

PEAK FLOW MONITORING

STATEMENT OF THE PROBLEM

Peak flow is a tool that measures how well air moves out of the lungs. Guidelines for the Diagnosis and Management of asthma show that peak flow and symptom-based asthma action plans are equally effective in adults. Peak flow monitoring for self-management of asthma may be less effective for preschool children.

“ Long-term daily peak flow monitoring should be considered for patients who have moderate or severe persistent asthma (Evidence B), poor perception of airflow obstruction or worsening asthma, unexplained response to environmental or occupational exposures, and others at the discretion of the clinician and patient.” Source: Expert Panel Report, pg. 120.

Poor perception of airflow can often come up for adolescents who have normalized their uncontrolled asthma symptoms and don't see the need to treat with their rescue inhaler. They may feel that they always feel bad and they always have a hard time breathing. Daily monitoring with peak flows to compare these peak flow numbers to their previously written zones when they have felt fine will be important for them to do to see evidence that they are breathing poorly and that they can take action.

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BACKGROUND

Peak flow monitoring is meant to be used for people living with asthma 6 years old and older along with the individual's Asthma Action Plan. It is a tool to be used along with observations of the individual's symptoms and their symptom patterns. Children at 6 and 7 need their parents help to be able to use a peak flow meter correctly.

Knowing triggers, and avoiding them

If the individual living with asthma is 6 years-old or older and his/her asthma symptoms escalate suddenly without your ability to observe them escalating or if the individual living with asthma is unaware of his/her symptoms and can't articulate that her/his airflow is obstructed then use the peak flow meter to be better able to prevent asthma attacks, provide medication and handle asthma when the child is still in their yellow zone.

CHILD

While use of a peak flow meter is not recommended for children under 6 years old, teaching asthma management skills to young children is critical at all ages. This means that talking about asthma is

important even if your child is as young as two. There are many things that a 3 year-old with asthma can do with your help that at 5 they will be able to do with your supervision and won't need your help to do. At other developmental points your child will be doing a lot to manage their own asthma and you will have provided them the tools through your good teaching for them to be effective in managing their asthma.

Assessment

- Check to see if peak flow monitoring is being done, and with correct technique. Watch patient as they do a peak flow reading.
- Assess patient motivation to monitor peak flow.
- Review numbers on peak flow monitoring chart.

Educational Messages

What a Peak Flow Meter is and why it's important:

- A peak flow meter is a tool that measures how well air moves out of the lungs (large airways). This is a measurement of how asthma is affecting the lungs.
- A peak flow meter can help with asthma management.
- During an asthma episode, the airways in the lungs begin to narrow slowly. The peak flow meter can be used to determine if there is narrowing in the airways, even before symptoms appear. It can provide an early warning that asthma is getting worse.
- A peak flow meter can help determine when to start asthma medicines in order to stop the episode quickly and avoid a serious asthma attack.
- A peak flow meter can be used intermittently around the time of acute asthma symptoms, at the onset of an upper respiratory infection, and during any acute episodes. Long-term daily monitoring should be considered for people with moderate to severe asthma, a history of severe asthma attacks and with people who can't tell when their airflow is obstructed as well as those who prefer this method of monitoring.
- Long-term daily monitoring should be considered for children with moderate to severe asthma, history of severe asthma attacks, and children who can't tell when their airflow is obstructed.
- The peak flow measurement varies by height, sex, and age.
- Measuring peak flows is one way of monitoring asthma. Keeping track of symptoms is also important. If symptoms are getting worse, even if peak flow remains good, it is important to take action based on the Asthma Action Plan.
- Know your symptoms, write them down and call your provider when necessary.

Peak Flow Meter Technique:

- Stand up.
- Slide button down to zero.
- Hold the meter so as not to block the button or the airflow.
- Take a deep breath.

- Place the meter in your mouth, close your lips around the tube and blow one time as fast and hard as you can in a single blow through your mouth (not your nose).
- Find your number by looking for where the button moved.
- Repeat 2 times.
- Write down the highest number achieved.
- Place this number into the Asthma Action Plan Zone chart, where does it fall?
- Peak flow monitoring measures airflow only in the large airways. It is highly effort dependent.
- Measurements can be falsely high or low. Falsely high measurements may occur with coughing, spitting, or allowing the tongue to get in the way of blowing. Falsely low measurements may occur with blowing too slowly (not hard and fast), not sealing the lips around the tube, blowing through the nose, or blocking the vent or button with a finger.

RECORDING PEAK FLOW NUMBERS/DIARY:

- Some people like to check peak flow every day to keep track of how asthma is doing. If the peak flow starts dropping, this can be an early sign that asthma is getting worse. If you do this:
- Measure peak flow at the same time every day: in the morning before taking medicines or in the evening before taking medicines. Do three measurements each time.
- Write down the best (highest) measurement in a peak flow diary and in your action plan. Your personal best peak flow should be used as a reference value in your plan. Personal best peak flow is the highest peak flow number you can achieve over a two week period when your asthma is under good control (no asthma symptoms).
- Compare the number from today with the numbers from the past week or two. If the numbers are going down, ask your health provider what to do.
- Checking peak flow numbers when asthma might be getting worse is helpful for everyone with asthma.
- Measure peak flow when you are having asthma symptoms, an asthma attack or a cold to see how your asthma is affecting your lungs.
- Compare the number with your personal best number. If it's lower (i.e. less than 80% of the best number), then you need to take action before asthma gets worse.
- You can measure peak flow before you use your asthma medicines, and again afterwards to see if your medicines are helping.
- Take peak flow readings every day for 2 weeks to determine your best measurement.
- Check in the afternoon or evening before using your bronchodilator.
- Record time and date and highest number achieved in your diary.
- Your health care provider will want the diary with the peak flow numbers to determine your personal best.

UNDERSTANDING PEAK FLOW METER NUMBERS:

- Peak Flow Zone System
- **Green Zone** (80% of personal best # / no asthma symptoms)
- All clear. Breathing is normal. Asthma is in good control. Go-ahead on all activities. Take medicines as usual.

- **Yellow Zone** (50-80% of personal best # / early warning symptoms)
- Caution. Signals the presence or beginning of minor symptoms. Slow down. An asthma episode may be starting. Your overall asthma may not be under control. You may need to increase your medicines or your health care provider may need to change your medicine plan. Refer to your Action Plan.
- **Red Zone** (<50% of personal best # / late warning symptoms)
- Danger/Medical Alert. Serious problem that needs immediate attention. Take rescue inhaler right away and call health care provider if peak flow reading doesn't increase and stay up. Refer to your Action Plan.
- Call 911 if
 1. Provider is not available and
 2. Breathing isn't relieved after using rescue inhaler once, waiting 10-15 minutes and then using it again and waiting 10-15 minutes for relieved breathing.
- Knowing which zone you are in can help you make treatment decisions, and take action early to prevent or treat the problem before red zone emergencies.

TAKING CARE OF YOUR PEAK FLOW METER

- To clean the Peak Flow Meter, wash with soap and water, rinse well, shake out excess water and dry on a clean towel.

ACTIONS

CHW ACTIONS	CAREGIVER/CHILD ACTIONS
<ul style="list-style-type: none"> • Demonstrate peak flow meter use and observe use by patient. • Assess when and how often client uses peak flow meter. • Encourage use of peak flow meter if asthma symptoms are present, when a cold begins or during an acute asthma episode. • Demonstrate how to record peak flows in diary. • Review diary to see if diary is being used properly. • Review entries in diary (or ask patient how peak flows have been doing if no diary available). If readings are frequently (more than twice a week) less than 80% of personal best, let the Primary Care Provider know. • Demonstrate how to determine zone of peak flow measurement and assess client's understanding. • Review care and cleaning of Peak Flow Meter. 	<ul style="list-style-type: none"> • Use peak flow meter correctly. • Use peak flow meter when having asthma symptoms, when a cold develops, or during an acute episode. • Record peak flow numbers in diary. • Bring diary to appointments. • Determine your personal best peak flow number. • Keep meter clean.

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FOLLOW-UP VISITS

Review use of peak flow meter and completing the action plan accurately

SUPPLIES

- Peak Flow Monitor.
- Peak Flow Diary.

EDUCATION HANDOUTS

REFERRALS

Health care provider as needed