Scientists Discover Brain Receptor that Makes Us Taller

Discussion > Advanced 7

Exercise 1 – Vocabulary

mutation	A change in the genetic code of a living thing.
[noun]	*Ex: Many diseases are caused by genetic **mutations**.*

hormone	A chemical produced in a living thing that affects growth, behavior, etc.
[noun]	*Ex: Insulin is a **hormone** which helps regulate blood sugar levels.*

puberty	The stage of physical development when a child changes into an adult.
[noun]	*Ex: Girls typically reach **puberty** at an earlier age than boys.*

chronic	Continuing for a long time or happening often.
[adjective]	*Ex: He is receiving treatment for a **chronic** knee injury.*

activate	To make something start working.
[verb]	*Ex: Please **activate** your account by clicking the link below.*

nutrition	The process of providing or getting food needed for health and growth.
[noun]	*Ex: Good **nutrition** is an important part of a healthy lifestyle.*

Exercise 2 – Reading

Read the text aloud with your tutor and discuss the key points.

Scientists Discover Brain Receptor that Makes Us Taller

Humans have been getting taller — in some places, a lot taller. The differences vary by country, but between 1914 and 2014, the average height of South Korean women increased by more than 20 centimeters, while Iranian men are over 16 centimeters taller than they were a century ago.

Improved access to food has long been linked to humans getting bigger over time, and we already know that the food we eat sends signals to a part of the brain that controls functions such as growth. But until now it has not been known exactly how the body senses how much nutrition it has and uses that information to tell itself to grow.

A study from universities in the UK and US has identified the receptor in the brain behind this process.

According to the study, the melanocortin 3 receptor (MC3R) is responsible for releasing important hormones that regulate growth and sexual development. "It tells the body we're great here, we've got lots of food, so grow quickly, have puberty soon and make lots of babies," said Professor Sir Stephen O'Rahilly, a senior author on the study, while talking with the BBC.

The team studied the genetic information of half a million people in the UK, and identified people who had mutations in one of their two copies of the MC3R gene preventing the receptor from functioning properly. These people were, on average, shorter than those who did not have these mutations, and started puberty later.

One participant was found to have rare mutations in both copies of the gene for the MC3R. This person was described as being "very short," and began puberty after the age of 20.

The discovery of the function of this receptor not only explains human growth, but could also help children who have growth and puberty delays. O'Rahilly also noted that research on drugs that activate the MC3R could even help people suffering from muscle loss caused by chronic medical conditions.

Exercise 3 – Discussion

Discuss the following questions with your tutor.

1. What are your thoughts on the discovery of the melanocortin 3 receptor?
2. Do you find it surprising that people have gotten so much taller over time?
3. Who are the tallest people you know? What about the shortest?
4. Would you like to take a DNA test to learn more about your family history?
5. Do you try to stay up to date with the latest health and science news?
6. What would you say is the most interesting scientific fact you know?
7. Are there any scientific concepts that you find difficult to understand?
8. What do you think is the best way to get kids interested in science?