UCLA Health

Extreme Heat, Wildfires and Air Pollution, and Workforce Preparation Toolkit

RESOURCES FOR PATIENTS	
UCLA Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC)	laregionalcollaborative.com
Ready LA County	ready.lacounty.gov/heat
Los Angeles Climate Emergency Mobilization Office	climate4la.org
AirNow	airnow.gov
CARB-Certified Air Cleaners	arb.ca.gov
EPA DIY Air Cleaner Guide	epa.gov

EXTREME HEAT

Heat seriously threatens your health, even if the temperature is not high! Each person experiences heat differently depending on their age, medical conditions, and level of physical activity. Humidity can make you feel much warmer than the actual temperature because when the air is full of moisture, your sweat doesn't evaporate as quickly, and your body can't cool down. This guide aims to provide high-yield, practical information on how to protect yourself from heat-related illnesses.

During periods of extreme heat, it is necessary to have an action plan.

Keep your body cool:

- ✓ **Wear loose-fitting, light-colored clothing.** Consider clothes, umbrellas, and hats with UV protection. This clothing will have an ultraviolet protection factor (UPF) number on the label.
- ✓ **Apply sunscreen!** Use one that offers SPF30+, protects against UVA and UVB rays, and is water-resistant. Fragrance-free products are preferable.
- ✓ **Stay in shady areas!** Using shade can quickly reduce heat exposure by up to 50%.
- ✓ **Know when fans are most effective!** Use a fan when outdoor air temperatures are cooler than indoor air temperatures. Fans do not cool the air, so at high temperatures (above 90°F), fans can become ineffective at cooling your body.
- ✓ **Monitor your symptoms and watch for signs of dehydration.** Consult your health provider to develop a personalized heat action plan to stay hydrated and cool.

You are most at risk for heat-related illnesses if you are:

- An outdoor worker
- Pregnant
  - Extreme heat exposure can lead to complications such as premature birth
- Over 65 years old
- Under 18 years old
- Have a mental health condition
- A person experiencing homelessness
- Have chronic medical conditions such as heart and kidney disease
- Take medications that either affect how your body cools down or increase the risk of dehydration

Stay cool indoors:

- ✓ **Use curtains and blinds** to keep out the sun.
- ✓ **Use kitchen hood and bathroom exhaust fans** to reduce heat and humidity.
- ✓ **Check insulation** and seal any gaps in windows and doors.
- ✓ **Conserve energy** by using energy-saving devices and unplugging unused devices.

Stay informed:

- ✓ **Check your local weather forecast and heat advisories.** The heat index indicates how hot it actually feels on your body when temperature and humidity are combined. Alternatively, California launched the CalHeatScore, which translates weather information into easy-to-understand heat scores, ranging from 0 to 4 to indicate increasing levels of human risk of heat-related illnesses.
- ✓ **Set up a buddy system.** Check on friends, family, and neighbors, especially those most at risk for heat-related illnesses.
- ✓ **Identify cooling centers in your area!** You can visit these public places to stay cool:
  - Local libraries
  - Senior centers
  - Malls
  - Air-conditioned venues
  - Splash pads and pools
- ✓ In LA County, you can refer to the following **resources**:
  - UCLA Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC): https://www.laregionalcollaborative.com
  - Ready LA County: https://ready.lacounty.gov/heat
  - Los Angeles Climate Emergency Mobilization Office: https://www.climate4la.org

WILDFIRES AND AIR POLLUTION

Wildfires have become increasingly common and more severe due to climate change. Even if you are not near a wildfire, the creation of wildfire smoke can travel long distances, hundreds to thousands of miles, affecting air quality and people far beyond the fire source. Wildfire smoke emits hazardous air pollutants such as fine particulate matter (e.g., PM 2.5), volatile organic compounds (VOCs), and heavy metals, which have been linked to cardiovascular disease, stroke, cancer, respiratory illness, and millions of premature deaths each year. These tiny particles can penetrate deep into the lungs and bloodstream. Wildfire smoke is unique from other sources of air pollution in that it can contain more toxic compounds due to the burning of plastics, electronics, and other synthetics materials. They can linger in the homes for weeks to months. This guide provides practical information that you can take to minimize the impacts of wildfires and poor air quality on your health.

Stay informed:

- ✓ **Get wildfire and air quality updates** near you via your local news station or check the official US resource at http://www.airnow.gov.
- ✓ You can **look up the air quality** via the Air Quality Index (AQI) or check your phone's weather app.
  - The AQI has limitations! During and immediately after fires, the AQI does not always tell us about air pollution related to the fires. **Use these tips for spotting poor air quality:**
    - There is a nearby fire
    - You see ash
    - There is a lot of wind
    - The air smells different
    - Your allergies/medical conditions feel worse when outside

Wildfire smoke and poor air quality harm everyone's health, but you could be extra sensitive to smoke if you are:

- An outdoor worker
- Pregnant
- Over 65 years old
- Under 18 years old
- Have a mental health condition
- A person experiencing homelessness
- Have chronic medical conditions such as asthma, COPD, heart or kidney disease

Stay indoors and keep the air clean:

- ✓ **Keep your windows and doors shut**, and seal any noticeable cracks.
- ✓ **Avoid activities that can worsen indoor air quality:**
  - Using cooking stoves (without proper ventilation)
  - Wearing shoes indoors
  - Using aerosol sprays like air fresheners
  - Lighting a fireplace, incense, or candles
  - Smoking
- ✓ **Use your exhaust vent** when cooking (preferably it vents to the outside).
- ✓ **Use an air conditioner (central or portable) to filter the air and replace the filter if it is dirty.** The filter should be high efficiency, preferably rated MERV 13 or higher. MERV (Minimum Efficiency Reporting Value) 13 is a high-efficiency air filter capable of capturing approximately 75–95% of airborne particles as small as 0.3 microns, including fine dust, smoke, pet dander, bacteria, and respiratory droplets that may carry viruses. MERV ratings range from 1 to 16; the higher the number, the better the filter can capture smaller particles and clean the air.
- ✓ **Filter the air** with a portable air cleaner, preferably with a HEPA filter. Pick one that doesn't create ozone! You can choose from a list certified by the California Air Resources Board (CARB): https://ww2.arb.ca.gov/list-carb-certified-air-cleaning-devices.

- ✓ **Set your air conditioner to recirculate** in your home and/or car, which recycles the air inside your space through a filter.
- ✓ **Close any vents** that pull air from the outside into your home. Swamp coolers are specifically designed to draw air into the house, so they cannot recirculate air!
- ✓ If portable air cleaners or central air systems are not available or affordable for you, you may choose to use a **do-it-yourself (DIY) air cleaner**. DIY air cleaners are made by attaching a filter to a box fan. You can refer to the EPA website for more information.
- ✓ **Use a wet paper towel to wipe away the ash.**

Be prepared:

- ✓ **Know your evacuation route**, how you will evacuate from wildfires, and where you will go.
- ✓ **Keep copies of important documents** (e.g., insurance policies, birth certificates, etc.) ready.
- ✓ **Have ready two kits**, one for "grab and go" and one for "shelter in place."
- ✓ **Have a plan for power outages.**
- ✓ **Wear a tight-fitting respirator** (such as an N95 or P100 mask).
  - A surgical mask will not adequately protect against particulate exposure.
  - Masks can be worn safely by children 2 years of age and older.

WORKFORCE PREPARATION

This guide outlines key actions that health care systems can take to support and prepare their workforce for the major climate events: extreme heat, wildfires, smoke, and poor air quality. The three main areas of focus are training and protocols, personal protective equipment (PPE) and supplies, and workforce support.

Workforce Support:

- ✓ **Remote work options** for non-clinical staff and shift adjustments during extreme climate events.
- ✓ **Health checks** on staff with high-risk conditions.
- ✓ **Mental health support.**
- ✓ **Discounts and partnerships** for air quality monitoring, cooling, and cleaning devices.
- ✓ **Lodging/relocation support** for displaced staff
- ✓ **Transportation support**
- ✓ **Family care assistance**

	Extreme Heat	Wildfires and Air Pollution
Training and Protocols	• Heat illness recognition and rapid response training • Guidelines on hydration, cooling measures, and workload adjustments • Identification of designated cooling centers	• Education on air quality index (AQI) interpretation and response thresholds • Respiratory illness identification (e.g., COPD/ asthma exacerbations) • Triage protocols for respiratory distress during high AQI days • Burns and smoke inhalation management training
PPE and Supplies	• Cooling vests or lightweight, moisture wicking uniforms • Hydration stations • Portable fans, misting devices, or cooling towels	• N95 respirators or equivalent masks for staff • HEPA air purifiers in critical patient care areas • Improved HVAC systems with air filtration • Regular indoor air quality monitoring • Burn care supplies

- ✓ **Have regular check-ins to evaluate response effectiveness and identify areas for improvement**
- ✓ **Emergency evacuation procedures and route planning**
- ✓ **Coordination with local fire departments, emergency services, and government agencies**
- ✓ **Backup communication systems during power outages**
- ✓ **Invest in long-term infrastructure resilience**
- ✓ **Education on vulnerable populations: elderly, children, pregnant people, outdoor workers, chronic physical and mental illness, persons experiencing homelessness**

This toolkit was developed in 2024 through the University of California Climate Action Innovation & Entrepreneurship Grant. Contributors are from UCLA Health and include: Rosemarie Fallieras, MD MPH; Anh (Annie) Hoang, MD MPH; Sarah Brockhaus, JD MBA. For more information, contact Sarah Brockhaus, SBrockhaus@mednet.ucla.edu.