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8级

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Our Inside Story

人体的故事

〔美〕Vanessa York 著

商务馆 网络互动·分级阅读

商務印書館

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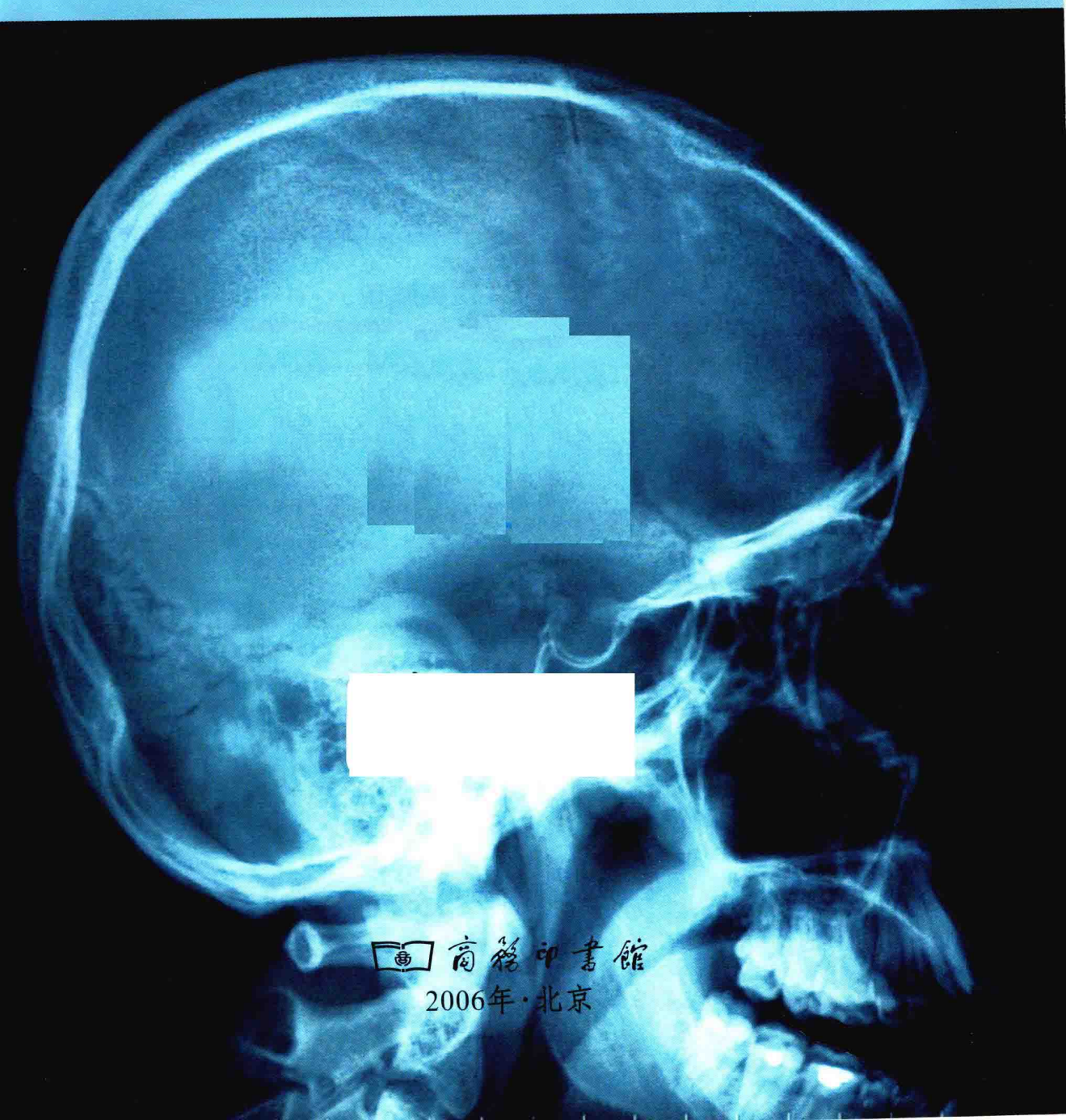

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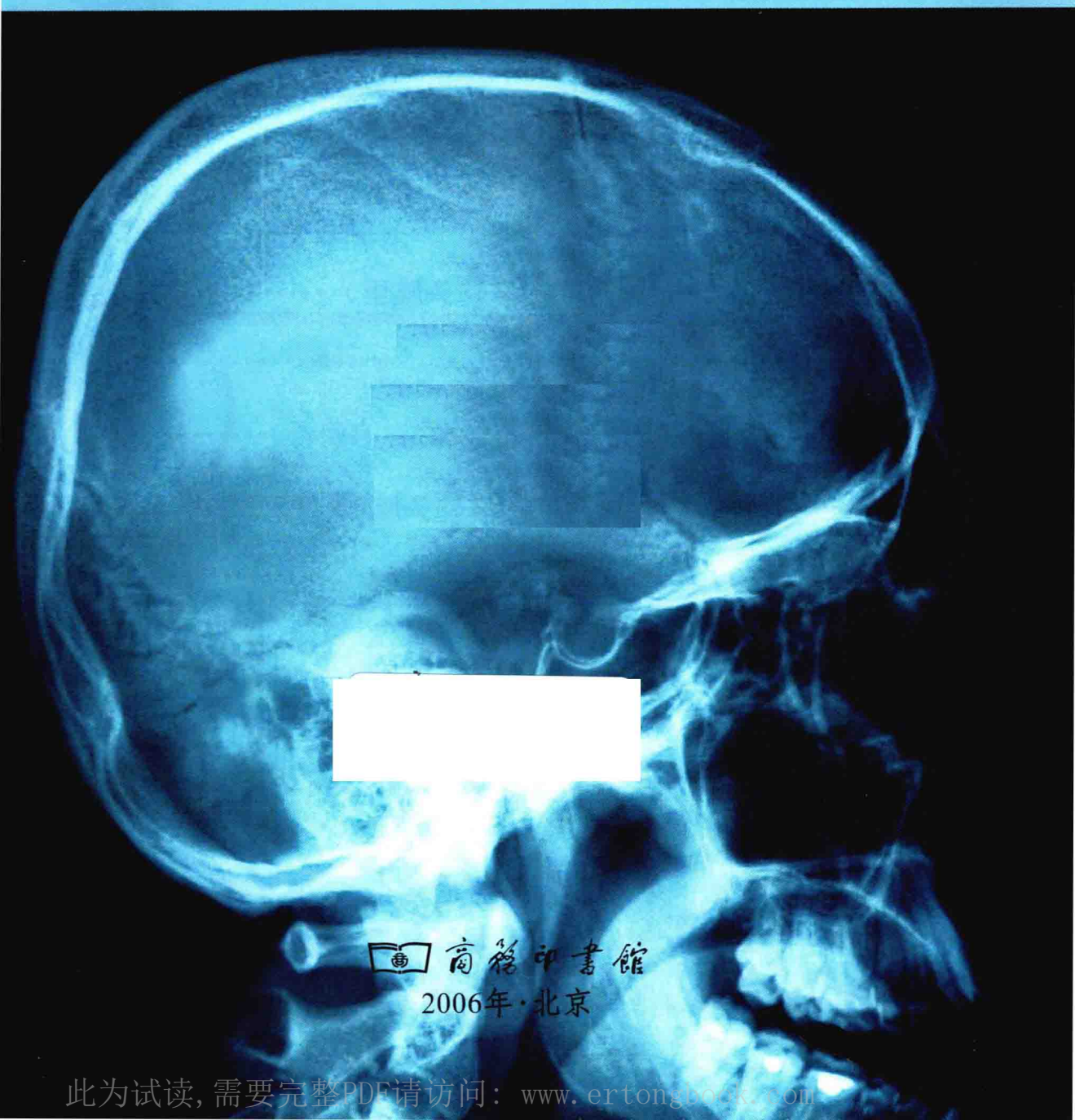

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Contents 目 录

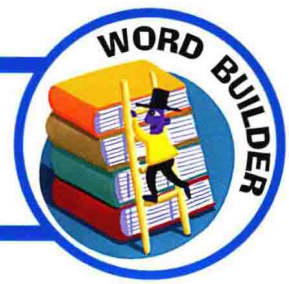
Features 导 读

Who was the doctor that prescribed bloodletting, vomiting, and singing for his patients? Turn to page 5 to find out.

你知道哪位医生开出的处方里竟然包括放血、呕吐和唱歌吗？翻开第5页，你就能找到答案。

Genetics and *genealogy* sound similar, but are they? Find out on page 9.

“Genetics”和“genealogy”听起来差不多，是吗？翻开第9页，看看它们是不是一回事。



Are people who are good at math simply born with the ability? Read **Natural Genius**? on page 11 and make up your own mind.

是不是有些人天生就擅长数学呢？请你读一读第11页的“天才是天生的吗？”，然后做出自己的判断。

How much of our lives do we spend asleep? Go to page 17 to learn the amazing answer.

我们一生中有多少时间是用来睡觉的呢？看看第17页上的答案，你肯定会大吃一惊的！

Why are sick people often feverish?

为什么病人经常会发烧？

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for more about ILLNESS.

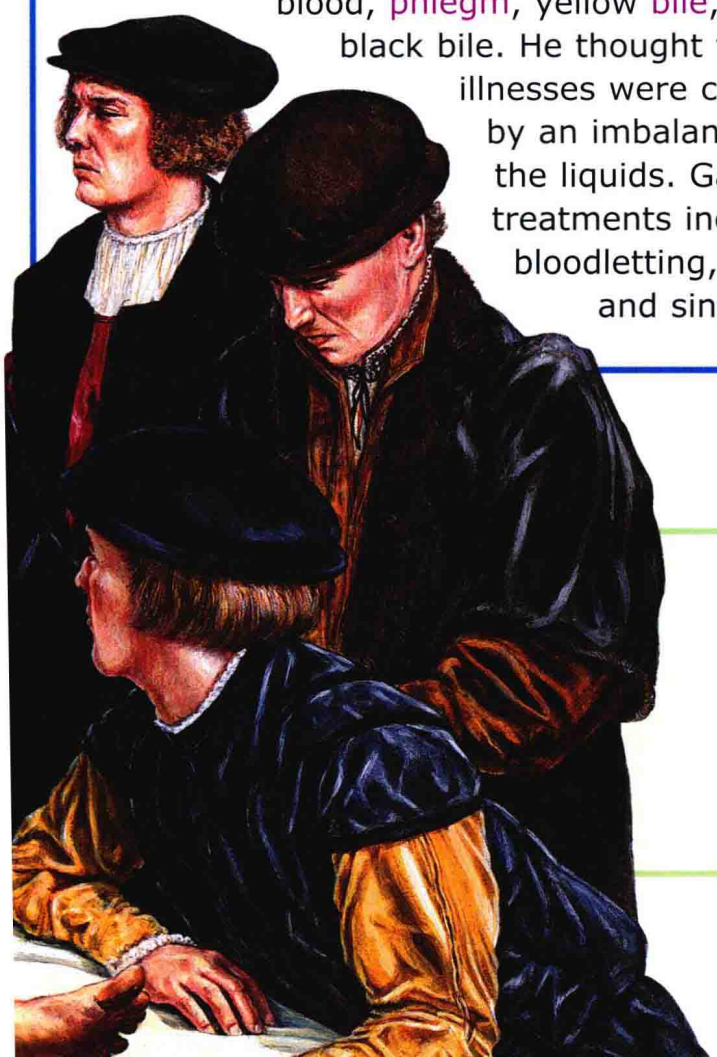
欲知更多与“疾病”有关的知识，请登录商务印书馆教育网站。

The Real Story

People today know far more about how the human body works than ever before. Doctors have tried to treat diseases for thousands of years, but it was not until the 1500s that people really began to understand the human body. Before then, it was believed to be wrong to study human cadavers, so doctors could only study wounds and the bodies of animals.

In 1543, the first book containing detailed drawings of human bodies was published. This led to the development of the modern science of anatomy. Anatomy looks at the shape and structure of the body and how it is made. The study of how the body works is called **physiology**.

Claudius Galen was a famous Roman doctor whose teachings were followed for 1,200 years. Galen believed that the body was made up of four liquids: blood, phlegm, yellow bile, and black bile. He thought that illnesses were caused by an imbalance in the liquids. Galen's treatments included bloodletting, vomiting, and singing!

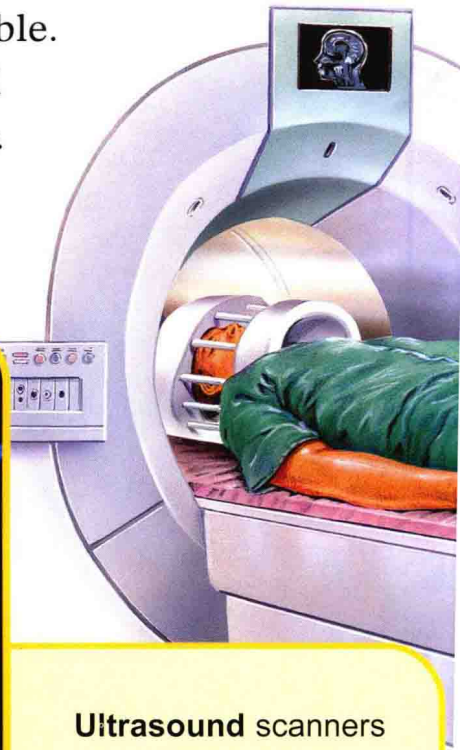


It wasn't until the Renaissance period (about 1350–1600) that medical students were allowed to study actual human bodies.

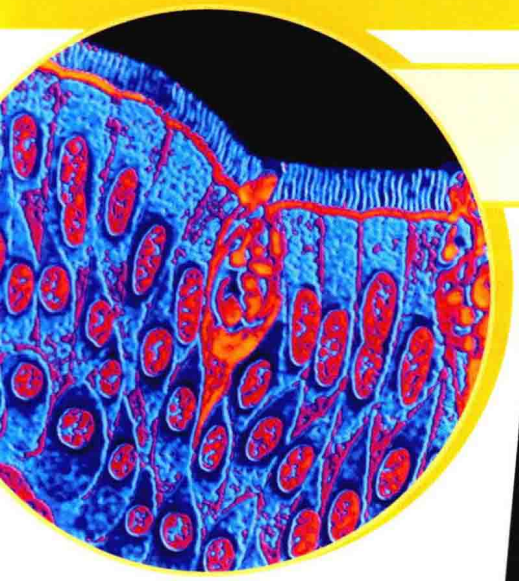
A Closer Look

Over the years, our knowledge of both anatomy and physiology has been greatly advanced by new technology.

The microscope, invented about 1608, showed that our bodies are made up of billions of cells. X rays were discovered in 1895, allowing doctors to see inside the body without cutting it open. In the twentieth century, computer technology that scanned the body and produced internal pictures which could be viewed on a screen became available. This technology has made the **diagnosis** and treatment of diseases such as cancer easier.

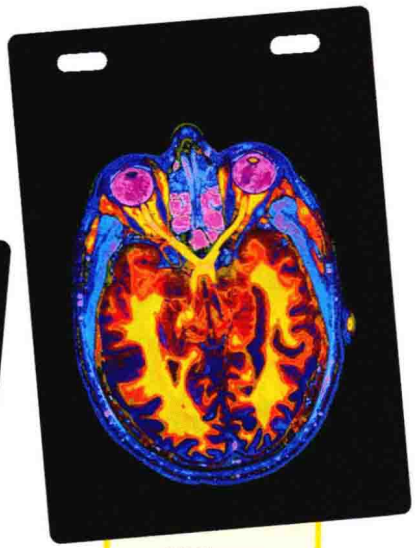


Ultrasound scanners use the echoes from high-pitched sounds to make images. These enable doctors to monitor the health of unborn babies.



Cells seen through a microscope
在显微镜里看到的细胞

X-ray X光



MRI scan of a head
头部的MRI扫描图像

Magnetic Resonance Imaging (MRI) was invented in the 1970s. An MRI scanner shows details of soft tissues such as muscles, nerves, and blood vessels by capturing images in sections. A computer then builds a picture of the body.

In Your Genes

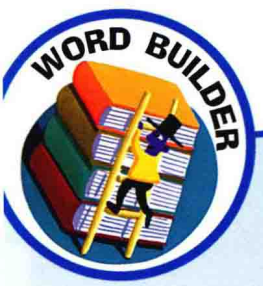
Why do you look more like your relatives than other people? The answer is in your genes. Genes are the parts of your cells that determine your personal traits. We **inherit** half of our genes from each parent.

When we are born, the stages of our growth are already encoded in our genes. Genes direct the growth of cells. They do this thanks to an amazing chemical called DNA. Genes are actually made of DNA. DNA is the short name for deoxyribonucleic acid.

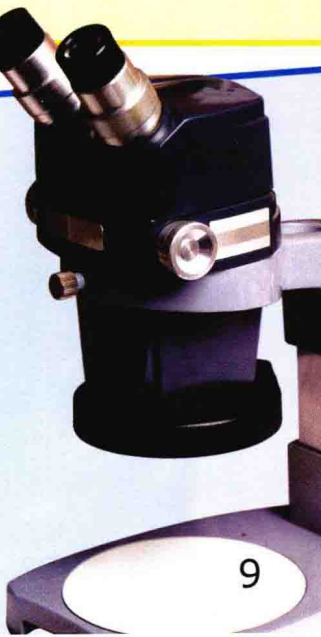
Why do many Scottish people have red hair? About a third of the Scottish population have the "ginger gene," which causes red hair, fair skin, and **freckles**. It is a **recessive** gene, which means it won't show up unless it is inherited from both parents. If one parent passes down the black hair gene instead, the child will have black hair. That is because black hair is a dominant gene.

Genes influence many individual traits such as whether you are male or female and whether you are tall or short. There are at least 30,000 different genes in each human being, and scientists still have a lot to discover about how genes work.

DNA is made up of two strands arranged like a long, twisted ladder. It contains all the body's genes. DNA forms into threads called chromosomes, shown above.



The scientific study of genes is called genetics, not genealogy as you might expect. Genealogy is the study of family origins to create a family tree; it is not a science. People have been studying their family history for a very long time, but scientists didn't know what genes were until the mid-1900s.



Nature and Nurture

Physical **traits** such as eye color are determined mostly or entirely by genes, so we say they are due to nature. The things that happen to you in your life—your experiences, the people you know, the places you live—add up to what we call nurture.

Hundreds of different traits make up who you are, and most of these develop through a combination of nature and nurture. Your taste for certain foods, for example, is influenced by both.

Natural Genius?

My whole family was never any good at math so I guess I never will be either. It's just the way I was born, so why should I even try?

I think anyone can be good at math like me if they study hard and have a positive attitude.

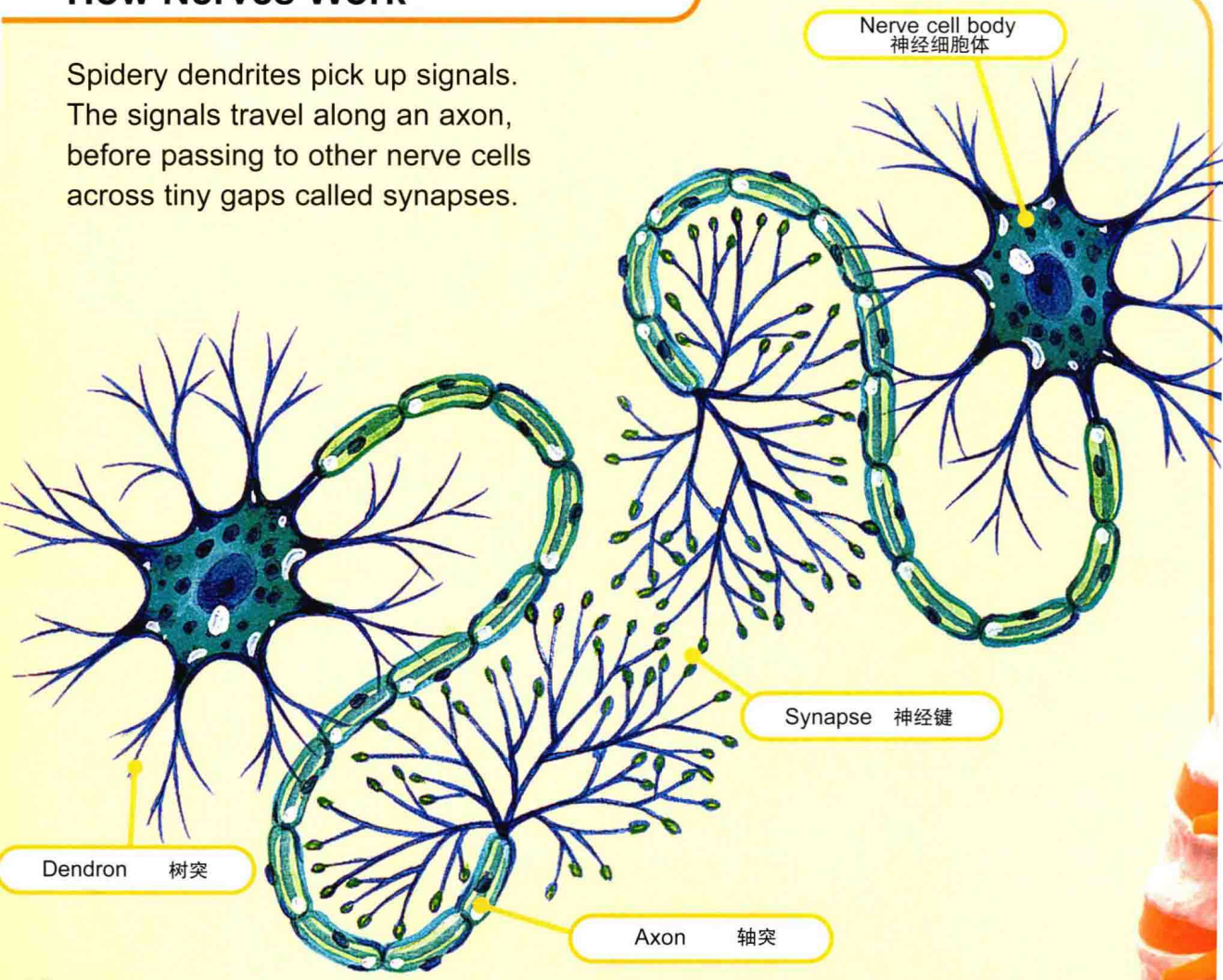
One way that scientists try to understand nature and nurture is by studying **identical twins** who have been separated at a young age. Since they were born with exactly the same genes, it is thought that differences in personality or physical characteristics will be due to nurture, or growing up in different environments with different influences.

Nerve Central

Our nerves, brain, and spinal cord make up our nervous system. Nerves link the brain to every part of the body. They are long and thin—some nerve cells, or neurons, are up to three feet long! Other neurons are shorter than 0.04 of an inch. Nerves work full-time, gathering information for the brain about things such as body temperature. Motor neurons then deliver the brain's instructions to the muscles.

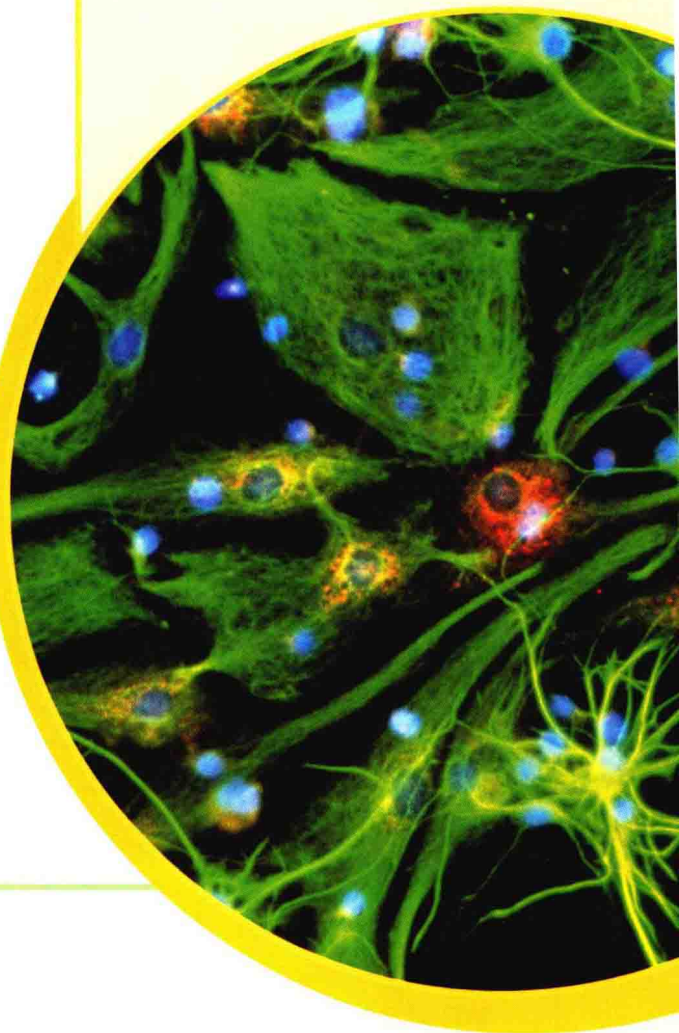
How Nerves Work

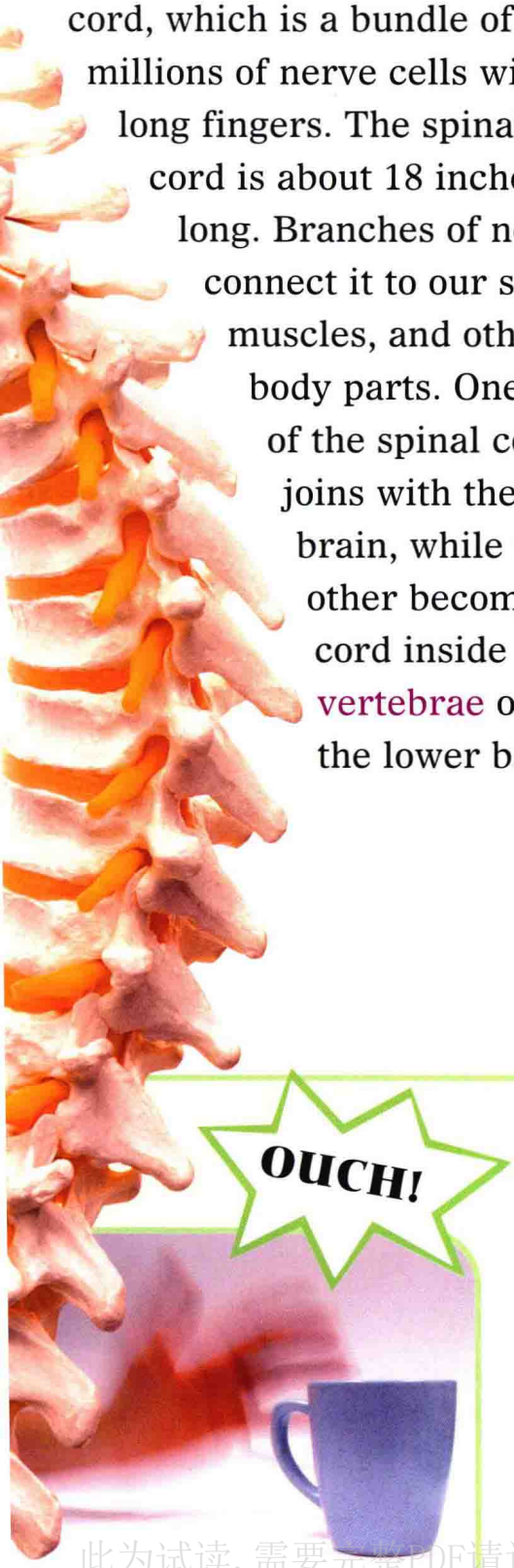
Spidery dendrites pick up signals. The signals travel along an axon, before passing to other nerve cells across tiny gaps called synapses.



The main nerve is the spinal cord, which is a bundle of millions of nerve cells with long fingers. The spinal cord is about 18 inches long. Branches of nerves connect it to our skin, muscles, and other body parts. One end of the spinal cord joins with the brain, while the other becomes a cord inside the vertebrae of the lower back.

In this magnified image of nerve cells, you can easily see the feathery dendrites and the long, stringy axons.





If you accidentally burn your fingers, your spinal cord instantly sends an urgent message to your arm, telling it to pull your hand away. These kinds of quick, automatic reactions are called reflexes.