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MEDfacts

An Educational Health Series From National Jewish Health®

Using the Asma-1™ Peak Flow Meter

What is the asma-1 peak flow meter?

The asma-1 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. The asna-1 measures PEF. This is the peak expiratory flow rate. In addition, the asma-1 also measures FEV1. This is the Forced Expiratory Volume in the first second you exhale. Many peak flow meters measure PEF, but not FEV_1. The asma-1 peak flow meter measures both.

Why use an asma-1 peak flow meter?

People with asthma may not always feel the early changes taking place in their airways because these changes often occur gradually. In addition to watching for daytime symptoms, nighttime symptoms and activity level the asma-1 meter can help you monitor asthma control. A peak flow meter can be useful if you or your child have moderate to severe asthma or have trouble identifying asthma symptoms.

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 watching for asthma symptoms and activity can be used to make decisions about level of asthma control and treatment.

People with asthma can benefit from an objective means of assessing asthma symptoms. The asma-1 meter is an inexpensive, practical way to measure lung function at home.

The asma-1 meter measures how fast and how much air you or your child can blow out after taking a deep breath. As reviewed above, these measures are PEF and FEV1. These measures, which are read as numbers, may reflect the amount of obstruction in the airways. Monitoring PEF and FEV1 numbers can help you and your health care provider assess lung function. This is helpful in making decisions about the following:

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

Peak flow and FEV1 numbers are effort dependent. This means you or your child needs to put forth a good effort to have reliable, consistent results.

How to insert or change the batteries in the asma-1 meter

The asma-1 meter does not come with the batteries in the device. You must put the batteries in the device before you use it. The battery cover is on the back of the device.

1. Open the battery cover.
2. Insert the 2 AAA 1.5V batteries. Place the negative and positive side in the correct position.
3. Replace the battery cover.

How to use the asma-1 meter

1. Attach the mouthpiece to the device.
2. Press the round white ON/OFF button to turn the monitor on.
3. The display will show a circle icon when it is ready for a test.
4. Stand up (or sit up straight). Hold the asma-1 meter with both hands.
5. Take a deep breath in.
6. Place the mouthpiece in your mouth; close your lips around the mouthpiece. Do not put your tongue in the mouthpiece.
7. Blow out as hard and as fast as you can without bending over. Blow for a second or more.
8. Wait about 3 seconds and the results will be displayed. The PEF will be displayed first, then the FEV1.
9. With the circle icon is displayed, repeat steps 4 through 8. Usually 3 blows are required.
10. To view the best PEF and FEV1 push the enter (middle white) button. The best PEF and FEV1 are stored in the device.

Note: If the ! appears, the technique was poor and you need to blow again. Remember to blow hard and fast.

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 peak flow numbers for two to three weeks when 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 have asthma symptoms (including nighttime symptoms) and maintains a normal level of activity. Talk with the health care provider about your or your child's "personal best".

Setting the personal best with the asma-1

1. Press on ON/OFF button to turn the monitor on.
2. When the device is ready for a test, press the ▼ and ▲ buttons together for 3 seconds. These are the white buttons on each side of the enter button.
3. The reference PEF value can now be set. Press the ▲ button and release it when the personal best value is reached. Press the ▼ button to decrease the values.
4. Press ENTER to keep the personal best value.
5. Press ENTER again to exit or to set the best FEV1 value.

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.

You or your child’s health care provider can help determine what the personal best is and what steps to take when the peak flow numbers are each zone.

Setting the zones with the asma-1

1. Press on ON/OFF button to turn the monitor on.
2. When the device is ready for a test, press the ▲ and enter buttons together for 3 seconds.
3. The reference PEF determining the green to yellow zone can now be set. Press the ▲ or ▼ button until the value is reached.
4. Press ENTER to keep the green to yellow value.
5. The reference PEF determining the yellow to red zone can now be set.
6. Press the ▲ or ▼ button until the value is reached.
7. Press ENTER to keep the yellow to red value.

8. Press ENTER again to exit or to set the best FEV1 value.

Keeping a record

The asma-1 meter holds up to 600 test results in the memory. To view the stored tests:

1. When the device is ready for a test, press the enter button for 3 seconds. The most recent test will appear.
2. Press the ▲ to see previous tests.
3. Press enter to return to the test screen.

Keeping a record of the highest PEF and FEV1 blows is helpful. The record may be:

- Graphing the highest of the three results on a graph or diary.
- Recording the highest of the three results on a calendar.

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 do you use your asma-1 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 and people who have trouble identifying asthma symptoms may need to record peak flow measures twice a day.

How do you clean and disinfect the asma-1 meter at home?

Remember to clean and disinfection your asma-1 Meter to keep it recording accurately. To clean and disinfection your meter:

Mouthpiece

1. Once a week disconnect the mouthpiece from the device wash it in warm soapy water. Rinse it in clean water.
2. Shake of the excess water and dry thoroughly on a towel.
3. Wipe it with an alcohol wipe.
4. Once dry, put the mouthpiece back on the device.

Main Unit

1. Wipe the main unit off daily with a clean damp cloth. Do not put the main unit in water.
2. Wipe with an alcohol wipe weekly.

Note: Review the Vitalograph Asma-1 User Manual for complete information.

Remember, in addition to watching for daytime asthma symptoms, nighttime asthma symptoms and activity level the asma-1 meter can help you monitor asthma control. This can be useful if you or your child have moderate to severe asthma or have trouble identifying asthma symptoms.