

How fast can humans run?

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Image 1. Usain Bolt of Jamaica competes in the Men's 4x100 Metres Relay during day nine of the 16th IAAF World Athletics Championships London 2017 at The London Stadium on August 12, 2017, in London, United Kingdom. Photo by: Andy Lyons/Getty Images for IAAF

The fastest person on record so far is the Jamaican athlete Usain Bolt. He ran the 100-meter sprint at the 2008 Summer Olympics in Beijing, China, in a world record of 9.58 seconds. That works out to be about 23.4 miles per hour over the course of the race. For a brief period during that sprint, Bolt reached an astounding 40 feet per second (27.51 mph).

As a physical activity, running is very different from walking. In running, a person's legs flex and the muscles stretch and then contract during acceleration. As the runner's muscles release and absorb energy, the overall energy in the person's body changes and leads to increased speed.

What Makes An Elite Runner?

Scholars believe that the fastest runners — the elite sprinters like Bolt — are those who use a low amount of energy for every foot that they run, compared to other people. The ability to do that is influenced by a number of different factors, including their age, sex and distribution of muscles. The fastest of the elite runners are young men.

The way in which a person's body moves in time and space is called biomechanics. The possible speed of a runner is influenced by their biomechanics, especially how their legs move as they run. Many different factors could influence a person's running speed, including how much time the foot spends touching the ground, how far the legs swing and the angle and distance of the stride.

In particular, sprint runners maximize their acceleration and top speed by applying more force relative to their body weight. Their ankles move faster and they take more steps per minute.

Long-Distance Runners

When considering speed, sports researchers also look at long-distance runners, who race distances between 3 and 26 miles. The fastest of these runners use considerable plantar pressure, which is the amount of pressure the foot puts on the ground. Changes in biomechanical factors, or how the legs move over time and space, also seem to have a significant effect.

As with sprinters, the fastest group in marathon running is men aged between 25 and 29. Those men have an average speed between 558 and 577 feet per minute. This information was gathered from the marathons that were run in Chicago and New York between 2012 and 2016.

The New York City marathon runs in waves. There are four groups of runners who begin the race roughly 30 minutes apart. As a result, statistics are available for runner speeds at 3-mile segments throughout the race. Researcher Zhenquan Lin and his team used that data to show that one factor of speed is competition. Runners increase speed and change positions more frequently at the end of the race.



The Upper Limits

In comparison to other animals, humans are very slow. The fastest animal on record is the cheetah, which can run up to 70 mph. Even Usain Bolt can only attain a fraction of that.

Recent research on the most elite runners has led sports medicine expert Peter Weyand and his team to suggest that the upper limit might reach 35–40 mph. So far though, no one has been willing to confirm that in an official publication. In other words, scientists still need to find more proof.

Statistics

According to Rankings.com, the fastest three male sprinters in the world today are Usain Bolt, Tyson Gay and Asafa Powell. Bolt and Powell are Jamaican, and Gay is American. Bolt set the 100-meter record at the 2008 Summer Olympic Games in Beijing, China, completing the race in 9.58

seconds. His speed was 34.25 feet per second. Gay's fastest time is 9.69 seconds. Powell's is 9.72 seconds.

The fastest three female sprinters are Florence Griffith Joyner, Carmelita Jeter and Marion Jones, who are all American. Joyner's fastest time in the 100-meter was 10.49 seconds, set in the 1988 Olympics in Seoul, South Korea, at a speed of 31.27 feet per second. Jeter's fastest time is 10.64 seconds. Jones' is 10.65 seconds.

The three fastest male marathon runners are, according to Runners World, Dennis Kimetto of Kenya, Kenenisa Bekele of Ethiopia and Elud Kipchoge of Kenya. Kimetto set the record for fastest marathon time at the Berlin Marathon in 2014. He completed the 26.2-mile race in just 2 hours, 2 minutes and 57 seconds. Bekele finished the Berlin Marathon in 2:03:03 in 2016. Kipchoge ran the London Marathon in 2:03:05 in 2016.

The three fastest female marathon runners are Paula Radcliffe of England, Mary Keitany of Kenya and Tirunesh Dibaba of Kenya. Radcliffe completed the 2003 London Marathon in 2:15:25. Keitany completed the 2017 London Marathon in 2:17:01. Dibaba finished the same race in 2:17:56.

