

Peak Flow Monitoring

Use of Peak Flow meters has greatly improved the ability to determine the child's respiratory status. It provides an objective measure rather than rely on the subjective assessments. In addition, it helps to determine the effectiveness of interventions such as medications.

How to use a peak flow meter

1. Discard gum, candy, or food from mouth.
2. Place the indicator at the base of the numbered scale.
3. Stand up.
4. Take a deep breath.
5. Place the meter in mouth and close lips around the mouthpiece.
(Do not put tongue inside the hold.)
6. Blow out as hard and fast as possible.
7. Note the number.
8. Repeat steps 2 through 7 two more times.
9. Write down the highest of the three numbers.

How to use the RED, YELLOW, GREEN ZONE SYSTEM

Once you have obtained the child's current peak flow reading you should determine which of the three zones he/she is currently at by following the steps outlined:

1. Record the highest of the three current peak flow readings.
2. Obtain the child's "personal best" from the Asthma Management plan.
(The child's "personal best" should be determined when the child is symptom free, in cooperation with the health care provider, and should be redetermined regularly.)
3. Calculate the peak flow percentage as outlined below. Compare the results from this line to the child's zone chart to determine course of action.

| Calculating the Peak Flow Percentage | Example |
|--|---|
| <ul style="list-style-type: none">• Divide the current peak flow reading by the child's "personal best."• Multiply by 100.• Record the results as a percentage | <ul style="list-style-type: none">• Current Reading: 250• Personal Best: 300• Current/Personal best: $250 / 300 = 0.83$• Multiply by 100: 83 percent of personal best |

Source: National Asthma Education and Prevention program (NAEPP), National Institutes of Health (NIH)

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ASTHMA CARE ZONE SYSTEM

The asthma care zone system is a color system to monitor an asthmatic's breathing. The colors indicate which procedure to perform

Follow the authorized health care provider's individualized instructions for the child.

The following are general recommendations for the three different color zones:

Green Zone

(Indicates relative stability)

With reasonable amounts of medicine, children with well-controlled asthma should be maintained within 90 to 100 percent of their best peak flow value.

No change in medicines may be needed at this level.

If the results from a child's tests show proven stability in this zone, tapering certain medicines may be considered.

At the highest ranges of this zone (70 to 90 percent), wheezing and coughing may not be noticeable either with the use of stethoscope or an unaided ear. Some children either may not notice any change in breathing or may ignore subtle signs of impending wheezing.

The lowest end of this zone (50 to 70 percent) is associated with obvious clinical signs of asthma. This precrisis zone indicates extreme asthmatic instability, requiring immediate medical attention.

Yellow Zone

(Indicates trouble)

Early signs of an asthma attack are either detected or confirmed by peak flow fluctuations in range from 50 to 90 percent of normal.

If appropriate changes in medication are made, the child's asthma should be restabilized at the green zone.

Red Zone

(Indicates emergency)

When flow rates fall to or below the 50 percent level, the child faces an almost certain asthmatic crisis.

Immediate and aggressive intervention is critical.

*Guidelines & Procedures for Meeting the Specialized Physical Health Care Needs of Pupils.

PEAK FLOW ZONE MANAGEMENT
 Predicted Average Peak Expiratory Flow
 Normal Children and Adolescents

| HEIGHT | | MALES AND | GREEN | YELLOW | RED |
|--------|-------|-----------|---------|---------|-------|
| cm. | (in.) | FEMALES | ZONE | ZONE | ZONE |
| 102 | (40) | 109 | 82-109 | 52-82 | 0-52 |
| 104 | (41) | 120 | 90-120 | 58-90 | 0-58 |
| 107 | (42) | 136 | 102-136 | 65-102 | 0-65 |
| 109 | (43) | 147 | 110-147 | 70-110 | 0-70 |
| 112 | (44) | 160 | 130-160 | 80-130 | 0-80 |
| 114 | (45) | 173 | 140-173 | 83-130 | 0-83 |
| 117 | (46) | 187 | 150-187 | 90-150 | 0-90 |
| 119 | (47) | 200 | 160-200 | 100-160 | 0-100 |
| 122 | (48) | 214 | 170-214 | 110-170 | 0-110 |
| 124 | (49) | 227 | 180-227 | 115-180 | 0-115 |
| 127 | (50) | 240 | 190-240 | 120-190 | 0-120 |
| 129 | (51) | 254 | 200-254 | 130-200 | 0-130 |
| 132 | (52) | 267 | 210-267 | 130-210 | 0-130 |
| 135 | (53) | 280 | 220-280 | 140-220 | 0-140 |
| 137 | (54) | 293 | 230-293 | 145-230 | 0-145 |
| 140 | (55) | 307 | 245-307 | 150-245 | 0-150 |
| 142 | (56) | 320 | 260-320 | 160-260 | 0-160 |
| 145 | (57) | 334 | 270-334 | 170-270 | 0-170 |
| 147 | (58) | 347 | 280-347 | 175-280 | 0-175 |
| 150 | (59) | 360 | 290-360 | 180-290 | 0-180 |
| 152 | (60) | 373 | 300-373 | 190-300 | 0-190 |
| 155 | (61) | 387 | 310-387 | 195-310 | 0-195 |
| 157 | (62) | 400 | 320-400 | 200-320 | 0-200 |
| 160 | (63) | 413 | 330-413 | 210-330 | 0-210 |
| 163 | (64) | 427 | 340-427 | 215-340 | 0-215 |
| 165 | (65) | 440 | 350-440 | 220-350 | 0-220 |
| 168 | (66) | 454 | 360-454 | 230-360 | 0-230 |
| 170 | (67) | 467 | 350-467 | 235-350 | 0-235 |
| | | FEMALES | MALES | | |
| 173 | (68) | 415 | 474 | | |
| 175 | (69) | 421 | 485 | | |
| 178 | (70) | 430 | 499 | | |
| 180 | (71) | 436 | 508 | | |
| 183 | (72) | 445 | 522 | | |

GREEN ZONE: Okay or healthy zone. No special treatment needed
 YELLOW ZONE: Caution zone. Additional meds are needed
 RED ZONE: Danger or doctor zone. Call the doctor immediately

CONVERSION FACTOR: 1 inch = 2.54 cm

%Predicted = $\frac{\text{actual PEFR}}{\text{predicted PEFR}}$ *This can be used with the pt.'s personal best PEFR instead of predicted PEFR

% Change post-bronchodilator = $\frac{\text{pre PEFR} - \text{post PEFR}}{\text{pre PEFR}}$

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