

## Peak Flow Monitoring

### What is a Peak Flow Meter?

A peak flow meter is a small, easy-to-use instrument that enables you or your child to measure lung function at home, at work, at school — wherever you go. The peak flow meter measures how fast a person can blow out air after a maximum inhalation. It helps reveal how well you or your child's lungs are working. This is called the peak expiratory flow rate.



### Why Use a Peak Flow Meter?

People with asthma cannot always feel the early changes taking place in their airways because these changes often occur gradually. By the time symptoms of asthma develop, you can be experiencing a 25 percent or greater decrease in lung function.

A daily (or regular) record of peak flow numbers can provide you with a valuable early warning sign. Sometimes peak flow numbers will decrease hours, or even a day or two before other asthma symptoms become evident. When you monitor peak flow numbers on a daily (or regular) basis, you can identify this drop and take steps to prevent an asthma episode. The peak flow numbers, along with early warning signs and asthma symptoms can be used to make decisions about asthma treatment.

Many asthma experts agree that people with asthma can benefit from an objective means of assessing the severity of their condition. The peak flow meter is an inexpensive, practical way to measure lung function at home.

The peak flow meter measures how fast you or your child can blow air out after taking a deep breath. This measurement, which is read as a number, may reflect the amount of obstruction in the airways.

Monitoring the peak flow numbers can help you and your health care provider assess

lung function. It is a valuable number to use in making decisions about the following:

- Effectiveness of asthma medications
- Adding or stopping medication(s)
- When to seek emergency care
- Environmental control measures

Young children, often by age 4 or 5, can learn to use a peak flow meter and produce reliable, consistent results. It is important to know that peak flow numbers are effort dependent. This means you or your child needs to put forth a good effort to have reliable, consistent results.

## How to Determine Your Personal Best?

The highest number you or your child can blow regularly is the "personal best". This is determined by recording values for two to three weeks when the asthma is under good control. Use the highest number you or your child can *regularly* blow. Asthma is often controlled when you or your child does not experience asthma symptoms (including nighttime symptoms) and maintains a normal level of activity. Peak flow values typically are highest at the midday or early evening, so use these readings to determine your personal best. Talk with the health care provider about your or your child's "personal best".

## How to Determine Your Zones?

Once your personal best is determined, it may be helpful for you and your health care provider to establish zones. Zones will cue you about how well your breathing is and actions you should take. The zone system can be compared to the colors of a traffic light, green, yellow and red.

**Green Zone** (often 80%-100% of personal best) signals ALL CLEAR.

This indicates good lung function. Follow the routine treatment plan for maintaining asthma control.

**Yellow Zone** (often 50%-80% of personal best) signals CAUTION.

You or your child may need more aggressive medical management for asthma. This may include a temporary increase in quick-relief medicine and inhaled steroid medicine, an oral steroid burst or other medicines as prescribed by your doctor.

**Red Zone** (often 50% or less of personal best) signals a MEDICAL ALERT!

You or your child needs immediate treatment with a quick-relief medicine. Notify your

doctor or seek emergency care if peak flow numbers do not immediately return and stay in the yellow or green zones.

Many peak flow meters have zone indicators or you can mark the peak flow meter with colored tape, dots or lines to indicate the green, yellow and red zones. Remember, the peak flow percentages we suggest are **guidelines** only. Establish peak flow zones with your health care provider. In children, the personal best number and the zone numbers will change as the child grows or as the asthma condition changes; these numbers should be reevaluated every six months to one year.

It can be helpful to record peak flow values on a graph or in a diary. The peak flow information should supplement record keeping of asthma symptoms, use of inhaled medications, activity level and nighttime awakenings due to asthma. This allows you, your child and your health care provider to monitor trends that indicate changes in lung function.

## When to Use a Peak Flow Meter

The frequency that you and your child record peak flow numbers depends upon the severity of the asthma, the season, the pattern of symptoms and other factors specific to each person. People with moderate, severe or unstable asthma may need to record peak flow values twice a day. People with mild or stable asthma may only need to use their peak flow meters two to three times a week. However, peak flow readings should be taken daily when you or your child:

- are exposed to asthma triggers (such as allergens, smoke and other environmental irritants), or
- have a respiratory infection, or
- have changes in medical therapy.

## How to Use a Peak Flow Meter

1. Place the indicator at the bottom or beginning of the numbered scale.
2. Stand up (or sit up straight).
3. Take a deep breath in.
4. Place the mouthpiece in your mouth; close your lips around the mouthpiece. Do not put your tongue in the hole.
5. Blow out as hard and as fast as you can without bending over.
6. Write down the number that you get.
7. Repeat steps 1 through 6 two more times.
8. Keep a record of the highest of the three numbers.

Remember to clean your peak flow meter to keep it recording accurately. To clean your peak flow meter, follow the manufacturer's directions.

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