

Sodium and Blood Pressure

What is Sodium?

Sodium is a mineral that supports vital functions in the body including transmitting nerve impulses, supporting the contraction and relaxation of the heart, regulating blood volume, pressure, and the proper balance of water and minerals.

Sodium and its Effect on the Heart

Having high blood pressure is a major risk factor for developing heart disease and one of the major causes of death in the US. Let's look into how sodium can contribute to high blood pressure, diagnostically referred to as Hypertension.

The Garden Hose Effect

Eating a lot of salty foods can cause a build up of sodium in the bloodstream. Having excess sodium in the bloodstream pulls water into your vessels, increasing the volume. When more blood is flowing through the bloodstream, this increases the blood pressure. Think of this like turning up the water supply on a garden hose-the pressure is increased as more water is sent through the hose. An increased blood flow also makes the heart work harder to pump blood throughout the body. High blood pressure can go undetected if you're not checking your BP regularly as the symptoms are not always obvious.

Long term effects: Over time, high blood pressure can overstretch and damage the blood vessels walls and contribute to a build-up of plaque which can block blood flow. Holding on to extra water can also cause bloating and weight gain. **Just remember water follows salt!**

Risk of Developing Hypertension

Certain factors can influence the risk of developing high blood pressure. These include:

- **Age**-blood pressure tends to rise as you increase in age.
- **Weight**-obesity can cause high blood pressure.
- **Race/Ethnicity**-According to the CDC, non-Hispanic Black men and women have the highest prevalence of hypertension among adults aged 18 and over.
- **Gender**-uncontrolled blood pressure poses a greater risk in men than in women. After menopause, however, blood pressure increases in women as well.
- **Medical conditions**-such as DM and CKD

Below is a table reflecting the goal range for blood pressure and the categorical stages of Hypertension:

Sodium Intake Goals

Category	Diastolic	Systolic
Normal	• <120	• <80
Elevated	• 120-129	• <=80
Stage I Hypertension	• 130-139	• 80-89
Stage II Hypertension	• <140	• >=90
Hypertensive Crisis	• <180	• >=120

Even if you do not have or are not at high risk for developing high BP, limiting the intake of sodium can help lessen the natural rise of BP as we age. It can also reduce the risk of heart attack, stroke, heart failure, CKD, osteoporosis, and even migraines. It is recommended to maintain a sodium intake of **<2300 mg** per day for general health which is an equivalent of 1 tsp of table salt per day. Your doctor may suggest a goal of **1500 mg** per day if you have been

diagnosed with Hypertension or additional comorbidities.

Limiting foods high in Sodium

Most of the Sodium in our diet comes from commercially prepared food and highly-processed foods products as opposed to just using table salt. The top 10 sources of Sodium in America include: bread/rolls, pizza, deli meats, sandwiches, soups, burritos/tacos, savory snacks (chips, crackers, pretzels, popcorn), poultry dishes, cheese, egg dishes. **Below is a full list of foods high in sodium:**

- **Seasoning/Condiments high in Sodium: seasoning that with the word salt (table salt, garlic salt onion salt, etc), Soy, Teriyaki, Worcestershire sauces, labels with MSG, packaged dressing mixes, pickles, bacon bits, some BBQ sauces and ketchup**
- **Deli meat/cured meats (bacon, sausage, ham, bologna, hot dogs)**
- **Processed baked goods (cookies, snack cakes, donuts)**
- **Processed cheeses (American/velveeta, parmesan, manchego, provolone, gouda, blue cheese)**
- **Canned Soups/vegetables**
- **Frozen Dinners**
- **Fast Food (french fries, fried food, hamburgers, tacos, etc)**
- **Vegetable juices**

Tips to Control High Blood Pressure

- Use fresh rather than packaged meats-Get your meat cut fresh from the deli counter. If a food item keeps well in the fridge for weeks that is a sign the sodium content is too high.
- Choose fresh fruits and vegetables over canned. If using canned, make sure to rinse off with water to get the brine off. Frozen fruits/vegetables are a lower sodium alternative as well.

- Pay attention to the nutrition label-Try to keep your meals around **~500 mg** per meal and **250-300 mg** per snack. Compare brands of the same product to determine which has a lower sodium content.
- Select spices and herbs that do not contain sodium for cooking-such as garlic, basil, oregano, parsley, paprika, thyme, garlic, rosemary, Mrs. Dash, etc.
- Browse the website of your favorite restaurants to determine the sodium content of available choices. You can also request the dish be served without salt.
- Beware of products that don't taste salty, but have a high sodium content such as cottage cheese and mixed foods like casseroles or pizzas with a lot of cheese.
- Cook pasta, rice and hot cereal without salt. You can add other flavorful ingredients, so you won't miss the taste of salt.
- Grill, braise, roast, sear or sauté. These cooking methods can bring out natural flavors and reduce the need to add salt.
- Salt preference is an acquired taste that can be unlearned. It takes around 6-8 weeks to get used to eating foods lower in sodium and desensitize your taste buds.

Lifestyle Management Tips to Improve BP

In addition to what we eat, there are several lifestyle management strategies that improve our blood pressure. These include:

- Engage in physical activity daily-Aim for 30 minutes of some form of physical activity per day
- Smoking cessation if you are a smoker
- Check BP at home-Try to check your blood pressure twice per day, once in the morning and once in the evening
- Medication adherence-Make sure to take your anti-hypertensive medications as prescribed by your doctor