
Low Blood Pressure

Patient Education

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ABSTRACT

Low blood pressure, or hypotension, is a condition where the force of blood pushing against the blood vessels is lower than normal. Normal blood pressure is typically around 120/80 mm Hg, so any consistent reading significantly lower than this may be considered hypotension. Blood pressure needs to be within a certain normal range to ensure that organs and extremities receive adequate oxygen and nutrients. If it is too low, it can cause symptoms such as dizziness, weakness, and fatigue. There are several types of low blood pressure and many possible causes, ranging from serious underlying medical conditions to simpler issues like dehydration. The treatment for low blood pressure depends on its underlying cause and may involve simple lifestyle modifications, addressing medical

conditions, or, in cases that cannot be managed otherwise, medications. This patient education book provides an overview of low blood pressure, including its causes, types, symptoms, diagnosis, and management, all explained in simple terms.

Keywords: complications of low blood pressure; diagnosis of low blood pressure; hypotension; lifestyle changes for low blood pressure; medications for low blood pressure; neurally mediated hypotension; orthostatic hypotension; postprandial hypotension; prevention and management of low blood pressure; risk factors of low blood pressure; symptoms of low blood pressure; treatment options for low blood pressure; types of low blood pressure

INTRODUCTION

Low blood pressure, also known as hypotension, occurs when the force of your blood pushing against the walls of your arteries is consistently and significantly lower than the normal range, typically around 120/80 mm Hg. While low blood pressure might seem desirable, especially in contrast to the well-known risks of high blood pressure, it can also pose health risks. Blood pressure is typically recorded as two numbers—the systolic pressure over the diastolic pressure. It is considered low if consistently below 90 millimeters of mercury (mm Hg) for the systolic (top) number or 60 mm Hg for the diastolic (bottom) number.

Low blood pressure means that your organs and muscles might not be getting enough blood and oxygen, leading to symptoms like dizziness or lightheadedness. In severe cases, it can escalate to shock, a life-threatening condition. Some individuals naturally maintain a lower blood pressure without any adverse symptoms or harm, while for others, a

sudden drop can indicate a serious health issue. It is crucial to monitor your blood pressure, particularly if you experience symptoms such as dizziness, fainting spells, or are on medications that could lower blood pressure (1-7).

CAUSES AND RISK FACTORS OF LOW BLOOD PRESSURE

Low blood pressure, or hypotension, can stem from a range of causes and carries its own set of risk factors that can lead to serious health issues if not properly managed. Commonly, heart conditions such as heart failure, heart attacks, or issues with heart valves can cause the heart to pump blood less effectively, leading to decreased blood pressure. Additionally, endocrine disorders that disrupt hormone levels, including adrenal insufficiency (Addison's disease) and insulin imbalances, can also lower blood pressure. Simple causes like dehydration, due to inadequate water intake, severe diarrhea, or vomiting, can lead to symptoms such as weakness, dizziness, and fatigue, which are indicative of low blood pressure.

Significant blood loss from major injuries or internal bleeding can drastically reduce blood volume, causing a severe drop in blood pressure, as can severe infections that progress to septic shock. Certain medications including diuretics, alpha and beta blockers, drugs for Parkinson's disease, and some antidepressants are known to disrupt blood pressure regulation, potentially leading to hypotension. Severe allergic reactions, known as anaphylaxis, which include symptoms like swelling, hives, and breathing difficulties, can also precipitate a sudden drop in blood pressure.

Apart from these direct causes, there are several risk factors associated with low blood pressure. Age is a significant factor, with older adults more prone to types of low blood pressure such as orthostatic or postprandial hypotension (see below under ‘Types of low blood pressure’) due to natural changes in blood pressure regulation and increased likelihood of underlying health issues or medication effects. Medication use is a prevalent risk factor, as many drugs, including those for high blood pressure, can lead to hypotension as a side effect.

Other medical conditions such as heart problems, thyroid disorders, adrenal insufficiency, or severe infections can all impact the body’s ability to regulate blood pressure effectively. Lifestyle factors like poor hydration and inadequate nutrition can reduce blood volume and pressure, while genetic predispositions may make certain individuals more susceptible to low blood pressure conditions.

SYMPTOMS OF LOW BLOOD PRESSURE

Low blood pressure might seem like a minor issue, but its symptoms can significantly impact daily life. Common symptoms include dizziness or lightheadedness, particularly when standing up quickly, which occurs because the brain temporarily receives insufficient blood supply. Another frequent symptom is fainting, which, due to a short-term lack of adequate blood to the brain, can lead to falls or other injuries, especially in older adults. Blurred vision is also associated with low blood pressure, resulting from inadequate blood flow to the eyes.

Some individuals may experience nausea or a general feeling of being unwell, linked to decreased efficiency in blood circulation that carries nutrients and removes waste. Fatigue is another common symptom, as organs do not receive enough oxygen-rich blood to function properly. Additionally, a lack of concentration can occur when the brain is not receiving sufficient blood, making focusing on tasks difficult and potentially affecting work and daily activities.

These symptoms can vary from person to person and might not always indicate low blood pressure, but if consistently experienced, it is crucial to discuss them with a healthcare provider to rule out or confirm hypotension.

TYPES OF LOW BLOOD PRESSURE

Low blood pressure comes in several forms, each with its own causes and concerns. Orthostatic hypotension, for example, occurs when standing up from a sitting or lying down position causes a temporary drop in blood pressure, leading to symptoms like dizziness. This type is common in older adults but can be exacerbated by factors such as dehydration, prolonged bed rest, or certain medications.

Postprandial hypotension happens shortly after eating, as blood flow is redirected to the stomach and intestines for digestion, potentially causing a significant drop in blood pressure and leading to dizziness, weakness, or fainting, especially after large, carbohydrate-heavy meals.

Neurally mediated hypotension, often found in younger individuals, results from a miscommunication between the heart and brain and can be triggered by prolonged standing

or emotional stress, causing the brain to mistakenly lower blood pressure.

Finally, severe hypotension associated with shock is a life-threatening condition where blood pressure drops to dangerously low levels, hindering proper organ function and often resulting from severe blood loss, major infections, allergic reactions, or significant cardiac problems, requiring immediate medical attention.

COMPLICATIONS OF LOW BLOOD PRESSURE

Low blood pressure might appear harmless, but it can lead to several serious complications if not managed properly. One of the most critical complications is shock, a condition where severely low blood pressure results in a significant reduction in blood flow to the organs. This reduction can be life-threatening as organs begin to fail from lack of sufficient oxygen and nutrients, which are normally delivered through the blood.

Another risk associated with low blood pressure is the increased likelihood of falls, stemming from symptoms such as dizziness or fainting. This is especially concerning for older adults, for whom falls can result in severe injuries, such as fractures or head trauma. These injuries can severely impact an individual's quality of life and independence.

Low blood pressure can also have effects on brain function, leading to episodes of confusion or blurred vision, which can interfere with daily activities and cognitive functions. Over time, repeated or prolonged periods of reduced blood

flow to the brain may lead to more permanent cognitive impairments.

Furthermore, chronic low blood pressure can compromise the health of the kidneys. Adequate blood flow is essential for the kidneys to filter waste products from the blood effectively. A sustained reduction in blood flow can lead to a deterioration in kidney function, potentially resulting in long-term damage or even kidney failure. Thus, it is crucial to monitor and manage low blood pressure to prevent these serious complications.

DIAGNOSIS OF LOW BLOOD PRESSURE

Diagnosing low blood pressure typically starts with measuring your blood pressure to determine if it falls below the normal range, typically considered low if consistently at 90/60 mm Hg or lower. This measurement is taken using a blood pressure cuff and can be performed in various settings such as a doctor's office, at home, or at a pharmacy.

If your readings are consistently low and you experience symptoms suggestive of low blood pressure, such as dizziness or fainting, your doctor will likely review your medical history to identify any ongoing health issues or medications that might be causing these symptoms. They will also inquire about the circumstances under which these symptoms occur, such as after quickly standing up or after meals.

A physical examination is also a crucial part of the diagnostic process. During this examination, your doctor may check your heart rate, listen to your heart and lungs,

and look for signs of heart, neurological, or endocrine disorders that could be influencing your blood pressure.

In some instances, additional tests may be necessary to identify the cause of low blood pressure. Blood tests can help detect conditions like anemia or low blood sugar, which might contribute to low blood pressure. An electrocardiogram (ECG) can reveal any electrical abnormalities in the heart that may affect heart function and blood pressure. An echocardiogram uses ultrasound waves to produce images of the heart, helping to assess whether the heart is pumping efficiently or if there are any issues with the heart valves.

Another useful diagnostic tool is the tilt table test, particularly when diagnosing orthostatic hypotension—a type of low blood pressure that occurs when standing up from a sitting or lying position. During this test, you lie on a table that is gradually tilted to simulate standing up while your blood pressure and heart rate are monitored. A significant drop in blood pressure upon tilting indicates orthostatic hypotension. This test is straightforward, generally safe, and provides valuable information on how your body regulates blood pressure in response to changes in position.

TREATMENT OPTIONS FOR LOW BLOOD PRESSURE

Treating low blood pressure typically involves a combination of lifestyle adjustments and medical interventions, tailored to address the underlying cause and the severity of the condition. For many individuals, addressing the root cause of the low blood pressure, such as heart issues or dehydration, can lead to significant

improvements. For example, increasing fluid intake can mitigate the effects of dehydration on blood pressure. Similarly, if low blood pressure is a side effect of medication, adjusting or changing the drug under medical supervision can effectively resolve the issue.

Lifestyle Changes

In terms of lifestyle changes, several adjustments can help manage low blood pressure. Increasing water consumption and reducing alcohol intake are both effective strategies, as alcohol can lower blood pressure further, while adequate hydration helps maintain it. Eating smaller, low-carbohydrate meals throughout the day can help prevent the post-meal drops in blood pressure some individuals experience. While increasing salt intake might benefit some people with low blood pressure, it is important to proceed with caution and under medical supervision, as excessive salt can contribute to other health complications.

Additionally, physical measures such as wearing compression stockings can aid in reducing the pooling of blood in the legs, thus improving circulation and potentially increasing blood pressure. Simple physical actions, like crossing the legs while sitting or rising slowly from a seated or lying position, can help manage sudden drops in blood pressure.

Medications for Low Blood Pressure

Medications for low blood pressure are typically used when lifestyle changes alone do not suffice to maintain healthy blood pressure levels or when specific underlying conditions cause significant symptoms. The choice of medication largely depends on the cause of the low blood

pressure and its impact on your health. When prescribing these medications, doctors also take into account the overall health profile of the patient, as these drugs can interact with other treatments and conditions.

Fludrocortisone is one common medication used to treat certain types of low blood pressure. It works by increasing the amount of sodium retained by the kidneys, which helps to boost blood volume. An increased blood volume can raise blood pressure and alleviate symptoms such as dizziness and fainting. However, since it affects fluid levels in the body, monitoring for side effects like swelling and potential heart complications is essential.

Midodrine is another medication prescribed specifically for low blood pressure. It functions by narrowing the blood vessels, thereby raising blood pressure. This is particularly beneficial for treating orthostatic hypotension. Midodrine is usually taken during the day to prevent high blood pressure during sleep.

For cases where low blood pressure results from heart failure or other severe cardiac conditions, medications such as dopamine or noradrenaline may be used. These powerful drugs increase the heart rate and constrict blood vessels, thus helping to elevate blood pressure to safer levels. They are typically administered in a hospital setting to allow for close monitoring.

PREVENTION AND MANAGEMENT

Preventing and managing low blood pressure involves a combination of lifestyle adjustments and medical oversight to ensure that it does not lead to serious health issues. Regular monitoring of your blood pressure is crucial.

Keeping track of readings can help identify patterns or triggers that cause your blood pressure to drop, which is particularly useful if you experience symptoms like dizziness or fainting, allowing you to connect these symptoms to specific changes in your blood pressure.

Understanding what causes your blood pressure to fall is essential for prevention. For many, simple changes in diet and hydration can help maintain stable blood pressure levels. Staying hydrated is particularly important, especially in hot weather or during exercise, as sufficient water intake helps maintain a healthy blood volume and prevents the pressure from dropping too low. Adjusting your salt intake might also be beneficial, as salt can help retain water in the body and increase blood pressure. However, it is important to consult with a healthcare provider before making significant changes, especially if you have conditions like heart disease or kidney problems.

Regular physical activity strengthens the heart and improves circulation, helping to prevent blood pressure from falling below healthy levels. Certain physical maneuvers, such as crossing your legs while sitting or rising slowly from a seated or lying position, can also help prevent sudden drops in blood pressure.

For those who frequently experience low blood pressure, wearing compression stockings can reduce the pooling of blood in the legs, which often causes sudden drops in blood pressure upon standing. Managing your environment is also key, including avoiding excessive alcohol, which can lower blood pressure, and being cautious about your posture and movements to prevent injuries and falls associated with dizziness or fainting spells.

Incorporating these strategies into daily life, along with regular check-ups with a healthcare provider, can effectively prevent low blood pressure from becoming a persistent issue and guard against its complications.

CONCLUSION

While low blood pressure might seem less alarming than high blood pressure, it requires careful attention and management to prevent potential complications. Recognizing symptoms like dizziness, fainting, and fatigue, and understanding their underlying causes are essential in managing hypotension effectively. Regular blood pressure monitoring helps identify problematic patterns and triggers that could indicate a drop in blood pressure. Lifestyle adjustments, such as improving hydration, adjusting salt intake, and incorporating regular physical activity, contribute significantly to maintaining stable blood pressure levels. Additionally, simple preventive measures like wearing compression stockings and carefully managing posture can significantly reduce the risk of injuries from falls due to sudden drops in blood pressure.

It is crucial for anyone experiencing frequent symptoms of low blood pressure to consult healthcare providers who can provide guidance tailored to individual health needs and conditions, ensuring that management strategies are safe and effective. Addressing low blood pressure proactively is key to maintaining good health and avoiding serious complications. With the right approach, those affected can lead full and active lives despite this condition.

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