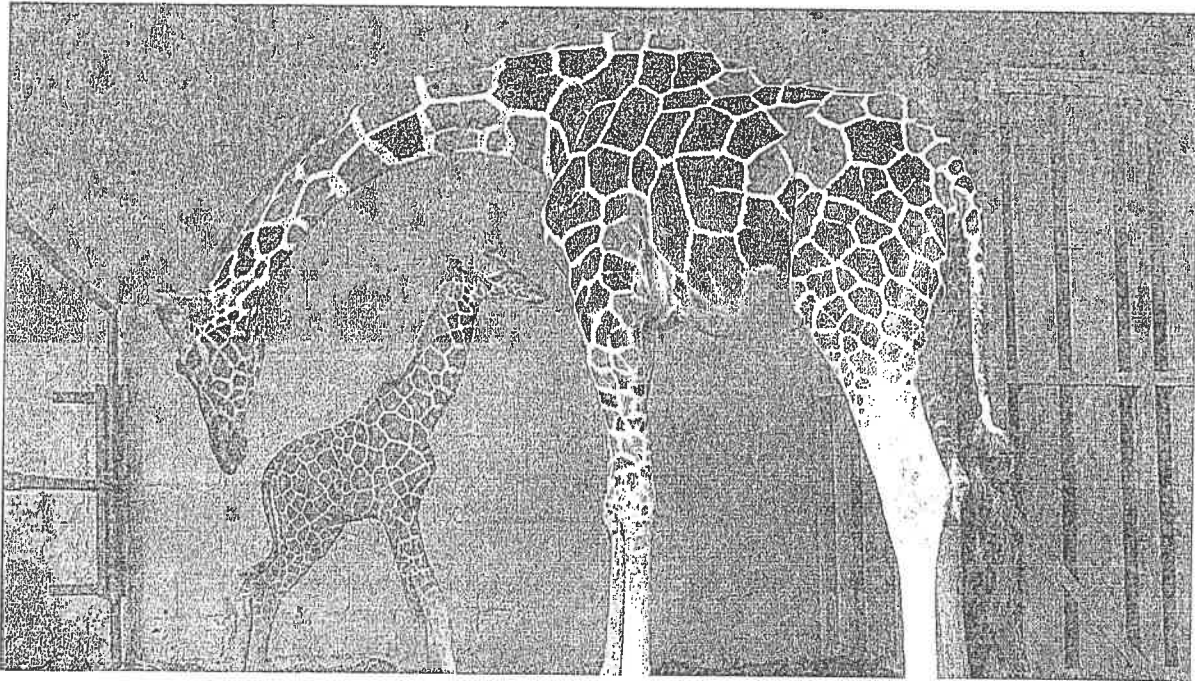


What a long neck you have! Study closes in on genes behind giraffe height

By Washington Post, adapted by Newsela staff on 05.26.16

Word Count 553



A 4-day-old baby giraffe stands near her mother Denisa at Ramat Gan Safari, near Tel Aviv, Israel, in 2009. Reuters/Gil Cohen Magen

Giraffes are strange.

Their long necks and strong hearts show how animals change, or evolve, over time. Evolution is a theory about how life has developed over the years. One part of evolution is how animals change over time to keep from dying out.

Giraffes' bodies are short to support their long necks. Their blood pressure is twice as high as ours. The higher blood pressure lets their hearts pump blood more than 6 feet up to their brains.

The okapi is the giraffe's closest living relative. The giraffe and the okapi share an ancestor from 11 million years ago. The giraffe does not look much like the older relative. The okapi has kept the zebra-like appearance of their ancestor.

The difference is probably because of small changes in the giraffe's genes. Genes are a part of DNA, which contains the information that tells your body how to grow and work. It is a body's instruction manual.

Comparing Giraffes With Their Relatives

In a study that came out Tuesday, scientists looked at the DNA of giraffes and okapi. The scientists also looked at the DNA of 40 other animals. Humans were one of those animals. The scientists wanted to learn what genes make giraffes how they are. The okapi and giraffe genes are a lot alike. Any differences could help find the genes that make long necks and strong hearts.

Small DNA changes can cause big effects. Most of the genes the scientists found have to do with how the bodies of animals form. This could be exciting. It could mean that changing these genes could change an animal's body. A small change in genes might make a donkey very tall, for example.

The scientists found genes that effect two body systems at the same time. These two systems are the skeletal system, or bones, and the heart and blood systems.

Sturdy Heart Needed To Get Blood Up Long Neck

It makes sense for these systems to work together in a giraffe. A giraffe needs a strong heart to go with its long neck. A giraffe needs to pump blood all the way up to its brain. A gene change could have made long necks and strong hearts at the same time. Giraffes might have died if they developed a long neck without a strong heart.

Scientists will test some of these genes soon. The scientists will change the DNA of mice. They will replace some mouse genes with giraffe genes. Scientists hope to see some changes in the mice like they found in giraffes.

The scientists want to learn things about giraffes that will help humans. They want to know why high blood pressure does not hurt giraffes. The scientists might also be able to help giraffes.

Research May Help Save Giraffes

The number of giraffes in the world has fallen by two-fifths in the past 15 years. There are a few reasons for this. Giraffes are hunted, which is against the law. The lands giraffes live on are also being taken from them. There could be fewer than 10,000 giraffes left in about 80 years.

Some kinds of giraffes might be different from others. These kinds of giraffes might disappear even sooner than the others.

Giraffe DNA may help scientists find the types of giraffes that are in the most danger.