TREATMENT GUIDELINES FOR HEALTH STAFF

**ASTHMA**

Authorized health and wellness staff may treat asthma as follows:

All students with asthma should be managed according to current NIH Guidelines. The 2020 focused update is available at: <https://www.nhlbi.nih.gov/health-topics/asthma-management-guidelines-2020-updates>. The full update report is available at: <https://www.nhlbi.nih.gov/health-topics/all-publications-and-resources/2020-focused-updates-asthma-management-guidelines>.

**Acute Management**

1. Severe Bronchospasm

Obtain vital signs and pulse oximetry. Any student with severe wheezing, muscle retractions, gasping, blue color or other signs of respiratory distress requires immediate medical attention - call 911 for emergency transport. Administer oxygen by facemask if available and initiate Rescue Therapy:

# Provide the Inhalation of a short-acting β2-agonists (albuterol). It is advisable to administer a nebulizer solution with a concentration of 2.5 to 5 mg every 20 minutes for three cycles, or if treating with a metered-dose inhaler, have the student administer 4 to 8 puffs of 90 mcg (albuterol base) every 20 minutes.

1. Mild-moderate Bronchospasm

In the absence of signs of severe respiratory distress needing immediate medical attention, students with asthma who experience acute mild to moderate bronchospasm should be instructed initiate Rescue Therapy:

# Administer inhalation of a short-acting β2-agonists (albuterol) at a dose of 2 to 4 puffs of 90 mcg (albuterol base) every 20 minutes.

**Chronic Management**

1. CLASSIFICATION: classify all students with asthma according to the National Heart, Lung, and Blood Institute (NHLBI) severity guidelines:

## Intermittent

## symptoms ≤ 2 days a week

## nighttime awakenings ≤ 2 times a month

## use of short-acting β2-agonist ≤ 2 days a week

## no interference with physical activity

## Mild Persistent

## symptoms > 2 days a week but not daily

## nighttime awakenings 3-4 times a month

## use of short-acting β2-agonist > 2 days a week, but not daily, and not more than once on any day

## minor limitation of physical activity

## Moderate Persistent

## symptoms daily

## nighttime awakenings > 1 time a week but not nightly

## use of short-acting β2-agonist daily

## some limitation of physical activity

## Severe Persistent

## symptoms throughout the day

## nighttime awakenings often 7 times a week

## use of short-acting β2-agonist several times a day

## extreme limitation of physical activity

1. TREATMENT: treat all students with asthma according to the NHLBI guidelines:

# Long-Term Control: STEP 1 (intermittent asthma)

## daily medication is not needed

## as-needed short-acting β2-agonist (albuterol) for rescue therapy

# Long-Term Control: STEP 2 (mild persistent asthma)

## daily low-dose inhaled corticosteroid

## as-needed short-acting β2-agonist (albuterol) for rescue therapy

## ─ OR ─

## as-needed concomitant use of low-dose inhaled corticosteroid and short-acting β2-agonist (e.g., 2-4 puffs albuterol immediately followed by 80-250 Mcg beclomethasone equivalent) every 4 hours

Long-Term Control: **STEP 3** (moderate persistent asthma)

# *(SMART: Single Maintenance And Rescue Therapy)*

## daily (1-2 puffs once to twice daily) and as-needed (1-2 puffs every 4 hours) combination low-dose inhaled corticosteroids and long-acting β2 agonists (fomoterol) (to a maximum total daily maintenance and rescue dose of 12 puffs (54 Mcg)

# Long-Term Control: STEP 4 (moderate-severe persistent asthma)

# *(SMART: Single Maintenance And Rescue Therapy)*

## daily (1-2 puffs once to twice daily) and as-needed (1-2 puffs every 4 hours) combination medium-dose inhaled corticosteroids and long-acting β2 agonists (fomoterol) (to a maximum total daily maintenance and rescue dose of 12 puffs (54 Mcg)

# Long-Term Control: STEP 5 (severe persistent asthma)

## daily medium- to high-dose inhaled corticosteroids combined with long-acting β2 agonists (fomoterol) plus an add-on long-acting muscarinic antagonist

* as-needed short-acting β2-agonist (albuterol) for rescue therapy

# Long-Term Control: STEP 6 (severe persistent asthma)

## daily high-dose inhaled corticosteroids combined with long-acting β2 agonists (fomoterol) plus oral corticosteroids

* as-needed short-acting β2-agonist (albuterol) for rescue therapy

Exercise-induced bronchospasm/asthma

* short-acting β2-agonist (albuterol) for prevention
* use 5 to 20 minutes (optimally 15) minutes before exercise
* bronchodilation is rapid in onset and can last 2 to 4 hours
* tolerance can develop with frequent use but preferred as first-line treatment with limited side effects

1. At each visit monitor adherence to treatment plan, efficacy of the current treatment plan, inhaler use technique, environmental factors, and any comorbid conditions.
2. All students known to have asthma should have access to an albuterol inhaler **at all times** for Rescue Therapy on center and for off center trips.
3. Increasing use of Rescue Therapy to > 2 days per week for symptom relief (not prevention of exercise-induced bronchoconstriction) generally indicates inadequate control and the need to step up treatment.
4. The differences of albuterol (ProAir, Ventolin and Proventil) compared to levalbuterol (Xopenex) for rescue are negligible. It is recommended to prime the rescue inhaler before using for the first time and in cases where the inhaler has not been used for more than 2 weeks by releasing four “test sprays” into the air. Also, it is important that the mouthpiece be washed and dried thoroughly at least once a week.
5. Formoterol is a long-acting β2 agonists but because it has a fast onset of action it can also be used as a rescue medication. Salmeterol causes bronchodilation in a slower manner. Both drugs are long-acting.
6. The combination of inhaled corticosteroids and a long-acting β2 agonists (fomoterol) is available and preferably used in a single inhaler.
7. Cromolyn, nedocromil, leukotriene receptor antagonists (zileuton and montelukast), and theophylline were not considered for the 2020 update; limited availability and increased need for monitoring side-effects make their use less desirable. The FDA issued a black-box warning for montelukast in March 2020 due to adverse serious behavior- and mood-related changes.
8. Consult with asthma specialist if Step 4 or higher is required.

**WHEN TO REFER TO THE CENTER PHYSICIAN**

* If the student’s wheezing does not respond within 10-15 minutes to 2-3 inhalations from an albuterol inhaler
* If the student presents with severe wheezing, muscle retractions, gasping, blue color or other signs of respiratory distress
* Students with increasing use ofshort-acting inhaled β2 agonists
* Students who require daily medication for asthma management should be seen at least monthly

**Refer to the** [**Asthma Chronic Care Management Plan**](https://supportservices.jobcorps.gov/health/Pages/HCGuidelines.aspx) **for additional guidance.**