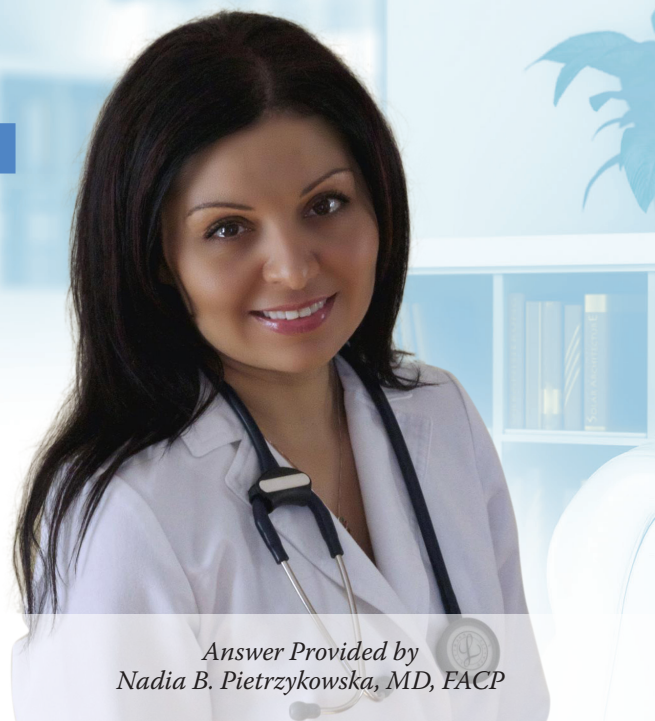


Dear Doctor +

“My Body-Mass-Index (BMI) is still high, but I’ve lost weight already. How do I know when I’m healthy?”



Answer Provided by
Nadia B. Pietrzykowska, MD, FACP

To answer this question, let’s first explain what BMI is:

The BMI is a formula expressed as a person’s weight in kilograms divided by the square of a person’s height in meters. It is used to classify individuals as having normal weight, less weight than normal or excessive weight. The BMI is a formula that was first invented in the early 1800s by Lambert Adolphe Jacques Quetelet (1796-1874), a Belgian mathematician, statistician, astronomer and sociologist. Later on, it was used by the Metropolitan Life Insurance Company to analyze and classify their policyholder population according to medical risk.



Is BMI always a good tool to determine healthy weight goals?

It certainly is a good starting point. Providers can use this easy calculator to assess their patients’ weight without any equipment other than a scale and a height rod. Unfortunately, it does have limitations and this “one size fits all” approach can be flawed. This is because BMI does not take into account body composition and does not give a good estimate of body fat, muscle mass and other tissues.

Why do these proportions matter?

Here are some examples showing why relying on BMI alone may result in inaccurate conclusions:

- Individuals with high musculature may have a high BMI despite having an appropriate weight: Let’s imagine two individuals with the same height and weight standing next to each other. One of them is a professional football player with prominent musculature, and the other is someone with low muscle mass. Their BMI will be the same, but the first individual’s body will be high in muscle and low in fat tissue whereas the second individual’s body will be low in muscle and high in fat tissue. Although they both may have the same high BMI that shows excessive weight, the football player does not have to lose any weight. His “excess weight” is composed of muscle tissue while the second individual may have to lose weight due to excessive fat tissue.

- When individuals that are “thin built” gain weight, they reach unhealthy amounts of fat tissue faster than their BMI can reflect it: These individuals have a naturally low muscle mass. As they gain weight and fat tissue, their BMI may still be in the normal range while their fat tissue proportion is growing to a less-desirable range. These individuals would need weight-loss interventions earlier than expected from the BMI scale.
- Individuals above the age of 65 are a special group to whom the BMI classification may not always apply: As adults age, they tend to follow the model of the “thin built” individuals described above. In fact, older adults lose muscle mass as they age while gaining fat tissue. They may be reaching high fat tissue amounts faster than their BMI can increase.
- This said, some studies show that a BMI slightly above normal may be a better and healthier goal for adults in this age range. More research is needed to determine optimal weight goals for this special population.
- Individuals with weight-related conditions need more aggressive weight-loss interventions: The presence of diseases like Type 2 Diabetes, hypertension and high cholesterol should supersede information provided by the BMI. This means that if an individual has one or more of these diseases, it is crucial to work on losing weight – especially if these conditions appear or worsen with weight gain. While it may be reasonable for someone with obesity who has no other medical conditions to remain at “an overweight BMI of 27,” further weight-loss should be recommended to individuals with weight-related medical conditions. In addition, the presence of pre-disease, specifically prediabetes, should also prompt weight-loss to attempt reversing it. Prediabetes is a condition where certain blood glucose parameters are above the normal range but not quite yet in the “diabetic range.” Prediabetes can often be reversed with weight-loss and lifestyle changes.
- Commonly referred to BMI thresholds do not apply to certain ethnic groups. For individuals of Asian descent, for example, the risk of cardiometabolic diseases increases with lower BMIs when compared to Caucasian individuals. This means that a BMI considered “normal” according to the standard chart is in fact “overweight” for these patients. Relying on BMI alone may underestimate weight excess.

Since BMI is not always accurate, what other tools could be helpful?

Waist circumference:

While it is a very simple measurement, waist circumference can provide useful information. In general, excessive fat tissue located in the abdomen is considered to be harmful. To decrease cardiometabolic risk (the risk of developing certain diseases

such as heart disease, stroke, diabetes, high cholesterol, etc.), an optimal waist circumference should be below 35 inches in women and 40 inches in men. When it's higher than these values, waist circumference can contribute to Metabolic Syndrome. This is a constellation of physical and laboratory findings that increases one's risk of developing cardiometabolic diseases like the ones mentioned earlier. Measuring weight circumference can supply valuable information that will help healthcare providers treat their patients appropriately.



Hip to waist ratio:

In addition to a waist measurement, a hip width measurement should be made. When the circumference of the waist is divided by the circumference of the hips, a ratio will result. A ratio of less than 0.9 for men and less than 0.8 for women is considered healthy. Higher ratios predispose to many cardiometabolic diseases as described earlier. For example, an “apple-shaped” woman (higher waist/hip ratio and more fat tissue in the abdomen) with a BMI of 40 may be at a higher risk of developing diabetes than a “pear-shaped” woman (lower waist/hip ratio and more fat tissue in the hip area) with the same BMI.

As a result, a person with excessive weight and an “apple-shaped” body may have to be more concerned about their weight than someone with a “pear-shaped” body, despite them both having the same BMI.

Body fat and body composition measurements:

There are several ways to estimate or measure body fat. Skin calipers that measure skin folds can help determine body fat content and provide helpful information regarding the need for weight-loss. More complex measures can also be achieved by machines that determine body composition. Some of them may be available in your health provider's office, and others are mostly used by scientists for research. These machines can, with varying accuracy, estimate and measure body composition and the proportion of tissues: fat tissue, musculature, other lean tissues and water. They can be helpful during weight-loss to guide treatment and build a program with an adequate diet and exercise regimen.

These additional tools provide useful information that helps determine whether an individual is at a healthy weight or if weight-loss is needed.

Other Factors to Consider When Determining Weight-loss Goals

In addition to these factors, two more should be taken into consideration when trying to determine weight-loss goals:

- **Basal metabolic rate** (metabolism) and its fluctuations that affect weight-loss and weight maintenance: Metabolism varies from one individual to another and is affected by many internal and external factors. It is also affected by the process of weight-loss itself. Although much is to be investigated further in this field, being cognizant of variations in the metabolic rate of individuals during and after weight-loss is important because it affects both weight-loss and weight maintenance.
- **Quality of life improves with weight-loss.** Although more subtle than and not as obvious as some of the disease states we mentioned earlier in this article, having obesity and excess weight should not be underestimated. Fatigue, chronic pain and quality of life in general can improve with weight-loss and act as goals to encourage individuals to live life to its fullest potential.

Conclusion

In summary, it is important to understand that weight-loss goals should not be exclusively determined by a number on a scale. In this article, several different factors were described that can affect and guide one's weight-loss goals.

It's also important to add that several other factors will determine how much weight someone cannot only lose, but maintain as well. Complex processes involving the brain, several body systems, hormones and behavioral factors will determine the extent of weight-loss and long-term weight maintenance. Although much is still to be researched and understood, this information should not go underestimated.

About the Author:

Nadia B. Pietrzykowska, MD, FACP, is a Board Certified Obesity Medicine Specialist, Nutrition Physician Specialist and Health Coach with a primary specialty in Internal Medicine. She is the Founder and Medical Director of “Weight & Life MD,” a Center for medical weight management located in Ewing, NJ. She promotes the use of evidence-based methods for obesity treatment as well as cutting edge science intertwined with a holistic approach. She contributes to the Education Committee of the OAC and writes for its publications.



ABOUT THE OBESITY ACTION COALITION (OAC)

The Obesity Action Coalition (OAC) is a National non-profit organization dedicated to giving a voice to individuals affected by obesity and helping them along their journey toward better health. Our core focuses are to elevate the conversation of weight and its impact on health, improve access to obesity care, provide science-based education on obesity and its treatments, and fight to eliminate weight bias and discrimination.



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The OAC knows that the journey with weight can be challenging but we also know that great things happen when we learn, connect and engage. That is why the OAC Community exists. Our Community is designed to provide quality education, ongoing support programs, an opportunity to connect, and a place to take action on important issues.

Through the OAC Community, you can get access to:

- Weight & Health Education • Community Blogs
 - Community Discussion Forum
 - Ongoing Support • Meaningful Connections
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