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What's Good about Being Shorter

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Commentary

There's no doubt that taller, bigger people have many advantages in our society. They are more imposing, stronger, great athletes, and make more money. However, in our adoration of taller height, we have turned a blind eye on the many real benefits of smaller human size. As a result most short and average height people are unaware of the many inherent benefits related to their height.

In proceeding with my exploration of the little know facts, I hope tall people can avoid taking my findings personally. After all, history has shown good and bad humans come in all sizes. In pointing out the advantages of shorter, smaller size, I am not denigrating tall or big individuals—my quarrel is with a future world population of billions of taller, bigger people who require enormous amounts of food, water, energy and natural resources. For example, an across the board reduction of 10% in height, while maintaining the same body proportions, would save enormous amounts of resources as discussed later. Thus, the question of whether tall or short is a desirable configuration for future humans depends on the relationship between height and human survival.

You are probably thinking I'm a short person trying to support my physical build. Although I have shrunk in height due to my age, when I was young in the 1950s, I was above average in height at 5'10". Most US male adults were about 5'8" or 5'9". At that time, I also believed shorter height was an undesirable biological factor in life. However, my research into aging, longevity, physical performance and survival of humanity changed my mind.

Since we can't cover over 40 years of research in this article, the reader is referred to www.humanbodysize.com and www.researchgate.net for a list of publications or copies related to the ramifications of increasing body height and weight. The following material covers background information, longevity findings, athletic performance, bravery, intelligence, outstanding achievements, resource requirements and nutritional considerations.

I started studying the relation of height and longevity in the 1970s. My first paper appeared in Science Digest in 1978 [1]. I subsequently discussed my findings with Lowell Storms of the University of California in San Diego. We decided to collaborate on a new paper and used data on deceased veterans from the San Diego VA Medical Center. We also looked at the Baseball Encyclopedia that provided the heights, weights and ages of thousands of deceased baseball players. When we analyzed the data provided, we found shorter veterans and players lived longer. These findings were replicated with various populations, including football players, basketball players, US presidents, strong men and high achievers in other disciplines. Our paper was published in the Bulletin of the World Health Organization in 1992 [2]. Harold Elrick joined us around 2002 and about 45 papers and book chapters were subsequently published on this subject in scientific, nutrition and medical journals. Earlier, I also wrote a book called The Truth about Your Height [3]. Over the years, many other researchers have found similar longevity or mortality results, such as studies in Hawaii, Ohio, Spain, Sardinia, Poland, Japan and Sweden [4-10]. For example, a Swedish study by Wilhelmsen tracked 67-year old men into their nineties and found that men who were shorter at 67 years of age were more likely to reach 90 years of age [10]. The short Okinawans have been studied extensively by the Willcox brothers and others [11]. Their findings show that the Okinawans have the world's highest percentage of centenarians (males ~5' in their youth [9]). In 2015 and 2016, three studies by researchers Sohn, Shapiro and Elsayed also found that shorter people had lower mortalities from all-causes, cancer, and heart disease [12-14]. Mueller and Mazur studied retired West Point graduates and also found that the shorter ones lived longer after 60-years of age [15]. Another study by Lemez found shorter retired basketball players had a lower death rate compared to taller players [16]. Now this is not to say that all short people will live longer than tall people. A lot depends on an individual's genetics, education, lifestyle, nutrition, physical activity, lifelong socioeconomic status, early childhood infections and trauma, environment, and social life. Thus, while most studies show centenarians tend to be short and lean [17], there are many tall people who live a long time as well. Actually, height alone is only about 10% of the longevity picture. The famous economist John Kenneth Galbraith at 6'9" lived to 98 years of age.

Longevity researcher, Andrzej Bartke, reported that there is a lot of evidence indicating that smaller individuals are healthier and live longer [18]. In addition, evolutionary biologist David Rollo reported that the difference in life expectancy between the sexes is due to their different body sizes [19].Bartke, Rollo and I also published a summary of our findings in a academic text: Human Body Size and the Laws of Scaling [20].

An interesting finding explaining why women live longer than men involved a comparison between American males and females; e.g., males were 9% taller and had a 9% shorter life expectancy [17]. This is a remarkably close inverse comparison and is similar to relations between US Asian males and females and US Hispanic males and females. A number of similar findings were reported in the Bulletin of the World Health Organization in 1992 [2]. Of course, not all population comparisons show such a close relationship and have differed in some cases by larger amounts; e.g., African American males were 9% taller than females and were 12% shorter in life expectancy.

In the area of athletics most people are unaware that many sports include relatively short players. For example, Sarna reported that boxers, long-distance runners, cross-country skiers, wrestlers and weightlifters were shorter than the average military recruit in Finland [21]. In addition, martial artists, figure skaters, divers, and gymnasts are often quite short. Simone Biles, an Olympic gold winner in gymnastics was 4'8". Even in basketball, Muggsy Bogues, at 5'3", played for 14 years with the Charlotte Hornets and other teams. In the 2018 winter Olympics, Gold winners for the snowboarding event were Shawn White (5'9"), Red Gerard (5'5") and Chloe Kim (5'2"). The Silver medal winner was won by Aymu Hirano (5'3").Recently; Desiree Linden won the women's Boston Marathon. She is 5'1" and 96 pounds. In general, shorter athletes are faster reacting, more agile, and have greater endurance than taller athletes and can accelerate their limbs faster than athletes of similar body proportions. They can also lift their own bodies more easily [22].

In terms of bravery, Yuri Gagarin was the first astronaut into space. He was 5'2" and under 150 pounds. Audie Murphy was the most decorated US combat soldier during World War II. He was 5'5" and 112 pounds. As a group, the Gurkhas (~5'3") have been praised as being fearless fighters. An article in the Business Insider called the Gurkhas the toughest soldiers seen in the modern world [23]. The Vietnamese and Japanese soldiers were also known for their bravery. In the past, the Greeks and Romans were also impressive warriors at 5'5" and 5'6". Alexander the Great, one of greatest military commanders in history was reported to be somewhat over 5' in height; however, other sources have reported that he was closer to 5'6" or 5'7".

A number of researchers have reported that taller people have higher IQs because they have larger brains. However, there is much evidence that IQ is not related to brain size [24]. For example, many studies have found that when socioeconomic status is adjusted for, the difference in IQ disappears. If brain size was a measure of intelligence, then women would be rated lower than men because their brains average about 10% smaller than men's because of their smaller body size. While males score higher in some tests, the differences in academic performance sometimes favor females, such as in science and mathematics.

There are other types of evidence indicating that moderate variations in brain size do not predict intelligence. For example, Posthuma evaluated the IQs of twins vs. Singletons (37 to 40 years of age) and found no difference [25]. She also reported that her findings were the same as a previous study based on 60-89 year old twins. Twins tend to be smaller than singletons because their low birth weights are correlated with reduced adult height and weight (at birth, twins weigh about 2 pounds less than singletons). Bowerman studied 1000 high achievers and found tall men had the highest score and short men came in a close second [26]. Average height people had the lowest percentage. Of course, the shorter Japanese, Chinese, and Indian societies have progressed exceptionally fast since the end of WWII. Asian Americans have the highest educational attainment of all ethnic groups in the US.Hard work and focus are important elements in academic achievement and the Asians may have stronger motivation to succeed in school compared to other ethnic groups.

Another consideration is the European renaissance of the 14th through the 17th centuries. During this period important strides were made in art, architecture, science and literature. Yet, the people of this period were several inches shorter than we are today. In fact, there was a progressive decrease in height during this period. The ancient Greeks averaged about 5'5" but were also exceptionally intelligent based on their various accomplishments. The same applies to the ancient Egyptians, Romans and Indians. If we look at dogs, Poodles are the second smartest. Poodles consist of three sizes: toy, miniature and standard. In spite of their differences in brain sizes, they were rated as having the same intelligence by Stanley Coren in his book, The Intelligence of Dogs [27]. He also reported that the miniature Schnauzer scored 12th from the top while the standard Schnauzer scored 18th from the top. The giant Schnauzer had the lowest intelligence score (28th from the top). In summary, there may be a slight difference in intelligence between tall and short people but it doesn't really make much of a difference in life's achievements where motivation, focus, hard work, opportunity and persistence are considered.

History is full of high achievers that were short. Some famous people include Socrates, Alexander Pope, British Queen Victoria, St. Francis of Assisi, Kant, Gandhi, Einstein, Steinmetz, Voltaire, Picasso, Juan Miro, Mozart, Mahler, Keats, and Buckminster Fuller. The second richest American of all time was Andrew Carnegie (5'3"). The fourth president of the US was James Madison (5'4"). Other shorter than average presidents included Van Buren (5'6"), Benjamin Harrison (5'6"), John Adams (5'7"), and John Quincy Adams (5'7"). Benito Juarez (4'6") was the 26th Mexican president from January 1858 through July 1872 .

The biggest advantage of shorter, smaller people is that they require many fewer resources that taller, heavier people. This advantage was depicted in the 2017 movie Downsizing with Matt Damon. However, we don't need to go to the extremes of the movie to see the benefits of smaller size [28]. For example, if we reduced future generations by 10% in height their weight would be reduced by 33% for the same body proportions. This reduction in the US population would reduce annual food consumption by 50 million tons. Water needs would drop by 30 trillion gallons and the need for metals, minerals, and plastics would go down by about 400 million tons. Pollution due to carbon dioxide creation would decrease by 1 billion tons a year. The cost savings to our

economy would be over a trillion dollars. Note that while smaller people live longer, they still use fewer resources. Of course, if the world population declined to about 1 or 2 billion people, larger human size could be a manageable problem. However, it looks like we will reach about 10 billion people during the next 40 years and as developing countries become more advanced, people will grow taller and heavier. However, according to a report by Bassino and Kato, the Japanese have stopped growing taller because women go on a calorie reduced weight control diet when they get pregnant and thus produce smaller birth weight infants who grow up shorter and lighter if the adults avoid over nutrition [29].This approach to height management would be relatively easy once people accept the benefits of smaller body size.

Many scientists, such as anthropologist Peter Farb, have identified over nutrition as the cause for our increased height and obesity [30]. The nutritional system developed over the last hundred years has played a major role in promoting bigger size and chronic diseases. In fact, the World Cancer Research Fund and American Institute for Cancer Research reported that before the industrial revolution, modern chronic diseases were rare—even in elderly people. Studies have also shown that pre-Western populations had virtually no modern chronic diseases until they become Westernized [31]. Nutritional scientists now recommend a plant-based diet with only small amounts of meat consumption, and the Mediterranean diet keeps being identified as the healthiest diet for modern humans.

Conclusion

In summary, on an individual basis there are benefits related to being tall in our society. However, there are also many advantages to being short or small. While the earth can sustain a small percentage of the tall people, a future world of 10 billion taller and heavier people is very dangerous in terms of human survival and quality of life. Since, our intelligence is not significantly affected by moderately smaller body size, we need to reconsider promoting larger human bodies to satisfy beliefs not based on the facts. Shorter, smaller humans have shown that they are equal to virtually all activities needed for human progress. It's time for us to respect and value each other as individuals and not how tall or short we are.

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