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Protecting Your Health and Brain Against Climate Change: An Information Page for Older Adults

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How does climate change affect my health and well-being?

Climate change refers to long-term alterations in temperature, weather patterns, and natural environments caused by factors such as greenhouse gas emissions and deforestation [1].

These changes lead to an increase in extreme weather events like hurricanes, floods, and wildfires, which pose serious health risks—especially for older adults and those with existing health conditions [2].

Experiencing an extreme weather event can be challenging and traumatic, particularly for older adults who might need to evacuate their homes on short notice [3]. This can be especially challenging for individuals with mobility limitations, chronic illnesses, or cognitive impairments [2].

Climate change also disrupts our living ecosystems, leading to broader environmental and health consequences, including:

- **Loss of green spaces:** Severe weather can destroy habitats, parks, and farmlands that are vital for environmental balance.

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- **Food supply and agriculture impact:** Events like wildfires and floods can devastate farms, affecting food supply chains and the health of agricultural workers.
- **Atmospheric changes:** Damage to ecosystems alters air and water quality, which can have long-term health implications, including effects on brain health.

How does climate change impact my healthcare?

Extreme weather events can result in natural disasters that may cause injuries or worsen pre-existing health conditions, increasing the need for emergency medical care and rehabilitation services. Accessing appropriate medical treatment can become difficult when healthcare services are disrupted for extended periods, directly affecting our health and well-being—especially for the most vulnerable patients.

It's important to understand how climate change impacts our health so we can prepare for our rapidly changing environment (Figure 1). Recognizing the psychological trauma resulting from extreme weather events is also crucial. Older adults should pay special attention to their brain health—including cognitive, emotional, and social well-being. Severe weather exposure can induce high levels of stress, potentially leading to depression, anxiety, and agitation, which can ultimately impact cognition and quality of life.

What are the psychological impacts of climate change?

The psychological effects of climate change are profound. Extreme weather conditions can lead to natural disasters, like Hurricane Maria in Puerto Rico, the Fukushima nuclear disaster in Japan, or large-scale wildfires in the U.S., Canada, and Greece. Survivors of these events may experience significant emotional distress [2], manifesting as:

- **Acute Stress and Panic Disorders:** Immediate responses to trauma, such as heightened anxiety, confusion, or agitation.
- **Post-Traumatic Stress Disorder (PTSD):** Long-term mental health conditions characterized by recurring memories, heightened fear, and emotional numbness.
- **Depression:** Prolonged feelings of sadness, hopelessness, or difficulty coping with the aftermath of a disaster.

What are some aspects of climate change that affect my brain health?

- **Heatwaves:** Older adults are at a higher risk of serious health conditions from extreme heat [4]. Extreme heat can worsen health conditions like dementia and Alzheimer's disease. Chronic exposure may harm the brain and increase the risk of cognitive decline [5].
- **Air quality:** Exposure to air pollutants is linked to cognitive decline and chronic neurological disorders like Parkinson's disease [6]. Poor air quality from wildfires and pollution can impair memory and attention. Levels of

Neurotrophins, including brain-derived neurotrophic factor (BDNF), which helps neurons grow and survive, may vary according to air quality [7].

Extreme weather events: Extreme weather can disrupt daily life, including eating and sleeping [8, 9]. It can also reduce energy and stop you from attending medical appointments or exercising. Stress from extreme weather events may increase rates of anxiety and depression [10].

How can I protect my brain health from the effects of climate change?

- **Prepare for heat:** During heat waves, stay in air-conditioned environments. Keep hydrated and avoid strenuous activities. Avoid the outdoors when temperatures exceed 95°F, especially between 10 AM to 2 PM. Carry plenty of water when you leave home. Resources like the Federal Low Income Home Energy Assistance Program (FLIHEAP), may be available to help obtain an air conditioner if needed.
- **Improve your indoor air quality:** Use air purifiers to help reduce indoor air pollution, especially if you live near wildfires, highways, or in areas with high industrial emissions.
- **Purchase ecologically friendly consumer products:** Most of the household products we use daily are derived from fossil fuel carbon sources, from toiletries and plastic packaging. When these products reach their end of life, their disposal and decay result in greenhouse gas emissions, contributing to pollution and climate change. Being mindful about climate sensitive products could help global climate efforts to decrease carbonization from human waste accumulation.
- **Support forests and green spaces:** Engage in activities that protect and expand green spaces and forests, which absorb CO₂, provide oxygen, increase natural water supplies, and cool urban areas.
- **Exercise regularly to strengthen your brain health:** Aim for at least 30 minutes of exercise, 5 days a week [11]. Even light exercise, like walking, can provide great benefits to your health.
- **Eat a healthy diet:** Consume a balanced diet rich in fruits, vegetables, healthy fats, and grains.
- **Reduce stress:** Stress can harm your body and brain and is associated with an increased risk of developing dementia. Talk to your doctor about ways to reduce your stress, which can include therapy, meditation, gentle exercise, and connecting with loved ones.
- **Have an extreme weather plan:** Stay informed with a weather app and personalized weather alerts. Keep an emergency kit on hand with life-saving supplies, medications, and at least 3 days' worth of non-perishable food. Consider purchasing a power bank, which can charge electronics during power outages.

How can I get support to protect my well-being?

Engaging with your family, community, and healthcare team can offer practical support, increased well-being, and a sense of empowerment.

- **Join a support group:** Connect with others facing similar challenges for mutual support.
- **Consult your healthcare team:** Discuss any concerns or mental health issues with your family doctor or therapist so they can help find the right plan for your health.
- **Connect with your neighbors and community:** Talk with neighbors to create safety plans for extreme weather events and power outages. Create a list of local resources with contact information.
- **Educate others:** Share knowledge about the impacts of climate change on health to raise awareness and support collective action [12].

Climate health and your healthcare team: the importance of physician's involvement

Make sure to talk to your healthcare team about extreme weather in your community. Your doctor's goal is to help you to manage your health effectively. Medical specialists, like physiatrists, can also support your health during weather challenges. If you are undergoing rehabilitation, talk to your team about your functional limitations and approaches to protect your health during dangerous weather. Physiatrists and other healthcare professionals can integrate environmental health into whole patient care, helping you make informed decisions to protect your health and well-being.

How can you stay informed about local weather events?

- **NOAA Weather Radio:** The National Weather Service (NWS) broadcasts severe weather watches and warnings, forecasts, current conditions, and climatology 24 hours a day. <https://www.noaa.gov/tools-and-resources/weather-and-climate-resources>
- **Wireless Emergency Alerts (WEA):** These text message-like alerts are sent to your phone based on your location and can include severe weather warnings.
- **Weather apps:** Some apps, like those from Storm Shield, Weather Underground, and the Weather Channel, can provide information about weather conditions and alerts based on your location. These can be found on the App Store (Apple) and the Google Play Store (Android).
- **Personal weather notifications:** The National Weather Service (NWS) and local media outlets may offer electronic alerting services that can send emails, RSS feeds, or text messages to your device.

- **Local news:** Local news can provide information about dangerous situations in your area.
- **Community notifications:** Some communities use outdoor sirens to send warnings. You can learn how your community sends warnings and sign up for notifications.

Conclusion

Understanding the connection between our health and climate change is critical to preserving our well-being and quality of life. By staying informed, adapting to environmental changes, and actively engaging with healthcare professionals about climate-related concerns, we can collectively find strategies to navigate the challenges of climate change.

Additional weather information resources:

- U.S. Department of Interior Internet Resources on Climate Change References: <https://www.doi.gov/library/internet/climate>
- American Meteorological Society Weather Resources: <https://www.ametsoc.org/index.cfm/ams/education-careers/education-program/weather-resources/>
- The National Hurricane Center and Central Pacific Hurricane Center: <https://www.nhc.noaa.gov/aboutintro.shtml>
- National Academies of Science, Engineering, and Medicine Environmental Health Matters Initiative: <https://www.nationalacademies.org/our-work/environmental-health-matters-initiative/about>

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Figure 1:
Figure 1 was created with the assistance of OpenAI's ChatGPT, an artificial intelligence-based text-generation tool.