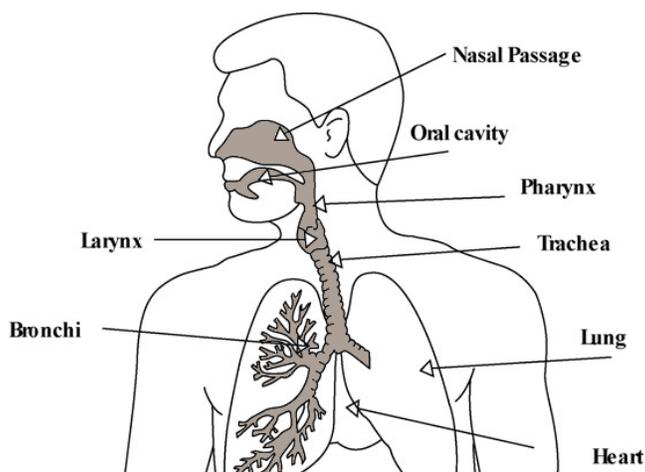


Got Air? A Healthy Airways Guide



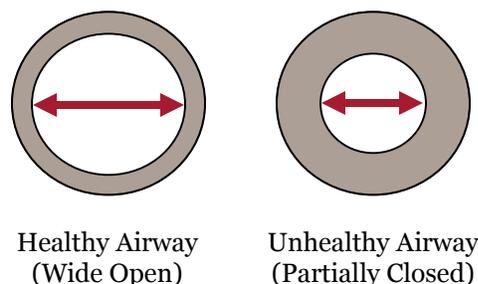
Let's Talk About Airways

Our airways are tubes that carry the oxygen in the air we breathe into our lungs. They include the nose, mouth, pharynx, trachea (windpipe), two bronchial tubes (also known as bronchi), and many smaller bronchioles. The tubes also carry carbon dioxide, a waste product of metabolism, out of our lungs.

When we are healthy, these tubes are open and allow the air to flow in and out easily. When we have a cold, the tubes or passages in the nose become blocked. When we have asthma, cells lining the trachea and bronchi become inflamed and swollen; the tube becomes partially closed.

What Is Peak Expiratory Flow?

We all know that more air can be blown through an open tube or airway than through a partially closed tube or airway. To determine the health of our airways, doctors and scientists developed a way to measure how much air can be blown out of the lungs with one strong "huff." They call this measurement Peak Expiratory Flow (PEF). Peak Expiratory Flow is the largest or highest (peak) amount of air that can be blown out (expired) in one "huff." An instrument known as the Wright Peak Expiratory Flow meter is now used to measure this flow of air. Children with asthma often use a similar meter to monitor the openness of their airways.



Healthy Airway
(Wide Open)

Unhealthy Airway
(Partially Closed)

How Can I Measure My Peak Expiratory Flow?

1. Put a cardboard tube in the Wright PEF meter. Set the arrow to zero.
2. Take a DEEP breath in, close your mouth tightly around the cardboard tube, and blow out the air in a strong "huff" as fast as you can, emptying your lungs of air.
3. Record your reading on a sheet of paper—that was for practice!
4. Set the arrow to zero three times, blow into the Wright PEF meter each time, and write down each reading.
5. Take the highest of three readings as your best score and make an "X" on the chart on the other side of this handout where your height and your PEF value intersect.

PEF is measured in liters per minute. As we grow until about 35, our lungs and airways grow larger, increasing the possible PEF score. After 35, our airways lose elasticity, decreasing the possible PEF score.

How Can I Keep My Airways Healthy?

- Do not smoke, do not start smoking, and avoid secondhand smoke as much as possible.
- Exercise and play away from major roads—at least 50 feet or more is ideal. Avoid rush hour too if possible.
- Keep your house clean of allergens like dust and mold, and take measures to discourage pests.
- Avoid exposure to dust, fumes, and gases at work and at home.
- If you are exposed to dust, fumes, or gases, be sure to use a protective respirator and ventilate the area.
- Engage in regular exercise and maintain a balanced diet.
- If you do have asthma or a similar condition, work with your doctor to manage it safely. This guide is not a replacement for medical guidance.

This activity is an outreach effort of the Community Outreach and Engagement Core (COEC) of the NIEHS-funded Harvard-NIEHS Center for Environmental Health, Grant Number P30ES000002. Contact Ann Backus at abackus@hsph.harvard.edu or 617-432-3327 for more information.



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