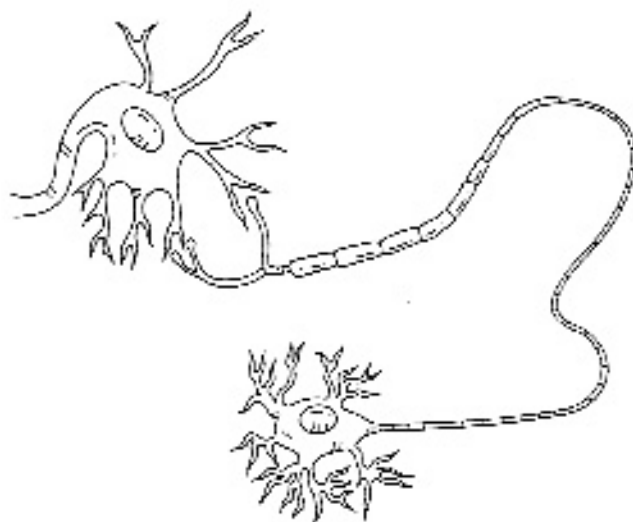


Cell Differentiation

Why are there different kinds of cells?

You have lots of cells, but they don't all do the same job. Your body must carry out many different life processes, from digesting food to thinking about your science quiz. Each process requires cells that are specialized for that process. For



A nerve cell is long and thin. Its function is to transmit messages from one part of the body to another.

example, a brain cell does not digest the nutrients in a slice of pizza. Cells of your digestive system do that job.

Your body has more than 200 different kinds of cells. But, you began life as a single cell. How did you get so many kinds of cells? The single cell underwent cell reproduction to produce two cells. The two cells produced four, and so on until you had trillions of cells. While your body was making all these cells, the cells were becoming specialized to do their jobs through **cell differentiation**. Cell differentiation produces the brain cells, eye cells, muscle cells, bone cells, lung cells—all the different kinds of cells in your body. Each of these cells has a different structure. A cell's structure is related to its function.

A single cell cannot do as many different jobs as lots of specialized cells can do. That is why one-celled organisms cannot do as many different things as multi-celled organisms.

Show What You Know

What is the relationship between structure and function in cells?
