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Body mass index (BMI)

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Body mass index (BMI) is one method used to estimate your total amount of body fat. It is calculated by dividing your weight in kilograms by your height in metres squared (m²).

Differences in BMI between people of the same age and sex are usually due to body fat. However, there are exceptions to this rule, which means a BMI figure may not be accurate.

BMI calculations will overestimate the amount of body fat for:

- body builders
- some high-performance athletes
- pregnant women.

BMI calculations will underestimate the amount of body fat for the elderly, and for people with a physical disability, who are unable to walk and may have muscle wasting.

BMI is also not an accurate indicator for people with eating disorders like anorexia nervosa or people with extreme obesity.

BMI is not considered the best measurement of weight and health risk. A person’s waist circumference is thought to be a better predictor of health risk than BMI.
What is a healthy BMI range for children?

The healthy BMI range for adults is 18.5 to 24.9. However, children are constantly growing, which makes it difficult to have set values for BMI cut-offs. For adults who have stopped growing, an increase in BMI is usually caused by an increase in body fat. But as children grow, their amount of body fat changes and so will their BMI. For example, BMI usually decreases during the preschool years and then increases into adulthood.

For this reason, a BMI calculation for a child or adolescent is interpreted differently from an adult’s, and takes into account the age and sex of the child or adolescent. The current BMI charts for children have been developed by the US Centres for Disease Control and Prevention. They are useful for the assessment of overweight and obesity in children aged over two years. However, BMI charts should be used only as a guide to indicate when to make small lifestyle changes, and when to seek further guidance from a doctor or a dietitian.

To calculate a child's BMI, you can use the body mass index calculator for children and teenagers.

How do I calculate my BMI?

BMI is an approximate measure of the best weight for health only. To calculate your BMI, you can use the body mass index (BMI) calculator for adults. You need to know:

- your weight in kilograms (kg)
- your height in centimetres (cm).

What your BMI means

Once you have calculated your BMI, you can work out your healthy weight range.

If you have a BMI of:

- Under 18.5 – you are considered underweight and possibly malnourished.
- 18.5 to 24.9 – you are within a healthy weight range for young and middle-aged adults.
- 25.0 to 29.9 – you are considered overweight.
- Over 30 – you are considered obese.

For older Australians over the age of 70 years, general health status may be more important than being mildly overweight. Some researchers have suggested that a BMI range of 22-26 is desirable for older Australians.

Some exceptions to the BMI rule

BMI does not differentiate between body fat and muscle mass. This means there are some exceptions to the BMI guidelines, including:

- Muscles – body builders and people who have a lot of muscle bulk will have a high BMI, but are not overweight.
- Physical disabilities – people who have a physical disability and are unable to walk may have muscle wasting. Their BMI may be slightly lower, but this does not necessarily mean they are underweight. In these instances, it is important to consult a dietician who will provide helpful advice.
- Height – BMI is not totally independent of height and it tends to overestimate obesity among shorter people and underestimate it among taller people. Therefore, BMI should not be used as a guide for adults who are very short (less than 150 cm) or very tall (more than 190 cm).
- People of different ethnic groups – Asians and Indians, for example, have more body fat at any given BMI compared to people of European descent. Therefore, the cut-offs for overweight and obesity may need to be lower for these populations. This is because an increased risk of diabetes and cardiovascular disease begins at a BMI as low as 23 in Asian populations. Some populations have equivalent risks at a higher BMI, such as people of Torres Strait Islander and Maori origin.

Being overweight or underweight can affect your health

The link between being overweight or obese and the chance you will become ill is not definite. Research is ongoing, although statistically, there is a greater chance of developing various diseases if you are overweight. For example, the risk of death rises slightly (by 20 to 30 per cent) as BMI rises from 25 to 27. As BMI rises above 27, the risk of death rises more steeply (by 60 per cent).

Risks of being overweight (high BMI) and physically inactive

If you are overweight (with a BMI over 25) and physically inactive, you may develop:

- cardiovascular (heart and blood circulation) disease
- gallbladder disease
- high blood pressure (hypertension)
- type 2 diabetes
- osteoarthritis
- certain types of cancer, such as colon and breast cancer
- depression and other mental health disorders.

Risks of being underweight (low BMI)

If you are underweight (BMI less than 18.5), you may be malnourished and develop:

- compromised immune function
- respiratory disease
- digestive diseases
- cancer
- osteoporosis.
Body fat distribution and health risk

A person’s waist circumference is a better predictor of health risk than BMI. Having fat around the abdomen or a ‘pot belly’, regardless of your body size, means you are more likely to develop certain obesity-related health conditions.

Fat predominantly deposited around the hips and buttocks doesn’t appear to have the same health risk. Men, in particular, often deposit weight in the waist region and therefore have an increased risk of obesity-related disease.

Studies have shown that the distribution of body fat is linked to an increased prevalence of diabetes, hypertension, high cholesterol and cardiovascular disease.

Generally, the association between health risks and body fat distribution are:

- least risk – slim (evenly distributed body fat)
- moderate risk – overweight with no pot belly
- moderate to high risk – slim with pot belly
- high risk – overweight with excess belly fat.

Waist circumference and health risks

Waist circumference can be used to indicate health risk for chronic diseases.

For men:
- 94 cm or more – increased risk
- 102 cm or more – substantially increased risk.

For women:
- 80 cm or more – increased risk
- 88 cm or more – substantially increased risk.

Genetic factors

The tendency to deposit fat around the middle is influenced by a person’s genes. However, you can take this genetic tendency into account and still do something about it.

Being physically active, avoiding smoking and eating unsaturated fat instead of saturated fat have been shown to decrease the risk of developing abdominal obesity.

Where to get help

- Your doctor
- Maternal and child health nurse
- Dietitians Association of Australia Tel. (02) 6163 5200 or 1800 812 942

References


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More information

Health checks

The following content is displayed as Tabs. Once you have activated a link navigate to the end of the list to view its associated content. The activated link is defined as Active Tab

- Health checks explained
- Life expectancy
- Monitoring your health
- Health checks throughout life
- Medical tests and assessment
- Staying healthy and well

Health checks explained

- Cancer screening
  
  The aims of cancer screening is to find cancer in its early stages...

- Health checks for men
  
  Men should see their doctor for regular medical check-ups...

- Health checks for women
  
  A woman at high risk of a particular disease should be checked more frequently and/or at an earlier age...

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Regular health checks

Regular health checks can help you identify any early signs of health issues.

Life expectancy

- Life expectancy for Victorians
  Reducing risk factors will improve the health of Victorians more than developing cures for diseases.

- Reduce your risk of early death
  You can dramatically reduce your risk of early death by making a few simple lifestyle changes.

Monitoring your health

- Talking with your doctor
  To get the most out of the conversation with your doctor, nurse or other healthcare provider, it is best to be open about providing information and to speak up if you don't understand.

- Blood pressure
  Healthy eating and lifestyle changes can help to manage high blood pressure.

- Bowel cancer screening
  The National Bowel Cancer Screening Program (NBCSP) offers kits for free to Australians between the ages of 50 and 74 years of age.

- Breast awareness
  Women should become familiar with the normal look, feel and shape of their breasts, so they will notice any abnormal changes.

- Cancer screening
  The aim of cancer screening is to find cancer in its early stages.

- Cervical screening tests
  The cervical screening test protects up to 30 per cent more women than the Pap test.

- Chronic illness
  A chronic or long term illness means the person has to adjust to the demands of the illness and the therapy used to treat the condition.

- Eye tests
  Regular eye tests or check-ups detect problems early, so you can have early treatment to minimise any permanent damage to your eyes.

- Hearing tests
  A ringing sensation in the ears (tinnitus), or people complaining that you talk too loudly are signs you may need to have your hearing checked.

- Heart disease and stroke - your risk score
  Absolute risk is a measure your doctor can calculate to understand the likelihood of you experiencing a heart attack or stroke in the next five years.

- Heart disease - know your risk
  Risk factors for heart disease include smoking, diabetes, obesity, family history and age.

- How to check for skin cancer
  Six common questions on checking for skin cancer.

- Immunisation – deciding which vaccines you need
  Everyone’s immunisation needs are different and are influenced by your health, lifestyle, age and occupation.

- Preparing for a health or medical appointment
  Get the most out of your consultation by preparing for your health or medical appointment.

- Reduce your risk of early death
  You can dramatically reduce your risk of early death by making a few simple lifestyle changes.

- Regular health checks
  Regular health checks can help you identify any early signs of health issues.

- Stroke risk factors and prevention
  Everyone can reduce their risk of having a stroke by making a few simple lifestyle changes.

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Testicular self-examination
Men with an increased risk of testicular cancer should regularly examine their testicles for unusual lumps or swellings.

Time to immunise - free vaccines for men who have sex with men
Immunisation is one of the best ways you can protect yourself and others from infectious diseases in our community. In partnership with Thorne Harbour Health (formerly Victorian AIDS Council), the...

Health checks throughout life

Dental checks for young children
Children should have an oral health check by the time they turn two.

Health check
This health assessment questionnaire will identify which zones of your lifestyle are contributing to your personal health risk and provide actions you can take to make positive change.

Health checks for men
Men should see their doctor for regular medical check-ups.

Health checks for women
A woman at high risk of a particular disease should be checked more frequently and/or at an earlier age.

Men's health checks (video)
Many men put off going to the doctor, including nutritionist, Shane Bilsborough.

Newborn bloodspot screening
Every newborn baby in Australia is offered a newborn bloodspot screening test to identify those at risk of rare, but serious, medical conditions.

Tests, scans and checks - pregnancy and labour
Tests can confirm your pregnancy and also monitor your baby's development in the womb.

Medical tests and assessment

Allergy testing
Allergy testing is used to find which substances provoke an allergic reaction.

Bowel cancer screening
The National Bowel Cancer Screening Program (NBCSP) offers kits for free to Australians between the ages of 50 and 74 years of age.

Breast screening
A breast x-ray or mammogram every two years is recommended for women aged 50 to 69.

Cervical screening tests
The cervical screening test protects up to 30 per cent more women than the Pap test.

ECG test
A doctor may recommend an electrocardiogram for patients who may be at risk of heart disease because of family history, smoking, overweight, diabetes or other conditions.

Eye tests
Regular eye tests or check-ups detect problems early, so you can have early treatment to minimise any permanent damage to your eyes.

Genetic testing for inherited cancer
A predisposition to certain cancers can be inherited via altered genes.

Hearing tests
A ringing sensation in the ears (tinnitus), or people complaining that you talk too loudly are signs you may need to have your hearing checked.

Staying healthy and well

3 steps to better health (video)
Ways to improve your understanding of your health.

Heart disease and stroke - your risk score
Absolute risk is a measure your doctor can calculate to understand the likelihood of you experiencing a heart attack or stroke in the next five years.

- Managing your health
  You can manage your health by learning about healthy living, taking steps to prevent disease and having regular health checks with your doctor.

- Talking with your doctor
  To get the most out of the conversation with your doctor, nurse or other healthcare provider, it is best to be open about providing information and to speak up if you don't understand.

Related Information

- Body mass index calculator for children and teenagers
  This calculator measures body mass index (BMI), which is a measure of body fat. It is only an approximate measure of the best weight for your health. The calculator can be used for anyone from two to...

- Weight and muscle gain
  Gaining lean body weight is a slow process that takes months and years, rather than days and weeks...

- Balancing energy in and energy out
  A kilojoule is a unit of measure of energy, in the same way that kilometres measure distance...

- Kids and energy needs
  It’s important for kids to eat a wide variety of foods for a healthy, well-balanced diet and to be physically active. Creating healthy habits during childhood helps to ensure lifelong healthy...

- Energy in food (kilojoules and calories)
  A kilojoule is a unit of measure of energy, in the same way that kilometres measure distance...

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**BMI Calculator**

Body Mass Index is used to estimate your total amount of fat. It is only an approximate measure of the best weight for your health.

This calculator is designed for men and women over the age of 18.

[Learn more](#)