

# EARTH ELEMENTS

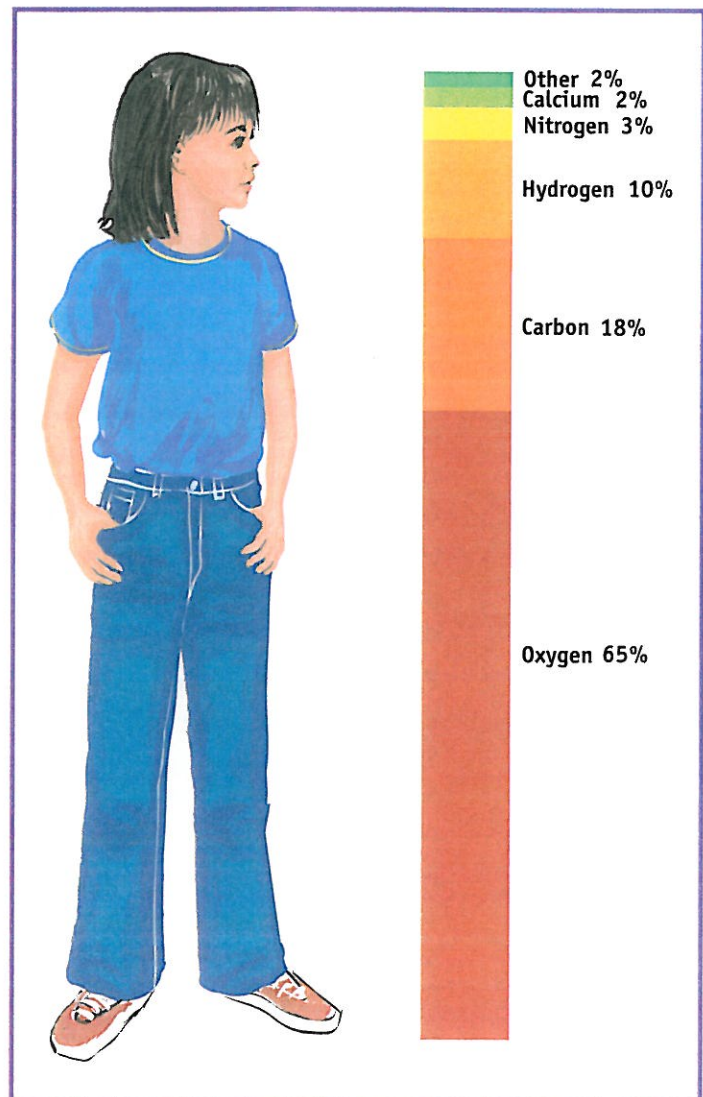
**E**verything is made of atoms, including you. That means you are made of elements in the periodic table. How many of the 92 elements do you think it takes to make a person?

You probably have a trace amount of every element in your body. That's because elements are found everywhere in our environment, including our air, water, and food. For instance, helium is in the air in tiny amounts. Small amounts of helium enter our bodies when we breathe. Lead gets into the water and air, and then into our bodies. It can poison us if we get too much. Some elements are essential for life. We need tiny amounts of some, like chlorine and iodine, but large amounts of others, like carbon and oxygen.

The human body is about 75 percent water. Water is made from the elements hydrogen and oxygen.

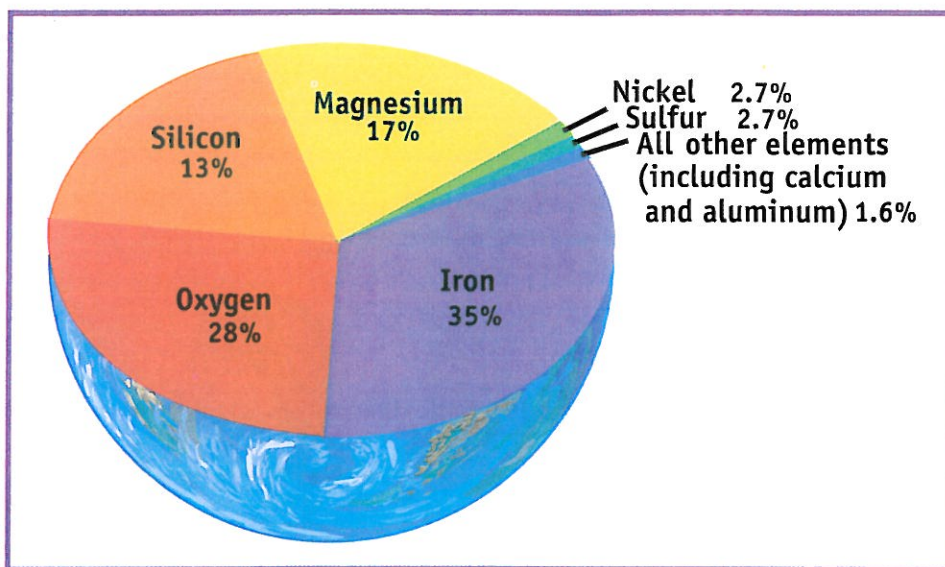
Much of the rest of the body is made from the element carbon combined with oxygen and hydrogen. These three elements form carbohydrates (sugars and starches), lipids (oil and fats), and proteins. The soft parts of the body, like skin, muscle, fat, and organs, are made of carbohydrates, lipids, and proteins. Proteins also contain nitrogen.

The tough, rigid parts of the body, like teeth, bones, and cartilage, are rich in calcium. Blood contains a lot of iron. Potassium and sodium are needed for nerve and brain function.



When you add it all up, about 98 percent of the human body is composed of only five elements. They are oxygen, carbon, hydrogen, nitrogen, and calcium. The remaining 2 percent is small amounts of a lot of different elements.

Most organisms are chemically very similar to humans. So it's pretty safe to say that all life is based on the same five elements. And anything we use that comes from organisms, such as wood, paper, cotton, fabrics, plastics, food, and fuels, will also be made out of these five elements.



On a larger scale, Earth itself is made out of elements. The most abundant element is iron (35 percent). The massive core of the planet is mostly iron. Next are oxygen (28 percent), magnesium (17 percent), and silicon (13 percent). These are the main elements in minerals and rocks. They make up the largest part of the planet, the mantle and crust. The other major elements that make up Earth are nickel (2.7 percent), sulfur (2.7 percent), calcium (0.6 percent), and aluminum (0.4 percent). The other 84 elements together make up a tiny 0.6 percent of Earth. This includes the oceans and atmosphere.

It might seem that Earth is a pretty simple place. It's made mostly out of a dozen or so elements. But Earth is not a simple place. It is not the number of different elements that determines the complexity of things. It's the ways the elements bond together into molecules. These few elements can combine to make millions of different materials. That's where the wonderful variety on Earth comes from.