

Article

Lung Function Results 2007 to 2009



January 2010

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website at www.statcan.gc.ca, e-mail us at infostats@statcan.gc.ca, or telephone us, Monday to Friday from 8:30 a.m. to 4:30 p.m., at the following numbers:

Statistics Canada's National Contact Centre

Toll-free telephone (Canada and United States):

Inquiries line	1-800-263-1136
National telecommunications device for the hearing impaired	1-800-363-7629
Fax line	1-877-287-4369

Local or international calls:

Inquiries line	1-613-951-8116
Fax line	1-613-951-0581

Depository Services Program

Inquiries line	1-800-635-7943
Fax line	1-800-565-7757

To access this product

This product, Catalogue no. 82-625-X, is available free in electronic format. To obtain a single issue, visit our website at www.statcan.gc.ca and browse by "Key resource" > "Publications."

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "About us" > "The agency" > "Providing services to Canadians."

HTML version published: January 2010.

PDF version published: September 2010.



Lung function results 2007 to 2009

Data on lung function will allow researchers to develop normal values for age, gender and racial groups in Canada that can be used in research and assist in medical diagnoses.

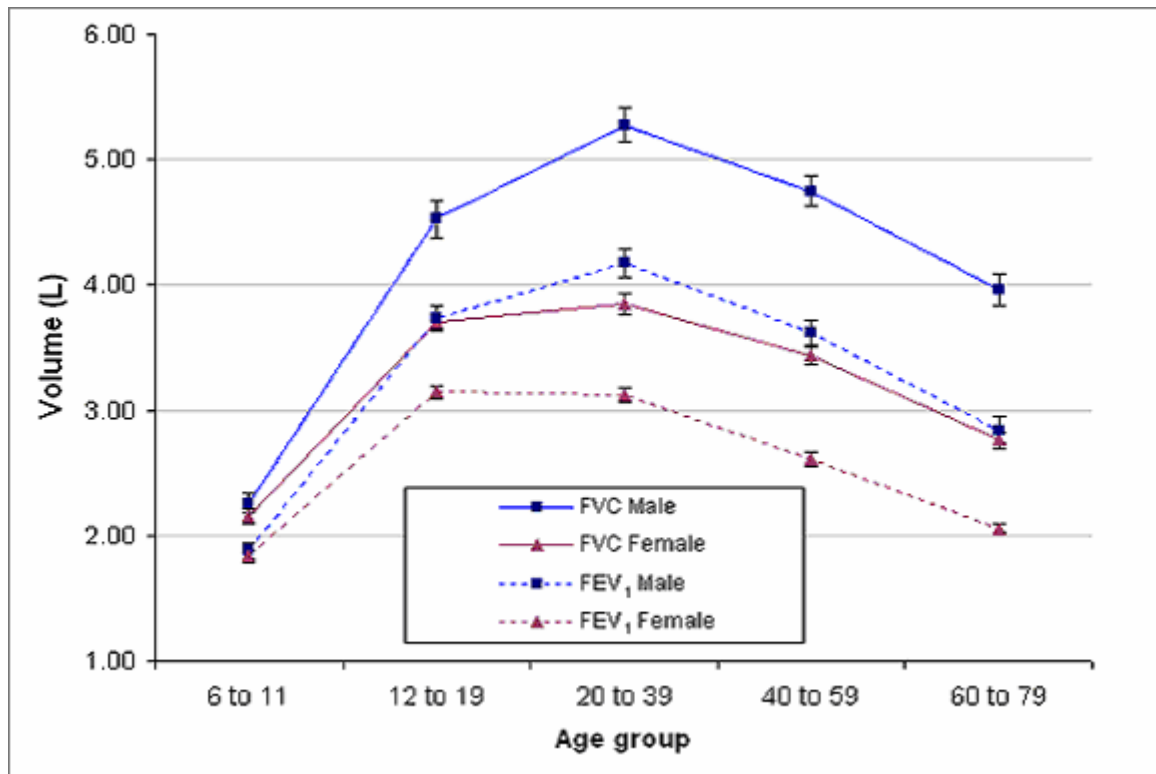
Data collected on respondents aged 6 to 79 demonstrate that lung function increases rapidly during childhood and adolescence, in line with normal growth and development, followed by a gradual decline during adulthood caused by the normal deterioration associated with aging.

Lung function measurements, also known as spirometric measurements, are invaluable tools in the study of respiratory health and lung disease. They permit objective diagnosis of lung disease and assess and monitor disease severity by comparing measurements to the expected values for a normal individual of the same age, height, sex and ethnic origin.

The measurements of primary interest are

- the total volume of air that can be forcibly exhaled after a maximal inspiration, known as the **forced vital capacity (FVC)**
- the volume of air that can be forcibly exhaled in the first second of a FVC manoeuvre, known as the **forced expiratory volume in one second (FEV₁)**
- the ratio between FEV₁ and FVC.

Chart 1
Mean FVC and mean FEV₁ by age group and sex



Source: Canadian Health Measures Survey (CHMS), 2007 to 2009

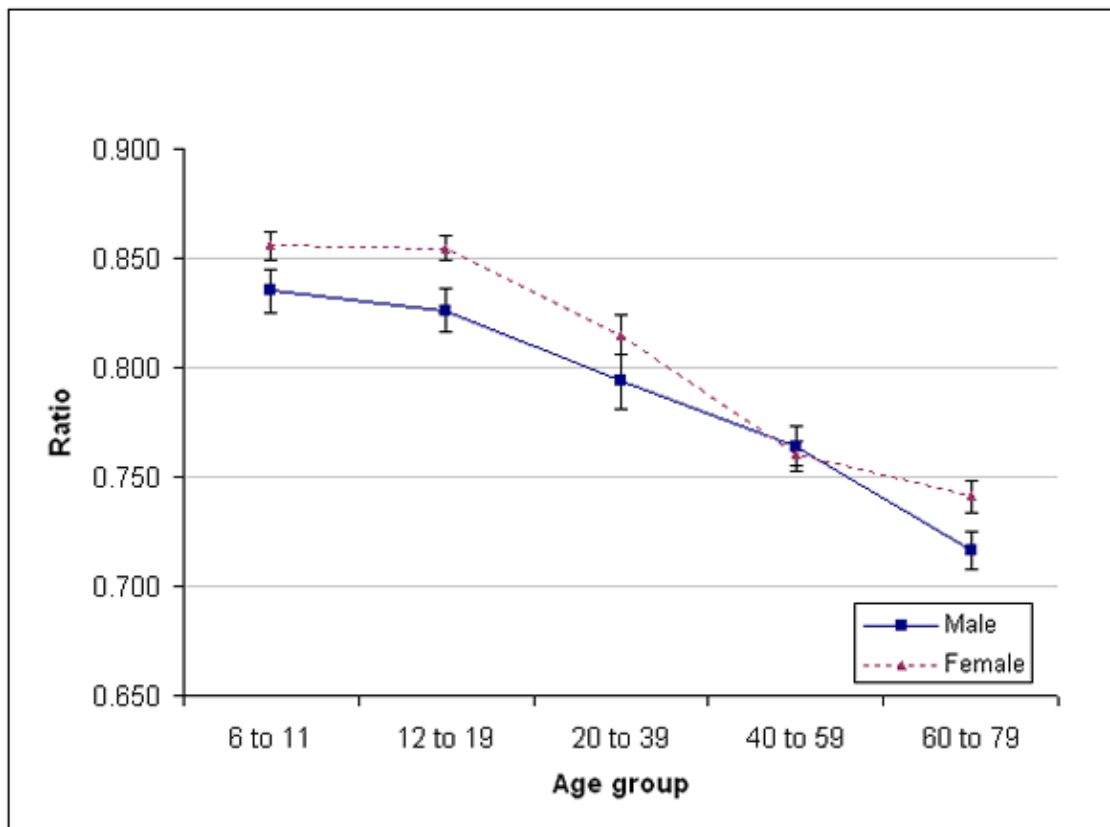


Males have larger FVC and FEV₁ volumes in all age groups. This difference between the sexes is not significant in early childhood, however it increases significantly until early adulthood where it remains throughout late adulthood.

FEV₁ to FVC ratio

The ratio of FEV₁ to FVC expresses the fraction of air that was exhaled in the first second of a FVC manoeuvre. This ratio is markedly age dependant, decreasing with age. Females have greater FEV₁/FVC ratios than males at all ages except in the 40 to 59 age group.

Chart 2
Mean FEV₁/FVC ratio by age group and sex



Source: Canadian Health Measures Survey (CHMS), 2007 to 2009

Since normal lung function values do not exist for the Canadian population, one of the CHMS objectives is to provide nationally representative data on lung function to develop normative data for age, gender and racial groups. This information will enable experts to better estimate the prevalence of conditions related to low lung function and interpret lung function testing.



Canadian Health Measures Survey

About spirometry

Spirometry is a test that measures the volume of air an individual inhales or exhales and the rate at which the air is moved into or out of the lungs.

Much like blood pressure provides important information about general cardiovascular health, spirometry is invaluable as a screening test of general respiratory health. Used in conjunction with other tests spirometry allows medical practitioners to monitor respiratory health for conditions such as chronic obstructive pulmonary disease (COPD) and cystic fibrosis.

Spirometry results are interpreted by comparing measurements to the expected values for a normal healthy individual with the same anthropometric and ethnic characteristics. In Canada, predominantly American data are used to define these normal and expected values.

Additional physical health measures information from the Canadian Health Measures Survey 2007 to 2009 is available from the Statistics Canada www.stacan.gc.ca/chms.