

Body Mass Index

Tutor's Handbook



The Body Mass Index

What is the Body Mass Index?

The body mass index, or BMI, is a method used to measure a person's body size. Calculating BMI means measuring a person's weight against their height to determine if they are the correct weight for their height. Through a simple calculation, the BMI can determine if a person's weight is within the normal range, or if they are under or over-weight.

Scores attributed to the BMI are classified as being either: underweight, normal, overweight or obese.

These terms are used to refer to the different ranges of body weight. Obesity and overweight categories refer to individuals whose weight range exceeds what is considered healthy for their height; similarly, the underweight category describes individuals whose body weight is lower than what is considered healthy for their height.

As such, a high BMI score can be an indicator of high body fatness, which in turn can become the first screening test for many diseases related to high body fat, including, coronary heart disease, stroke, type 2 diabetes, cancer, high blood pressure, sleep apnoea, gallstones, osteoarthritis, etc.

BMI in Adults, Adolescents and Children

In adults, BMI values are categorised using standard weight status categories. As such, the values are not linked to age and are the same for both men and women. These categories are referenced further down in this handbook.

However, BMI is interpreted differently for children and adolescents. While the calculation for both children and teens is the same, they are interpreted with different charts. The reason for this is that the interpretation charts need to be age- and gender-specific to take into account the amount of changes to body fat which occur as both boys and girls grow, and also to consider the differences in body fat rates between boys and girls.

Rather than receiving a BMI score of 18.5 to 30+, as is the case with adults, children and teens interpret their BMI based on a chart that uses percentiles.

So, for example, obesity among 2-19-year olds is defined as a BMI at or above the 85th percentile of children of the same age and sex in a reference population. The Centre for Disease Control and Prevention (CDC) has produced a calculator that provides BMI and the corresponding BMI-for-age

percentile on a CDC growth chart for children and teens.

These charts can be accessed online. Children and adolescents are first invited to complete the BMI calculation – the same calculation as adults – and then their score can be interpreted using the CDC growth chart.

The chart for boys aged 2 to 19 years can be accessed at this link: <https://www.cdc.gov/growthcharts/data/set1clinical/cj411023.pdf>

The chart for girls aged 2 to 19 years can be accessed at this link: <https://www.cdc.gov/growthcharts/data/set1clinical/cj411024.pdf>

Understanding your Body Mass Index

Calculating your BMI

You can calculate your BMI using kilograms and metres, or using pounds and inches, as follows:

- If using the metric system, the formula for calculating BMI is weight in kilograms (kgs) divided by height in meters squared (m^2).
- If using pounds and inches, divide weight in pounds (lbs) by height in inches squared (in^2) and multiply by a conversion factor of 703.

Interpreting your BMI

As mentioned above, BMI is an estimate of your body fat. It is a good way of judging if you are overweight or obese, and at risk of diseases that can occur with more body fat.

The higher your BMI score, the greater the risk you face in developing serious illnesses and diseases, including heart disease, high blood pressure, type 2

diabetes, gallstones, breathing problems, and certain cancers.

Similarly, if a person is underweight, this can increase their risk of malnutrition, osteoporosis and anaemia, etc.

To limit the impact that these diseases can have on your life, and to maintain a healthy BMI, it is important that you know how to interpret your BMI.

After you calculate your BMI, you can interpret the findings by remembering what each score corresponds to:

- If your BMI is less than 18.5, this indicates that you are underweight and should consult your doctor or dietitian about safe ways to gain weight.
- If your BMI is between 18.5 and 24.9, this indicates that you are a healthy weight for your height.

- If your BMI is between 25.0 and 29.9, this indicates that you are slightly overweight, and you could be advised to lose some weight for health reasons.
- If your BMI is 30.0 or higher, this indicates that you are heavily overweight or 'obese', and you should speak to your doctor or dietitian about losing weight so that you do not cause further risks to your health.

Limitations of BMI

While it is widely used by medical professionals to track weight and identify potential health risks for individuals, BMI does have its limitations. For example, it does not measure body fat directly, and it does not account for age, sex, ethnicity, or muscle mass in adults.

Similarly, for pregnant women, bodybuilders and athletes, the BMI score can be skewed because it does not take into account that muscle mass is heavier than fat, or the percentage of body fat of an individual.

How to use this Resource with your Local Health Group?

This handbook presents some basic information that will help you to better understand the Body Mass Index, how to measure it, what it's used for, how it's different for adults and children and some of

the short-comings of using BMI as an overall measure of a person's health. To accompany this handbook, you will also find a short PowerPoint presentation that can be used with your local health network to introduce the topic of BMI to them. This presentation gives some basic information to introduce the BMI, BMI scores and charts and also includes some discussion points that you can use with your group. Use the presentation to:

- Talk to the members of your local working group about how they track their weight and maintain a healthy lifestyle.
- Highlight some of the risk factors of having a high and low BMI score.
- Encourage them to calculate their BMI, and to calculate the BMI for other adults and children in their household.

Group Activity

Once you have shared the digital resource and the PowerPoint presentation with your group members, you can lead a short group activity where group members are invited to check their BMI and interpret what it means. Ensure that all group members are comfortable with this activity first, and don't pressure anyone into sharing their results if they are not comfortable. Afterwards, you can lead a group discussion on how to maintain a healthy weight, eliciting examples from the group about what they do to stay healthy.



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