Washington State Department of Health
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Good Asthma Care On a Desert Island . . .*

Washington Asthma Initiative

*These desert island recommendations are essential tasks from the "Four Pillars of Asthma Management."

If you could only do FOUR THINGS for your asthma patients:

ASK: How much albuterol are you using?

- Albuterol use is an indication of symptom frequency, which should also be part of patient history.
- More than one canister every 2–3 months indicates not well controlled asthma.
- More than one canister per month indicates very poorly controlled asthma.
- Patients with persistent asthma should be using a long-term controller medication daily.
- Assess inhaler technique.

ASK: What makes you cough or wheeze?

- Asthma patients should be counseled to avoid or reduce exposure to environmental triggers.
- Consider allergy testing and referral for immunotherapy if indicated.

Test lung function with spirometry.

Provide spirometric testing:

1) At the time of initial assessment.
2) After treatment is initiated and symptoms and PEF have stabilized.
3) During periods of progressive or prolonged loss of asthma control.
4) At least every 1–2 years.

Schedule planned visits.

- Asthma patients should receive regular visits every 2–6 weeks until well controlled.
- Then, schedule the patient every 1–6 months to monitor control.
- Step therapy up or down as needed to achieve adequate control.

Reference: National Heart, Lung, and Blood Institute. *Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma 2007*. Bethesda, MD: National Institutes of Health; August 2007. NIH Publication 07-4051. For greater detail, see "The Four Pillars of Asthma Management" and additional clinical tools for treating patients with asthma at http://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/Asthma or call 360-236-3631. This publication was supported by Cooperative Agreement # U59/CCU025030-03 from the Centers for Disease Control and Prevention.

The Four Pillars of Asthma Management

Planned Visits for Asthma Management

- Make a diagnosis of asthma.
- Assess asthma severity.
- Test lung function with spirometry.
- Assess control at every visit.
- Schedule follow-up every 2–6 weeks until well-controlled; then, every 1–6 months to monitor control.
- Provide a written asthma action plan.
- Recommend annual flu vaccine.

Appropriate Use of Asthma Medications

- Daily inhaled corticosteroids are the preferred treatment for persistent asthma.
- Monitor patient's use of rescue medication.
- Assess patient's inhaler technique.
- Use stepwise approach to identify appropriate treatment.
- Refer to specialist if cannot achieve or maintain control.

Education for a Partnership in Care

- Provide self-management education.
- Develop self-management goals and an action plan with the patient.
- Encourage self-monitoring.
- Encourage adherence to the action plan.
- Teach and reinforce at every opportunity.

Assessment of Environmental Triggers

- Identify allergen/ irritant exposures.
- Assess for smoking or secondhand smoke exposure.
- Provide cessation counseling if needed.
- Perform allergy testing.
- Teach ways to reduce exposure to triggers.
- Consider allergen immunotherapy.

Reference: National Heart, Lung, and Blood Institute *Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma 2007*, Bethesda, MD: National Institutes of Health; August 2007. NIH Publication 07-4051.
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Asthma Management for Children and Adults

Washington State Department of Health

Washington Asthma Initiative

Consider the diagnosis of "asthma" if:

1. ***RECURRENT*** coughing, wheezing, or shortness of breath relieved by a bronchodilator
2. ***SPIROMETRY*** demonstrates obstruction and reversibility by an increase in FEV_1 of ≥12% after bronchodilator
3. Rule out conditions such as aspiration, GERD, airway anomaly, foreign body, cystic fibrosis, vocal cord dysfunction, or COPD. GERD is a common co-morbidity. (If diagnosis in doubt, consult with an asthma specialist.)

Assess Asthma Severity: Persistent vs. Intermittent

Persistent Asthma — any of the following:

1. Symptoms >2 days per week ***OR***
2. Awaken at night from asthma >2X per month ***OR***
3. Short-acting beta2-agonist use >2 days/week ***OR***
4. Limitation of activities, despite pretreatment for exercise induced asthma ***OR***
5. More than 2 steroid bursts in 1 year ***OR***
6. FEV_1 <80% predicted ***OR*** low FEV_1/FVC ratio (see below)
7. For children <4 years consider "persistent" if more than 4 episodes of wheezing in a year ***AND*** parental history of asthma or eczema or wheezing between illnesses.

See "Assessing Asthma Severity" chart for more detailed information.

Treatment for Persistent Asthma: Daily Inhaled Corticosteroids

(steps 2, 3 or higher)

Assess Response within 2–6 weeks

"Well Controlled" Asthma

1. Daytime symptoms ≤2 days per week ***AND***
2. Awakening at night from asthma <2X per month ***AND***
3. No limitation of activities ***AND***
4. Less than 2 steroid bursts per year
5. FEV_1 ≥ 80% predicted
6. FEV_1/FVC →

FEV_1/FVC:
5-19 yrs ≥ 85%
20-39 yrs ≥ 80%
40-59 yrs ≥ 75%
60-80 yrs ≥ 70%

See "Assessing Asthma Severity" chart for more detailed information.

YES → Follow the **Stepwise Approach Guideline** and consider *step down* if well controlled for 3 consecutive months. Then **re-assess every 3 to 6 months.**

NO → Follow the **Stepwise Approach Guideline** and *step up* until well controlled is achieved. **Re-assess in 2 to 6 weeks.**

Quick Tips for All Patients with Asthma

- ❑ **Planned Visits:** schedule planned visits to achieve and maintain asthma control.
- ❑ **Environmental Control:** identify and avoid triggers such as tobacco smoke, pollens, molds, animal dander, cockroaches, and dust mites.
- ❑ **Flu Vaccine:** recommend annually. Pneumococcal vaccine is also recommended.
- ❑ **Spirometry:** at diagnosis and at least annually.
- ❑ **Asthma Score:** use tools such as ACQ®, ACT™ or ATAQ© to assess asthma control.
- ❑ **Asthma Education:** review correct inhaled medication device technique every visit, if needed.
- ❑ **Asthma Action Plan:** provide written action plan at diagnosis; review and update at each visit.
- ❑ **Short-Acting Beta-Agonist** ***(e.g., albuterol)***: 1) quick relief every 4–6 hours, 2) pretreat with 2 puffs for exercise-induced bronchospasm.
- ❑ **Oral Corticosteroids:** consider for acute exacerbation.
- ❑ **Valved Holding Chamber or Spacer:** recommend for use with all metered dose inhalers (MDI).
- ❑ **Mask:** use with spacer with valve and with nebulizer for children <5 years and anyone unable to use correct mouthpiece technique.

See* www.doh.wa.gov/cfh/asthma *for additional asthma resources.

Consider referral to a specialist if not well controlled within 3–6 months using stepwise approach ***OR*** 2 or more ED visits or hospitalizations for asthma in a year.

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Asthma Stepwise Approach

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Intermittent Asthma

Persistent Asthma: Daily Medication

Step up as indicated although address possible poor adherence to medication. Re-assess in 2 to 6 weeks.

Step down if well controlled and re-assess in 3 months. If very stable then assess control every 3 to 6 months.

All LABAs and combination agents containing LABAs have a black box warning.

Step 1 *(all ages)*

Short-acting beta-agonist (e.g., albuterol prn)

If used more than 2 days per week (other than for exercise) consider inadequate control and the need to step up treatment.

Step 2

All Ages

Preferred: Low-dose inhaled steroid

Alternative: Leukotriene blocker or cromolyn

Age 0-4 yrs

Consider referral (especially if diagnosis is in doubt)

Step 3

Age 12+ yrs

Preferred: Low-dose inhaled steroid + long-acting beta-agonist or Medium-dose inhaled steroid

Alternative: Low-dose inhaled steroid + leukotriene blocker

Age 5-11 yrs

Low-dose inhaled steroid + long-acting beta-agonist or leukotriene blocker or Medium-dose inhaled steroid

Age 0-4 yrs

Medium-dose inhaled steroid + referral

Step 4

Age 12+ yrs

Preferred: Medium-dose inhaled steroid + long-acting beta agonist

Alternative: Medium-dose inhaled steroid + leukotriene blocker

Age 5-11 yrs

Same as 12+ yrs

Age 0-4 yrs

Medium-dose inhaled steroid + either long-acting beta-agonist or leukotriene blocker

Step 5

Age 12+ yrs

High-dose inhaled steroid + long-acting beta-agonist **-and-** Consider omaluzimab if allergies

Age 5-11 yrs

Preferred: High-dose inhaled steroid + long-acting beta-agonist

Alternative: High-dose inhaled steroid + leukotriene blocker

Age 0-4 yrs

High-dose inhaled steroid + either long-acting beta-agonist or leukotriene blocker

Step 6

Age 12+ yrs

High-dose inhaled steroid + long-acting beta-agonist + oral steroid **-and-** Consider omaluzimab if allergies

Age 5-11 yrs

Preferred: High-dose inhaled steroid + long-acting beta-agonist

Alternative: High-dose inhaled steroid + leukotriene blocker + ***oral steroid***

Age 0-4 yrs

High-dose inhaled steroid + either long-acting beta-agonist or leukotriene blocker + ***oral steroid***

All ages Steps 4 through 6: Consult with asthma specialist

Consider immunotherapy if allergic asthma

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Assessing Asthma Severity

Table represents asthma severity classifications and treatment steps for each age group. See "Asthma Stepwise Approach" chart for treatment recommendations.

	Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent
Impairment	**Symptoms:** • **All ages:** ≤2 days/week **Nighttime awakenings:** • **0-4:** None • **5 & older:** ≤2 times/month **Short-acting B2-agonist use:** • **All ages:** ≤2 days/week **Interference with normal activity:** • **All ages:** None **Lung function:** • **All ages:** Normal FEV_1, between exacerbations; FEV_1 >80% predicted. • **5-11:** FEV_1/FVC >85% • **≥12:** FEV_1/FVC normal	**Symptoms:** • **All ages:** >2 days/week but not daily **Nighttime awakenings:** • **0-4:** 1-2 times/month • **5 & older:** 3-4 times/month **Short-acting B2-agonist use:** • **0-11:** >2 days/week but not daily • **≥12:** >2 days/week but not >once/day **Interference with normal activity:** • **All ages:** Minor limitation **Lung function:** • **5-11:** FEV_1 >80% predicted; FEV_1/FVC >80% • **≥12:** FEV_1 ≥80% predicted; FEV_1/FVC normal	**Symptoms:** • **All ages:** Daily **Nighttime awakenings:** • **0-4:** 3-4 times/month • **5 & older:** >1x/week but not nightly **Short-acting B2-agonist use:** • **All ages:** Daily **Interference with normal activity:** • **All ages:** Some limitation **Lung function:** • **5-11:** FEV_1 60-80% predicted; FEV_1/FVC 75-80% • **≥12:** FEV_1 >60% but <80% predicted; FEV_1/FVC reduced 5%	**Symptoms:** • **All ages:** Throughout the day **Nighttime awakenings:** • **0-4:** >1 time/week • **5 & older:** Often 7 times/week **Short-acting B2-agonist use:** • **All ages:** Several times/day **Interference with normal activity:** • **All ages:** Extremely limited **Lung function:** • **5-11:** FEV_1 <60% predicted; FEV_1/FVC <75% • **≥12:** FEV_1 <60% predicted; FEV_1/FVC reduced >5%
Risk	• **All ages:** 0-1 exacerbations requiring oral systemic corticosteroids/year	(Exacerbations requiring oral systemic corticosteroids (OSCS); consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time. Exacerbations of any severity may occur in patients in any severity category.) • **0-4:** ≥2 exacerbations in 6 months requiring OSCS or ≥4 wheezing episodes/year lasting >1 day AND risk factors for persistent asthma • **All ages:** ≥2/year		
Treatment Step	• **All ages:** STEP 1	• **All ages:** STEP 2	• **0-4:** STEP 3; consider short course of oral systemic corticosteroids (OSCS) • **5-11:** STEP 3, medium-dose ICS option; consider short course of OSCS • **≥12:** STEP 3; consider short course of OSCS	• **0-4:** STEP 3; consider short course of oral systemic corticosteroids (OSCS) • **5-11:** STEP 3 (medium-dose ICS option) OR 4; consider short course of OSCS • **≥12:** STEP 4 OR 5; consider short course of OSCS

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Assessing Asthma Control

Table represents asthma control classifications for each age group. See "Asthma Stepwise Approach" chart for treatment recommendations.

	Well Controlled	Not Well Controlled	Very Poorly Controlled
Impairment	**Symptoms:** • **0-4:** ≤2 days/week • **5-11:** ≤2 days/week but not more than once on each day • **≥12:** ≤2 days/week **Nighttime awakenings:** • **0-11:** ≤1 time/month • **≥12:** ≤2 times/month **Short-acting B2-agonist use:** • **All ages:** ≤2 days/week **Interference with normal activity:** • **All ages:** None **Lung function:** • **5-11:** FEV_1 = >80% predicted/personal best; FEV_1/FVC = >80% • **≥12:** FEV_1/peak flow = >80% predicted/personal best; ACT = ≥20	**Symptoms:** • **0-4:** >2 days/week • **5-11:** >2 days/week or multiple times on ≤2 days/week • **≥12:** >2 days/week **Nighttime awakenings:** • **0-4:** >1 time/month • **5-11:** ≥2 times/month • **≥12:** 1-3 times/week **Short-acting B2-agonist use:** • **All ages:** >2 days/week **Interference with normal activity:** • **All ages:** Some limitation **Lung function:** • **5-11:** FEV_1 = 60-80% predicted/personal best; FEV_1/FVC = 75-80% • **≥12:** FEV_1/peak flow = 60-80% predicted/personal best; ACT = 16-19	**Symptoms:** • **All ages:** Throughout the day **Nighttime awakenings:** • **0-4:** >1 time/week • **5-11:** ≥2 times/week • **≥12:** ≥4 times/week **Short-acting B2-agonist use:** • **All ages:** Several times per day **Interference with normal activity:** • **All ages:** Extremely limited **Lung function:** • **5-11:** FEV_1 = <60% predicted/personal best; FEV_1/FVC = <75% • **≥12:** FEV_1/peak flow = <60% predicted/personal best; ACT = ≤15
Risk	**Exacerbations requiring oral steroids:** • **All ages:** 0-1 per year	**Exacerbations requiring oral steroids:** • **0-4:** 2-3 per year • **≥5:** ≥2 per year; consider severity and interval since last exacerbation	**Exacerbations requiring oral steroids:** • **0-4:** >3 per year • **≥5:** ≥2 per year; consider severity and interval since last exacerbation

Treatment-related Adverse Effects:
Medication side effects can vary from none to very troublesome and worrisome. Level of intensity should be considered in the overall assessment of risk.

Reduction in Lung Growth (ages 5-11)**/Progressive Loss of Lung Function** (age 12+):
Evaluation requires long-term follow-up.

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