

# An Unrecognized Sign of High Blood Pressure

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✓ Fact Checked

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## STORY AT-A-GLANCE

- › Nocturia is a condition causing you to awaken at night to urinate; researchers found a correlation between those who get up once a night or more with uncontrolled high blood pressure
- › Several factors affect your risk of high blood pressure, including an imbalanced potassium-to-sodium ratio, lack of exercise and poor dietary choices
- › Eating a Mediterranean or Pan-Asian Modified Mediterranean diet emphasizes eating healthy fats, fresh fruits and vegetables while minimizing synthetic fats, all of which help control your blood pressure
- › Incorporating the Nitric Oxide Dump exercise may help relax your arterial system and contribute to controlling your blood pressure; do the exercise at home or work as it takes just four minutes, two to three times a day

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Blood pressure is a measurement of the force your blood exerts as it pushes against your arteries. Blood pressure will normally rise and fall throughout the day but when it remains consistently high it becomes a significant concern as this pressure may damage your heart and cause other health problems.

In 2017, the American Heart Association (AHA) and the American College of Cardiology, along with nine other health organizations,<sup>1</sup> changed the cutoff used to diagnose high

blood pressure from 140/90 to 130/80.<sup>2</sup> This slight shift increased the number of people diagnosed to include many who had previously been considered healthy.

According to the AHA, an estimated 103 million U.S. adults have high blood pressure using these new measurements.<sup>3</sup> Your blood pressure may be measured at a health care professional's office, or at home using a self-measured blood pressure monitoring system.<sup>4</sup>

The top number of your blood pressure measurement is called the systolic blood pressure and measures the pressure inside your arteries as your heart beats. The bottom number, called the diastolic number, measures the pressure in your vessels when your heart is at rest.

Both numbers are important in determining how much damage may occur over time to your blood vessels and other organ systems. Usually, there are no warning signs or symptoms of high blood pressure.

The only way to know for certain is to have your pressure measured.<sup>5</sup> A recent study published in the Journal of the American Heart Association<sup>6</sup> found urinating at least twice nightly may be a symptom of uncontrolled high blood pressure.

## **Nocturia May Indicate Unrecognized High Blood Pressure**

Nocturia is a condition causing you to awaken at night to urinate. It may be related to high fluid intake late in the evening, sleep disorders or bladder obstruction.<sup>7</sup>

Researchers from Cedars-Sinai and UCLA School of Medicine<sup>8</sup> sought to determine if nighttime urination is a potentially reversible symptom of uncontrolled high blood pressure.

The researchers conducted in-person health interviews and measured blood pressure in a large community-based sample of 1,673 black men, 35 to 49 years old. Those with high blood pressure were 56% more likely to get up at night to urinate.

They found men with untreated high blood pressure were 39% more likely to experience nocturia than men with normal blood pressure or those whose high blood pressure was under control. They concluded:<sup>9</sup>

*"Uncontrolled hypertension was an independent determinant of clinically important nocturia in a large cross-sectional community-based study of non-Hispanic black men aged 35 to 49 years."*

Results from another study were presented at the 83rd Annual Scientific Meeting of the Japanese Circulation Society in Yokohama, Japan.<sup>10</sup> According to the researchers, previous research from Japan had found high salt intake was associated with nocturia in a country where individuals eat more salt compared to Western countries.

The study looked at the association between high blood pressure and nighttime urination in the general population, enrolling 3,749 residents who had an annual checkup in 2017. There were 1,882 who completed the questionnaires. The researchers used 140/90 as the cutoff for high blood pressure and not the new cutoff of 130/80.<sup>11</sup>

Nocturia was described as getting up during the night one or more times, as opposed to the study in the Journal of the American Heart Association,<sup>12</sup> which defined it as two or more nocturnal bathroom visits. Despite these differences, the Japanese researchers found similar results, as urinating during the night was linked to a 40% greater chance of having high blood pressure.<sup>13</sup>

## **Potassium Deficiency Raises Blood Pressure**

Potassium is a naturally occurring mineral your body uses as an electrolyte. It is one of the most abundant intracellular cations and is essential for normal cell function.<sup>14</sup> The potassium and sodium relationship is strong, and is the main regulator of extracellular fluid volume, including your plasma (blood).

You may lose potassium through diarrhea, vomiting, excessive sweating or the use of some drugs, including excessive alcohol.<sup>15</sup> However, the most common reason potassium levels are not within normal limits is related to your dietary intake.

According to the U.S. Department of Agriculture,<sup>16</sup> the average intake of potassium in the U.S. population is 2,640 milligrams (mg) per day, which has remained unchanged since the mid-1990s. However, the Institute of Medicine recommends 4,700 mg per day for adequate intake.

Your body works most efficiently when there is a balance in your potassium and sodium.<sup>17</sup> Potassium helps relax the walls of your arteries and lowers your blood pressure. Potassium also helps protect against muscle cramping, and Harvard Health<sup>18</sup> states those with a high systolic blood pressure may reduce their blood pressure simply by increasing their potassium intake.

Many potassium-rich foods are also low in calories and carbohydrates, such as broccoli, spinach and other leafy greens. For those with current kidney problems, it's important to seek your physician's advice before using any potassium supplements as it may lead to irregular heart rhythms.<sup>19</sup>

Excessive salt consumption may contribute to an imbalance in potassium and sodium, which is more important than your overall salt intake. An imbalance in this ratio not only may lead to high blood pressure, but also kidney stone formation,<sup>20</sup> osteoporosis,<sup>21</sup> cataracts<sup>22</sup> and increased pain with rheumatoid arthritis.<sup>23</sup>

## **High Blood Pressure Triggers Health Concerns**

According to the Centers for Disease Control and Prevention,<sup>24</sup> 13 million U.S. adults with high blood pressure are not aware they have it and are not being treated. Of those with high blood pressure, almost half don't have it under control.

Uncontrolled high blood pressure is the leading cause of heart disease and stroke and raises your risk of heart of kidney and heart failure.<sup>25</sup> High blood pressure increases the workload on your heart muscle, which may result in heart failure and damage the arteries supplying the muscle with oxygen, leading to a potential heart attack.

High blood pressure may also damage small arteries, reducing the amount of oxygen delivered to your organs such as your kidneys and eyes. Over time, this may result in

kidney failure and vision loss.<sup>26</sup>

The term for damage to smaller blood vessels is microvascular disease and it may lead to angina,<sup>27</sup> or chest pain that occurs when the heart muscle doesn't get enough oxygen, as well as sexual dysfunction.<sup>28</sup>

Another form of damage occurring to the arterial system from high blood pressure is atherosclerosis,<sup>29</sup> which may lead to peripheral vascular disease. Atherosclerosis is narrowing of the arteries that may occur in the arteries feeding the legs, arms, stomach or head, triggering pain and fatigue.

## **Dietary Strategies to Maintain Normal Blood Pressure**

In addition to eating foods rich in potassium, there are additional dietary strategies you may use to maintain normal blood pressure. The Mediterranean region is known for rich olives and olive oil, fresh vegetables, fruits, seafood and infrequent red meat consumption. The people living there are known to be some of the healthiest, longest-living people in the world.<sup>30</sup>

Most of the diet's health benefits are likely due to being low in sugar, with moderate protein and high in fresh fruits and vegetables, along with healthy fats. Dr. Stephen Sinatra's PAMM, or Pan-Asian Modified Mediterranean, diet is a modification of the Mediterranean diet.<sup>31</sup>

The PAMM diet highlights the crucial nature of eating a "high-fiber, healthy-fat, Mediterranean-type, heart-healthy diet," and emphasizing healthy fats and vegetables while minimizing synthetic fats.<sup>32</sup>

There has also been success<sup>33</sup> reducing blood pressure using the Dietary Approaches to Stop Hypertension (DASH) diet, which consists largely of fresh vegetables, fruits, lean protein, whole grain and low-fat dairy. Although it's often believed the results are from the low sodium in the diet, it's more likely the diet is effective as it's low in sugar and fructose.

Eating right to help optimize your blood pressure, thereby lowering your risk of kidney disease, heart disease, stroke and dementia is extremely important. It's also important to note that what you don't eat is as crucial as what you do eat, and I recommend avoiding the following foods, which are notorious for causing blood pressure levels to rise:<sup>34</sup>

- Sugar, processed fructose and processed foods, grains
- Partially hydrogenated oils (synthetic trans fats), found in many processed foods, including packaged cookies, crackers, chips and other snacks
- Processed omega-6 oils, especially those in vegetable oils such as corn, canola, soy and safflower oils

## **Include Exercise to Keep Blood Pressure Under Control**

Inactivity and blood pressure are also closely related – so closely that exercise is considered a first line of treatment by several health authorities, including the World Health Organization, the International Society of Hypertension and the U.S. Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure.<sup>35</sup>

Research shows inactive individuals have a 30% to 50% greater risk for high blood pressure than their active counterparts.<sup>36</sup> As noted in a literature review on exercise and high blood pressure, published in Australian Family Physician:<sup>37</sup>

*"Depending upon the degree the patient's BP has been normalized by drug therapy, regular aerobic exercise significantly reduces BP the equivalent of 1 class of antihypertensive medication (chronic effect) ...*

*Overall, resistance training has a favorable chronic effect on resting BP, but the magnitude of the BP reductions are less than those reported for an aerobic based exercise program ...*

*For most hypertensive patients, exercise is quite safe. Caution is required for those over 50 years of age, and those with established cardiovascular disease*

*(CVD) (or at high CVD risk) and in these patients, the advice of a clinical exercise physiologist is recommended."*

The key is to participate in activities to raise your heart rate and increase your blood flow. Many activities may accomplish this, including yard work, brisk walking, swimming, bicycling and sports such as tennis, skiing, rowing and soccer. Boosting your nitric oxide release also helps to normalize your blood pressure by relaxing your arteries.

The Nitric Oxide Dump is one high-intensity exercise I recommend, which you may easily incorporate into your daily routine at home or at work. Read more about it in my previous article, "Incorporate the Nitric Oxide Dump."

## **More Drug-Free Methods to Control Your Blood Pressure**

Factors that may influence your blood pressure are varied. Although diet and exercise are important strategies to control high blood pressure, there are others you may incorporate to positively affect your blood pressure and improve your overall health.

Some of these factors include lifestyle choices, such as quitting smoking and addressing your potassium to sodium ratio. Walking barefoot to ground to the earth, intermittent fasting and reducing stress may also impact your blood pressure measurements.

### **Sources and References**

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