

Status Asthmaticus

A plain-English guide for you and your family

WHAT IS HAPPENING

Normally, the small breathing tubes in your lungs stay open because tiny muscles wrapped around them stay relaxed. Those muscles have special locks on them called beta-2 receptors (tiny switches that tell the muscles to loosen up). When you breathe in albuterol through an inhaler or nebulizer, it flips those switches and the tubes open wide so air flows easily. Tiny hairs inside the tubes sweep mucus up and out, keeping the airways clear. In status asthmaticus, something — a virus, pollen, smoke, cold air, or even a pain medicine like ibuprofen — wakes up the immune system inside the airway walls. The immune cells flood in and cause swelling. The muscles around the tubes squeeze tight in a spasm. Thick, sticky mucus clogs the tubes. All three things pile up at once. The person uses their albuterol over and over, but the beta-2 switches stop answering because they have been flipped too many times in a row and they get tired or numb. Air flows in during a breath, but it gets trapped on the way out because the tubes collapse shut. The person works harder and harder to breathe, using their neck and rib muscles. At first you hear loud wheezing — a whistle as air squeezes through the narrow tubes. But as the tubes get tighter and almost no air moves, the wheezing stops and the chest goes silent. That silent chest is the danger sign, not a sign of improvement. Carbon dioxide, the waste gas you are supposed to breathe out, builds up in the blood because the lungs cannot get rid of it. The person gets tired, confused, and eventually too weak to keep breathing. This is a life-threatening emergency that needs oxygen, repeat breathing treatments, IV steroids, IV magnesium, and sometimes a breathing tube and ventilator to buy time for the medicines to calm the inflammation and open the airways again.

What you might feel

- Severe trouble breathing that does not get better with rescue inhaler
- Cannot finish a whole sentence without stopping for air
- Using neck, shoulder, and belly muscles to breathe
- Chest pulls in between the ribs or above the collarbones with each breath (retractions)
- Very quiet or silent breath sounds when listening to the chest with a stethoscope

- Peak flow or FEV₁ (how much air you can blow out in one second) under 50% of personal best
- Fast heart rate (often over 120 beats per minute)
- Sweating and looking very tired or sleepy despite struggling to breathe

Call the doctor right away if...

- Silent chest (no wheezing because almost no air is moving)
- Confusion, drowsiness, or trouble staying awake
- Blue lips or fingernails (cyanosis—not enough oxygen in the blood)
- Chest stops moving much or breathing becomes very slow
- No improvement or getting worse despite repeated rescue inhaler and emergency treatment

What the care team will do

- Sit the person completely upright and apply oxygen by mask or nasal cannula to keep SpO₂ between 93 and 95 percent.
- Start continuous albuterol nebulizer treatment and give ipratropium nebulizer every 20 minutes for three doses.
- Give systemic corticosteroids within the first hour—either methylprednisolone IV or prednisone by mouth if the person can swallow.
- Place the person on a cardiac monitor and watch for a fast heart rate above 120, irregular rhythm, or a drop in blood pressure.
- Prepare magnesium sulfate 2 grams IV to give over 20 minutes if the person does not improve after the first hour of albuterol and steroids.
- Listen to breath sounds every 15 minutes and watch how hard the person is working to breathe—look for silent chest, one-word answers, or the person leaning forward and unable to lie back.
- Have intubation equipment, ketamine, and a bag-valve mask at the bedside, and notify the respiratory therapist and provider immediately if SpO₂ drops below 90 percent or the person becomes drowsy.
- Start an IV line and give normal saline fluids at a maintenance rate unless the person is dehydrated from fast breathing and poor intake.

Medicines you may be given — and why

Oxygen (high-flow nasal cannula or face mask)

Pure oxygen raises the oxygen level in the blood when the airways are squeezed shut and the lungs cannot pull in enough on their own. It keeps the body's cells fed while the other medicines open the airways back up.

Albuterol (also called salbutamol)

Albuterol flips the 'relax' switch on the smooth muscle wrapped around the airways. The muscle loosens, the airway opens wider, and air can flow in and out again.

Ipratropium bromide

Ipratropium blocks the acetylcholine signal that tells the airway muscles to squeeze. By blocking that signal, it adds extra airway opening on top of what albuterol does.

Methylprednisolone (IV) or Prednisone (by mouth)

Steroids turn down the whole inflammation storm in the airways. They shrink the swollen airway lining, stop immune cells from pouring out attack chemicals, and make the beta-2 receptors work better so albuterol has more effect.

Magnesium sulfate (IV)

Magnesium acts like a natural brake on muscle contraction. It blocks calcium from entering airway muscle cells, so the muscle cannot squeeze as hard. This adds another layer of airway opening when albuterol and ipratropium are not enough.

Epinephrine (intramuscular injection)

Epinephrine is the body's all-out emergency signal. It relaxes airway muscles (through beta-2 receptors), shrinks swollen blood vessels in the airway lining (through alpha receptors), and steadies mast cells to stop further release of histamine and other attack chemicals. It works fast and powerfully when all else is failing.

Terbutaline (subcutaneous injection)

Terbutaline works the same way as albuterol—it flips the beta-2 relax switch on airway muscles—but it is given as a shot under the skin (subcutaneous) so it reaches the bloodstream and lungs even when the airways are too tight for inhaled medicine to get through.

Heliox (helium-oxygen mixture)

Heliox is a blend of helium and oxygen (usually 70% helium, 30% oxygen or 60/40). Helium is much lighter than nitrogen (the main gas in normal air), so the mix flows through narrowed

airways more easily, reducing the work of breathing and buying time for the other medicines to open the airways.

Ketamine (IV, for intubation sedation and as bronchodilator adjunct)

Ketamine puts the patient into a trance-like state for intubation without dropping blood pressure or stopping breathing. As a bonus, it also relaxes airway smooth muscle and reduces airway secretions, making it the safest sedative for a crashing asthma patient who needs a breathing tube.

Where this information comes from

- NHLBI Expert Panel Report 3 (EPR-3) on Asthma Management
- Global Initiative for Asthma (GINA) 2023 Report
- American College of Emergency Physicians (ACEP) Clinical Policy on Acute Asthma
- Cochrane systematic reviews on acute asthma treatment

Last reviewed: 2026-07-07