Potato Chips, Popcorn, Pretzels, Nuts. These popular foods all have something in common—lots of salt. Many people find a salty taste pleasant, but salt does more than simply add saltiness. It can also enhance sweetness and hide unpleasant metallic or chemical flavors, rounding out the overall balance of flavors and improving the taste of food. Flavor can also be enhanced by adding herbs, spices, and vinegars, but adding salt is a cheap and easy way to make food taste good.

Unfortunately, taking too much salt has been associated with high blood pressure, which can damage the heart and blood vessels and increase the risk of a heart attack and stroke. For decades, the U.S. government and the American Heart Association have recommended consuming less salt. But reduced consumption of salt has not been shown to reduce blood pressure much and has not led to a decrease in heart attack and stroke in the U.S. population. Yet current guidelines still call for limiting salt intake to stay healthy. So how much salt do we actually need to take to stay healthy?

**Health effects of salt**

Cutting back on salt can reduce blood pressure, but often, the change in blood pressure is small. According to the American Heart Association, a person who reduces salt intake from median levels (around 3,400 milligrams (mg)) to the federally recommended levels (no more than 2,300 mg) typically sees a slight drop of 1% to 2% in blood pressure, on average.

Also, other factors affect blood pressure. For example, blood pressure increases with weight gain and decreases with weight loss. So, keeping a healthy weight can help prevent high blood pressure. Eating foods high in potassium also seems to counter some of the effects of high salt consumption on blood pressure.

Studies comparing salt intake in different countries worldwide have not found a clear connection between salt intake and high blood pressure. Societies that eat lower levels of salt do not necessarily have less heart disease than those that eat a lot of salt.

In addition, salt directly affects other nutrients. For instance, consuming a lot of salt may cause more calcium to be excreted in the urine. Calcium is a mineral that helps to strengthen bones, so people on a high-salt diet may need more calcium to make up for the calcium lost (along with the excess sodium). Also, urinary calcium, the main constituent of kidney stones, is increased by a high-salt diet. Therefore, a high-salt diet can lead to painful kidney stones.
How much is enough?

Surprisingly little is known about how much salt we need. U.S. residents consume, on average, about 3,400 mg of salt per day. For decades, the U.S. government and organizations such as the American Heart Association have recommended people consume less salt. Current dietary guidelines recommend no more than 2,300 mg of sodium—about a teaspoon of salt—per day for teens and adults. No more than 1,500 mg per day is recommended for groups at higher risk of heart disease, including African Americans and everyone over the age of 50.

The U.S. dietary guidelines were established in the 1970s when relatively little information was available about dietary salt and health. The guidelines were the best guess, given the information available at the time. However, the guidelines made little difference in people’s behavior. Between 1957 and 2003, U.S. residents consumed, on average, 3,400 mg of salt per day.

Also, over the years, salt consumption remained steady, even though manufacturers added more salt to commercial foods. This consistency in salt intake suggests that people may somehow automatically regulate the amount of salt they eat. If that is true, does it mean people instinctively choose the right amount of salt? Or perhaps people used less salt at the table, in an attempt to follow the guidelines, but unknowingly consumed more salt in their prepared foods.

Some scientists now say that the average amount of salt U.S. residents eat (3,400 mg of salt per day) is safe and may even be healthier than the lower government guidelines. In fact, a study found that people who meet the new guidelines, but unknowingly consumed more salt at the table, in an attempt to follow the guidelines made little difference in people’s behavior.

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is essential to the functioning of every cell in our bodies. Compounds containing sodium and potassium are electrolytes, substances that dissolve in water and produce ions. The resulting solution conducts an electric current. In the human body, many processes require electrical signals for communication, especially in the nervous system, brain, and muscles. For example, sodium ions are necessary to generate those electrical signals. Too much sodium, or too little, can cause cells to malfunction (Fig. 1) and, if taken to an extreme, can be fatal.

**Sodium is the major positive ion in bodily fluids, so its concentration determines the total concentration of solutes—called the osmolarity—in these fluids.** When two fluids with different osmolarities are separated by a membrane, then water tends to flow through the membrane to equalize the concentrations. Through a process called osmosis (Fig. 2), water moves across the semipermeable membrane from an area of low-solute concentration to an area of high-solute concentration. In the case of bodily fluids, the fluid inside cells is separated from the fluid in the blood. So, if the osmolarity of blood is not balanced with the osmolarity inside cells, the total volume of liquid in the cells may increase or decrease. Without enough sodium, cells in our bodies would lose water, causing dehydration, low blood pressure, and possibly death.

Salt is excreted through urine and through sweat. Because salt is excreted from the body, it must be constantly replaced. However, most people choose to continue eating salt, even when their needs have been met. Could people benefit from consuming higher levels of salt for reasons scientists do not yet understand? Some researchers suggest that high-salt consumption is merely a habit learned in childhood or, possibly, an addiction. Others suggest that evolution has given people a taste preference for salt, even when they do not need it.

**How much salt do you need?**

If you are athletic and eat a low-salt diet, you may be getting too little salt. However, if you eat a lot of processed foods, you may be getting more salt than you need. As is probably clear to you by now, scientists and the medical community have not yet agreed on the optimal amount of salt people should get, but for most people, moderation is a good option.

You can estimate your daily intake of salt by paying attention to the nutrition labels on food. Some foods, including ready-to-eat foods such as items from the deli or bakery, are not required to have nutrition labels. If you eat a lot of these foods, or a lot of restaurant foods, it is harder to estimate your salt intake. However, you can look online for nutrition information for many restaurants, and deli and bakery items. Search for “nutrition information” and the name of the item. MyFitnessPal (www.myfitnesspal.com) also offers a free mobile app, and the online site lists nutrition information for thousands of products.

Blood tests can confirm your blood sodium level. If you discover that you eat too much salt, try to cut back on high-salt foods or add little or no salt to your food at the table. If food lacks flavor, you can try adding spices or herbs instead.

**Sources of U.S. residents’ sodium intake**

77% from packaged and restaurant food.

12% from foods that contain sodium naturally.

11% from adding salt to food while cooking or at the table.

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**SELECTED REFERENCES**


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**Chris Eboch** is a science writer who lives in Socorro, N.M. Her most recent ChemMatters article, “Geothermal Power: Hot Stuff,” appeared in the December 2015/January 2016 issue.