Five steps to help your patients with asthma stay safe on hot days.

Help your patients and their caregivers document action steps in a Heat Action Plan.

1) Assess heat- and air quality-related risk factors that may worsen your patient's asthma control.

- ☐ **Review your patient's baseline control of asthma** since children with poorly controlled asthma may be more sensitive to heat and poor air quality.
- ☐ **Use the HEAT** questionnaire to assess risk factors related to
  - **H**ousing and Indoor Environment
  - **E**mergency Preparedness
  - **A**wareness of Health Risks
  - **T**emperature and Outdoor Environment
- ☐ Based on risk factor screening, **refer your patient to needed services or engage social work support** in your clinic as appropriate.

2) Educate your patients on how to stay cool during hot days.

- ☐ **Review the HeatRisk Tool and how it works with your patients or caregivers of children and teens.** The tool assigns colors to each level of risk and recommends protective actions by color level.
  - **Ask your patients to monitor their asthma symptoms at HeatRisk yellow and orange and determine which level applies to them**. Their Heat Action Plan should reflect the applicable HeatRisk level.
  - Most children and teens with asthma can take action when the HeatRisk is **orange**.
  - Some will be more sensitive to heat and will need to take action when HeatRisk is **yellow**.
- ☐ In addition to the **recommended actions to take when outside for each level of HeatRisk**, all children and teens with asthma and/or their caregivers can
  - Wear light-colored, loose-fitting clothing that covers arms and legs; a hat with a brim that shades the face, ears, and back of the neck; and sunglasses.
  - Apply broad spectrum sunscreen that filters out UVA and UVB rays. The sunscreen should have an SPF of 30 or higher.
  - Schedule outdoor activities during the coolest time of the day or evening, if possible.
- ☐ Review heat-related symptoms with your patients.
  - Review signs of worsening asthma and help them understand signs and symptoms that their asthma control may be worsened by heat (for example, more shortness of breath or more exertional fatigue than usual for them).
  - Review symptoms of heat-related illness including heavy sweating, muscle cramps, weakness, lightheadedness, headache, nausea, and vomiting.

- Help your patients and their caregivers understand the difference between heat exhaustion and heat stroke.
- Review which symptoms constitute an emergency and what actions to take in an emergency setting.

☐ Talk to your patients and/or caregivers of children and teens about how to **stay cool indoors.** They can
- Use an air conditioner if they have one or find a location that does. Even a few hours in a cool location can lower the health risk from heat.
- Use fans only if indoor temperatures are less than 90°F. In temperatures above 90°F, a fan can increase body temperature.
- Cool their bodies with a cool shower, a damp cool cloth, or a spray bottle of cool water.

☐ Direct your patients and their caregivers to information about public resources such as cooling centers, pools, and splash pads. The nearest cooling center locations can be located by calling 2-1-1, checking public resources, or contacting your local health department or emergency management agency.

☐ Refer patients who need assistance with home energy costs to the Low-Income Heat Energy Assistance Program (LIHEAP).

3) Educate your patients on how to stay hydrated.

☐ Review signs and symptoms of dehydration, which include

Cold, clammy skin	Nausea
Dizziness or feeling lightheaded	Abdominal cramping
Rapid heart rate	Swelling in extremities
Excessive sweating or an inability to sweat	Darker color urine
Fatigue	Infrequent urination
Headache	Thirst
Muscle cramps or spasms	

☐ Emphasize the importance of regular and consistent fluid and food intake throughout the day.

☐ Advise patients to try to limit beverages higher in sugars, sodium, and caffeine, which may lead to dehydration. See Guideline 4 of the dietary guidelines.

☐ Advise patients and their caregivers that water is usually the best choice, although sports drinks containing electrolytes may be necessary if sweating for several hours.

☐ Children and teens with asthma and with nausea, vomiting, and diarrhea will need particular attention to avoiding dehydration and fluid and electrolyte imbalance, which heat exposure can compound.

☐ To avoid sunburn, which can promote dehydration, see # 2 “How to Stay Cool”.

4) Educate your patients on air quality. Heat can worsen air quality, which can lead to additional health harms.

☐ **Review the Air Quality Index (AQI)** with your patients and caregivers of children and teens at the HeatRisk Dashboard, the phone’s weather app, or at airnow.gov. Ensure

they know how to access, understand, and use the information including which actions they can take at specific air quality levels.

- ☐ **Review Steps to Take for Good Indoor Air Quality.**
  - Remind your patients and their caregivers that indoor air can be as polluted as outdoor air.
  - Educate patients that cigarette and e-cigarette smoke, candles, and air fresheners are indoor sources of air pollution.
  - If possible, bring outdoor air in when cooking indoors.
  - Encourage patients to allow clean indoor air inside when the AQI is less than 100 (or <50 for individuals sensitive to poor air quality).
- ☐ **Review Information on Air Filters**
  - **Discuss air purifiers**, also known as air sanitizers, air cleaners, and air filters **used in HVAC systems**. While these devices cannot remove all air pollutants, they can improve indoor air quality for many pollutants when used properly. A list of portable cleaners can be found here.
  - Some homes have HVAC systems with replaceable filters. These filters have MERV (Minimum Efficiency Reporting Values) ratings or are designated as HEPA (high efficiency particulate air) filters. To effectively remove indoor air pollution, HEPA filters or filters with MERV of 13 or higher can be used.
  - Air filters should be replaced regularly. Replacement frequency depends on how much air pollution is present but can be done every 60-90 days.
  - Do-it-yourself (DIY) air cleaners may be a more affordable and accessible alternative to commercial versions to filter out smoke particles and can be constructed using a box fan and a high-efficiency home air filter.

5) Make a plan with your patients for medication management on HeatRisk orange, red, and magenta days.

- ☐ Review the Heat and Medications page to familiarize yourself with how medications interact with heat, which medications are most likely to do so, and an approach to medication management during hot days.
- ☐ **Ensure your pediatric patients and their caregivers know to not abruptly stop medications and to take all medications as directed unless otherwise guided by you or another clinician.**
- ☐ Review your patient's medication list with them, highlighting medications that may need to be adjusted because of interactions with heat. Document with your patient any medication adjustments during hotter weather and when to resume their normal medication schedule.
- ☐ Provide guidance on proper storage of medications, including for medications that individuals may carry with them, such as inhalers, which can malfunction or burst from high heat. Counsel patients and their caregivers not to leave medications in a car or other places that can get excessively hot and help your patients develop a medication storage plan in the event of a heat-related power outage.

- ☐ Counsel your patients and/or caregivers of children and teens to limit sun exposure if they take a medication that can cause sensitivity to the sun, such as certain antibiotics.
- ☐ Encourage your patients to reflect heat and medication information discussed with you in the medication section of their Health Action Plan and in their Asthma Action Plans.