

Peak Flow Measurement

Peak flow rates provide an objective measure of obstruction in the large airways. Guidelines recommend that a peak flow measurement be taken at each asthma visit for children with persistent asthma. It is helpful in assessing a child's response to treatment.

Patients who are over 6 years of age, are able to use a peak flow meter correctly, and are likely to use one at home, should be given one to monitor their status. Peak flow results provide an objective measure of lung function and can help patients and their families determine when to continue baseline therapy and when they may need to step up therapy as peak flow values move into the yellow/red zones. The table on the back of this form provides peak flow averages by height, with green, yellow, and red zones pre-calculated.

Procedure:

1. Have patient stand, lips tight around the mouthpiece, take a deep breath, hold for a second, blow hard and fast. Take highest of three tries.
2. Calculate Green, Yellow and Red Zones (or use the color chart on the reverse.)
3. Compare the highest value achieved of three peak flow maneuvers. Determine which zone they are in.
4. Remember: Value is effort and technique dependent

Establishing a “personal best” peak flow reading is the most effective way to use peak flow measurements. Parents are encouraged to obtain two peak flow readings a day during an entire week when the child is well. By doing so, they can obtain the child’s “personal best.” The Personal Best can be recorded on the Asthma Action Plan. These values can change over time as the child grows and should be re-assessed periodically.

Green Zone: Child is within 80% of their personal best peak flow rate (if available) or of the predicted averages on the table on the back. This is a safe zone; indicates child is doing well on current medication.

Yellow Zone: Child is within 50-80% of their personal best peak flow rate (if available) or of the predicted averages on the table on the back. This may suggest a child's asthma is only partially controlled and the medication needs to be altered or, an asthma attack may occur shortly. Providers should have advised a plan of action if this occurs.

Red Zone: Child is able to achieve less than 50% of their personal best peak flow rate (if available) or of the predicted averages on the table on the back. This indicates moderate to severe respiratory distress and is an urgent/emergent clinical situation requiring immediate attention. Asthma action plans should include instructions on what to do at these times (i.e., take medications, go right away to your doctor, urgent care, or emergency room; call 911.)

Peak Flow Averages Table

Height in/cm	Average Peak Flow: (Predicted)	Yellow Zone Below: (Under 80%)	Red Zone Below: (<50% of Predicted)
43/109	147	118	74
44/112	160	128	80
45/114	173	138	87
46/117	187	150	94
47/119	200	160	100
48/122	214	171	107
49/125	227	182	114
50/127	240	192	120
51/130	254	203	127
52/132	267	214	134
53/135	280	224	140
54/137	293	234	147
55/140	307	246	154
56/142	320	256	160
57/145	334	267	167
58/147	347	278	174
59/150	360	288	180
60/152	373	298	187
61/155	387	310	194
62/157	400	320	200
63/160	413	330	207
64/163	427	342	214
65/165	440	352	220
66/168	454	363	227

Source: Adapted from “Peak Flow Values” table, Northeast Valley Health Corporation and “Expected Peak Flow Table” California Asthma Public Health Initiative, 2006, www.caasthma.org.