

Shock

A plain-English guide for you and your family

WHAT IS HAPPENING

Your body runs on oxygen. Blood carries oxygen from the lungs to every cell, and the heart pumps that blood through miles of blood vessels. Think of it like a city water system: the heart is the pump, blood is the water, and vessels are the pipes. For the system to work, you need enough water in the tank (blood volume), a strong pump (heart muscle), and pipes that stay the right size (blood vessels that squeeze or relax). When one of these three things breaks, cells don't get the oxygen they need and they start to shut down. That's shock. There are four main ways it happens. Distributive shock means the pipes open too wide—like turning every faucet on at once—so pressure drops and blood pools instead of flowing (sepsis from infection, anaphylaxis from allergy, or neurogenic from spinal injury). Hypovolemic shock means the tank is empty—you lost too much blood or water (bleeding, vomiting, diarrhea, burns). Cardiogenic shock means the pump is broken—the heart muscle is too weak or too damaged to squeeze (heart attack, heart failure). Obstructive shock means something is blocking the pump from the outside (fluid squeezing the heart in a sac called tamponade, air trapped in the chest called tension pneumothorax, or a huge clot in the lung called massive PE). Once any one of these breaks happens, the body fights back. It pulls blood away from the skin and gut and sends it to the brain and heart—the organs you can't live without. That's why skin turns pale and cold, why you stop making urine, why you feel confused or dizzy. Your heart beats faster trying to push more blood. Lactate (a waste chemical) builds up because cells switch to emergency backup fuel that doesn't need oxygen. None of this is random. Every weird sign—the cold sweat, the racing pulse, the low blood pressure—is your body trying to buy time. The danger is that this buying-time phase can look almost okay for a while, then suddenly tip into organ failure. Every minute cells go without enough oxygen, more damage piles up. The goal is to catch it early, figure out which of the three things broke, and fix the upstream problem before the body runs out of tricks.

What you might feel

- Fast heart rate (tachycardia)
- Low blood pressure (hypotension)

- Cold, clammy, pale skin
- Weak or absent pulses
- Confusion or agitation
- Very little or no urine (oliguria or no urine output (anuria))
- Fast, shallow breathing (tachypnea)
- Mottled or blotchy skin (livedo reticularis)

Call the doctor right away if...

- Blood pressure stays low even after you give fluids through the IV tube
- The person is confused, very sleepy, or cannot wake up all the way
- Skin is cold, sweaty, and blotchy or has a blue color
- Urine output drops to almost nothing (less than 0.5 mL per kg per hour)
- Blood lactate level is high and going up (above 4 mmol/L). This shows tissues are not getting enough oxygen

What the care team will do

- Place the patient on a cardiac monitor and pulse oximeter, and get a full set of vital signs including blood pressure in both arms, heart rate, breathing rate, temperature, and oxygen saturation every 5 to 15 minutes
- Start two large-bore IV lines (18-gauge or bigger) immediately and prepare to give rapid IV fluid boluses as ordered, usually 30 milliliters per kilogram of crystalloid solution like normal saline or lactated Ringer solution in the first hour
- Give high-flow oxygen by non-rebreather mask at 10 to 15 liters per minute to keep oxygen saturation above 94 percent, or prepare to assist breathing with a bag-valve mask if the patient cannot protect their airway or breathe well
- Insert a urinary catheter (Foley catheter) and measure urine output every hour, with a goal of at least 0.5 milliliters per kilogram per hour
- Draw blood quickly for laboratory tests including complete blood count (CBC), lactate level, blood glucose, kidney function tests (creatinine and BUN), liver tests, and blood type and crossmatch if bleeding is suspected
- Assess skin temperature, color, and capillary refill by pressing on the fingernail or kneecap for 5 seconds and watching how fast color returns; check if neck veins are flat or bulging; listen to lung sounds for crackles or wheezes
- Keep the patient flat or in Trendelenburg position (head lower than feet) if blood pressure is very low and no signs of heart failure are present, and keep the patient warm with blankets but do not overheat

- Prepare emergency medicines at the bedside including epinephrine for anaphylaxis, vasopressors like norepinephrine for low blood pressure that does not respond to fluids, and have the crash cart and intubation equipment immediately available

Medicines you may be given — and why

Norepinephrine (Levophed)

Tightens blood vessels that have opened too wide, raising blood pressure so organs get enough flow. Think of it like turning a loose garden hose nozzle tighter so water shoots farther.

Epinephrine (Adrenaline)

Does two jobs at once: squeezes blood vessels to raise pressure AND makes the heart beat stronger and faster. Also relaxes airway muscles. This is the first-line drug for anaphylactic shock (severe allergic reaction).

Dobutamine

Makes heart muscle squeeze harder with each beat, pumping more blood forward. Used in cardiogenic shock when the heart is too weak to push blood out.

Normal saline or Lactated Ringer's (crystalloid fluids)

Refills the blood-vessel tank with salty water that stays in circulation long enough to restore pressure and flow. First-line treatment for most shock before pressors.

Packed red blood cells (PRBCs)

Replaces lost red blood cells to restore oxygen-carrying capacity. Used in bleeding-driven (hemorrhagic) shock (bleeding shock) when hemoglobin drops dangerously low.

Vasopressin

Squeezes blood vessels through a different receptor than norepinephrine, often added when norepinephrine alone is not enough in septic shock. Think of it as a backup squeezer.

Milrinone

Strengthens heart contractions and relaxes blood vessels at the same time. Used in cardiogenic shock, especially when blood is backing up into the lungs.

Hydrocortisone (corticosteroid)

Calms overwhelming inflammation and helps blood vessels respond better to pressors. Added in septic shock when high-dose pressors are still not enough. Also replaces missing cortisol if adrenal glands have failed.

Broad-spectrum antibiotics (e.g., piperacillin-tazobactam, meropenem, vancomycin)

Kill or stop the growth of bacteria causing the infection that triggered septic shock. Treating the root cause is the only way to truly reverse septic shock.

Where this information comes from

- Surviving Sepsis Campaign 2021 (SCCM/ESICM)
- AHA/ACC Shock and Cardiac Care guidelines
- ATLS (Advanced Trauma Life Support) 10th edition
- Cochrane systematic reviews on fluid resuscitation

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