

How fast can humans run?

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Image 1. Usain Bolt of Jamaica competes in the men's 4 x 100-meter relay during the World Championships held in London, England, in August 2017. Bolt is the fastest human to ever run the 100-meter dash. Photo by Andy Lyons/Getty Images for IAAF

So far, Usain Bolt was measured as the fastest person on Earth. He is a runner from Jamaica. Bolt ran about 330 feet at the 2008 Summer Olympics in Beijing, China, in a world record of 9.58 seconds. That is the same as 23.4 miles per hour over the course of the race. For a short time during that race, Bolt reached an astounding 40 feet per second, more than 27 mph.

Running is very different from walking. In running, a person's leg muscles stretch and then tighten quickly. This creates energy that allows a runner to move at a faster speed.

What Makes An Elite Runner?

Scientists think that the fastest runners like Bolt use less energy than other people. These runners are better at making the most of the energy they have. People's age and muscles also affect how fast they can run. The fastest elite runners are usually young men.

How a person's body moves in time and space is called biomechanics. The possible speed of a runner is affected by how the legs move. This includes how much time the foot spends touching

the ground and how far the legs swing. Short-distance runners increase their speed quickly by using more force. Their ankles move faster. They also take more steps per minute.

Long-Distance Runners

Sports scientists also look at long-distance runners. These are runners who race distances between 3 and 26 miles. The fastest of these runners press their feet harder against the ground.

A marathon is a race that is 26.2 miles long. The fastest marathon runners are men between 25 and 29 years old. Those men run up to 577 feet per minute. This information is based on marathons in Chicago and New York between 2012 and 2016.

The New York City marathon runs in waves. There are four groups of runners. Each group starts the race 30 minutes after another. We can study how fast the groups are running at a certain part of the race. Scientists used information from the New York marathon to show that people run faster when they compete. That is why they change position and speed more often at the end of a race. That is when they're trying the hardest to win.



The Upper Limits

Compared to other animals, humans are very slow. The fastest animal is the cheetah, which can run up to 70 mph. Usain Bolt cannot run even half that speed. Some experts have said that the fastest a human can run might be 35–40 mph. No one is sure just yet, though.

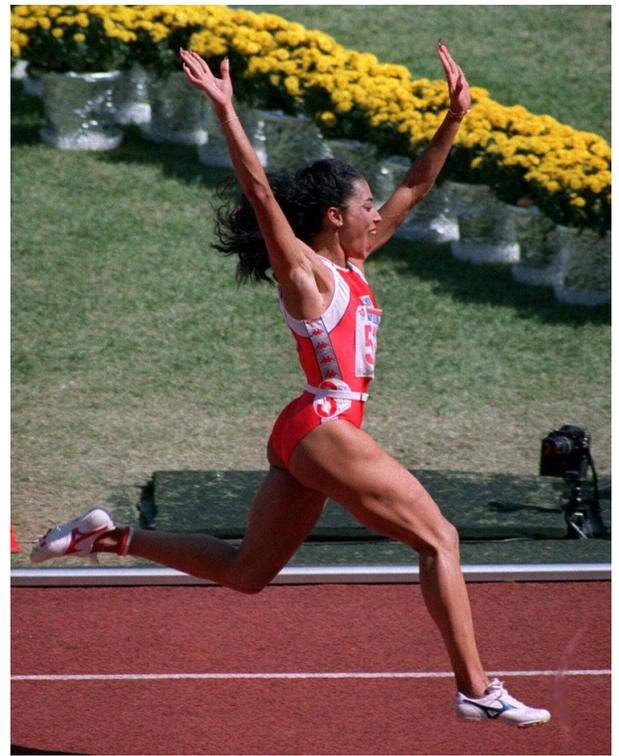
Statistics

The website Rankings.com shows a list of the fastest runners. The fastest male sprinter in the world today is Usain Bolt. He set a record at the 2008 Summer Olympic Games in Beijing, China. He ran 100 meters, or 330 feet, in 9.58 seconds. That is a speed of 34.25 feet per second. The second fastest is the U.S. runner Tyson Gay, who ran 100 meters in 9.69 seconds.

The fastest female sprinter ever was Florence Griffith Joyner, an American runner. Joyner's fastest time in the 100-meter race was 10.49 seconds, at a speed of 31.27 feet a second. She ran that race at the 1988 Olympics in Seoul, South Korea. The second fastest is American Carmelita Jeter, who ran 100 meters in 10.64 seconds.

The fastest male marathon runner is Dennis Kimetto of Kenya. Kimetto set the record for fastest marathon runner at the Berlin Marathon in 2014, in Germany. He completed the race in just 2 hours, 2 minutes, 57 seconds. The next fastest is Kenenisa Bekele of Ethiopia. He finished the 2016 Berlin Marathon in 2 hours, 3 minutes, 3 seconds.

The fastest female marathon runner is Paula Radcliffe of England. Radcliffe finished the 2003 London Marathon in 2 hours, 15 minutes, 25 seconds. The second fastest is Mary Keitany of Kenya. She finished the 2017 London Marathon in 2 hours, 17 minutes, 1 second.



Quiz

1 Read the paragraph below from the section "What Makes An Elite Runner?"

How a person's body moves in time and space is called biomechanics. The possible speed of a runner is affected by how the legs move. This includes how much time the foot spends touching the ground and how far the legs swing. Short-distance runners increase their speed quickly by using more force. Their ankles move faster. They also take more steps per minute.

Which detail from this paragraph BEST supports the conclusion that the fastest runners use their bodies skillfully?

- (A) How a person's body moves in time and space is called biomechanics.
- (B) Short-distance runners increase their speed quickly by using more force.
- (C) The possible speed of a runner is affected by how the legs move.
- (D) This includes how much time the foot spends touching the ground and how far the legs swing.

2 Read the section "Long-Distance Runners."

Which sentence from the section explains how long-distance runners use a different strategy than short-distance runners?

- (A) Those men run up to 577 feet per minute.
- (B) Scientists used information from the New York marathon to show that people run faster when they compete.
- (C) The fastest marathon runners are men between 25 and 29 years old.
- (D) The fastest of these runners press their feet harder against the ground.

3 Read the paragraph from the section "Long-Distance Runners."

The New York City marathon runs in waves. There are four groups of runners. Each group starts the race 30 minutes after another. We can study how fast the groups are running at a certain part of the race. Scientists used information from the New York marathon to show that people run faster when they compete. That is why they change position and speed more often at the end of a race. That is when they're trying the hardest to win.

Which piece of information from the paragraph helps the reader understand the meaning of "waves"?

- (A) There are four groups of runners. Each group starts the race 30 minutes after another.
- (B) We can study how fast the groups are running at a certain part of the race.
- (C) That is why they change position and speed more often at the end of a race.
- (D) That is when they're trying hardest to win.

4 Read the following sentence from the introduction of the article.

For a short time during that race, Bolt reached an astounding 40 feet per second, more than 27 mph.

In this sentence, "astounding" most likely means:

- (A) outrageous
- (B) alarming
- (C) incredible
- (D) wonderful