

Shock Classification

A plain-English guide for you and your family

WHAT IS HAPPENING

When the body is healthy, blood flow meets every organ's need for oxygen and fuel—picture a smooth highway delivering packages. That balance is called blood flow (perfusion) meeting metabolic demand. But shock means the delivery system broke. There are exactly four ways it can break: you lose too much blood (bleeding or severe dehydration), the heart pump fails (heart attack or weak heart muscle), blood vessels open too wide and leak (usually from infection spreading toxins into the blood), or something physically blocks the flow (like a blood clot in the lung or fluid squeezing the heart). Each type leaves different clues. Cold, pale, clammy skin means the body is shutting down surface blood flow to save what's left for the brain and heart—that happens in bleeding, heart failure, or blockage shock. Warm, flushed skin means the vessels are too open from infection toxins, so blood pools in the skin instead of the core—that's septic shock. As organs run short on oxygen, cells switch to emergency backup energy that makes lactic acid as waste, so lactate climbs in the blood. The kidneys slow down and make less urine. The brain gets foggy. The heart races to try to pump harder. None of this is random—every sign is the body's honest attempt to cope with one upstream break. Your job is to trace the clues backward, name which of the four causes is the culprit, and fix that broken part before the body runs out of tricks.

What you might feel

- Fast heart rate (tachycardia)
- Low blood pressure (hypotension)
- Fast breathing (tachypnea)
- Confusion or altered mental status
- Cool, pale, clammy skin or mottled (blotchy) skin
- Slow capillary refill (when you press the skin, color comes back slowly)
- Low urine output (oliguria)
- Weak or thready pulse

- Flat or collapsed neck veins (in hypovolemic or obstructive shock) or swollen neck veins (in cardiogenic shock)
- Warm skin and bounding pulse (in early distributive shock, especially septic shock)

Call the doctor right away if...

- Blood pressure stays low (systolic under 90) even after giving fluids
- Confusion, no response, or cannot wake the patient up
- Urine output drops to almost nothing (under 0.5 mL per kg per hour)
- Skin turns mottled (blotchy purple) or stays cold and pale
- Heart rate stays very fast (over 120) or becomes very slow and irregular

What the care team will do

- Get two large-bore IV lines (18-gauge or bigger) in place immediately and prepare for fluid bolus or blood transfusion
- Start continuous monitoring with blood pressure cuff cycling every 3 to 5 minutes, pulse oximeter, cardiac monitor, and place Foley catheter to measure urine output every hour
- Draw blood for lactate, complete blood count, type and cross-match, troponin, blood cultures before antibiotics, and basic metabolic panel
- Perform or assist with POCUS ultrasound to check IVC collapsibility, heart squeeze strength, fluid around heart, and lung sliding
- Assess skin temperature, capillary refill, mottling pattern, and mental status every 15 minutes
- Administer oxygen to keep saturation above 94% and prepare for intubation if respiratory rate over 30 or patient cannot protect airway
- Give antibiotics within one hour if fever or infection suspected, stop any bleeding source with pressure or call surgery, or prepare for cath lab if chest pain present
- Notify provider immediately for orders on fluid type and rate, vasopressor choice and dose, blood product transfusion, and consults for ICU, surgery, or cardiology

Medicines you may be given — and why

Norepinephrine (Levophed)

Norepinephrine is the first-choice pressure drug for most kinds of shock. It lands on tiny switches in the muscles wrapped around your blood vessels and tells them to squeeze. When the vessels tighten, blood pressure climbs and pushes blood forward to your brain, heart, and kidneys—the organs that need it most.

Crystalloid fluids (normal saline 0.9% or lactated Ringer's)

Crystalloid fluids are sterile salt water that matches the salt level in your blood. In shock, the amount of fluid inside your blood vessels drops—from bleeding, fluid leaking into tissues, or vessels opening too wide. Giving crystalloid refills the tank so your heart has enough volume to pump and deliver oxygen to your organs.

Packed red blood cells (PRBCs)

Packed red blood cells are the oxygen-carrying part of donated blood, with most of the liquid (plasma) removed. In bleeding-driven (hemorrhagic) shock (bleeding shock), you lose both volume and the cells that deliver oxygen. Giving PRBCs replaces those cells so your tissues can breathe again.

Fresh frozen plasma (FFP)

Fresh frozen plasma is the clear, straw-colored, protein-rich liquid part of donated blood. It carries clotting factors—proteins that work together in a chain reaction (the clotting cascade) to build clots and stop bleeding. In bleeding-driven (hemorrhagic) shock with massive bleeding, you lose or dilute these factors. Giving FFP replaces them so clots can form and bleeding slows.

Platelets

Platelets are small pieces of cells (made by megakaryocytes in your bone marrow) that patrol your bloodstream looking for damage. When a blood vessel tears, platelets rush to the injury, stick to the torn edges, clump together, and form a plug—the first seal. In massive bleeding, your platelet count drops (diluted by IV fluids and transfusions, or used up by clotting). Giving platelets restores the supply so clots can form and bleeding stops.

Epinephrine (adrenaline)

Epinephrine is your body's own emergency hormone—the chemical behind the fight-or-flight response. It works on multiple switches at once: it tightens blood vessels to raise pressure, makes your heart beat faster and harder, and relaxes the muscles around your airways so you can breathe. In anaphylactic shock (a severe life-threatening allergic reaction), blood vessels open wide, airways squeeze shut, and pressure crashes. Epinephrine reverses all three problems at once.

Dobutamine

Dobutamine works mainly on beta-1 receptors scattered across your heart muscle. It tells the muscle cells to contract more forcefully, so each beat pumps out more blood. In cardiogenic shock (when your heart is too weak or damaged to pump enough blood), dobutamine boosts the pump's strength without squeezing blood vessels as much as other pressure drugs do.

Milrinone

Milrinone blocks an enzyme called phosphodiesterase-3 (PDE-3) inside heart muscle cells and the smooth muscle cells that wrap blood vessels. Blocking this enzyme raises the level of cyclic AMP (cAMP), a chemical messenger. In the heart, more cAMP means stronger contraction. In blood vessels, more cAMP means the muscles relax and the vessels open wider. The result: your heart pumps harder and blood flows forward more easily because resistance drops.

Tranexamic acid (TXA)

Tranexamic acid blocks plasmin, an enzyme that dissolves clots. Normally, after a clot does its job sealing an injury, plasmin slowly breaks it down so blood can flow freely again. But in trauma or massive bleeding, the body sometimes activates plasmin too much and chews up clots before they can seal the wound, making bleeding worse. TXA slows that breakdown, giving clots time to hold and bleeding time to stop.

Calcium chloride or calcium gluconate

Calcium is essential for three big jobs: muscle contraction (including the heart), nerve signaling, and blood clotting. In massive transfusion, the citrate preservative in stored blood binds calcium and pulls the level dangerously low (hypocalcemia). Low calcium weakens the heart so it can't squeeze well, causes muscles to twitch or cramp, and slows clot formation. Giving calcium replaces what citrate steals and keeps all three systems working.

Sodium bicarbonate

Sodium bicarbonate is baking soda for your blood. In severe shock, your tissues don't get enough oxygen, so cells switch to anaerobic metabolism (making energy without oxygen). This process produces lactic acid as waste. Acid builds up in the blood, lowering pH (a condition called metabolic acidosis (acid building up in the blood)). Severe too much acid in the blood (acidosis) weakens the heart, blocks pressure drugs from working, damages organs, and worsens shock. Bicarbonate neutralizes acid and raises pH back toward normal, helping your heart and other treatments work better.

Vasopressin

Vasopressin (also called antidiuretic hormone, or ADH) is a hormone your body releases from the pituitary gland (a pea-sized gland at the base of your brain) to hold onto water and raise blood pressure during stress. It works on V1 receptors on blood vessel walls, telling the smooth muscle wrapped around vessels to squeeze. Unlike norepinephrine, vasopressin does NOT depend on adrenergic receptors (alpha and beta switches), so it can still work when those receptors are exhausted or down-regulated—common in septic shock when the body has been flooded with its own adrenaline-like chemicals for hours.

Where this information comes from

- AHA/ACC 2017 Shock and Hemodynamic Support Guideline
- Surviving Sepsis Campaign 2021
- NEJM Clinical Practice (Shock)
- Cochrane Reviews on Fluid Resuscitation

Last reviewed: 2026-07-07