

## Managing Your Asthma: Using a Peak Flow Meter

A peak flow meter is an inexpensive, portable, handheld device that is used to measure how well air moves out of your lungs. Measuring your peak flow using this meter is an important part of managing your asthma symptoms and preventing an asthma attack.

The peak flow meter works by measuring how fast air comes out of the lungs when you exhale forcefully after inhaling fully. This measure is called a "peak expiratory flow," or "PEF." By keeping track of your PEF, you can know if your symptoms of asthma are in control or worsening. Why Use a Peak Flow Meter? Readings from a peak flow meter can help you or your child recognize early changes that may be signs of worsening asthma. During an asthma attack, the muscles in the airways tighten and cause the airways to narrow. The peak flow meter alerts you to the tightening of the airways often hours or even days before you have any asthma symptoms. This allows you to know when to take your rescue (quick acting) asthma inhaler or other asthma medicine. By taking rescue medications before you have symptoms of an asthma attack, you may be able to stop the narrowing of the airways quickly and avoid a severe asthma emergency. The peak flow meter can also be used to help you:

- Learn what triggers your asthma
- Decide if your asthma action plan is working
- Decide when to add or adjust asthma medications
- Know when to seek emergency care It is important to know that your peak flow meter only measures the amount of airflow out of the large airways of the lungs. Changes in airflow caused by the small airways (which also occur with asthma) will not be detected by a peak flow meter. Early warning signs, however, may be present. Therefore, it is important for you to also be aware of your symptoms and early warning signs to best manage your asthma. Who Should Use a Peak Flow Meter? Peak flow meters are very helpful if you or your child have moderate to severe asthma and require daily asthma medications. Even children ages 4 and up should be able to use a peak flow meter with good results. People with moderate-to-severe asthma should have a peak flow meter at home. How Do I Use the Peak Flow Meter? A peak flow meter is simple to use. Here's what you do:
  - Stand up or sit up straight.
  - Make sure the indicator is at the bottom of the meter (zero).
  - Take a deep breath in, filling the lungs completely.
  - Place the mouthpiece in your mouth; lightly bite with your teeth and close your lips on it. Be sure your tongue is away from the mouthpiece.
  - Blast the air out as hard and as fast as possible in a single blow.
  - Remove the meter from your mouth.
  - Record the number that appears on the meter and then repeat steps 1-7 two times.
  - Record the highest of the three readings in an asthma diary. This reading is your peak expiratory flow (PEF). To ensure the results of your peak flow meter are comparable, be sure to use your meter the same way each time you take a reading. How Often Should I Check My Peak Flow? Peak flow values are best if they are checked at the same time each day, preferably once in the morning and again at night. How Do I Determine My "Personal Best" Peak Flow Number? The "personal best" peak expiratory flow (PEF) is the highest peak flow number you or your child can achieve over a 2- to 3-week period when asthma is under good control. Good control means you feel good and do not have any asthma symptoms. Your personal best PEF is important because it is the number to which all of your other peak flow readings will be compared. Your asthma action plan, developed along with your asthma doctor, is based on this number. To find your personal best peak flow number, take peak flow readings:
    - Twice a day for 2-3 weeks when asthma is in good control
    - At the same time in the morning and in the early evening
    - Before taking a short-acting beta-2 agonist (a bronchodilator) for quick relief (if you or your child takes this medication)
    - As instructed by your doctor or asthma care provider Once you have determined your or your child's personal best PEF, work with your asthma care provider to determine at what point you should start taking quick-relief medicines to relieve an asthma attack or seek emergency medical attention. These are called your asthma peak flow zones. All of this information should be recorded in your personal asthma action plan. Then, continue to take peak flow readings each morning. Daily readings will help you:
      - Recognize early drops in airflow
      - Know when your child's personal best improves naturally as he or she grows If your morning PEF drops below 80% of your personal best, follow your asthma action plan and check PEF more frequently that day or as directed by your doctor. Seek immediate help before your asthma symptoms worsen.