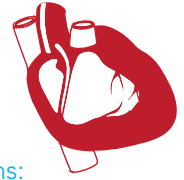


# The Workplace and Your Heart

**CARDIOVASCULAR DISEASES (CVD)** is a group of diseases that affect the heart and blood vessels, and is the leading cause of death in the United States. It has long been acknowledged that certain occupational exposures will exacerbate or even cause CVD. Some of these exposures are very common in the workplace, others are quite rare.



Here are some exposures that have been shown to increase risk of CVD and exacerbate pre-existing conditions:

## PHYSICAL HAZARDS

<sup>1,2</sup> Noise	Evidence suggests that prolonged exposure to noise exceeding 80Db can cause an increase in blood pressure.
<sup>2</sup> Physical activity	Lack of physical activity is correlated with CVD, and heavy lifting has been associated with an increased risk of heart attack.
<sup>2</sup> Extreme temperatures	Extreme heat or cold in the workplace have both been linked to an increased risk of CVD, usually when there is a pre-existing CVD.
<sup>2</sup> Vibration	Evidence suggests that vibration of a part or the whole body can affect the cardiovascular system.

## CHEMICAL HAZARDS

<sup>1,2</sup> Carbon monoxide (CO)	Exposure through work with furnaces, boilers, vehicle exhaust, or in areas with poor air circulation can reduce the amount of oxygen carried by blood, damaging the heart.
<sup>1,2</sup> Nitrate esters	Chemicals found in explosives in construction, demolition, and mining can cause withdrawal symptoms like constriction of blood vessels, which increases risk of CVD.
<sup>1,2</sup> Carbon Disulfide (CS <sub>2</sub> )	Exposure through work with rayon or cellophane, or solvents for rubber and oils, pesticides, fumigants, and microelectronics has been shown to affect how certain enzymes work in the body, which can cause high cholesterol, blood pressure, and aneurysms.
<sup>2</sup> Heavy Metals (Lead, Cobalt, Arsenic/Arsine)	Construction, smelting, manufacturing, production of metal alloys, or work with arsenical insecticides have been linked to high blood pressure and damage to the heart.
<sup>2</sup> Certain Solvents	Exposure through degreasing, paint stripping, work with refrigeration, air conditioning propellants, and work in hazardous waste sites can increase risk of arrhythmias.

## PSYCHOSOCIAL HAZARDS

<sup>1</sup> Stress	Prolonged stress affects hormone levels that impact how your cardiovascular and nervous systems work. It can also lead to unhealthy coping mechanisms can cause CVD.
<sup>1</sup> Shift work	Work outside of daytime hours have been associated with CVD, like high blood pressure.

## SYMPTOMS

If you work with hazards that are risk factors for CVD, be aware of symptoms that may indicate a heart condition.

- Chest pain or discomfort
- Breathlessness, fatigue, or weakness
- Loss of consciousness
- Pain or discomfort in the jaw, neck, or arm

However, sometimes there are no symptoms at all. Regular screenings can detect any possible heart condition early.

## SCREENING AND DIAGNOSIS

There are several screens and tests that can determine if you have a CVD or are at risk.

These screens can be done at your annual physical and measure markers that are predictive of CVD:

- Blood pressure
- Cholesterol
- Blood glucose
- Body weight



If your doctor thinks you might have a CVD, you might get one of these tests to diagnose the condition:

- Electrocardiogram
- Echocardiogram
- CT scan
- Holter monitoring
- Cardiac catheterization
- MRI

## PREVENTION

Since the workplace can be a source of CVD risk factors, occupation needs to be considered in one's management, treatment, and prevention methods.

These are ways to decrease your risk:

**Pre-employment:** If you have a pre-existing heart condition, be aware of potential hazards in the workplace before choosing a job.



**Eat a healthy diet** that focuses on a variety of fruits and vegetables, lean meats and fish, whole grains, and low-fat dairy. Try to limit saturated fats, sodium, and added sugars. Maintain a healthy weight.

**Reduce and manage your stress** through techniques like mindfulness.



**Stop smoking.** Smoking increases risk of developing CVD by damaging arteries and reducing the amount of oxygen in the blood. If you are a smoker, talk to a doctor about helping you quit.



**Exercise regularly.** At least 150 minutes of moderate exercise or 75 minutes a week of vigorous exercise can improve overall heart health. Talk to your doctor before starting a new physical activity regimen.

**Decrease physical demands** through ergonomics, which can decrease fatigue and can increase feelings of control in the worker.



**Follow safety guidelines** to reduce accidents that can get you exposed to unsafe chemicals or physical trauma. Wear the appropriate personal protective equipment (PPE) to reduce exposure.

## LEARN MORE

<sup>1</sup>The National Institute for Occupational Safety and Health. Aug 2010. <https://www.cdc.gov/niosh/topics/heartdisease/>

<sup>2</sup>Price AE. Heart Disease and Work. Heart. 2004.

Bhatnagar A. Environmental Cardiology: Studying Mechanistic Links Between Pollution and Heart Disease. Circulation Research. 2006.

Know the Facts About Heart Disease. CDC. 2015.

*The information is for educational purposes only and is not intended as a substitute for medical advice, diagnosis or treatment. Always seek the advice of your physician or other qualified health care provider with any questions you have regarding your medical care.*



**Mount Sinai** Selikoff Centers for Occupational Health

The Selikoff Centers for Occupational Health are dedicated to preventing, diagnosing, and treating work-related injuries and illnesses. Our multilingual and highly skilled team of board-certified occupational medicine physicians, industrial hygienists, ergonomists, workers' compensation coordinators, and social workers provide patient-centered services for workers and retirees in New York City and the Mid-Hudson Valley.

