CONDITION

Hypovolemic shock

Hypovolemic shock is a medical emergency caused by losing enough blood or body fluid to prevent organs receiving adequate blood flow.

WHAT IT IS
Critically reduced circulation from severe blood or fluid loss

BODY SYSTEM
Heart and circulation, with effects throughout the body

MAIN SYMPTOMS
Rapid pulse, weakness, confusion, cool clammy skin

WHAT CAUSES IT
Severe blood loss or major loss of body fluids

HOW IT IS DIAGNOSED
Clinical assessment, vital signs, blood tests, and cause-finding imaging

MAIN TREATMENT
Rapid fluid or blood replacement and control of the cause

CAN IT BE CURED?
Yes - rapid treatment can restore circulation

IS IT AN EMERGENCY?
Yes - any suspected shock needs emergency care

LONG-TERM OUTLOOK
Often full recovery; organ damage can worsen the outlook

Overview

Hypovolemic shock happens when the body loses so much blood or other fluid that the heart cannot pump enough blood to the organs. "Hypovolemic" means low blood volume. Shock means that tissues are not receiving enough blood flow and oxygen.

This is an acute condition, not a disease that develops as a diagnosis over many years. It can follow severe bleeding, major burns, prolonged vomiting or diarrhea, or another event that rapidly removes fluid from the circulation.

The body first tries to protect vital organs. The heart beats faster, blood vessels narrow, and blood flow is redirected toward the brain and heart. These responses may keep blood pressure near normal for a time. If the loss continues, they are no longer enough.

Without rapid treatment, reduced circulation can damage the kidneys, brain, heart, liver, and other organs. Early control of the fluid loss and restoration of circulation can often reverse the condition.

Symptoms

Symptoms can develop suddenly after an injury or more gradually during ongoing internal bleeding or fluid loss.

Possible signs include:

Bleeding may be obvious, but hypovolemic shock can also happen without visible blood. Internal bleeding may cause abdominal pain or swelling, chest pain, back pain, vomiting blood, black stools, or blood in the urine. Symptoms depend on where the bleeding is occurring.

Blood pressure is not always low at first. Children and younger adults may maintain their blood pressure until a large amount of blood has been lost. Older adults and people taking medicines that slow the heart rate may not develop a very fast pulse.

- A fast, weak pulse
- Rapid or shallow breathing
- Pale, cool, or clammy skin
- Marked weakness, dizziness, or fainting
- Thirst and a dry mouth
- Anxiety, restlessness, confusion, or unusual sleepiness
- Very little urine
- Low blood pressure, especially as shock becomes more severe

Causes and risk factors

Hypovolemic shock has two main types: hemorrhagic shock from blood loss and non-hemorrhagic shock from loss of other body fluids.

Blood loss may result from:

Major fluid loss can result from severe or prolonged vomiting and diarrhea, large burns, or heavy sweating without adequate fluid replacement. Some kidney conditions and medicines can also cause excessive water and salt loss.

Fluid may sometimes move out of the bloodstream and collect in damaged tissues or body spaces. This can happen with major burns, severe inflammation of the pancreas, or certain intestinal problems. The fluid remains inside the body but is no longer available to support circulation.

Risk is higher when fluid loss is rapid, treatment is delayed, or a person already has heart, kidney, or blood-clotting problems.

- A serious injury or major operation
- Bleeding in the stomach or intestines
- Pregnancy-related bleeding, including a ruptured ectopic pregnancy
- A ruptured blood vessel
- Heavy bleeding after childbirth
- Medicines or medical conditions that make bleeding harder to stop

Diagnosis

Hypovolemic shock is diagnosed mainly from the circumstances, symptoms, examination, and vital signs. There is no single test that confirms every case.

The emergency team checks heart rate, blood pressure, breathing, oxygen level, temperature, alertness, skin circulation, and urine output. They look for visible bleeding and signs of blood or fluid loss.

Blood tests may assess:

A normal early hemoglobin result does not always rule out sudden blood loss. The concentration may take time to change.

Ultrasound can quickly look for internal bleeding around the heart or in the abdomen. CT scans may locate bleeding in someone stable enough for scanning. Endoscopy, surgery, or other tests may be needed to find bleeding from the digestive tract or another source. Testing should not delay treatment when severe shock or uncontrolled bleeding is apparent.

- Red blood cells and hemoglobin
- Blood clotting
- Kidney and liver function
- Salts and acid levels in the blood
- Lactate, which may rise when tissues receive too little blood flow

- Blood type, in case a transfusion is needed

Treatment and management

Treatment begins immediately and has two goals: restore circulation and stop the ongoing loss.

Emergency care may include oxygen, breathing support, warming measures, and close monitoring. Large intravenous lines are often placed so fluids, blood products, and medicines can be given quickly. If a vein cannot be reached, emergency teams may use access through a bone.

For major blood loss, transfusions can replace red blood cells and other blood components needed for oxygen delivery and clotting. The exact combination is based on the situation, test results, and local emergency protocols. Fluids given into a vein are often used for major non-blood fluid loss.

Replacing volume alone is not enough if bleeding or fluid loss continues. Treatment of the cause may involve:

Medicines that support blood pressure may sometimes be needed, but they do not replace the missing blood or fluid. The care team also monitors urine output, blood tests, temperature, heart function, and signs of organ recovery.

After circulation is stable, treatment focuses on the underlying cause and any complications. Some people need intensive care, while others can move to a regular hospital ward once their condition has improved.

- Direct pressure or another method to control an external wound
- Surgery to repair an injury or bleeding blood vessel
- Endoscopy to treat bleeding in the stomach or intestines
- A catheter-based procedure to block a bleeding vessel
- Treatment for pregnancy-related or childbirth bleeding
- Care for burns, vomiting, diarrhea, or another source of fluid loss

Complications

If circulation remains too low, organs may be injured by a lack of oxygen. Possible complications include acute kidney injury, heart injury, liver problems, breathing failure, and

changes in brain function.

Severe shock may disturb normal blood clotting. This can cause both abnormal clot formation and further bleeding. Reduced blood flow can also damage the intestines or limbs.

The risk of lasting problems generally rises with the severity and duration of shock, the cause of the fluid loss, and the person's health before it happened.

Prevention

Not every case can be prevented. Serious injuries, internal bleeding, pregnancy emergencies, and unexpected complications can occur without warning.

Practical steps may reduce some risks:

People with an illness that causes repeated fluid loss may be given a personal plan for hydration and when to seek help. This is different from trying to treat suspected shock at home.

- Use seat belts, protective equipment, and established workplace safety measures
- Seek early care for persistent vomiting, diarrhea, or signs of dehydration
- Follow the monitoring plan for medicines that affect bleeding or fluid balance
- Report unusual bleeding, black stools, vomiting blood, or blood in the urine promptly
- Follow medical advice for conditions known to cause recurrent bleeding

Living with it and what to expect

Hypovolemic shock is usually a single acute event rather than a permanent condition. What happens afterward is shaped by its cause, how quickly circulation was restored, and whether any organs were injured.

Some people recover fully after hospital treatment. Fatigue, weakness, reduced stamina, or lightheadedness may continue for days or weeks, especially after major blood loss, surgery, or a long hospital stay. Blood counts can take time to recover.

Follow-up may include checking for anemia, kidney recovery, wound healing, or the condition that caused the bleeding or fluid loss. Rehabilitation may be needed after a serious injury or prolonged intensive care stay. Anxiety, sleep problems, or upsetting memories can also follow an emergency admission.

Hypovolemic shock itself does not usually keep returning once the loss has stopped.

Recurrence is possible if the underlying cause, such as repeated digestive bleeding, heavy bleeding, or ongoing fluid loss, remains active.

When to get medical help

Suspected hypovolemic shock is always an emergency. Call emergency services if someone has major bleeding or fluid loss together with fainting, confusion, severe weakness, rapid breathing, cool clammy skin, or a fast weak pulse. Do not wait for blood pressure to fall.

While waiting for help:

Routine follow-up is appropriate after discharge for ongoing tiredness, anemia checks, wound review, kidney monitoring, or management of the original cause. New fainting, confusion, heavy bleeding, breathing difficulty, or rapidly worsening weakness is not a routine follow-up issue and needs urgent emergency assessment.

- Apply firm, continuous pressure to an external bleeding wound
- Keep the person still and warm if it is safe to do so
- Do not give food or drink, especially if they are confused, vomiting, or may need surgery
- Do not leave them alone
- Follow instructions from the emergency call handler

Common questions

Is hypovolemic shock the same as dehydration?

No. Dehydration means the body has lost more water than it has taken in. Most dehydration does not cause shock. Severe dehydration can progress to hypovolemic shock when the fluid loss becomes large enough to reduce circulation to the organs.

Can you have hypovolemic shock without visible bleeding?

Yes. Blood can collect inside the chest, abdomen, pelvis, tissues, or digestive tract. Major loss of non-blood fluid can also cause hypovolemic shock. A lack of visible bleeding does not make shock less serious.

Can blood pressure be normal during hypovolemic shock?

It can be normal early on because the heart speeds up and blood vessels narrow. Falling blood pressure is often a later sign. Emergency assessment considers the full pattern of symptoms, vital signs, examination findings, and likely fluid loss.

How quickly can hypovolemic shock happen?

It can develop within minutes after major bleeding. It may develop over hours or longer when bleeding is slower or when vomiting, diarrhea, burns, or other fluid losses continue. The speed depends on how much fluid is lost and how quickly it is lost.

Is hypovolemic shock curable?

It is often reversible when the loss is stopped and circulation is restored quickly. Recovery is less certain after prolonged shock, extensive injury, or severe organ damage. Treatment must also address the reason the blood or fluid was lost.

How long does recovery take?

There is no single recovery time. A brief episode treated early may have a relatively short recovery. Major surgery, severe bleeding, organ injury, or intensive care can lead to recovery over weeks or months, sometimes with rehabilitation and ongoing follow-up.

Sources

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