Carbon Monoxide Poisoning

Carbon monoxide is a colorless, odorless gas that, when inhaled, prevents the blood from carrying oxygen and prevents the tissues from using oxygen effectively. Small amounts are not usually harmful, but poisoning occurs if levels of carbon monoxide in the blood become too high. Carbon monoxide disappears from the blood after several hours.

Smoke from fires commonly contains carbon monoxide, particularly when combustion of fuels is incomplete. If improperly vented, automobiles, furnaces, hot water heaters, gas heaters, kerosene heaters, and stoves (including wood stoves and stoves with charcoal briquettes) can cause carbon monoxide poisoning. Inhaling tobacco smoke produces carbon monoxide in the blood, but usually not enough to result in symptoms of poisoning.

Symptoms and Diagnosis

Mild carbon monoxide poisoning causes headache, nausea, vomiting, drowsiness, and poor coordination. Most people who develop mild carbon monoxide poisoning recover quickly when moved into fresh air. Moderate or severe carbon monoxide poisoning causes confusion, unconsciousness, chest pain, shortness of breath, and coma. Thus, most victims are not able to move themselves and must be rescued. Severe poisoning is often fatal. Rarely, weeks after apparent recovery from severe carbon monoxide poisoning, symptoms such as memory loss, poor coordination, and uncontrollable loss of urine (which are referred to as delayed neuropsychiatric symptoms) develop.

Carbon monoxide is dangerous because a person may not recognize drowsiness as a symptom of poisoning. Consequently, someone with mild poisoning can go to sleep and continue to breathe the carbon monoxide until severe poisoning or death occurs. Some people with long-standing, mild carbon monoxide poisoning caused by furnaces or heaters may mistake their symptoms for other conditions, such as the flu or other viral infections.

Carbon monoxide poisoning is diagnosed by measuring the level of carbon monoxide in the blood.

Treatment and Prevention

For mild poisoning, fresh air may be all that is needed. To treat more severe poisoning, high concentrations of oxygen are given, usually through a face mask. Oxygen hastens the disappearance of carbon monoxide from the blood and relieves symptoms. The value of high-pressure oxygen treatment (in a hyperbaric

chamber) remains uncertain.

To prevent poisoning, sources of indoor combustion, such as gas space heaters and wood stoves, require properly installed ventilation. If such ventilation is impractical, an open window can limit carbon monoxide accumulation by allowing it to escape from the building. Exhaust pipes attached to furnaces and other heating appliances need periodic inspections for cracks and leaks. Chemical detectors are available for the home that can sense carbon monoxide in the air and sound alarms when it is present. Constant monitoring with such detectors can identify carbon monoxide before poisoning develops. Like smoke detectors, carbon monoxide detectors are recommended for all homes.