

Reference document  
**Obesity**



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## Table of contents

Introduction	2
Definition	2
Diagnosing obesity	2
Contributing factors to obesity	3
Consequences	3
Prevention	3
Treatment	4
Conclusion	4
References	4

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## Introduction

Obesity appears to have reached epidemic proportions. In 2014, Statistics Canada reported that over half of Canadian adults were overweight or obese. Also worrying is the fact that obesity affects an increasing number of young children.

According to Health Canada, people who are overweight or obese are more susceptible to serious illnesses, including heart disease. As obesity significantly increases the risk of developing chronic diseases and reduces quality of life and life expectancy, we need to take preventive action.

## Definition

According to the World Health Organization (WHO), obesity is characterized by an abnormal excess of body fat caused by a calorie intake that is higher than our energy expenditure. It manifests as an accumulation of fat in tissues, which has a direct effect on one's health and increases the risk of illnesses such as diabetes, hypercholesterolemia and hypertension.

### A few statistics

- The rate of obesity has risen sharply over the past 40 years and tripled since 1980.
- According to Health Canada, 1 in 4 Canadians suffers from obesity (BMI of more than 30).
- In Canada, 13% of youth between 3 and 19 years of age suffer from childhood obesity.
- In Quebec, 18% of youth between 2 and 17 years of age are overweight, and 10% are obese.

## Diagnosing obesity

Various measurement tools, such as weight, body mass index (BMI), waist circumference and body fat percentage, are used to measure obesity.

### Body mass index

BMI is the most used tool, according to WHO. It is found by dividing weight by height squared (weight in kg/height in metres squared). Obesity is assessed using the following scale:

- Normal weight – BMI greater than 18.5
- Overweight – BMI greater than 25
- Class 1 obesity – BMI greater than 30
- Class 2 obesity – BMI greater than 35
- Class 3 (morbid) obesity – BMI greater than 40

However, this measurement does not calculate the mass of bones and muscles. Waist circumference and body fat percentage are therefore used as complementary measurements.

### Waist circumference

This measurement is used to assess abdominal fat mass, also called "visceral fat mass." Abdominal fat surrounds the vital organs and is very harmful to one's health. Waist circumference should be less than 94 cm for men and less than 80 cm for women.

### Body fat percentage

This method consists of measuring skinfold thickness on various predetermined parts of the body using a special plier. However, this tool requires great precision and has a significant margin of error.

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## Contributing factors to obesity

Many factors are involved in increasing obesity. **The two fundamental causes remain excessive calorie consumption and a lack of physical activity.** A high intake of high-fat, high-sugar foods and a low intake of nutrients considerably increase the risk of obesity. Furthermore, increasingly sedentary lifestyle habits (use of video games, computers and motorized transportation) reduce daily energy expenditures and contribute to increased obesity. Stress, lack of sleep, alcohol abuse, psychological disorders, advertising, urban planning, the environment, agriculture, psychosocial problems and education also contribute to obesity.

Jobs these days are increasingly sedentary, which serves to reduce energy expenditures and increase the risk of obesity and chronic diseases. Furthermore, work that is performed sitting or standing in a static position greatly increases postural problems and the risk of developing musculoskeletal disease. These problems may increase workplace absenteeism and work-related injuries and, as a result, decrease employee productivity.

## Consequences

A BMI greater than 25 is a significant contributor to an increased risk of chronic diseases such as:

### Diabetes

Diabetes signifies an excessive level of sugar in the blood, caused by an absence of insulin (a hormone secreted by the pancreas) or an inability to absorb sugar into cells and use it as energy. There are two types of diabetes:

- **Type 1 diabetes** is characterized by the total absence of insulin production.
- **Type 2 diabetes** is characterized by insulin being unable to do its job. Type 2 diabetes is related to lifestyle and affects 9 out of 10 diabetics. People suffering from obesity are particularly at risk of developing this type of diabetes.

### Heart disease

According to WHO, heart disease is the world's leading cause of death. This disease affects the heart and blood vessels, and may take the form of a stroke, a heart attack, heart failure, an embolism or high blood pressure.

### Musculoskeletal disorders

Musculoskeletal disorders describe the damage of muscle or bone tissue, tendons or cartilage. Obesity significantly increases the weight on these tissues, promoting the risk of developing an injury or a chronic disease such as osteoarthritis, osteoporosis or tissue inflammation.

Other illnesses, like gout, various respiratory problems or infections, sleep apnea, chronic fatigue and even some cancers may be caused by obesity. In addition, psychological health could suffer greatly from lowered self-esteem, burnout, increased anxiety or depression.

## Prevention

Obesity is a preventable health problem, which is to say that its risk factors can be mitigated by adopting healthy lifestyle habits and instilling them in children from an early age. Moving, exercising regularly (ideally every day or three times a week), eating healthily, reading food labels and making healthy choices (eating low-fat and low-sugar foods and more fruits, vegetables and whole-grain fibre) are practices that can help to reduce risk factors. Also, many electronic or virtual tools are now available to provide support and motivation for making healthy choices.

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## Treatment

According to Dr. Klein from the news agency The Canadian Press, the main recommendation for treating obesity is to reduce one's weight by 5 to 10%. Research shows that a weight decrease of only 5% significantly reduces the risk of chronic diseases and improves overall fitness.

The main goal in treating obesity is to reduce one's weight by ensuring that the number of calories burned each day is greater than the number of calories consumed. The number varies depending on the person and their activities. To achieve this goal, it is recommended to consult a professional such as a doctor, a nutritionist or a kinesiologist. In cases of morbid obesity, bariatric surgery may be a valid option.

## Conclusion

Obesity is a problem of alarming proportions. It is important to act quickly to prevent it from impacting one's health and overall fitness. The main actions to take continue to be preventing disease and promoting good health among children.

## References

Canadian Obesity Network: [www.obesitynetwork.ca](http://www.obesitynetwork.ca)

[www.who.int/topics/en/](http://www.who.int/topics/en/)

[www.statcan.gc.ca/eng/help/bb/info/obesity](http://www.statcan.gc.ca/eng/help/bb/info/obesity)