

Hemoptysis

A plain-English guide for you and your family

WHAT IS HAPPENING

Your lungs get blood from two separate pipe systems. The pulmonary arteries bring dark, oxygen-poor blood from the heart at low pressure so it can pick up oxygen. The bronchial arteries bring bright, oxygen-rich blood from the body's main pump (the aorta) at high pressure to feed the airway walls themselves. Normally, the bronchial arteries are small and quiet, but when lung tissue gets damaged — by infection like tuberculosis, by widened airways called bronchiectasis, by a tumor, or by inflammation — those arteries grow bigger and their walls weaken. Then they can crack and bleed. Because bronchial arteries run at high pressure, even a small crack can pour a lot of blood fast. That blood spills into the breathing tubes, and if it fills the tubes faster than you can cough it out, it blocks air from reaching the tiny air sacs (alveoli) where oxygen moves into your blood. The danger is not bleeding to death like a cut on your skin — the danger is drowning in your own blood before your body runs out of volume. A small amount of blood-streaked spit is usually from something mild like bronchitis and the body clears it on its own. But coughing up a cupful or more in 24 hours, or blood that keeps coming, is an emergency — the team must protect your airway, find the bleeding vessel, and stop it within hours. Every breath you take and every cough you hear points back to that one upstream break: a vessel leaking into the lung, blocking the air you need.

What you might feel

- Coughing up blood that is bright red, frothy, and mixed with air bubbles
- Shortness of breath or feeling like you cannot get enough air
- Cough that keeps happening or gets worse
- Chest pain on one side, especially when you breathe in deeply
- Fever and chills
- Weight loss you did not try for, or feeling very tired all the time
- Fast heart rate or feeling your heart pounding
- Wheezing or a whistling sound when you breathe

Call the doctor right away if...

- Coughing up more than a few teaspoons of blood at once, or blood that keeps coming in large amounts (this can block your airway or mean a major vessel is torn)
- Sudden trouble breathing, very fast breathing, or blue lips or fingertips (signs your oxygen is dangerously low)
- Feeling dizzy, confused, or about to pass out (your brain is not getting enough oxygen or you have lost a lot of blood)
- Chest pain that is severe, crushing, or spreads to your arm or jaw (could be a heart problem or a clot in the lung artery)
- History of recent surgery, long travel, or a known clotting disorder (raises the chance of a pulmonary embolism (a clot lodging in a lung artery), a clot blocking the lung)

What the care team will do

- Apply continuous pulse oximetry and place the patient on high-flow oxygen or non-rebreather mask to keep oxygen saturation above 90 percent
- Position the patient sitting upright or with the suspected bleeding lung down if the side is known
- Establish two large-bore IV lines (18-gauge or bigger) and send blood for type-and-cross, complete blood count, PT/INR, PTT, and basic metabolic panel
- Hold all anticoagulants and antiplatelet drugs immediately and notify the provider for reversal agents if the patient is on warfarin, dabigatran, or heparin
- Keep the patient NPO (nothing by mouth) and prepare for emergent bronchoscopy or intubation with a double-lumen endotracheal tube
- Monitor vital signs every 15 minutes, watching for a fast heart rate (tachycardia) (heart rate above 100), low blood pressure (hypotension) (systolic blood pressure below 90), fast breathing (tachypnea) (breathing faster than 20), and decreasing oxygen saturation
- Measure and document the amount of blood expectorated using a graduated container or absorbent pads, and note color and consistency
- Notify interventional radiology and the ICU team immediately if coughing up blood (hemoptysis) is massive or the patient shows signs of respiratory distress

Medicines you may be given — and why

Tranexamic acid (TXA)

It blocks plasmin, the enzyme that breaks down blood clots. Think of it as putting a lock on the clot so it stays in place long enough to seal the bleeding vessel in the lung. This gives the body time to repair the damaged spot without the clot washing away too early.

Antibiotics (specific choice depends on the infection)

If the bleeding comes from infection—tuberculosis, pneumonia, lung abscess, or infected bronchiectasis (permanent widening of airways that traps mucus and bacteria)—antibiotics kill the germs that are eating away at blood vessels. Once the infection clears, inflammation drops and vessels heal, stopping the bleed.

Antifungal agents (e.g., voriconazole, amphotericin B)

Fungi like *Aspergillus* can grow a ball (aspergilloma) inside old lung cavities—from tuberculosis scars or bronchiectasis—and the fungus ball rubs against blood vessels, causing bleeding. Antifungals punch holes in the fungal cell wall or stop fungi from making the fats they need to survive. As the fungus dies, the irritation drops and bleeding can lessen, though often surgery or embolization is still needed to remove the ball.

Immunosuppressants (e.g., cyclophosphamide, rituximab, corticosteroids)

If bleeding comes from the immune system attacking blood vessels—vasculitis like granulomatosis with polyangiitis (GPA) or Goodpasture disease—these drugs turn down or redirect the immune assault. Corticosteroids (like prednisone) damp inflammation broadly. Cyclophosphamide wipes out fast-dividing immune cells. Rituximab kills B cells, the immune cells that make harmful antibodies. By stopping the attack, vessel walls stop breaking down and bleeding stops.

Reversal agents for anticoagulants (e.g., vitamin K, prothrombin complex concentrate, idarucizumab, andexanet alfa)

If you are on a blood thinner (warfarin, dabigatran, rivaroxaban, apixaban) and start coughing up blood, the thinner keeps the blood from clotting properly and can turn a small bleed into a dangerous one. Reversal agents either replace the clotting factors the drug blocks (prothrombin complex concentrate) or directly bind and neutralize the drug (idarucizumab for dabigatran, andexanet alfa for Xa inhibitors). This restores normal clotting so your body can plug the leak.

Where this information comes from

- American Thoracic Society (ATS)
- European Respiratory Society (ERS)
- American College of Chest Physicians (ACCP)
- CDC (for tuberculosis and infectious causes)

Last reviewed: 2026-07-07