Mercola.com
Take Control of Your Health
Since 1997

Call Toll Free: **877-985-2695**

Study Suggests Sugar Is Worse Than Salt for Blood Pressure

February 25, 2015 | 116,113 views
| Disponible en Español

By Dr. Mercola

One out of every three US adults has high blood pressure (hypertension).[1] If you're among them, one of the first recommendations your physician probably gave you was to cut back on *salt*.

Yet, there's far more to maintaining a healthy blood pressure than eating a low-salt diet – a strategy that works for some people and fails for others.

In fact, fewer than half of Americans with high blood pressure have their condition under control,[2] and perhaps this is because conventional physicians have been focused on the "wrong white crystals," namely *salt* instead of *sugar.*

One of the primary underlying causes of high blood pressure is related to your body producing too much insulin and leptin in response to a high-carbohydrate (i.e. high *sugar)* and processed food diet.

New Study: Sugar May be Worse for Your Blood Pressure Than Salt

You've probably heard of the DASH diet, which is claimed to be among the most effective for controlling hypertension. It consists largely of fresh vegetables, fruits, lean protein, whole grains, low-fat dairy, and very low sodium content.

But it's ALSO low in sugar/fructose. So, while people on DASH diets do tend to show reduced hypertension, the reason for this may not be solely the reduction in salt, but the reduction in sugar.

The same holds true for reducing your intake of processed foods, which are top sources of both

Story at-a-glance

Added sugars, particularly fructose, in the US diet may be more strongly related to high blood pressure than salt

Cutting processed foods from your diet may benefit high blood pressure not only because it reduces salt, but more likely because it reduces sugar

Excess sugar in your diet increases blood pressure and heart rate and contributes to inflammation, insulin resistance and metabolic dysfunction

Most Popular

1 **Why Low-Carb Diets May Be Ideal for Most People, Including Athletes**

2 **For Optimal Health and Weight, Eat Real Food**

3 **Why Exercise and Endorphins Make You Happy**

4 **How Chemical Defense Attorney Blew the Lid Off PFOA and Teflon Dangers**

5 **Gene Editing Technology Promises to Revolutionize Medicine and Human Reproduction — For Better or Worse**

You Might Also Like

Green Tea Helps Lower Blood Pressure, and Much More...

Eliminate Fructose and Watch How This Lowers Your Blood Pressure

Strategies to Prevent Hypertension

heavily processed salt and sugar/fructose. In a new review in the journal *Open Heart*, the authors also argue that the high consumption of added sugars in the US diet may be more strongly and directly associated with high blood pressure than the consumption of sodium.

They write:[3]

> *"Evidence from epidemiological studies and experimental trials in animals and humans suggests that added sugars, particularly fructose, may increase blood pressure and blood pressure variability, increase heart rate and myocardial oxygen demand, and contribute to inflammation, insulin resistance and broader metabolic dysfunction.*
>
> *Thus, while there is no argument that recommendations to reduce consumption of processed foods are highly appropriate and advisable, the arguments in this review are that the benefits of such recommendations might have less to do with sodium—minimally related to blood pressure and perhaps even inversely related to cardiovascular risk—and more to do with highly-refined carbohydrates."*

Take, for instance, one 2010 study that showed consuming a high-fructose diet lead to an increase in blood pressure of about 7mmHg/5mmHg, which is greater than what is typically seen with sodium (4mmHg/2mmHg).[4]

Research also shows that drinking a single 24-ounce fructose-sweetened beverage leads to greater increases in blood pressure over 24 hours than drinking a sucrose-sweetened beverage,[5] which again points to the detrimental effects of fructose on your health. The *Open Heart* study authors concluded:

> *"It is time for guideline committees to shift focus away from salt and focus greater attention to the likely more-consequential food additive: sugar.*
>
> *A reduction in the intake of added sugars, particularly fructose, and specifically in the quantities and context of industrially-manufactured consumables, would help not only curb hypertension rates, but might also help address broader problems related to cardiometabolic disease."*

How Excess Sugar Causes High Blood Pressure

In order to effectively treat and recover from high blood pressure, it's important to understand its underlying cause, which is often related to your body producing too much insulin and leptin in response to a high-carbohydrate and processed food diet. As your insulin and leptin levels rise, it causes your blood pressure to increase. Eventually, you may become insulin and/or leptin resistant.

As explained by Dr. Rosedale, insulin stores magnesium, but if your insulin receptors are blunted and your cells grow resistant to insulin, you can't store magnesium so it passes out of your body through urination. Magnesium stored in your cells relaxes muscles.

If your magnesium level is too low, your blood vessels will be unable to fully relax, and this constriction raises your blood pressure. Fructose also elevates uric acid, which drives up your blood pressure by inhibiting the nitric oxide in your blood vessels. (Uric acid is a byproduct of fructose metabolism. In fact, fructose typically generates uric acid within minutes of ingestion.)

Nitric oxide helps your vessels maintain their elasticity, so nitric oxide suppression leads to increases in blood pressure. So any program adapted to address high blood pressure needs to help normalize both your insulin/leptin sensitivity and uric acid level.

As it turns out, by eliminating excess sugar/fructose from your diet, you can address all three issues (insulin, leptin, and uric acid) in one fell swoop. As a standard recommendation, I recommend keeping your total fructose consumption below 25 grams per day.

If you're insulin resistant (the majority of Americans are), have high blood pressure, diabetes, heart disease, or other chronic disease, you'd be wise to limit your fructose to 15 grams or less per day, until your condition has normalized.

In his book *The Sugar Fix*, Dr. Richard Johnson includes detailed tables showing the content of fructose in different foods, but you can view a sampling of the fructose content of several common fruits below.

Keep in mind that for most Americans, in order to lower your fructose/sugar consumption you'll also need to eliminate sugar-sweetened beverages and processed foods.

Fruit	Serving Size	Grams of Fructose
Limes	1 medium	0
Lemons	1 medium	0.6
Cranberries	1 cup	0.7
Passion fruit	1 medium	0.9
Prune	1 medium	1.2
Apricot	1 medium	1.3
Guava	2 medium	2.2
Date (Deglet Noor style)	1 medium	2.6
Cantaloupe	1/8 of med. melon	2.8
Raspberries	1 cup	3.0
Clementine	1 medium	3.4
Kiwifruit	1 medium	3.4
Blackberries	1 cup	3.5
Star fruit	1 medium	3.6
Cherries, sweet	10	3.8
Strawberries	1 cup	3.8
Cherries, sour	1 cup	4.0
Pineapple	1 slice (3.5" x .75")	>4.0
Grapefruit, pink or red	1/2 medium	4.3

Fruit	Serving Size	Grams of Fructose
Boysenberries	1 cup	4.6
Tangerine/mandarin orange	1 medium	4.8
Nectarine	1 medium	5.4
Peach	1 medium	5.9
Orange (navel)	1 medium	6.1
Papaya	1/2 medium	6.3
Honeydew	1/8 of med. melon	6.7
Banana	1 medium	7.1
Blueberries	1 cup	7.4
Date (Medjool)	1 medium	7.7
Apple (composite)	1 medium	9.5
Persimmon	1 medium	10.6
Watermelon	1/16 med. melon	11.3
Pear	1 medium	11.8
Raisins	1/4 cup	12.3
Grapes, seedless (green or red)	1 cup	12.4
Mango	1/2 medium	16.2
Apricots, dried	1 cup	16.4
Figs, dried	1 cup	23.0

New Website Shows How Too Much Sugar Can Make You Sick

Sugar: Hiding in plain sight - Robert Lustig

SugarScience.org is a new website that uses graphics, videos and science to show you the many links between excess sugar and chronic disease. It's a product of Dr. Robert Lustig and colleagues, who have reviewed more than 8,000 independent studies on sugar and its role in heart disease, type 2 diabetes, liver disease and more.[6] The site notes:[7]

> *"Over time, consuming large quantities of added sugar can stress and damage critical organs, including the pancreas and liver. When the pancreas, which produces insulin to process sugars, becomes overworked, it can fail to regulate blood sugar properly. Large doses of the sugar fructose also can overwhelm the liver, which metabolizes fructose. In the process, the liver will convert excess fructose to fat, which is stored in the liver and also released into the bloodstream. This process contributes to key elements of MetS [metabolic syndrome], including high blood fats or triglycerides, high cholesterol, high blood pressure and extra body fat in the form of a sugar belly."*

The site points out that added sugar can be found in 74 percent of packaged foods, using at least 61 different names on food labels. If you see sucrose, sugar or high-fructose corn syrup, you'll probably recognize that the food contains added sugars, but barley malt, dextrose, maltose and rice syrup (among many others) also signal added sugar. The World Health Organization (WHO) recommends that no more than 10 percent of your daily calories (and ideally less than 5 percent) come from added sugar or natural sugar. At 5 percent, if you eat a 2,000-calorie daily diet, this amounts to 25 grams of sugar a day. For comparison, the average American eats closer to *82 grams* of sugar daily.[8]

Even in the US, acknowledgement of sugar's health dangers continues to grow. The 2015 Dietary Guidelines Advisory Committee also recommended Americans limit their added sugars to 10 percent of their total daily calories, while the American Heart Association recommends no more than 150 calories a day for men and 100 for women. The Dietary Guidelines Advisory Committee's working group on added sugar pointed out "strong scientific evidence" and "moderate evidence" that added sugars play a role in:[9]

Excess weight and obesity	Type 2 diabetes
High blood pressure	Heart disease
Stroke	Tooth decay

Does Salt Play a Role in Hypertension?

While the role of sugar in high blood pressure is becoming clearer, what does this mean for advice to cut salt from your diet to boost heart health? Overindulgence in the typically used commercially processed table salt can lead to fluid retention, high blood pressure, swelling of your limbs, and shortness of breath. In the long term, it is thought to contribute to high blood pressure, kidney and heart disease, heart attacks, and heart failure. However, compelling evidence suggests that while processed salt can indeed cause fluid retention and related health problems, numerous studies have, overall, refuted the salt-heart disease connection.

For example, a 2011 meta-analysis of seven studies involving more than 6,000 people found NO strong evidence that cutting salt intake reduces the risk for heart attacks, strokes or death. In fact, salt *restriction* actually increased the risk of death in those with heart failure.[10] Some studies have shown a modest benefit to salt restriction among *some* people with high blood pressure, but the evidence does not extend to the rest of the population. So what's really going on? For starters, there's a huge difference between natural salt and the processed salt added to processed foods and salt shakers in most homes and restaurants. The former is essential for good health, whereas the latter is best avoided altogether.

Another factor that can have a significant impact on whether salt will harm or help your health is the ratio between the salt and potassium in your diet. Among other things, your body needs potassium to maintain proper pH levels in your body fluids, and it also plays an integral role in regulating your blood pressure. It's possible that potassium deficiency may be more responsible for hypertension than excess sodium. Imbalance in your sodium-potassium ratio can lead to hypertension, and the easiest way to achieve this imbalance is by consuming a diet of processed foods, which are notoriously low in potassium while high in sodium. Remember, processed foods are also loaded with fructose, which is clearly associated with increased hypertension risk, as well as virtually all chronic diseases.

This may also explain why high-sodium diets appear to affect some people but not others. According to a 2011 federal study into sodium and potassium intake, those at greatest risk of cardiovascular disease were those who got a combination of *too much sodium* along with *too little potassium*.[11] According to Dr. Elena Kuklina, one of the lead authors of the study, potassium may neutralize the heart-damaging effects of salt. Tellingly, those who ate a lot of salt and very little potassium were more than twice as likely to die from a heart attack as those who ate about equal amounts of both nutrients.

My Top-Recommended Strategies to Prevent Hypertension

If you are diagnosed with high blood pressure, dietary strategies will be crucial to controlling your levels. Avoiding processed foods (due to their being high in sugar/fructose, grains, trans fat and other damaged fats and processed salt) is my number one recommendation if you have high blood pressure. Instead, make whole, ideally organic, foods the focus of your diet. As you reduce processed foods, and other sources of non-vegetable carbs, from your diet, you'll want to replace them with healthy fat. Sources of healthy fats to add to your diet include:

Avocados	Butter made from raw, grass-fed organic milk	Raw dairy	Organic pastured egg yolks
Coconuts and coconut oil (coconut oil actually shows promise as an effective Alzheimer's treatment in and of itself)	Unheated organic nut oils	Raw nuts, such as pecans and macadamia, which are low in protein and high in healthy fats	Grass-fed meats or pasture raised poultry

It's not *only* your diet that matters for healthy blood pressure … a comprehensive fitness program is another strategy that can improve your blood pressure and heart health on multiple levels (such as improving your insulin sensitivity). To reap the greatest rewards, I strongly suggest including high-intensity interval exercises in your routine. You'll also want to include weight training. When you work individual muscle groups you increase blood flow to those muscles, and good blood flow will increase your insulin sensitivity. If you want to kill several birds with one stone, exercise barefoot outdoors on sunny days.

Not only will you get much-needed sunshine to promote production of heart-healthy vitamin D, but bright daylight sun exposure will also help maintain a healthy circadian clock, which will help you sleep better. Poor sleep is yet another oft-ignored factor that can cause resistant hypertension. Going barefoot, meanwhile, will help you ground to the earth. Experiments show that walking barefoot outside—also referred to as Earthing or grounding—improves blood viscosity and blood flow, which help regulate blood pressure. Keep in mind that, in most cases, high blood pressure is a condition that can be managed and oftentimes reversed with natural lifestyle changes.

I encourage you to read through my full list of strategies to prevent and treat hypertension, however, below you'll find some additional highlights.

1. **Skip breakfast**: Research shows that intermittent fasting helps fight obesity and type 2 diabetes, both of which are risk factors for high blood pressure. Your body is most sensitive to insulin and leptin after a period of fasting. While there are many types of fasting regimens, one of the easiest to comply with is an eating schedule where you limit your eating to a specific, narrow window of time each day. I typically recommend starting out by skipping breakfast, and making lunch your first meal of the day until you resolve insulin resistance, then you can eat breakfast if your fasting insulin levels remain normal.

2. **Optimize your vitamin D levels:** Arterial stiffness (atherosclerosis*)* is a driving factor for high blood pressure. As your blood travels from your heart, cells in the wall of your aorta, called baroreceptors, sense the pressure load, and signal your nervous system to either raise or lower the pressure. However, the stiffer your arteries are, the more insensitive your baroreceptors become, and the less efficient they become at sending the appropriate signals. Vitamin D deficiency is, in turn, linked to stiff arteries, which is why optimizing your levels is so important.

3. **Address your stress:** The link between stress and hypertension is well documented. Suppressed negative emotions such as fear, anger, and sadness can severely limit your ability to cope with the unavoidable every day stresses of life. It's not the stressful events themselves that are harmful, but your lack of ability to cope. I recommend Emotional Freedom Technique (EFT) to transform your suppressed, negative emotions and relieve stress.

4. **Normalize your omega 6:3 ratio:** Most Americans get too much omega-6 in their diet and far too little omega-3. Consuming omega-3 fats will help re-sensitize your insulin receptors if you suffer from insulin resistance. Omega-6 fats are found in corn, soy, canola, safflower, and sunflower oil. If you're consuming a lot of these oils, you'll want to avoid or limit them. For omega-3s, your best bet is to find a safe source of fish, or if this proves too difficult or expensive, supplement with a high-quality krill oil, which has been found to be 48 times more potent than fish oil.

5. **Optimize your gut flora:** Compared to a placebo, people with high blood pressure who consumed probiotics lowered systolic blood pressure (the top number) by 3.56 mm Hg and diastolic blood pressure (the bottom number) by 2.38 mm Hg.[12] The best way to optimize your gut flora is by avoiding sugar and processed foods and including naturally fermented foods in your diet, which may contain about 100 times the amount of bacteria in a bottle of high-potency probiotics. Using fermented foods with a starter culture like Kinetic culture will also add therapeutic levels of important nutrients like vitamin K2.

6. **Maintain an optimal sodium-potassium ratio:** As mentioned, an imbalanced ratio may lead to hypertension. To ensure yours is optimal, ditch all processed foods, which are very high in processed salt and low in potassium and other essential nutrients. Instead, eat a diet of whole, unprocessed foods, ideally organically and locally-grown to ensure optimal nutrient content. This type of diet will naturally provide much larger amounts of potassium in relation to sodium.

7. **Eliminate caffeine:** The connection between coffee consumption and high blood pressure is not well understood, but there is ample evidence to indicate that if you have hypertension, coffee and other caffeinated drinks and foods can exacerbate your condition.

8. **Vitamins C and E:** Studies indicate that vitamins C and E may be helpful in lowering blood pressure. If you're eating a whole food diet, you should be getting sufficient amounts of these nutrients through your diet alone. If you decide you need a supplement, make sure to take a natural (not synthetic) form of vitamin E. You can tell what you're buying by carefully reading the label. Natural vitamin E is always listed as the "d-" form (d-alpha-tocopherol, d-beta-tocopherol, etc.) Synthetic vitamin E is listed as "dl-" forms.

9. **Olive leaf extract:** In one 2008 study, supplementing with 1,000 mg of olive leaf extract daily over eight weeks caused a significant dip in both blood pressure and LDL ("bad") cholesterol in people with borderline hypertension. If you want to incorporate olive leaves as a natural adjunct to a nutritionally

sound diet, look for fresh leaf liquid extracts for maximum synergistic potency. You can also prepare your own olive leaf tea by placing a large teaspoon of dried olive leaves in a tea ball or herb sack. Place it in about two quarts of boiling water and let it steep for three to 10 minutes. The tea should be a medium amber color when done.

10. **Quick tricks:** Increasing nitric oxide in your blood can open constricted blood vessels and lower your blood pressure. Methods for increasing the compound include taking a warm bath, breathing in and out through one nostril (close off the other nostril and your mouth), and eating bitter melon, rich in amino acids and vitamin C.

Stay Up-To-Date on the Latest Health News

If you haven't already, here's your chance to subscribe to the world's most popular newsletter! My **FREE** newsletter is instrumental in changing the lives of many people across the world. If you want to take control of your health then you won't want to miss out on this opportunity.

When you subscribe I guarantee:

- **You'll be the first** to hear about fast-breaking health news and hard-to-find tips for improving your emotional, physical, and spiritual well-being
- **You'll save money** because I'm committed to helping you stay healthy, so you won't need expensive prescription drugs or doctor's visits so often
- **You'll get straight talk** from me in plain English that shatters all the myths and misconceptions about health, aging, and fitness

Don't be left in the dark on breaking health news! Sign up for my daily newsletter today!

Subscribe to the World's Most Popular Natural Health Newsletter

Enter your email address

Subscribe Now!

[+] Sources and References

Sort Comments by : Top Rated | Newest | Oldest | Top Poster