



Syncope Trust And Reflex anoxic Seizures®

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Living with low blood pressure

Understanding the medical jargon and tips on how to cope with low BP



Working together with individuals, families and medical professionals to offer support and information on syncope and reflex anoxic seizures

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Glossary of terms

Autonomic nervous system The part of your nervous system that controls involuntary functions of the body such as heartbeat and breathing

Blood pressure Recordings that consist of two numbers. The top reading is systolic blood pressure (BP) and relates to the contraction of the left side of the heart. The bottom number is the diastolic recording and is the lowest pressure achieved in the circulation

Low blood pressure Also known as hypotension. This is when the systolic recording is less than 90mmHg

Orthostatic Relates to standing upright

Postprandial hypotension When BP falls as a consequence of eating food

PoTS (postural tachycardia syndrome) A condition where patients experience symptoms of PoTS and a persistent increase in heart rate after sitting or standing up from lying

Reflex anoxic seizures (RAS) A medical term used for syncope which results from a brief stoppage of the heart through excessive activity of the vagus nerve

Syncope A medical term for a blackout that is caused by sudden lack of blood supply to the brain

Tilt table test An autonomic test used to induce an episode whilst connected to heart and BP monitors

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What is low blood pressure (BP)?

BP recordings consist of two numbers. The top one is the systolic BP and relates to the contraction of the left side of the heart and the peak pressure achieved when it pumps blood round the body. The bottom number is the diastolic recording and is the lowest pressure achieved in the circulation; this relates to the relaxation of the heart. BP is measured in millimetres of mercury (mmHg), e.g. 120/70 mmHg

Low BP is also known as hypotension. This is usually defined in an adult as a systolic recording of less than 90 mmHg, although it has been suggested that for elderly people, below 110 mmHg is a more appropriate definition.

BP and heart rate are controlled by the autonomic nervous system (the nervous system that controls bodily functions that we do not have to think about).

What are the symptoms of low BP?

It is important to recognise that low BP can cause no symptoms at all, and is a common normal finding in young people and athletes. However, in some people, low BP causes symptoms which can significantly interfere with their quality of life. These can include syncope (fainting), pre-syncope (near fainting, usually associated with feeling light-headed), sweating, tiredness, slow thinking (brain fog), nausea, visual blurring, hearing disturbances, headache, palpitations, neck pain, breathlessness and chest pain.

A drop in systolic BP of 60 mmHg or more is usually associated with loss of consciousness.

This booklet is designed for individuals who have been diagnosed with low BP.

It has been written to provide information on the causes, symptoms and management of the condition.

* The star means that there is currently no available medical evidence but is generally accepted by experts.



What causes low BP?

There are many factors which can contribute to low BP. In some people, they only have one factor such as fear. In others, there is a combination which add together to cause problems, such as prolonged standing, heat, alcohol and hyperventilation (over-breathing).

It occurs more often in older people who are taking a lot of medication. However, it can cause symptoms in younger people. There may be underlying medical conditions such as joint hypermobility syndrome, diabetes, Parkinson's disease, Addison's disease or autonomic failure. Dehydration, hunger*, low body weight and deconditioning (being out of shape/unfit) can reduce BP.

Different types of low BP

Orthostatic hypotension

Orthostatic hypotension, sometimes called postural hypotension, is a sustained, prolonged fall in systolic BP of at least 20 mmHg or diastolic BP of 10 mm Hg within three minutes of standing up (or with head-up tilt to at least 60° on a tilt table).

Orthostatic means caused by upright posture; people with low BP mostly have problems when they are standing, and occasionally with prolonged sitting*. This is the result of the brain being above the level of the heart.

Head rush is also known as initial orthostatic or postural hypotension and occurs within the first 15 seconds of standing up suddenly. The autonomic nervous system usually corrects this fall in BP very quickly and symptoms are usually very short-lived. 'Head rush' can occur in young, healthy people.

Neurally mediated hypotension

There are many different names and definitions for this type of low blood BP and it can be very confusing.

When BP drops as a result of a change in the activity of the autonomic nervous system this is called neurally mediated hypotension.

Neurally mediated syncope (neurocardiogenic syncope) occurs when this drop in BP results in fainting. It is often associated with a reduction in heart rate. When it occurs suddenly, it can be called **reflex syncope**.

Neurally mediated syncope is a symptom which has many different causes. These include an abnormal response (e.g. fainting) to coughing, swallowing and passing urine or faeces. Fear may also be a trigger. The term **situational syncope** is used when there is a specific trigger (or situation) that provokes the faint.

Reflex anoxic seizures (RAS) are a form of reflex syncope often seen in young children where a reversible pause in heart beat precedes a drop in BP. (STARS booklet, Reflex anoxic seizures has more detailed information on this condition).

Vasovagal syncope is a type of neurally mediated syncope where there is predominantly overactivity of the vagus nerve. This nerve is part of the autonomic nervous system function and acts by dilating (relaxing/opening up) blood vessels. The vagus nerve primarily slows the heart rate which subsequently also lowers the BP. When there is also a drop or pause in heart rate, the term cardio-inhibitory vasovagal syncope is used. Sometimes vasovagal syncope is referred to as 'the common faint' or 'simple faint'.

Vasodepressor syncope and presyncope - means a drop in BP when blood vessels are unable to narrow (constrict) sufficiently to maintain BP. BP tends to drift down more slowly as blood pools (collects) in the veins of the limbs and abdomen. The heart rate may increase slightly to compensate.

Shock

People who do not normally have problems with low BP can suddenly develop hypotension when severely unwell e.g. due to loss of circulating blood volume (haemorrhage), loss of fluid (burns, dehydration) or when the heart doesn't pump efficiently (heart failure). This situation is sometimes called shock.

Postprandial hypotension

If BP falls as a consequence of eating food, this is called postprandial hypotension. 'Prandial' means related to a meal. This problem is thought to be caused by dilation of blood vessels in the abdominal cavity and increased blood flow to the bowel, which reduces overall BP.

How is low BP treated?

If you feel that your BP is dropping act immediately! Try to sit or squat down, or better still, lie down and elevate your legs in the air. If you are unable to do this, cross your thighs, clench your buttocks and make a tight fist. Taking a short walk or rocking up and down on your toes may help. Drink two glasses of water as soon as possible.



How to prevent problems with low BP

- First, the cause of low BP should be identified and removed or treated, if possible. Medication is a common cause and culprits include antihypertensives (for treatment of high BP), diuretics (water tablets), anti-Parkinson's drugs and tricyclic antidepressants.
- High fluid intake is usually recommended i.e. two to three litres per day (except in conditions such as heart failure and severe kidney disease). Drink two glasses of water before undertaking activities that may worsen symptoms e.g. shopping.
- There is some evidence that a high salt intake can help, but only on the advice of your doctor as this can be dangerous in some medical conditions. Aim for 6g (one level teaspoon of table salt or ten slow sodium tablets) per day.
- Postprandial hypotension can be lessened by eating small meals often. Refined carbohydrates (found in foods made with white flour, sugary foods, white pasta etc) should be avoided, or eaten later in the day when patients can lie down afterwards*.
- It is important to keep as physically fit as possible. Exercise in the horizontal or seated position may be better tolerated e.g. swimming, recumbent exercise bike.
- Avoid triggers like prolonged standing, heat and alcohol.
- Some people find support tights (class three, waist high) and abdominal binders to be helpful. Ensure you are measured correctly and wear the right size.

- Safely elevate the head end of the bed with wooden blocks or bricks (10cm).
- Take care first thing in the morning as people often find this is when symptoms are worse.
- Get out of bed slowly (especially when getting out of bed at night to go to the toilet). Drink two glasses of water 30 minutes before rising.
- Keep your weight within the normal range – BMI 19-25. People who are very underweight are more prone to low BP.
- Observe your posture - elevating legs; sitting cross legged and fidgeting can help symptoms.
- Tilt training involves spending increasingly longer periods standing or on a tilt table. Patients have to be very motivated to persist with this treatment.
- If all else fails, medication may be used to elevate BP. Examples include fludrocortisone, desmopressin, midodrine, pyridostigmine and octreotide.



Autonomic nervous system and low BP

The symptoms of PoTS and orthostatic hypotension can be very similar. In fact a number of people experience both problems at the same time. During a stand test or a tilt table test, people with PoTS have an increase in heart rate of 30 beats per minute or more within 10 minutes of becoming upright (or to more than 120 bpm). Although the definition says that there is no BP drop in PoTS, some people with PoTS subsequently also drop their BP and, occasionally, heart rate. This is because the abnormalities in the autonomic nervous system that cause PoTS can also cause a drop in BP. This combination of findings is common in joint hypermobility syndrome and chronic fatigue syndrome.

In vasodepressor syncope or presyncope, there is often an increase in heart rate that accompanies the drop in BP. This is called a reactive tachycardia and can look like PoTS. Treatment for both conditions is very similar.



Know Your Pulse



What is your pulse?

Your pulse is:

- ♥ Your heart beat
- ♥ Your heart rate
- ♥ Your heart rhythm

One of the easiest places to feel your pulse is on your wrist, just below your thumb. You can feel your pulse in other areas of your body, including the crease of your elbow, in your groin or behind your knee.

Why and when should you check your pulse?

Being aware of your pulse is important because it may indicate an abnormal heart rate or rhythm.

It is a good idea to try taking your pulse at various points throughout the day (before and after various activities). Your pulse rate will change during the day depending on what activity you are doing. This is normal. To get your baseline pulse and normal rhythm, try taking your resting pulse when you wake in the morning and before going to bed.

What is a normal pulse?

Between 60 and 100 beats per minute.

However, there are normal reasons why your pulse may be slower or faster. This may be due to your age, medications, caffeine, level of fitness, any other illness including heart conditions, stress and anxiety.

When should you seek further advice?

- ♥ If your pulse seems to be racing some or most of the time and you are feeling unwell.
- ♥ If your pulse seems to be slow some or most of the time and you are feeling unwell.
- ♥ If your pulse feels irregular ("jumping around"), even if you do not feel unwell.

Everyone is different and it is difficult to give precise guidelines. Certainly many people may have pulse rates over 100 beats/min (bpm) and less than 60 bpm. Irregularity is quite difficult to assess since the normal pulse is a bit irregular, varying with the phase of respiration. You should see your doctor if you have a persistent heart rate above 120 bpm or below 40 bpm.

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Your Pulse in four steps

1

To assess your **resting** pulse rate in your wrist, sit down for **5 minutes** beforehand. Remember that any stimulants taken before the reading will affect the rate (such as caffeine or nicotine). You will need a watch or clock with a second hand.



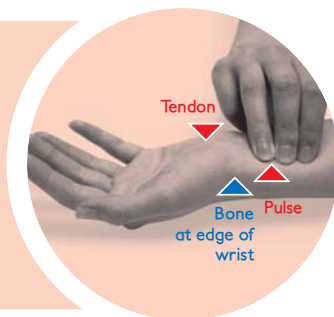
2

Take off your watch and hold your left or right hand out with your palm facing up and your elbow slightly bent.



3

With your other hand, place your index and middle fingers on your wrist, at the base of your thumb. Your fingers should sit between the bone on the edge of your wrist and the stringy tendon attached to your thumb (as shown in the image). You may need to move your fingers around a little to find the pulse. Keep firm pressure on your wrist with your fingers in order to feel your pulse.



4

Count for **30 seconds**, and multiply by 2 to get your heart rate in beats per minute.

If your heart rhythm is irregular, you should count for 1 minute and do not multiply.



Record your pulse here

Day	Result		Activity (e.g. after a run)
	am	pm	
1			
2			
3			
4			
5			
6			
7			

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Please remember that this publication provides general guidelines only. Individuals should always discuss their condition with a healthcare professional.

STARS would like to thank all those who helped in the development and review of this publication. In particular, thanks are given to Dr Lesley Kavi, and Dr Charlotte D'Souza.

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Published July 2013,
Reviewed July 2017



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