Understanding asthma

A confirmed diagnosis and knowing your triggers are the first steps to fewer attacks.

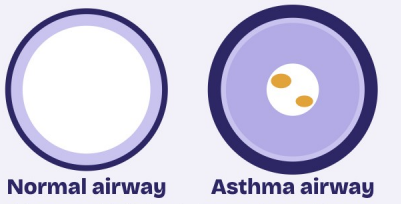
1. What is asthma?

Asthma is **long-term swelling (inflammation) of the airways**. Swollen airways overreact to triggers and narrow. Symptoms come and go, but the swelling is often there even on good days.

Symptoms: wheezing, cough (often at night or with exercise), shortness of breath, chest tightness.

Common triggers: colds and flu, allergens (dust mites, pets, pollen, mold), smoke and vaping, exercise, cold air, strong smells.

INSIDE AN AIRWAY



Normal airway wide open, thin lining

Asthma airway tight muscle, swelling, mucu

2. How asthma is diagnosed: two things must be true

PART 1 · YOUR STORY

Symptoms that come and go

Symptoms that **vary over time and in strength**, are often worse at night or on waking, and are set off by triggers.[1]

PART 2 · PROOF ON A BREATHING TEST

Spirometry shows air leaving the lungs too slowly, **plus at least one** of these:[1]

Albuterol response: FEV1 rises 12% or more and at least 200 mL

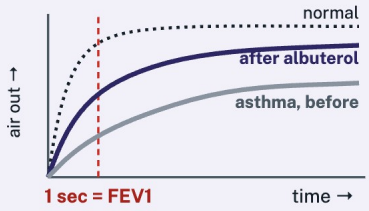
Challenge test: FEV1 falls 20% or more with methacholine, or 10% or more with exercise

Treatment response: same rise after about 4 weeks of a controller

Peak flow diary: large swings in twice-daily readings over 1–2 weeks

3. Why spirometry matters

ONE HARD, FAST BREATH OUT



Confirms the diagnosis. Vocal cord dysfunction, reflux and heart problems can mimic asthma. Testing avoids years of medicine you may not need.

Feelings can mislead. Some people feel fine with low lung function. Repeat at diagnosis, after starting treatment, and every 1–2 years.[5]

Before your test: skip albuterol for 4–6 hours if you safely can. Ask us about your other inhalers.

THE EVIDENCE

1 in 3

adults diagnosed with asthma did **not** have it when retested with breathing tests.[2]

4. Allergy and asthma go together

Find it

Allergic asthma is the most common type. Skin or blood tests show which allergens matter for **you**.

Control it

Nose and lungs are **one airway**: treating nasal allergies helps asthma. Cut exposure at home.

Treat the cause

Allergy shots or tablets. A dust mite tablet cut moderate to severe attacks by about **30%**.[4]

THE EVIDENCE

19×

higher odds of a hospital stay: child with a cold, allergic **and** highly exposed.[3]

Sources

1. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2025 update. ginasthma.org. · 2. Aaron SD, et al. Reevaluation of diagnosis in adults with physician-diagnosed asthma. *JAMA*. 2017;317(3):269-279.

3. Murray CS, et al. Virus infection and allergen exposure increase the risk of asthma hospital admissions in children. *Thorax*. 2006;61(5):376-382. · 4. Virchow JC, et al. Efficacy of a house dust mite sublingual allergen immunotherapy tablet in adults with allergic asthma. *JAMA*. 2016;315(16):1715-1725.

5. National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. NHLBI; 2007.

Treating asthma day to day

One inhaler, the right technique and a clear plan for when symptoms flare.

1. SMART therapy: the same inhaler every day and for symptoms

What it is. **S**ingle **M**aintenance **A**nd **R**eliever **T**herapy: one inhaler, **budesonide-formoterol** (Symbicort, Breyna or generic), as both daily controller and rescue.

Why it works. Formoterol opens airways in 1–3 minutes, like albuterol, and every rescue puff adds steroid to calm the swelling. Guideline-recommended for most people ages 4 and up.[3,4]

My daily dose: ____ puffs, ____ times a day · **Strength:** 80/4.5 ☐ 160/4.5 ☐

SEVERE ATTACKS PER 100 PEOPLE A YEAR



Reliever only (grey) vs **budesonide-formoterol** (navy): **64% fewer.**[1]

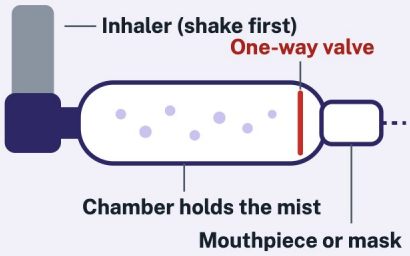
THE EVIDENCE

~1/3 fewer

severe attacks with SMART than controller plus albuterol, in 16 trials.[2]

2. Use a spacer with every puff from a spray inhaler

PARTS OF A SPACER



1 Shake and attach. Cap off, shake 5 seconds, push into the back of the spacer.

2 Breathe out, then seal. Breathe out fully, then close lips tightly on the mouthpiece.

3 One press, slow breath. Breathe in slowly over 3–5 seconds. Mask: 6 normal breaths.

4 Hold 10 seconds. Wait 30–60 seconds between puffs. Rinse and spit after steroids.

Why bother? More medicine reaches the lungs, less stays in the throat. During an attack, inhaler plus spacer works **as well as a nebulizer.**[5]

3. Know when to take action

ON SMART · SYMPTOMS START

Take an extra puff

Take **1 puff**. Still tight after a few minutes? Take 1 more.

Daily maximum (all puffs):
12 puffs of 160/4.5, ages 12+
8 puffs of 80/4.5, ages 4–11[3]

NOT WELL CONTROLLED

Call us for a visit if you

Use **albuterol more than 2 days a week** (not counting exercise).

Need **extra SMART puffs more than 2 days a week**, or near your maximum.

Wake at night **more than twice a month**, or needed steroid pills or the ER.

EMERGENCY

Call 911 or go to the ER

Very hard to breathe, walk or talk.

Blue or grey lips; skin sucking in at ribs or neck.

Puffs not helping, or at your daily maximum and still struggling.

Sources

1. O'Byrne PM, et al. Inhaled combined budesonide–formoterol as needed in mild asthma (SYGMA 1). *N Engl J Med.* 2018;378(20):1865-1876. · 2. Sobieraj DM, et al. Association of ICS and LABA as controller and quick relief therapy with exacerbations and symptom control in persistent asthma. *JAMA.* 2018;319(14):1485-1496.
3. NAEPP Expert Panel Working Group. 2020 focused updates to the asthma management guidelines. *J Allergy Clin Immunol.* 2020;146(6):1217-1270. · 4. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2025 update. ginasthma.org.
5. Cates CJ, Welsh EJ, Rowe BH. Holding chambers (spacers) versus nebulisers for beta-agonist treatment of acute asthma. *Cochrane Database Syst Rev.* 2013;(9):CD000052.