Human height

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Human height, or how tall people become, generally varies little between people compared to other anthropometric measures. Exceptional height variation (around 20% deviation from average) is usually due to gigantism or dwarfism.

Adult height for one sex in a particular ethnic group follows more or less a normal distribution.

Contents

Average adult height around the world

Below are average adult heights by country. (The original studies and sources should be consulted for details on methodology and the exact populations measured, surveyed, or considered.)

		Imperial		

	Metric system		system			
Country/Region	**Males**	**Females**	**Males**	**Females**	**Age range sampled**	**Source**
Argentina	172.0 cm	161 cm	5 ft 8.7 in	5 ft 3.4 in	19 (measured)	SciELO Argentina (2005)[1]
Australia	174.8 cm	163.9 cm	5 ft 10.2 in	5 ft 4.2 in	18-24 (measured)	g
Belgium	178.0 cm	166.0 cm	5 ft 10 in	5 ft 5.5 in	18-24 (measured)	g
Brazil	168.99 cm	158.0 cm	5 ft 6.5 in	5 ft 2.2 in	adult population (measured)	IBGE(2005) (http://www.anpec.org.br/encontro2005/artigos/A05A159.pdf) Folha de SP (http://www1.folha.uol.com.br/folha/cotidiano/ult95u103096.shtml)
Canada	174.0 cm	161.0 cm	5 ft 8.5 in	5 ft 3.4 in	adult population (measured)	j[2]
Canada	180 cm	165 cm	5 ft 10.9 in	5 ft 5.0 in	18-24 (self reported)	j
China (PRC)	164.8 cm	154.5 cm	5 ft 4.8 in	5 ft 0.8 in	30-65 (measured)	CHNS(1997) (http://aje.oxfordjournals.org/cgi/reprint/155/4/346.pdf)
Czech Republic	180.3 cm	167.3 cm	5 ft 11 in	5 ft 6.0 in	18 (measured)	Blaha *et al.* 2005
Denmark	180.9 cm	169.1 cm	5 ft 11.2 in	5 ft 6.6 in	19 (conscripts)	u
Dinaric Alps	185.6 cm	171 cm	6 ft 1 in	5 ft 7.3 in	17	q
Estonia	179.1 cm		5 ft 10.5 in		17	ff

Finland	176.7 cm	163.5 cm	5 ft 9.5 in	5 ft 4.3 in		a
Finland	178.2 cm	164.7 cm	5 ft 10 in	5 ft 4.7 in	15-64 (self reported)	p
France	173.2 cm	161.8 cm	5 ft 8.1 in	5 ft 3.7 in		a
France	175.7 cm	162.5 cm	5 ft 9.2 in	5 ft 4.0 in		n
Germany	178.1 cm	165 cm	5 ft 10 in	5 ft 4.9 in	entire population	s
Germany	181 cm	167 cm	5 ft 11 in	5 ft 6 in	18-19 (2005)	s
Iceland	181.7 cm	167.6 cm	5 ft 11.5 in	5 ft 6 in	20	cc
Israel	175.6 cm	162.8 cm	5 ft 9.1 in	5 ft 4.1 in	20-22 (between 1980-2000)	y
Italy - Middle & North	176.9 cm	163.2 cm	5 ft 9.5 in	5 ft 4.2 in	20(between 1994-2000)	Cacciari et al. 2001
Italy - South	174.2 cm	160.8 cm	5 ft 8.0 in	5ft 3.3 in	20(between 1994-2000)	Cacciari et al. 2001
	158.92 cm	5 ft 7.8 in	5 ft 2.6 in	20-24	m^2	
Korea, South	173.6 cm	161.1 cm	5 ft 8.3 in	5 ft 3.4 in	17	aa
Korea, South	173.9 cm	161.1 cm	5 ft 8.4 in	5 ft 3.4 in	17	2006 aa[1]
Korea, South	173.6 cm		5 ft 8.3 in		19 examination for conscription	a[3]
	176.3		5 ft			

Lithuania	cm		9.4 in		20	r
Malta	169 cm	159 cm	5 ft 6.5 in	5 ft 2.6 in	all adult population	z
Malta	175.2 cm	163.8 cm	5 ft 9 in	5 ft 4.5 in	25-34	z
Netherlands	178.8 cm	167.1 cm	5 ft 10.3 in	5 ft 5.7 in		a
Netherlands	184.8 cm	168.7 cm	6 ft 0.8 in	5 ft 6.5 in	20-30	DINED 2004 TU Delft (http://dined.io.tudelft.nl/nl,dined2004h)
New Zealand	177.0 cm	165.0 cm	5 ft 9.7 in	5 ft 5 in	19-45	k
Norway	179.9 cm	167.2 cm	5 ft 10.8 in	5 ft 5.9 in	men measured at 18-19	SSB
Philippines	163.3 cm	151.4 cm	5 ft 4.3 in	4 ft 11.6 in	20-39 (measured)	5Th National Nutrition Survey
Philippines	158.9 cm	147.8 cm	5 ft 2.6 in	4 ft 10.2 in	60 and over (measured)	5Th National Nutrition Survey
Portugal	172.8 cm		5 ft 8 in		21 conscription exam. (1998-99)	dd
Poland	176.9 cm		5 ft 9.6 in		19 conscription exam (1995)	ee
Singapore	172.0 cm	160 cm	5 ft 7.8 in	5 ft 3 in	17-25	Deurenberg *et al.* 2003
Spain	173.1 cm	161 cm	5 ft 8.2 in	5 ft 3.3 in	entire population (self reported)	o
Spain	177.1	164.3	5 ft	5 ft 4.6	18-29 (self	o

	cm	cm	9.7 in	in	reported)	
Catalonia, Spain	173.0 cm	164 cm	5 ft 8 in	5 ft 4.6 in	18 (measured)	x
Madrid, Spain	177.0 cm	164 cm	5 ft 9.7 in	5 ft 4.6 in	18 (measured)	x
Galicia, Spain	177.0 cm	164 cm	5 ft 9.7 in	5 ft 4.6 in	18 (measured)	x
Zaragoza, Spain	177.0 cm	162 cm	5 ft 9.7 in	5 ft 4.6 in	18 (measured)	x
Sweden	180.2 cm	167 cm	5 ft 10.9 in	5 ft 5.7 in	16-24	Statistiska Centralbyrån
Switzerland	175.5 cm	164.0 cm	5 ft 9 in	5 ft 3.8 in		a
Taiwan	172.04 cm	159.68 cm	5 ft 7.73 in	5 ft 2.8 in	18.5	bb
United Kingdom	175.1 cm	161.4 cm	5 ft 8.9 in	5 ft 3.5 in	entire population	v
United Kingdom	177.3 cm	163.0 cm	5 ft 9.8 in	5 ft 4.1 in	16-24	v
USA	175.8 cm	162.5 cm	5 ft 9.2 in	5 ft 3.77 in	20+	i
USA	178.2 cm	164.1 cm	5 ft 10.1 in	5 ft 4.6 in	20-39 Whites	i
USA	177.8 cm	164.0 cm	5 ft 10.0 in	5 ft 4.6 in	20-39 African-American	i
USA	169.7 cm	158.1 cm	5 ft 6.8 in	5 ft 2.2 in	20-39 Mexican-Americans	i
			5 ft		'80 - '83 born	

USA	179.25 cm	165.05 cm	10.6 in	5 ft 5 in	Whites (measured)	gg
USA	178.22 cm	163.65 cm	5 ft 10.2 in	5 ft 4.4 in	'80 - '83 born African-Americans	gg

Sources:

a = Cavelaars et al 2000*
b = kurabe.net**
c = 'Fitting the Task to the Man'
ger = Official statistics ot the Federal Statistical Office of Germany (http://www.destatis.de/basis/d/gesu/gesutab8.php)
d = Netherlands Central Bureau for Statistics, 2000 (http://statline.cbs.nl/StatWeb/table.asp?PA=7068eng&D1=69-134&D2=(l-11)-l&DM=SLEN&LA=en&TT=2)
e = Eurostats Statistical Yearbook 2004
f = Statistics Norway 2006 [2] (http://www.ssb.no/aarbok/tab/tab-104.html)
g = ABS How Australians Measure Up 1995 data (http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/Lookup/CA25687100069892CA256889001F4A36/$File/43590_1995.pdf)
h = Leiden University Medical Centre 1997
i = Mean Body Weight, Height, and Body Mass Index 1960-2002 (http://www.cdc.gov/nchs/data/ad/ad347.pdf)
j² = 2005 Canadian Community Health Survey 3.1 (http://www.usatoday.com/tech/columnist/aprilholladay/2006-12-04-size-age_x.htm)
j = Canadian Fitness and Lifestyle Research Institute (http://www.cflri.ca/pdf/e/pip15.pdf)
k = (page 60) Size and Shape of New Zealanders: NZ Norms for Anthropometric Data 1993**** (http://www.osh.govt.nz/order/catalogue/pdf/muscl-kt.pdf)
l = Statistics Sweden (http://www.scb.se/templates/tableOrChart____47966.asp)
m² = Official Statistics by Ministry of Education, Culture, Sports, Science and Technology[3] (http://www.mext.go.jp/b_menu/houdou/18/10/06100304/003/002.pdf)
n = UFIH (French Union of Clothing Industries) 2006
o = Sigma Dos Statistics 2003
p = National Public Health Institute (Finland) (http://www.ktl.fi/attachments/suomi/julkaisut/julkaisusarja_b/2004b13.pdf)
q = (Full text source is pay, lists the statistics as based on these regions: Dalmatia (Split, Sibenik, Drnis, Sinj, Imotski, Vrgorac) and Hercegovina (Mostar, Trebinje, Konjic) Dynamique de l'evolution humaine 2005 (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=16168365&dopt=Abstract)
r = VISUOMENĖS SVEIKATA Anthropometrical data and physical fitness of Lithuanian soldiers (http://medicina.kmu.lt/0601/0601-08e.pdf)
s = [4] (http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Presse/pk/2006/Mikrozensus/Pressebroschuere,property=file.pdf)

according to the sociodemographic characteristics

s = Committee for determining the eligibility of young men for military service.
u = [5] (http://www.dst.dk/asp2xml/puk/udgivelser/get_file.asp?id=9335&sid=Pop)
v = Health Survey for England 2004 (http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd/04TrendTabs.xls/file)

x = Vall d'Hebron Hospital pediatric study about 18-year-old Spaniards, dated in 2004, and other values mentioned in the article below.
y = (a study made between the years 1980-2000) (http://www.jacn.org/cgi/reprint/23/1/51?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&andorexacttitle=and&andorexacttitleabs=and&fulltext=Height-Related+Changes+in+Body+Mass+Index%3A+A+Reappraisal+&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&resourcetype=HWCIT)
z = 2003 study (https://secure.gov.mt/nso/statdoc/document_file.aspx?id=573). A 2007 Eurostat study revealed the same results - the average Maltese person is 164.9cm (5'4.9") compared to the EU average of 169.6 cm (5'6.7").
aa = Korean statistical information system (between) 1970-2004 (http://www.kosis.kr/eng/e_stat_OLAP.jsp?tbl_id=DT_1P12&org_id=112&vwcd=MT_ETITLE&path=&oper_YN=Y&lang_mode=eng) Source: Ministry of Education and Human Resources Development [korea]
aa[1] = Physique of primary & secondary students Pdf file (http://pub.paran.com/surgus/SG.pdf)
aa[2] = Empas news (http://news.empas.com/show.tsp/cp_kh/20060512n06861/?kw=20%BC%BC%20%3Cb%3E%26%3C%2Fb%3E%20%C6%F2%B1%D5%20%3Cb%3E%26%3C%2Fb%3E%20%BD%C5%C0%E5%20%3Cb%3E%26%3C%2Fb%3E) (website in Korean)
a[3] = MMA (Military Manpower Administration) White book 2004~6 (http://blog.daum.net/surgus/?_top_blogtop=go2myblog)(South Korea)

bb = Ministry of Education, Republic of China (Taiwan) (http://epaper.edu.tw/news/960919/960919_003.htm)
cc = Icelandic boys (http://lb.icemed.is/media/skjol/2000-07_08/2000-07-8-f4-TI.jpg), girls (http://lb.icemed.is/media/skjol/2000-07_08/2000-07-8-f4-TII.jpg)
dd = Tendências do Peso em Portugal no Final do Século XX (http://www.actamedicaportuguesa.com/pdf/2004-17/3/205-210.pdf)
ee = [6] (http://www.ingentaconnect.com/content/tandf/tahb/1999/00000026/00000003/art00005)
ff = [7] (http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B73DX-4GHRC52-1&_user=10&_coverDate=01%2F31%2F2006&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=400538aca29cf0c6
gg = [8] (http://epub.ub.uni-muenchen.de/archive/00001241/01/underperformance.pdf)

Notes:

a* Based on self reported and not measured height
b** Some values from this site have been disputed, see the talk page for more information.
j*** Based on self reported and not measured height
k**** Based on British norms and their relations to New Zealand values

Human Height Distribution (USA)

Table showing percentile smaller than stated height

Height (feet/inch)	Height (cm)	Male	Female
4ft 11in	150cm	0%	4.6%
5 ft 0in	152cm	0.2%	9.7%
5ft 1in	155cm	0.5%	17.7%
5ft 2in	157cm	1.4%	28.9%

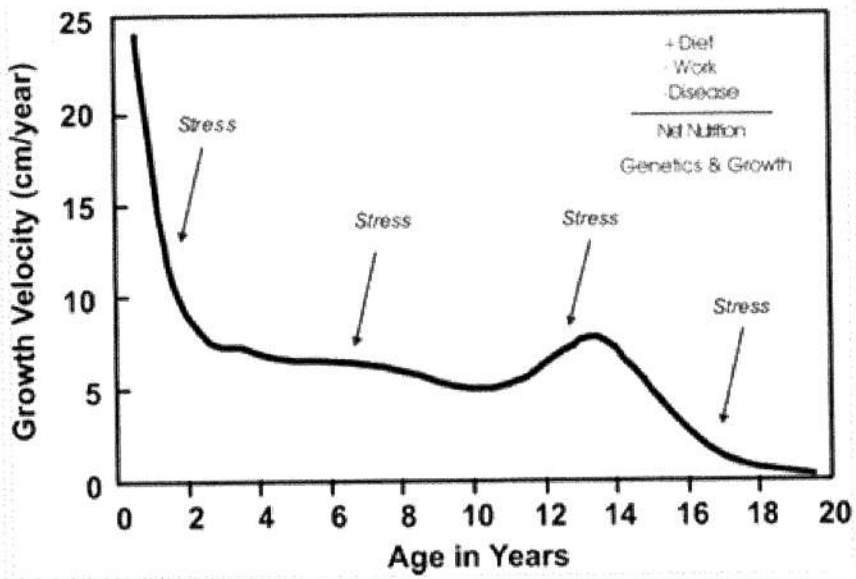
5ft 3in	160cm	3.1%	42.5%
5ft 4in	163cm	6.4%	57.1%
5ft 5in	165cm	11.9%	70.6%
5ft 6in	168cm	20%	81.8%
5ft 7in	170cm	30.7%	89.7%
5ft 8in	173cm	43.3%	94.7%
5ft 9in	175cm	56.8%	97.5%
5ft 10in	178cm	69.5%	98.8%
5 ft11in	180cm	80.1%	99.3%
6 ft 0in	183cm	88.2%	99.5%
6ft 1in	185cm	93.6%	99.6%
6ft 2in	188cm	96.8%	99.9%
6ft 3in	190cm	98.6%	99.9%
6ft 4in	193cm	99.4%	99.9%
6ft 5in	195cm	99.7%	99.99%
6ft 6in	198cm	99.9%	99.99%

- Source (http://www.shortsupport.org/Research/analyzer.html) - This data is based on a sample of 12,867 people by the Third National Health and Nutrition Examination Survey between 1988 and 1994. Study is based on Adults between 18 and 65 (men) and 60 (women)

Determinants of growth and height

The study of human growth is known as auxology. Growth and height have long been recognized as a measure of the health and wellness of individuals, hence part of the reasoning for the use of growth charts.
For individuals, as indicators of health problems, growth trends are tracked for significant deviations and growth is also monitored for significant deficiency from genetic expectations. Genetics is a major factor in determining the height of individuals, though it is far less influential in regard to populations. Average height is increasingly used as a measure of the health and wellness (standard of living and quality of life) of populations. Attributed as a significant reason for the trend of increasing height in parts of Europe is the egalitarian populations where proper medical care and adequate nutrition are relatively equally distributed. Changes in diet (nutrition) and a general rise in quality of health care and standard of living are the cited factors in the Asian populations. Average height in the United States has remained

essentially stagnant since the 1950s. Severe malnutrition is known to cause stunted growth in North Korean, portions of African, certain historical European, and other populations. Diet (in addition to needed nutrients; such things as junk food and attendant health problems such



An example of human growth velocity under optimal conditions
(Courtesy: Richard Steckel)

as obesity), exercise, fitness, pollution exposure, sleep patterns, climate (see Allen's rule and Bergmann's Rule for example), and even happiness (psychological well-being) are other factors that can affect growth and final height.

Height is, like other phenotypic traits, determined by a combination of genetics and environmental factors. Genetic potential plus nutrition minus stressors is a basic formula. Genetically speaking, the heights of mother and son and of father and daughter correlate, suggesting that a short mother will more likely bear a shorter son, and tall fathers will have tall daughters.[2] Humans grow fastest (other than in the womb) as infants and toddlers (birth to roughly age 2) and then during the pubertal growth spurt. A slower steady growth velocity occurs throughout childhood between these periods; and some slow, steady, declining growth after the pubertal growth spurt levels off is common. These are also critical periods where stressors such as malnutrition (or even severe child neglect) have the greatest effect. Conversely, if conditions are optimal then growth potential is maximized; and also there is catch-up growth — which can be significant — for those experiencing poor conditions when those conditions improve.

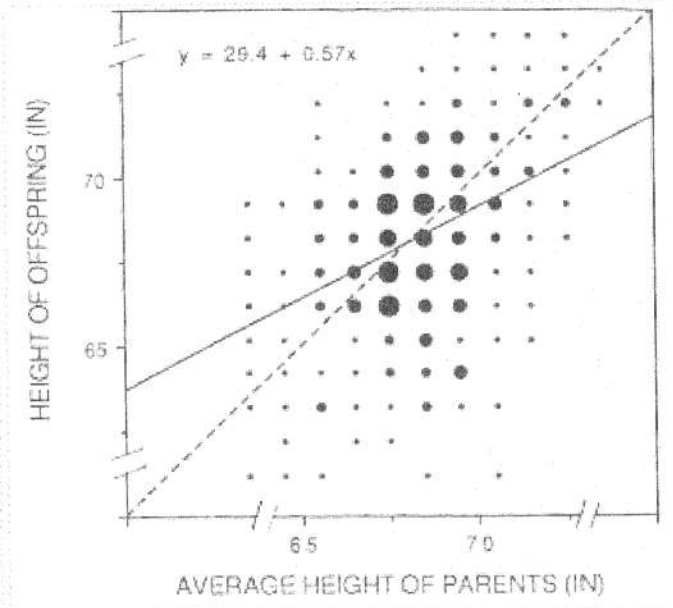
Moreover, the health of a mother throughout her life, especially during her critical periods, and of course during pregnancy, has a role. A healthier child and adult develops a body that is better able to provide optimal prenatal conditions. The pregnant mother's health is important as gestation is itself a critical period for an embryo/fetus, though some problems affecting height during this period are resolved by catch-up growth assuming childhood conditions are good. Thus, there is an accumulative generation effect such that nutrition and health over generations influences the height of descendants to varying degrees.

The precise relationship between genetics and environment is complex and uncertain. Human height is 90% heritable[3] and has been considered polygenic since the Mendelian-biometrician debate a hundred years ago.[4] The only gene so far attributed with normal height variation is *HMGA2*. This is only one of many, as each copy of the allele concerned confers an additional 0.4 cm, accounting for just 0.3% of population variance.[3]

Race and height

See also: Race and health, Race and intelligence, height and intelligence, and health and intelligence

The Nilotic peoples of Sudan such as the Dinka have been described as the tallest in the world, with the males in some communities having average heights of 1.9 m (6 ft 3 in) and females at 1.8 m (5 ft 11 in)[5]. A notable example is Manute Bol, who, at 2.31m(7ft 7in), was the tallest basketball player in the NBA. The Dinka are characterized as having long legs, narrow bodies and short trunks, an adaptation to hot weather[6]. However, a 1995 study casts doubt on the claim of extraordinary height in Dinka, which after studying the average height of Dinka males in one location, listed the actual number as 1.76 m (5 ft 9.45 in.) [7] Adults of Pygmy peoples have an approximate average height of 4ft 11in.



Sir Francis Galton's (1889) data showing the relationship between offsping height (928 individuals) as a function of mean parent height (205 sets of parents). Heritability (h^2) is equal to the slope of the regression line, 0.57.

At 2.57 metres (8 ft 5.5 in), Leonid Stadnyk is the world's tallest living man and is from Ukraine. The tallest man that ever lived was Robert Pershing Wadlow from Alton, Illinois, who was born in 1918 and stood 8 ft 11.1 inches (2.72 m) at the time of his death in 1940. The tallest man without a growth disorder is Bao Xishun at 2.361 metres (7 ft 8.95 in) tall.

Process of growth

Growth in stature, determined by its various factors, results from the lengthening of bones via cellular divisions chiefly regulated by somatotropin (human growth hormone (hGH)) secreted by the anterior pituitary gland. Somatotropin also stimulates the release of another growth inducing hormone insulin-like growth factor 1 (IGF-1) mainly by the liver. Both hormones operate on most tissues of the body, have many other functions, and continue to be secreted throughout life; with peak levels coinciding with peak growth velocity, and gradually subsiding with age after adolescence. The bulk of secretion occurs in bursts (especially for adolescents) with the largest during sleep. Exercise promotes secretion. (indeed, adolescents who take steroids can experience stunted growth). A positive net nutrition is also important, with proteins and various other nutrients especially important.

The majority of linear growth occurs as growth of cartilage at the epiphysis (ends) of the long bones which gradually ossify to form hard bone. The legs compose approximately half of adult human height, and leg length is a somewhat sexually dimorphic trait. Height is also attained from growth of the spine, and contrary to popular belief, men are the "leggier" sex with a longer leg to torso ratio, conversely to women's longer torso to leg ratio. (The illusion of the proportion being the other way around is caused by fatty deposits placed high on women's hips.) Some of this growth occurs after the growth spurt of the long bones has ceased or slowed. The majority of growth during growth spurts is of the long bones. Additionally, the variation in height between populations and across time is largely due to changes in leg length. The remainder of height consists of the cranium. Height is obviously sexually dimorphic and statistically it is more or less normally distributed, but with heavy tails.

Height abnormalities

Most intra-population variance of height is genetic. Short stature and tall stature are usually not a health concern. If the degree of deviation from normal is significant, hereditary short stature is known as familial short stature and tall stature is known as familial tall stature. Confirmation that exceptional height is normal for a respective person can be ascertained from comparing stature of family members and analyzing growth trends for abrupt changes, among others. There are, however, various diseases and disorders that cause growth abnormalities. Most notably, extreme height may be pathological, such as gigantism (very rare) resulting from childhood hyperpituitarism, and dwarfism which has various causes. Rarely, no cause can be found for extreme height; very short persons may be termed as having idiopathic short stature. The Food and Drug Administration (FDA) in 2003 approved hGH treatment for those 2.25 standard deviations below the population mean (approximately the lowest 1.2% of the population). An even rarer occurrence, or at least less used term and recognized "problem", is idiopathic tall stature.

If not enough growth hormone is produced and/or secreted by the pituitary gland, then a patient with growth hormone deficiency can undergo treatment. This treatment involves the injection of pure growth hormone into thick tissue to jump-start the growth process.

Role of an individual's height

Tallness has been suggested to be associated with better cardio-vascular health and overall better-than-average health and longevity (Njolstad *et al.* 1996,[8] McCarron et al 2002[9]). However, height may not be causative of better health and longevity (Miura *et al.* 2002). Other studies have found no association, or suggest that shorter stature is associated with better health (Samaras & Elrick, 1999[10]). On the other hand, being excessively tall can cause various medical problems, including cardiovascular issues, due to the increased load on the heart to supply the body with blood, and issues resulting from the increased time it takes the brain to communicate with the extremities. For example, Robert Wadlow, the tallest man known to verifiable history, developed walking difficulties as his height continued to increase throughout his life. In many of the pictures of the later portion of his life, Wadlow can be seen gripping something for support. Late in his life he was forced to wear braces on his legs and to walk with a cane, and he died after developing an infection in his legs because he was unable to feel the irritation and cutting caused by his leg braces (it is important to note that he died in 1940, before the widespread use of modern antibiotics). Height extremes of either excessive tallness or shortness can cause social exclusion and discrimination for both men and women (heightism).

Epidemiological studies have also demonstrated a positive correlation between height and intelligence. The reasons for this association appear to include that height serves as a biomarker of nutritional status or general mental and physical health during development, that common genetic factors may influence both height and intelligence, and that both height and intelligence are affected by adverse early environmental exposures.

In addition, an individual's height can be largely a part of what social clique, or group that they fall in to, though this is usually associated with pre-teens and teenagers. For example, in some schools, students on the basketball team might be "cool", and those with short stature wouldn't likely make the team. Therefore, in some cases, this could contribute to them being classified as "uncool", which can be detrimental to that particular individual's self-esteem.

This can also sometimes be translated over into the corporate world. Individuals with short stature can sometimes appear to not have any leadership ability or power, since some people might not take them seriously due to their short stature. However, this is not always the case with most employers. Historically this assumption has not always reflected reality; for instance Napoleon was not much taller than 5ft according to sources (though Napoleon's height is subject to great debate, and he may have been as much as 5' 7", see Napoleon's height for further information) and Deng Xiaoping of China who undertook massive reforms to the Chinese economy in the 1980s was reported to have only been 5 ft 2.(which was shorter than the average Chinese) Both were considered very strong leaders.

The role of height in sports

Height often plays a crucial role in sports. For most sports, height is useful as it affects the leverage between muscle volume and bones towards greater speed of movement. It is most valuable in sports like basketball and volleyball, where the "short" players are almost always well above average in height compared to the general population. In men's professional basketball, the guards, the smallest players, are usually around 6'2" to 6'6" (1.88 to 1.98 m), and the centers, the tallest players, are generally from 6'10" to 7'2" (2.08 to 2.18 m). Famous basketball player Shaquille O'Neal is listed at 7'1"[11] (2.16 m). Some sports, such as horse racing, auto racing, figure skating, diving, and gymnastics, a smaller frame is more valuable. In other sports, the role of height is specific to particular positions (i.e . In American Football, running backs have an advantage if they are shorter than the defenders due to lower centers of gravity and decreased visibility.) In weightlifting shorter levers are advantageous and taller than average competitors usually compete in the 105 kg + group.

Soccer

For example, in soccer, tall goalkeepers have an advantage because they have greater armspans and can jump higher easily, so one will rarely, if ever, see a short goalkeeper at the professional level. However, shorter goalkeepers will have an easier time reaching low shots as they can reach the ground fractionally sooner than taller keepers. In attacking and wide positions, height is not always important with some of the best players in the world (e.g. Lionel Messi, Romario and Maradona) being shorter than average and in many cases gaining an advantage with their low center of gravity. However, height is generally considered advantageous for central defenders.

Cricket

Similarly, in cricket, some good batsmen like Donald Bradman (5'7"/1.70 m), Sachin Tendulkar (5'5"/1.65 m) and Aravinda De Silva (5'2") are/were short. On the other hand, many successful fast bowlers are/were well over 6 ft/1.83 m; for examples, past greats Joel Garner, Courtney Walsh, and Curtly Ambrose were all 6'6"/1.98 m or taller and the recently retired Glenn McGrath is 6'4¾"/1.95 m. In general, taller bowlers have a higher point of release in their bowling action, making it easier for them to make the ball rear-up from a length. Also, they can generate more pace with longer arms and the sling action associated with bowling.

Rugby

In rugby union, lineout jumpers, generally locks, are usually the tallest players on the pitch, as this increases their chance of winning clean ball, whereas scrum-halves are usually relatively short. As examples, current world-class locks Victor Matfield, Chris Jack, and Paul O'Connell are all at least 6'6"/1.98 m, while the sport's all-time leader in international appearances, scrum-half George Gregan, is 5'8"/1.73m.

Football

In Football, a tall quarterback is at an advantage because it is easier for him to see over the heads of large offensive and defensive linemen while he is in the pocket in a passing situation. Tall wide receivers have an advantage of being able to outjump shorter defensive backs to catch highly thrown passes. By contrast, shorter defensive backs are utilized because of their typically greater agility, as the ability to change directions instantly is a prerequisite for the position. Short running backs are at an advantage because their shorter stature and lower center of gravity generally makes them harder to tackle effectively. In addition, they can easily "hide" behind large offensive linemen, making it harder for defenders to react at the beginning of a play. Thus, in the NFL and in NCAA Division I football, running backs under 6 ft 0 in (1.83 m) are more common than running backs over 6 ft 3 in (1.91 m). Former Heisman Trophy winner and Pro Football Hall of Famer Barry Sanders, thought by some to be the greatest running back in history, is a classic example of a running back with an extraordinarily low center of gravity, as he stood only 5 ft 7 1/2 in (1.71 m). However, Jim Brown, another player often considered the greatest running back of all time, was more than 6 ft 2 in (1.88 m) tall, demonstrating benefits conferred by the greater power and leverage which height provides.

Kickers are generally short, they are shorter becuase this allows them tog et under the ball easier. Punters are generally very tall because of longer legs achieving greater leg swing and this translates into more power on the ball.

Cornerbacks are generally matched with taller recievers if they are very good at blocking off the line. But for plays where it is a definite deep pass, then taller corners are used. To increase the chaces of a batted down pass or an interception.

Safetys are tall to pick off passes and intimidate backs and recievers.

Basketball

Basketball players tend to be extremely tall with the tallest players being the centers, as their position is nearest the basket. Height helps them make easy dunks and gives them a better chance of not having their shots blocked. The shortest players are usually the pointguards, whose low center of gravity helps them dribble closer to the ground.

Baseball

In baseball, pitchers tend to be taller than position players. Being taller means longer legs, which power pitches use to generate velocity and a release point closer to the plate, which means the ball reaches the batter quicker. While tall position players have a larger strike zone, most position players are at least of average height because the larger frame allows them to generate more power. Most successful modern pitchers are safely over 6 feet/1.83 m, some to extremes (e.g., the 6'10"/2.08 m Randy Johnson), with the 5'11"/1.80 m Pedro Martínez a notable exception.

History of human height

In the 18th and 19th centuries, Europeans in North America were far taller than those in Europe. In fact, they were the tallest in the world. The original indigenous population of Plains Indians was also among the tallest populations of the world at the time.[12] Several nations, including many nations in Europe, have now surpassed the US, particularly the Netherlands, and the Scandinavian nations.

In the late nineteenth century, the Netherlands was a land renowned for its short population, but today it has the 2nd tallest average in the world,[13] with young men averaging 183 cm (6 ft) tall and only shorter than the peoples of the Dinaric Alps (Montenegro, Herzegovina, Coastal Croatia), where males average 186 cm (6 ft 1.1 in) tall. The Dinarians and Dutch are now well known in Europe for extreme tallness. In Africa, the Maasai, Dinka and Tutsi populations are known for their tallness.

Average male height in impoverished Vietnam and North Korea[14] remains comparatively small at 163 cm (5 ft 4 in) and 165 cm (5 ft 5 in), respectively. Currently, young adult North Korean males are actually significantly shorter. This contrasts greatly with the extreme growth occurring in surrounding Asian populations with correlated increasing standards of living. Young South Koreans are about 12 cm (5.5 inches) taller than their North Korean counterparts, on average. There is also an extreme difference between older North Koreans and young North Koreans who grew up during the famines of the 1990s-2000s; there is virtually no height difference among North Korean and South Korean adults older than 40, who came of age at a time when the North's economy was on a par with that of the South.

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See also

- Heightism
- Anthropometry
- Height and intelligence
- Human weight
- Human variability
- Human biology
- List of tallest people

External links

- CDC National Center for Health Statistics: Growth Charts of American Percentiles (http://www.cdc.gov/growthcharts/)

For a more accurate worldwide statistical study data covering males and females from 1 - 18 years of age, check this link (scroll down to table III - IV).

- www.fao.org: Body Weights and Heights by Countries (http://www.fao.org/DOCREP/MEETING/004/M2846E/M2846E07.htm)
- Height to Weight Charts (http://www.stayfitalways.com/charts.php) Height to weight charts according to small, medium and large frame for both men and women.
- Standard to Metric Human Height Converter (http://www.albireo.ch/bodyconverter/)
- BMI Calculator (http://www.calcalot.com/bmi-calculator.asp) Calculate a persons Body Mass Index

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