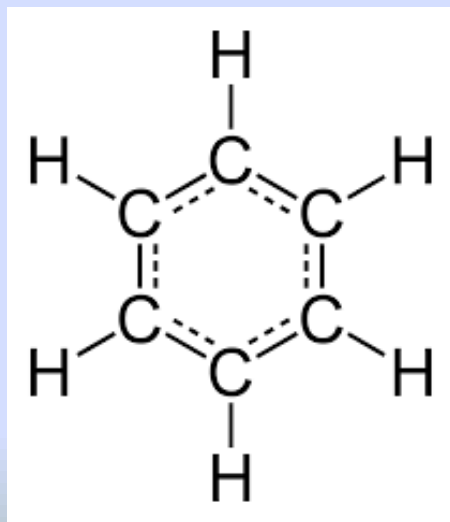


# Benzene

## Description/Chemical Forms:

Benzene is a highly flammable aromatic hydrocarbon that is usually colorless and has a rather sweet odor. This substance has a short half-life and will decompose a few days after being released into the environment.



## Sources/Routes of Exposure:

Sources: Both natural and anthropogenic in origin, commonly found in water, soil, and air

- Synthetic: First manufactured in the 1800s, now mostly derived from petroleum and used as a solvent-in rubber production, lubricants, dyes
- Natural: volcanic emissions, forest fires, byproduct of cigarette smoke

Main Route of Exposure:

Inhalation: automobile exhaust and industrial emissions (20%), cigarette smoke-either first or secondhand (50%), although smokers take in 10x's more Benzene than non-smokers

## Health Effects:

Acute (short-term exposure): high level concentrations can cause headaches, dizziness, and unconsciousness, effects will subside once source of exposure is halted or patient has access to fresh air

Chronic (long-term exposure): aplastic anemia, which is characterized by bone marrow hypoplasia, peripheral blood pancytopenia, and reticulocytopenia. Granulocytosis is the specific type of leukemia caused by benzene compounds

# Benzene

<b>Diagnosis/Treatment Options:</b>	<b>Prevention Strategies:</b>	<b>Links for Additional Information:</b>
<p>A variety of tests are available to detect recent exposures of Benzene. Blood and breath measurements are generally most effective as close to the exposure as possible and with high concentrations, due to the rapid dissipation of the chemical from the body.</p> <p>Metabolites, including muconic acid and phenol can be detected in urine after recent exposures but do not provide indication of adverse health effects. Examination of bone marrow is the most accurate predication of health outcomes in highly exposed individuals.</p>	<p>Most people are exposed to small amounts of Benzene each day, yet more significant exposure can result in adverse health outcomes.</p> <p>Recommendations:</p> <ul style="list-style-type: none"><li>• Advise patients to avoid tobacco smoke or steer them towards cessation programs if they are active users</li><li>• Encourage parents to keep their children away from nearby hazardous waste sites or fuel stations as play areas</li></ul>	<p>More information concerning benzene exposure and health effects can be found at the following sites:</p> <p><a href="http://www.atsdr.cdc.gov/PHS/PHS.asp?id=37&amp;tid=14">http://www.atsdr.cdc.gov/PHS/PHS.asp?id=37&amp;tid=14</a></p> <p><a href="http://www.cancer.org/cancer/cancercauses/othercarcinogens/intheworkplace/benzene">http://www.cancer.org/cancer/cancercauses/othercarcinogens/intheworkplace/benzene</a></p> <p><a href="http://www.epa.gov/ttnatw01/hlthef/benzene.html">http://www.epa.gov/ttnatw01/hlthef/benzene.html</a></p> <p><a href="http://www.who.int/ipcs/features/benzene.pdf">http://www.who.int/ipcs/features/benzene.pdf</a></p>