

Body weight

The term **body weight** is overwhelmingly used in daily English speech as well as in the contexts of biological and medical sciences to describe the mass of an organism's body. Body weight is measured in kilograms throughout the world, although in some countries it is still measured in pounds (e.g. United States) or stones and pounds (e.g. among people in the United Kingdom) and thus may not be well acquainted with measurement in kilograms. Most hospitals, even in the United States, now use kilograms for calculations, but use kilograms and pounds together for other purposes. Body weight of a person is theoretically the weight of the person without any items on. However, for all practical purposes, body weight is taken with clothes on but often without the shoes and heavy accessories like mobile phones and wallets.

In physics, body mass (an expression of matter that does not change due to gravity) is expressed in kilograms while body weight (which is an expression of force that includes gravity) is expressed in Newtons.

Average weight around the world

Country/Region	Average male weight/kg	Average male weight/lb	Average female weight/kg	Average female weight/lb	Sample population / age range	Methodology	Year	Source
Brazil	72.7	160.3	62.5	137.8	20–74	Measured	2008–2009	[1]
Chile	77.3	170.4	67.5	148.8	15 and over	Measured	2009–2010	[2]
Germany	82.4	181.7	67.5	148.8	18 and over	Measured	2005	[3]
United States	86.6	190.9	74.4	164.0	20–74	Measured	1999–2002	[4]

Stability

The stability of body weight depends on the energy intake and expenditure. When energy intake exceeds output, the excess energy is stored in the body as carbohydrates, proteins or fats and this causes a gain in body weight. The converse is also true. When energy expenditure exceeds energy intake, body weight decreases.

Estimation in children

A number of ways to estimate weight in children have been developed. They include: Broselow tape, Leffler formula, and Theron formula.^[5] The Broselow tape is based on length with weight read from the appropriate color area.

The Leffler formula is used for children 0–10 years of age.^[5] In those less than a year old it is

$$m = \frac{1}{2}a_m + 4$$

and for those 1–10 years old it is

$$m = 2a_y + 10$$

where m is the number of kilograms the child weighs and a_m and a_y respectively are the number of months or years old the child is.^[5]

The Theron formula is



An example of a half unfolded Broselow tape.

$$m = e^{0.175571a_y + 2.197099}$$

where m and a_y are as above.^[5]

Sports usage

Participants in sports such as boxing, mixed martial arts, wrestling, rowing, judo, and weight-lifting are classified according to their body weight, measured in units of mass such as pounds or kilograms. See, e.g., wrestling weight classes, boxing weight classes, judo at the 2004 Summer Olympics, boxing at the 2004 Summer Olympics.

References

- [1] (<http://g1.globo.com/brasil/noticia/2010/08/metade-dos-adultos-brasileiros-esta-acima-do-peso-segundo-ibge.html>)
- [2] Encuesta Nacional de Salud 2009–2010 (<http://www.redsalud.gov.cl/portal/url/item/99c12b89738d80d5e04001011e0113f8.pdf>) (p. 81)
- [3] (<http://www.wissen.de/wde/generator/wissen/ressorts/bildung/index.page=3496378.html>)
- [4] United States National Health and Nutrition Examination Survey, 1999–2002 (<http://www.cdc.gov/nchs/data/ad/ad347.pdf>)
- [5] So TY, Farrington E, Absher RK (June 2009). "Evaluation of the accuracy of different methods used to estimate weights in the pediatric population". *Pediatrics* **123** (6): e1045–51. doi:10.1542/peds.2008-1968. PMID 19482737.

Article Sources and Contributors

Body weight *Source:* <http://en.wikipedia.org/w/index.php?oldid=444807901> *Contributors:* 12dstring, 28bytes, Alex3yoyo, Altenmann, Alun009, Andycjp, Blehfu, Bonadea, Bongwarrior, Bped1985, BUMIsFat, Calle, Calliopejen, Caltas, Chapium, Coffee, D2s, DragonflySixtyseven, Erik Garrison, Estudiarme, Finalius, Gene Nygaard, Graham87, Gwernol, Hecko X, Hituro, Jambornik, Jimp, Jmh649, Joseph Solis in Australia, K-ssouf, Kenshealth, Kirachinmoku, L Kensington, Marek69, Mariabrenna, Mikey234534, Mwanner, Neelix, Nsaa, Omicron18, Osmanja, Patrick, PhilKnight, Pristino, Pstanton, Quantumor, Radagast83, Renaissancee, Rentafferret, Rhialto, Rich Farmbrough, Richard001, Richard2902, Rodrigogomesonetwo, Rugbylg6, Salvio giuliano, Sanfranman59, Seglea, Sheeju, TAG.Odessa, TaalVerbeteraar, Thatguyflint, The Anome, The Thing That Should Not Be, The Utahraptor, Tim bates, Tony Fox, Versageek, WLU, Wavelength, WeightMatters, Woohookitty, Xgymnast-x, 126 anonymous edits

Image Sources, Licenses and Contributors

File:Broselowtape.JPG *Source:* <http://en.wikipedia.org/w/index.php?title=File:Broselowtape.JPG> *License:* Fair Use *Contributors:* Explicit, Graham87, Jmh649, Sfan00 IMG, Sreejithk2000

License

Creative Commons Attribution-Share Alike 3.0 Unported
<http://creativecommons.org/licenses/by-sa/3.0/>