December 2005

Fact Sheet

Environmental Hazards Weigh Heavy on the Heart

Information for Older Americans and their Caregivers

Environmental hazards can contribute to heart disease and stroke. Older adults should limit exposure to air pollution, arsenic, lead, and excessive heat.

Did you know that environmental hazards can contribute to heart disease and stroke? Factors in the environment, such as pollutants in the air and water, are known or thought to affect heart disease and stroke. The purpose of this fact sheet is to make older people in particular aware of some of these factors. It is also intended to help older persons reduce their exposure to these factors. By controlling factors in your environment, you may be able to protect yourself and your loved ones.

Heart disease is the leading cause of death in the United States, and stroke is the third highest cause of death. They cost the nation hundreds of billions of dollars each year. In 2001, heart disease killed 700,000 people in the US.

What in the Environment can Contribute to Heart Disease and Stroke Problems?

Indoor Air Pollution

People who spend long periods of time indoors may be the most affected by indoor air pollution. Studies suggest that older adults spend up to 90% of their time indoors. Indoor air can contain toxic pollution that comes from both indoors and outdoors. Pollutants that people are exposed to outdoors are described later in this fact sheet.

Indoor air pollution can come from:

- secondhand smoke
- fumes from household cleaning products
- carbon monoxide

Smoke: Secondhand smoke is one of the worst indoor air pollutants. Smoking is known to be bad for the heart. Breathing secondhand smoke can be just as harmful. Smoke from wood burning stoves and fireplaces are also hazardous. Smoke contains particles that can cause chest pain and shortness of breath. For older persons with heart disease smoke can also make people feel tired.

Household Products: Fumes from paints, pesticides, and cleaning products can place stress on the lungs and heart. To stay safe, older adults should limit the time they spend around these fumes and keep their indoors full of fresh air.

Many homes built before 1978 used paints that contained lead. Breathing in small amounts of lead dust can cause serious health problems including high blood pressure. If you are renovating your home, make sure to limit your exposure to lead found in paint chips and dust.

Pesticide poisonings often result from breathing in toxic fumes or insect repellants. Be careful when you or a hired professional sprays pesticides in or around your home. Signs of poisoning include irregular heart beats or a very slow pulse.

Carbon Monoxide: Carbon monoxide (CO), a gas that you can't see or smell, is a dangerous pollutant because it is difficult to detect. It is very harmful to people with heart disease, clogged arteries, or heart failure because it limits the blood's ability to carry oxygen. For a person with heart disease, exposure to even low levels of CO may cause chest pain, or irregular heart beats. It may also make exercising difficult. Sources of CO include fumes from furnaces, gas water heaters, ranges, dryers, space heaters, fireplaces, wood stoves, and exhaust from cars left running in enclosed garages.

Outdoor Air Pollution

Older adults who are at risk for heart disease and stroke may benefit from less contact with pollutants in the air and car exhaust.

Particle Pollution: Small soot particles found in the air outdoors can be hazardous and the risk is greatest among people with heart disease, emphysema, chronic bronchitis, and asthma. These particles come from many sources such as vehicles, power plants, industrial smokestacks, and fires. Particles can travel hundreds to thousands of miles downwind, and affect people far from the sources.

Traffic: Time spent in traffic has also been associated with the start of a heart attack. It is not known if this is due to traffic-related air pollution (e.g., particle pollution, CO), the stress of being in traffic, or some other risk factor.

Pollutant Gases: Ozone, sulfur dioxide, and nitrogen dioxide are gases that can cause negative health effects. Ozone can bother the lungs and airways causing chest pains that can be mistaken for a heart attack.

Drinking Water

Some metals found in drinking water may cause heart disease or worsen its symptoms.

Lead: Exposure to lead can increase blood pressure. Both paint dust and drinking water are sources of lead exposure. Old lead plumbing may contaminate the clean drinking water in your community.

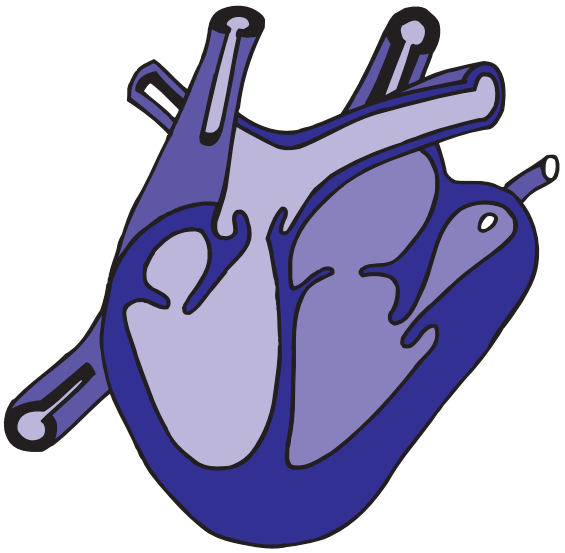
Arsenic: Arsenic is a natural element found in drinking water in some areas of the country. Long-term exposure to high levels of arsenic can harm the heart. If your water comes from a private well or small water system, see the "Steps You Can Take" section for more information on how to limit exposure.

Excessive Heat Events

Heat events are when temperatures reach at least 10º F (5.5ºC.) above a region's average high temperature for long periods of time. Excessive heat can cause heat stroke. When the body's temperature control system fails, the core temperature in your body rises. Symptoms of heat stroke are hot, dry, red skin, and a lack of perspiration. Other warning signs are confusion and hallucinations. Heat stroke is a serious condition and needs immediate medical attention (call 911 or take the person to an emergency room). Left untreated, heat stroke can cause severe and permanent damage to vital organs. It can also lead to permanent disability, or even death.

People with heart disease and stroke do not cool down easily during heat events. The use of some medications such as anti-depressants and some circulatory medications can make a person exposed to excessive heat more at risk.

Air-conditioning is the best protection against heat-related illness and death. Even a few hours a day in air-conditioning can greatly reduce the risk. While electric fans may provide comfort, but when temperatures are in the high 90s, (35ºC or higher) fans do not prevent heat-related illness and could actually be harmful.



Steps You Can Take to Help Control Heart Disease and Stroke

A healthy lifestyle is the best way to prevent heart disease and stroke. Also, older adults should stay away from environmental hazards and ask local governments to take action to reduce these hazards.

Limit Contact with Environmental Factors

- **Keep smoke out of indoor spaces:** Stay away from tobacco smoke and places where people smoke. Try not to use wood-burning stoves and fireplaces.

- **Use caution when working around the house:** Keep fresh air moving when painting by leaving windows open and by using fans. Take many fresh air breaks when painting; stay away from painted rooms for several days.

  Before renovating a home built before 1978, take precautions to avoid lead paint exposure. Do not use a belt-sander, propane torch, heat gun, dry scraper, or dry sandpaper to remove lead-based paint.

  If you use pesticides, always read labels first and follow all precautions and restrictions. Follow all directions and wear rubber gloves, long pants, and long-sleeved shirts. Change clothes and wash your hands immediately after applying pesticides. Wash clothes that have pesticides on them separately.

- **Avoid carbon monoxide poisoning:** Never leave a car running in a garage, even with the garage door open. Take care of gas appliances. Install and use exhaust fans. Have a trained professional inspect, clean, and tune-up your furnaces and chimneys every fall. Install carbon monoxide detectors around the home.

- **Stay away from traffic and outdoor air pollution:** Watch the Air Quality Index (AQI) to know when the air is unhealthy for sensitive groups. Check with your doctor about being less active when the AQI is high. Reduce your time in traffic and try not to exercise near busy roads.

- **Prevent heat stress:** Use your air-conditioner or go to air-conditioned buildings in your community. Take a cool shower or bath. Wear lightweight, light-colored, and loose-fitting clothes. Ask your doctor if your medications may increase your chance of getting a heat-related illness when it is hot. Drink lots of water. If a doctor limits how much you can drink, be sure to ask what is okay when it's hot.

- **Drink clean water:** Run cold water for at least 30 seconds, preferably 2 to 3 minutes before drinking to help limit your risk of lead poisoning. For extra protection test your drinking water for lead and arsenic, and ask for test results and more information from your water supplier.

Encourage Your Local Government to Take Action

Local governments should take these simple steps to reduce hazards and inform older adults of precautions they can take.

- **Promote smoke-free policies in public places:** By keeping public places (restaurants, bars, and parks) smoke-free, communities can limit exposure to secondhand smoke.
- **Promote Active Heat Health Watch Warning and Response Systems:** These systems can help identify when a heat-related threat is likely, alert residents, and provide assistance to at-risk individuals.
- **Ensure that Air Quality Index forecasts are publicized and followed:** EPA's Air Quality Index is an index for reporting daily air quality. See www.epa.gov/airnow.
- **Promote public transit options that reduce traffic and air pollution:** Public transit is the best way to avoid road congestion, air pollution, and stress.
- **Locate parks, bike paths, and trails away from major roads:** Physical activity is one of the best ways to lower your risk for heart disease and stroke. Exercise away from roads and traffic pollution.

Control Your Major Risk Factors for Heart Disease and Stroke

The environment is just one factor that affects a person's risk for heart disease and stroke. The most important steps you can take to reduce risk factors for heart disease and stroke include:

- **Avoid smoke from tobacco**
- **Schedule time for regular physical activity 30 minutes per day at least 5 days a week**
- **Follow the 2005 Dietary Guidelines for Americans**
- **See your health care provider regularly to screen for and treat high blood pressure, diabetes, and hyperlipidemia (high levels of lipids in the bloodstream)**

Additional Resources

Environmental Protection Agency

Air Quality Index: www.airnow.gov

Arsenic: www.epa.gov/safewater/arsenic.html

Indoor Air Quality: www.epa.gov/iaq/

Lead: www.epa.gov/lead

Painting: www.epa.gov/iaq/homes/hip-painting.html

Pesticides: www.epa.gov/pesticide/

Smoke free homes: www.epa.gov/smokefree/

Centers for Disease Control and Prevention

Cardiovascular health: www.cdc.gov/cvh/

Physical Fitness Guidelines: www.cdc.gov/nccdphp/dnpa/physical/recommendations/older_adults.htm

Dietary Guidelines for Americans

www.health.gov/dietaryguidelines/

Federal Emergency Management Administration

www.fema.gov/hazards/extremeheat/heat.shtm

National Weather Service: www.nws.noaa.gov/om/brochures/heat_wave.shtml

American Heart Association:

www.americanheart.org/

Health Effects Institute:

www.healtheffects.org/about.htm

Learn More

The EPA Aging Initiative works to protect the health of older adults through research, prevention suggestions, and public education. For more information, or to join the EPA Aging Initiative listserve visit: www.epa.gov/aging. Older adults can improve their health and quality of life by being aware of environmental contributors to heart disease and stroke and controlling major non-environmental risk factors.

Footnotes

1 U.S. Environmental Protection Agency. Air Quality Guide for Particle Pollution. http://www.epa.gov/airnow//aqi_cl.pdf

2 U.S. Environmental Protection Agency. Regulation and Management of Pesticide Poisonings. 1999. http://www.epa.gov/pesticides/safety/healthcare/handbook/Index1.pdf

3 U.S. Environmental Protection Agency. Air Quality Criteria for Carbon Monoxide, EPA 600-P-99-001F. Research Triangle Park, NC: U.S. Environmental Protection Agency, Office Research and Development, National Center for Environmental Assessment. June 2000.

4 Peters, A., S. von Klot, M. Heier, I. Trentinaglia, H. Ines, A. Hormann, H.E. Erich, H. Lowel. "Exposure to Traffic and the Onset of Myocardial Infarction." The New England Journal of Medicine. Oct 21, 2004. 351 (17): 1721-30.

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