weight chronically while conforming to the instructions in the package insert.



#### Sibutramine

Sibutramine induces weight loss primarily through its effect on food intake, but it also increases metabolic rate to a lesser degree. Sibutramine enhances satiety. Studies indicate that maximum weight loss is achieved by six months. Most individuals lose from 5 percent to 10 percent of their body weight. Weight regain occurs after sibutramine is discontinued. Normally when individuals lose weight, their metabolic rate goes down and energy expenditure decreases. Sibutramine helps to prevent this decline. Sibutramine use may increase heart rate and blood pressure. Regular blood pressure checkups are encouraged. Sibutramine is not recommended for someone with uncontrolled hypertension or tachycardia.

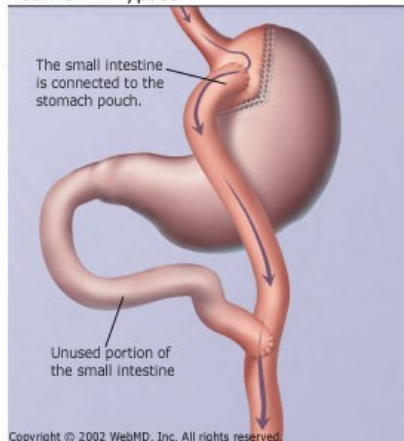


## Orlistat

Orlistat prevents the absorption of dietary fat. It inactivates an enzyme that is involved with fat digestion called lipase, and, in this way, about 30 percent less fat is absorbed. The unabsorbed dietary fat is then eliminated in the stool. This may change bowel habits, resulting in oily stools, fatty stools, increased frequency of bowel movements and an inability to control bowel movements. Orlistat intake, together with a 30 percent fat diet, can result in modest weight loss of about 6 to 7 pounds a year while minimizing the gastrointestinal side effects. Because less fat is absorbed, this also improves blood lipids. A decrease in blood cholesterol levels and blood pressure can be anticipated.



## Roux-en-Y Bypass



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## Malabsorptive

## Surgery

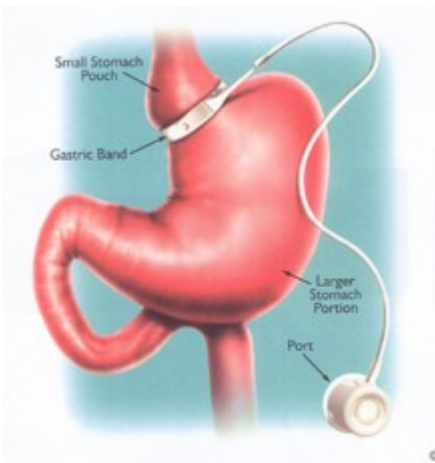


## Malabsorptive:

**Gastric bypass.** This operation creates a very small stomach pouch from which the rest of the stomach is separated. The small intestine is attached to the newly created small stomach, thereby bypassing the rest of the stomach and the first part of the small intestine and a portion of the second. After surgery, there is delayed absorption of food. The operation restricts food intake and reduces the feeling of hunger by activation hormones in the lower small intestine. The result is an early sense of fullness followed by a sense of satisfaction. The portion size is reduced to a small 2- to 6-ounce serving. Patients continue to enjoy eating all types of food in smaller portions after surgery.

## Restrictive:

A restrictive silicone band is placed around the upper part of the stomach, creating a smaller gastric pouch, limiting the amount of food that the stomach will hold at any time. The inflatable ring controls the flow of food from this smaller pouch to the rest of the digestive tract. A small amount of food creates a sense of fullness, and because of slow emptying, the feeling of fullness lasts for several hours.



## Restrictive



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