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Poor air quality contributes to heart disease

Air Quality News from IQAir, the world leader in air purifiers.

Heart disease is the leading cause of death worldwide. Each year 715,000 heart attacks and 600,000 deaths occur in the U.S. alone. The annual cost of heart disease in the U.S. is \$108.9 billion, including health care, medications and lost productivity.

Causes of heart disease

Heart disease often starts with damage to the inner walls of the arteries that lead to the heart, according to the National Heart, Lung and Blood Institute. This damage can be caused by smoking, excess cholesterol, high blood pressure, diabetes and other causes. Fats, cholesterol and other substances build up on the damaged artery walls after the initial damage occurs. This build-up is known as “plaque.”

February is American Heart Month. Research shows that poor air quality is linked to heart disease.

Poor air quality also plays a role in the development of heart disease. The American Heart Association (AHA) says “long-term” exposure (measured in years) to air pollution increases the risk of death from cardiovascular causes. Reductions in exposure lower the risk. “Short-term” exposure (measured in 24-hour periods) increases the risk of heart attack, stroke, arrhythmia and heart failure. This is especially true for groups such as the elderly.

Role of fine and ultrafine particles

Researchers in Europe recently reported that a 5 microgram increase in annual PM2.5 levels is linked with a 13% increase in heart attacks and angina. PM2.5 includes particles smaller than 2.5 microns in diameter. Another study published by the University of Michigan School of Public Health linked long-term PM2.5 exposure with the development of indicators of atherosclerosis.

Other research has focused specifically on tiny ultrafine particles (smaller than 0.1 microns in diameter). These tiniest particles represent, in sheer number, 90% of all particles in the air.

Researchers at the University of Rochester (N.Y.) Medical Center found that diabetics exposed over a long period of time to carbon ultrafine particles had higher levels of activated blood platelets. These platelets attach to plaque in blood vessels. A UCLA study found that ultrafine particles block the anti-inflammatory properties of HDL cholesterol and its ability to fight inflammation related to atherosclerosis.

The importance of filtering ultrafine particles

Considering the special role of ultrafine particles in the development of heart disease, IQAir recommends cleaning indoor air with an air purifier that is effective against these tiny particles. Unfortunately, ordinary HEPA air purifiers are only tested at 0.3 microns or larger. IQAir's HyperHEPA filtration, on the other hand, is tested and certified to filter ultrafine particles all the way down to 0.003 microns in diameter, the smallest particles that exist.

While air filtration can improve indoor air quality, reducing air pollution outdoors should be a priority to everyone. Reducing air pollution can save lives and reduce heart disease. Learn more about air pollution and what you can do to help by visiting the American Lung Association (<http://www.lung.org/healthy-air/>).

This online publication is brought to you by IQAir North America, Inc., a member of the Swiss-based IQAir Group that develops, manufactures and markets innovative air purifiers and air quality products for indoor environments around the globe. IQAir is the exclusive educational partner of the American Lung Association for the air purifier industry.