Asthma Management for Children and Adults (age 5+ yrs)
Good asthma control reduces the risk of exacerbations and long-term pulmonary damage.

Make the Diagnosis
1. Consider the diagnosis of asthma if symptoms include: recurrent coughing, wheezing or shortness of breath relieved by a bronchodilator.
2. Spirometry: ≥12% increase of FEV\textsubscript{1} post-bronchodilator.
3. Consider co-morbidities or alternate diagnosis, especially if poor control: GERD, aspiration, airway anomaly, foreign body, cystic fibrosis, vocal cord dysfunction, tobacco/secondhand smoke exposure, or COPD. GERD is a common co-morbidity.
4. If diagnosis in doubt, consult with an asthma specialist.

Key Points of Assessment and Treatment
1. Asthma is a variable disease and needs to be assessed at every visit.
2. Use the Assess Asthma Control box to guide your assessment and make treatment decisions.
3. The goal of asthma therapy is to keep the patient in control as much as possible with the least amount of medication.
4. If at the first visit the patient is not well-controlled (see below), begin controller therapy. A patient should be diagnosed with Persistent Asthma if he/she needs a daily controller medication to stay in control.

Assess Asthma Control (determination of level of control is dictated by the criterion at the lowest level of control)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Well-Controlled</th>
<th>Not Well-Controlled</th>
<th>Very Poorly Controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daytime symptoms</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
<td>Throughout the day</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤2 times/month</td>
<td>1-3 times/week</td>
<td>≥4 times/night</td>
</tr>
<tr>
<td>Limitation of activities</td>
<td>None</td>
<td>Some limitation</td>
<td>Extremely limited</td>
</tr>
<tr>
<td>Short-acting beta\textsubscript{2}-agonist use for symptom control</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
<td>Several times per day</td>
</tr>
<tr>
<td>Asthma Control Test (ACT)\textsuperscript{7}</td>
<td>Score of ≥20</td>
<td>Score of 16-19</td>
<td>Score of ≤15</td>
</tr>
<tr>
<td>Courses of prednisone in last year</td>
<td>&lt;2</td>
<td>≥2</td>
<td>&gt;2</td>
</tr>
<tr>
<td>Spirometry\textsuperscript{4}</td>
<td>FEV\textsubscript{1} % predicted or personal best</td>
<td>60-80% predicted or personal best</td>
<td>&lt;60% predicted or personal best</td>
</tr>
<tr>
<td>FEV\textsubscript{1}/FVC ratio</td>
<td>Normal ratio for age</td>
<td>≤5% decrease in ratio for age</td>
<td>&gt;5% decrease in ratio for age</td>
</tr>
</tbody>
</table>

If Well-Controlled:
Follow the Stepwise Approach Guideline (see page 2). Consider step down if well-controlled for 3 consecutive months. Re-assess every 1 to 6 months.

If Not Well-Controlled:
Follow the Stepwise Approach Guideline. If initial visit, start at Step 2. Step up until well-controlled. Re-assess in 2 to 6 weeks. For side effects, consider alternative treatment.

If Very Poorly Controlled:
Consider course of prednisone (1-2 mg/kg, daily max 60 kg). If initial visit, start at Step 2. Step up 1-2 steps using Stepwise Approach Guideline. Re-assess in 2 weeks.

Consider Referral to a Specialist
If not well-controlled within 3-6 months using stepwise approach OR if 2 or more ED visits or hospitalizations for asthma in a year.

Other Things to Consider at Every Visit
- Check adherence and address possible poor adherence to medication.
- Review environmental factors: e.g., pets, cigarette smoke, perfume, allergy season, respiratory infection.
- Provide self-management education.
- Develop and review a written asthma control plan in partnership with the patient.
- Integrate education into all points of care where healthcare professionals interact with patient.
- Review inhaler technique. Encourage use of spacers with all MDIs.
- Treat co-morbid conditions: rhinitis and sinusitis, obesity, gastroesophageal reflux, obstructive sleep apnea, stress, depression or anxiety, allergic bronchopulmonary aspergillosis.

Exercise-Induced Bronchospasm (EIB)
- If symptoms resolve without treatment after 5 minutes of rest, it is more likely poor conditioning.
- If EIB is unresponsive to albuterol and the patient has allergies, consider starting an inhaled steroid (see Stepwise Treatment table on page 2).
- If still unresponsive after starting inhaled steroid, refer to specialist.

Other related conditions:
- Other Things to Consider at Every Visit
- Spirometry is suggested annually and/or any time the clinical picture changes or does not make sense.

Based on the NAEPP EPR-3 (http://www.nhlbi.nih.gov/guidelines/asthma/) with some modifications. This guideline is designed to assist the clinician in the management of asthma. This guideline is not intended to replace the clinician’s judgment or establish a protocol for all patients with a particular condition. For references, additional copies of the guideline, or patient documents go to www.healthteamworks.org or call (303) 446-7200 or 866-401-2092. Revised 10/17/2012.

See page 2 for treatment.
Asthma Stepwise Approach

Good asthma control reduces the risk of exacerbations and long-term pulmonary damage.

Intermittent Asthma

Persistent Asthma: Daily Medication

\[ \text{Step up} \] as indicated, although address possible poor adherence to medication. Re-assess in 2 to 6 weeks.

\[ \text{Step down} \] if well-controlled and re-assess in 3 months. If patient remains well-controlled then assess control every 1 to 6 months.

\text{All long-acting beta-agonists (LABAs) and combination agents containing LABAs have a black-box warning.}

Schedule Follow-Up Care

Frequency of follow-up visits based on severity:
- Step 1-2: 1-2x per year
- Step 3-4: Every 6 months
- Step 5-6: Every 3 months

All ages Steps 3 through 6: Consider alternative therapy within step before stepping up.

All ages Steps 4 through 6: Consider consult with an asthma specialist.

Consider immunotherapy if allergic asthma.

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