Shock
Summary

Most people think of ‘shock’ as emotional distress or sudden fright in response to a traumatic event. But in medical terms, shock is when you do not have enough blood circulating around your body. It is a life-threatening medical emergency.

Shock is a defence response

In medical terms, shock is the body’s response to a sudden drop in blood pressure. At first, the body responds to this life-threatening situation by constricting (narrowing) blood vessels in the extremities (hands and feet). This is called vasoconstriction and it helps conserve blood flow to the vital organs. But the body also releases the hormone (chemical) adrenaline and this can reverse the body’s initial response. When this happens, the blood pressure drops, which can be fatal.

Many things affect the severity and effect of shock on a person, such as their health, age, gender and personality, where on their body they are injured, and the environment.

If a person has emotional distress or sudden fright, their body releases adrenaline into the bloodstream, but this usually reverses itself in a healthy person. This is where the confusion in the term ‘shock’ sometimes occurs.

This ‘non-medical shock’ is a response to anxiety or fear. Although the symptoms can look like those of medical shock, this ‘fright-flight’ response is short lived and symptoms will disappear once the person is comforted or the reason for the fright or fear is removed.

Symptoms of shock

Depending on the cause, symptoms and signs of shock may include:

- Pale, cold, clammy skin
- Shallow, rapid breathing
- Difficulty breathing
- Anxiety
- Rapid heartbeat
- Heartbeat irregularities or palpitations
- Thirst or a dry mouth
- Low urine output or dark urine
- Nausea
- Vomiting
- Dizziness
- Light-headedness
- Confusion and disorientation
- Unconsciousness.

Types of shock

Some of the different types of medical shock include:

- Hypovolaemic – meaning not enough blood volume. Causes include bleeding, which could be internal (such as a ruptured artery or organ) or external (such as a deep wound) or dehydration. Chronic vomiting, diarrhoea, dehydration or severe burns can also reduce blood volume and cause a dangerous drop in blood pressure
- Cardiogenic – caused when the heart cannot effectively pump blood around the body. Various conditions including heart attack, heart disease (such as cardiomyopathy) or valve disorders may prevent a person’s heart from functioning properly
- Neurogenic – injury to a person’s spine may damage the nerves that control the diameter (width) of blood vessels. The blood vessels below the spinal injury relax and expand (dilate) and cause a drop in blood pressure
- Septic – an infection makes the blood vessels dilate, which drops blood pressure. For example, an E. coli infection may trigger septic shock
- Anaphylactic – a severe allergic reaction causes blood vessels to dilate, which results in low blood pressure
- Obstructive – blood flow is stopped. Obstructive shock can be caused by cardiac (pericardial) tamponade, which is an abnormal build-up of fluid in the pericardium (the sac around the heart) that compresses the heart and stops it from beating properly, or pulmonary embolism (a blood clot in the pulmonary artery,
First aid for shock

Medical shock is a life-threatening emergency. Effective first aid and prompt medical attention can save a person’s life.

First aid management includes:

- Follow the DRSABCD Action Plan to assess the situation.
- If the person is conscious, lie them down and keep them warm and comfortable. Loosen their clothing. If possible, raise their legs above the level of their torso and head (to improve blood flow to the brain, heart, and lungs). Do not raise their legs if you suspect a spinal injury or if moving their legs causes pain, such as in the case of a suspected fracture in their leg(s).
- Manage any obvious signs of external bleeding. For example, firmly press a clean cloth or pad against a wound to stop blood loss. If blood seeps through and soaks the cloth, do not remove it. Add another cloth or pad over the top of the first one. If the second cloth or pad gets soaked, replace that one with another clean cloth or pad. Continue maintaining firm pressure against the wound. Raise the bleeding injured limb if possible.
- Do not give the person anything to eat or drink, even if they are very thirsty.
- Reassure the person and encourage them to rest or stay still. Stay with them until the ambulance arrives.

Please note that these suggestions are not a substitute for first aid training. Refer to the Where to get help section of this fact sheet for organisations that offer first aid courses. Your training may save a life.

Diagnosis of shock

In all cases of medical shock, treatment aims to restore the blood circulation and manage or prevent complications. When the person reaches the emergency department of the nearest hospital, medical staff will often make efforts to secure their airway and boost their blood circulation, before diagnosing the cause of shock.

In some cases (such as stab wounds, severe burns or traumatic amputation), the cause of shock is obvious. In other cases, once the person is out of immediate life-threatening danger, hospital staff may use diagnostic tests to learn the cause of the person’s low blood pressure.

Tests may involve:

- Blood tests
- X-rays
- Ultrasound, computed tomography (CT scan) or magnetic resonance imaging (MRI) to check for internal bleeding
- Other tests, depending on the type of shock suspected – for example, diagnosis of cardiogenic shock may need an electrocardiogram (ECG).

Treatment of shock

Specific treatment depends on the type of shock, but could include:

- Hypovolaemic shock – stopping the bleeding and boosting the person’s blood volume with intravenous fluids (fluids given directly into the person’s bloodstream through a tube and needle). In severe cases, the person may need a blood transfusion. Internal or external wounds may need surgery.
- Cardiogenic shock – boosting blood volume with intravenous fluids. Medications to constrict (narrow) the blood vessels will improve the heart’s ability to pump. Some people may need heart surgery.
- Neurogenic shock – giving intravenous fluids and medications, including corticosteroids.
- Septic shock – giving antibiotics for the infection. The person may need supportive hospital care, for example, mechanical ventilation to help them breathe.
- Anaphylactic shock – the person may need medications such as antihistamines, adrenaline or corticosteroids.
- Obstructive shock – removing the obstruction, for example, surgery or clot-dissolving medication to remove a blood clot in the pulmonary artery.
- Endocrine shock – administering medications to correct the hormonal imbalance, for example, thyroid medication to treat hypothyroidism.

You can help a person who has non-medical shock by comforting them or encouraging them to use anxiety management techniques, until the reason for their fright or fear is removed.

Outlook for people with shock

Medical shock is a life-threatening condition. A person’s chances of surviving medical shock depend on various factors including:

- The person’s age and general health
- The type and cause of shock
- The severity of the shock

Generally, hypovolaemic, neurogenic and anaphylactic shock respond well to treatment. But in about half of all cases of cardiogenic and septic shock, the person will die.

Where to get help

- In an emergency, always call triple zero (000)
- Emergency department of the nearest hospital
References


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Blood and blood vessels

The following content is displayed as Tabs. Once you have activated a link navigate to the end of the list to view its associated content. The activated link is defined as Active Tab

- Blood and blood vessels explained
- Cholesterol
- Iron anaemia and blood disorders
- Bleeding, clotting and infections
- Blood pressure
- Blood vessel and bone marrow conditions
- Blood donation and transfusion

Blood and blood vessels explained

- Blood count
  The full blood count (FBC) test looks for abnormalities in the blood, such as unusually high or low numbers of blood cells.
- Blood groups
  A person's blood group is determined by a pair of genes, one each inherited from their mother and father.
- Bone marrow
  Bone marrow is the spongy tissue in the hollow centres of a person's long bones and is the blood cell 'factory'.
- Heart explained
  The heart is about the size of a clenched fist and lies in the middle of your chest, behind and slightly to the left of your breastbone.
- Lipoedema
  Lipoedema is a painful, chronic, symmetrical swelling in the legs, thighs, buttocks and sometimes arms due to the accumulation of fat in the subcutaneous tissues. The onset often occurs during puberty.
- Lymphatic system
  The lymphatic manages fluid levels in the body, filters out bacteria and houses types of white blood cells.

Cholesterol

- Cholesterol
  Your body needs cholesterol, but it can make its own. You don't need cholesterol in your diet.
- Cholesterol - healthy eating tips
  Replacing foods that contain saturated fats with foods that contain polyunsaturated and monounsaturated fats will help to lower your cholesterol.
- Genetic factors and cholesterol
  Familial hypercholesterolaemia is an inherited condition characterised by higher than normal levels of blood cholesterol.
- Triglycerides
  If a person habitually eats more kilojoules than they burn, they will have raised triglyceride levels in the blood.

Iron anaemia and blood disorders

- Anaemia
  When a person is anaemic, the red blood cells have to work harder to get oxygen around the body.
- Haemochromatosis
Haemochromatosis (iron overload disorder) tends to be under-diagnosed, partly because its symptoms are similar to those caused by a range of other illnesses.

- **Hughes syndrome**
  Hughes syndrome is thickening of the blood caused by abnormal immune system cells.

- **Iron**
  Iron is important for transporting oxygen in the blood.

- **Iron deficiency - adults**
  Don't take iron supplements unless advised by your doctor.

- **Iron deficiency - children**
  Keep iron supplements away from children - as little as one to three grams can kill a child under six years.

- **Porphyria**
  Porphyria can affect the skin, nervous system, gastrointestinal system or all of these, depending on the specific type.

- **Thalassaemia**
  Thalassaemia is an inherited blood disorder that can cause anaemia or death if not treated.

**Bleeding, clotting and infections**

- **Bleeding**
  Bleeding may be minor or it may be a life-threatening medical emergency.

- **Deep vein thrombosis**
  Long international flights are suspected of contributing to deep vein thrombosis in susceptible people.

- **Haemophilia**
  All children with severe haemophilia are given preventative treatment with infusions of blood products before they have a bleed.

- **Needlestick injury**
  A needlestick injury means the skin is accidentally punctured by a used needle. Diseases that could be transmitted by a needle or needlestick injury include human immunodeficiency virus (HIV).

- **Nosebleeds**
  Bleeding from the nose is common in children and is usually not severe or serious.

- **Septicaemia**
  Bacteria in the bowels, urinary tract, mouth and skin can cause disease if they get into the bloodstream.

- **Subarachnoid haemorrhage**
  A subarachnoid haemorrhage is any bleed located underneath one of the protective layers of the brain known as the arachnoid layer.

- **Subdural haematoma**
  Subdural haematomas are blood clots formed underneath one of the protective layers of the brain.

- **Travel tips for seniors**
  All travellers should plan carefully, but older people have a few extra concerns when travelling.

- **Von Willebrand disease**
  A person with von Willebrand disease may have frequent nosebleeds, heavy menstruation or excessive bleeding from the mouth.

**Blood pressure**

- **Blood pressure**
  Healthy eating and lifestyle changes can help to manage high blood pressure.

- **Blood pressure (high) - hypertension**
  Hypertension, or high blood pressure, can increase your risk of heart attack, kidney failure and stroke.

- **Blood pressure - keep your blood pressure down (video)**
Heart Foundation of Australia warns of the risk of high blood pressure and tells you what you can do to keep your blood pressure down.

- **Blood pressure (low) - hypotension**
  Low blood pressure is only a problem if it has a negative impact on the body.

- **Dizziness - orthostatic hypotension**
  Postural hypotension is the lightheaded feeling you may get if you leap out of bed very quickly.

- **Fainting**
  Common causes of fainting include heat, pain, distress, the sight of blood, anxiety and hyperventilating.

- **Pulmonary hypertension**
  Pulmonary hypertension is high blood pressure on the lungs.

- **Shock**
  Shock is when there is not enough blood circulating in the body. It is a life-threatening medical emergency.

- **Stroke explained**
  A stroke interrupts blood flow to an area of the brain and is a medical emergency.

### Blood vessel and bone marrow conditions

- **Amyloidosis**
  A person with amyloidosis produces aggregates of insoluble protein that cannot be eliminated from the body.

- **Aneurysm**
  An aneurysm may have no symptoms until it is either very large or it ruptures.

- **Granulomatosis with polyangiitis**
  Granulomatosis with polyangiitis (GPA), formerly known as Wegener granulomatosis is a rare condition that targets the arteries, veins and capillaries of the kidneys and the respiratory system.

- **Henoch-Schonlein purpura**
  Henoch-Schonlein purpura causes a purple spotted skin rash which lasts around one to four weeks, and is often marked by relapses.

- **Leukaemia**
  Most children and many adults with acute leukaemia can expect to be cured, while chronic leukaemia can be successfully managed.

- **Peripheral vascular disease**
  Peripheral vascular disease is the reduced circulation of blood to a body part (other than the brain or heart).

- **Polycythemia vera**
  Polycythemia vera is characterised by the production of too many red blood cells, caused by abnormal function of the bone marrow.

- **Raynaud's phenomenon**
  Raynaud's phenomenon can be a sign of a more serious underlying condition, so see your doctor if you experience it.

- **Thalassaemia**
  Thalassaemia is an inherited blood disorder that can cause anaemia or death if not treated.

- **Varicose veins and spider veins**
  Smaller varicose veins are usually treated by sclerotheray - the injection of irritant chemicals into the affected vein.

### Blood-donation-and-transfusion

- **Blood donation**
  Donated blood is used to help people who are sick or injured, or for medical research.

- **Blood transfusion**
  Donated blood is screened for blood-borne diseases such as hepatitis, syphilis and HIV.

- **Organ and tissue donation**
  Discover the facts about organ and tissue donation, decide about becoming a donor and discuss your decision with the people close to you.
Related Information

- **Blood and blood vessels**
  - Bleeding, blood pressure, conditions, risks and blood products...

- **Fainting**
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- **Dizziness - orthostatic hypotension**
  - Postural hypotension is the lightheaded feeling you may get if you leap out of bed very quickly...

- **Blood pressure (low) - hypotension**
  - Low blood pressure is only a problem if it has a negative impact on the body...

- **Blood pressure**
  - Healthy eating and lifestyle changes can help to manage high blood pressure...

Home

Related information on other websites

- Melbourne Health Training Services – Causes of shock
- St John Ambulance Australia
- St John Ambulance Victoria

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This page has been produced in consultation with and approved by: St John Ambulance

Last updated: August 2014

Page content currently being reviewed.

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