Public Health Ontario | Santé publique Ontario

PARTNERS FOR HEALTH | PARTENAIRES POUR LA SANTÉ

OBESITY A BURDEN ACROSS THE LIFE COURSE

A substantial proportion of the Ontario population – both adults and children – is obese, and an even greater proportion is overweight. This is a result of several decades of increase and cannot be attributed to just one cause. Obesity is a complex issue with a negative impact on the health and quality of life of Ontarians.

WHAT CAUSES OBESITY?

Energy expenditure < **Energy intake** = **OBESITY**

The causes of obesity are complex, multifaceted and interrelated. Obesity is influenced by:[1–4]

BIOLOGY

- Genetics
- Prenatal environment

INDIVIDUAL BEHAVIOURS

- Physical activity
- Food consumption
- Sleep
- Sedentary behaviour

PHYSICAL, SOCIAL AND POLICY ENVIRONMENT

- Activity environment
- Food environment
- Economic environment
- Societal influences

Factors that contribute to the risk of becoming obese begin before birth and extend across the life course.[2,3]

HOW IS OBESITY MEASURED?

Obesity is often measured using **body mass index** (BMI).

$$BMI = \frac{\text{weight (kg)}}{\text{height}^2\ (\text{m}^2)}$$

- **Underweight:** <18.5 kg/m²
- **Normal:** 18.5-24.9 kg/m²
- **Overweight:** 25-29.9 kg/m²
- **Obese:** 30+ kg/m²

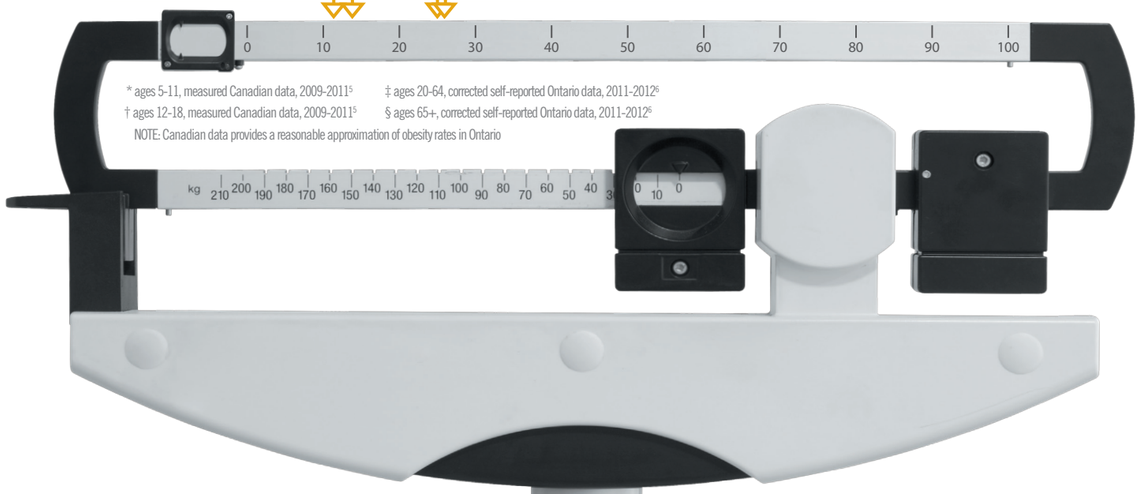
For children and youth, BMI-for-age is often calculated using sex-specific growth charts from the World Health Organization.

13.1% of children* are obese

11.0% of youth† are obese

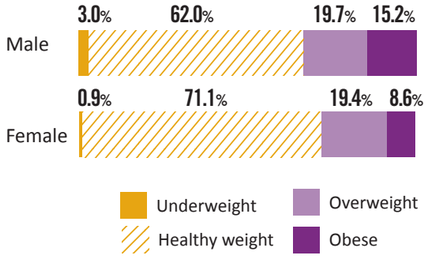
25.8% of adults‡ are obese

25.5% of seniors§ are obese



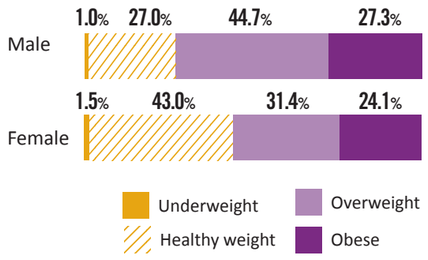
* ages 5-11, measured Canadian data, 2009-2011[5]
† ages 12-18, measured Canadian data, 2009-2011[5]
‡ ages 20-64, corrected self-reported Ontario data, 2011-2012[6]
§ ages 65+, corrected self-reported Ontario data, 2011-2012[6]
NOTE: Canadian data provides a reasonable approximation of obesity rates in Ontario

CHILDREN AND YOUTH:



Measured weight distribution in Canadian children and youth, age 5-18, 2009-2011[5]

ADULTS AND SENIORS:



Corrected self-reported weight distribution in Ontario adults and seniors, age 20+, 2011-2012[6]

DISPARITIES IN OBESITY

Obesity rates are not consistent—disparities have been found in adult subpopulations. Obesity rates are higher in:[6]

- Females from neighbourhoods with the highest material deprivation (28.0%), compared to the lowest (19.9%)
- People born in Canada (28.7%), compared to people that immigrated in the past five years (13.2%)
- People who have not completed high school (33.9%), compared to people with post-secondary education or more (25.7%)
- People who identify as Aboriginal (38.2%), compared to people who do not (28.4%)

THE IMPACT OF OBESITY

Obesity in children and youth may lead to:[3,7]

- Asthma
- Glucose intolerance and type 2 diabetes
- Obesity in adulthood
- Orthopaedic complications
- Self-esteem and mental health-related issues
- Sleep apnea

In addition, obesity in adults may also lead to:[3,8–11]

- Cancer
- Hypertension
- Infertility and disrupted reproductive functioning
- Ischaemic heart disease and stroke
- Liver and gall bladder disease
- Metabolic syndrome
- Musculoskeletal disorders
- Premature mortality
- Respiratory disease
- Type 2 diabetes

1. Public Health Agency of Canada and Canadian Institute for Health Information. Obesity in Canada: A joint report from the Public Health Agency of Canada and the Canadian Institute for Health Information. Ottawa, ON: Her Majesty the Queen in Right of Canada; 2011. Available from: https://secure.cihi.ca/free_products/Obesity_in_canada_2011_en.pdf **2.** Foresight. Tackling obesities: Future choices - project report. London, U.K.: Government Office for Science;2007. Available from: http://www.bis.gov.uk/assets/foresight/docs/obesity/17.pdf **3.** Public Health Ontario. Addressing obesity in children and youth: Evidence to guide action for Ontario. Toronto, ON: Queen's Printer for Ontario; 2013. Available from: http://www.publichealthontario.ca/en/eRepository/Addressing_Obesity_Children_Youth_Sept2013.pdf **4.** Wardle J. Eating behaviour and obesity. Obes Rev. 2007;8 Suppl 1:73-5. **5.** Statistics Canada. Canadian health measures survey: Cycle 2 data tables – 2009 to 2011. Table 25: Distribution of the household population aged 5 to 18, by body mass index norms based on direct measures – World Health Organization (WHO) system, by age and sex, Canada, 2009 to 2011. Ottawa, ON: Minister of Industry; 2012.Available from: http://www.statcan.gc.ca/pub/82-626-x/2012001/t026-eng.pdf **6.** Data source: Canadian Community Health Survey 2011/2012, Statistics Canada, Canada Share File, Distributed by Ontario Ministry of Health and Long-Term Care. **7.** Ezzati M, Hoorn SV, Lopez AD, Danaei G, Rodgers A, Mathers CD, et al. Comparative quantification of mortality and burden of disease attributable to selected risk factors. In: Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJL, editors. Global burden of disease and risk factors. Washington, D.C.: World Bank; 2006. Available from: http://www.ncbi.nlm.nih.gov/books/NBK11813/ **8.** Kopelman P. Health risks associated with overweight and obesity. Obes Rev. 2007;8 Suppl 1:13-7 **9.** World Health Organization. Obesity and overweight [Internet]. Geneva: World Health Organization; 2013. Available from: http://www.who.int/mediacentre/factsheets/fs311/en/index.html **10.** Reilly JJ, Kelly J. Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: Systematic review. Int J Obes (Lond). 2011;35(7):891-8. **11.** Griffiths LJ, Parsons TJ, Hill AJ. Self-esteem and quality of life in obese children and adolescents: A systematic review. Int J Pediatr Obes. 2010;5(4):282-304.

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