



Office of Environmental Health Hazard Assessment
California Environmental Protection Agency
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What Is Secondhand Smoke?

In January 2006, the California Air Resources Board added secondhand tobacco smoke to its list of “toxic air contaminants.” The Board based its decision on scientific studies that link secondhand smoke to heart disease, asthma, other respiratory diseases, and cancer among nonsmokers.

Secondhand smoke is also known as environmental tobacco smoke (ETS), passive smoke, or involuntary smoke. It is released into the air when tobacco products burn or when smokers exhale. Cigarettes, cigars, and pipes all can produce toxic secondhand smoke.

This pamphlet summarizes some of the findings from a recent comprehensive review of hundreds of studies of secondhand smoke by the California EPA’s Office of Environmental Health Hazard Assessment (OEHHA).



Is Secondhand Smoke Dangerous?

Yes!

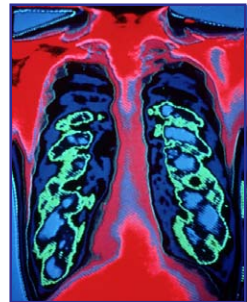
This smoke is a mixture of gases and fine particles containing more than 4,000 chemicals. Many of these can cause harmful health effects. For example, secondhand smoke contains over 50 chemicals known to cause cancer, such as benzene, chromium, and formaldehyde. Other toxic chemicals in secondhand smoke include cyanide and carbon monoxide.

Children may be exposed to secondhand smoke in homes and daycare, at outdoor smoking areas, in cars, and anywhere that people are smoking.

Is Secondhand Smoke More Harmful to Children?

Yes. Children are more likely than adults to suffer health effects from secondhand smoke because:

- Children breathe in more air than adults for their size and weight.
- Children’s bodies continue to grow and develop as they get older and taller. During this time of growth, they can be more sensitive to the effects of secondhand smoke. It is especially dangerous to their developing lungs and immune systems.



Lung Development

The lungs continue to develop throughout childhood. There is some evidence that exposure to secondhand smoke during childhood interferes with lung development. Damage to the lungs during this period can affect lung function (how well the lungs work) for the rest of a child’s life.

Chronic Respiratory Symptoms

Many of the chemicals in secondhand smoke are powerful respiratory irritants for both children and adults. Secondhand smoke can cause chronic symptoms like cough, phlegm, and wheezing, especially in infants and younger children. Children exposed to secondhand smoke have more visits to doctors for these complaints.

Asthma

Asthma is a chronic health condition whose symptoms include coughing, wheezing, and shortness of breath. Asthma has become very common in children. In the U.S., it is the number one reason children are admitted to hospitals.

Secondhand smoke has been shown to cause new cases of asthma in children who did not have asthma before. It also has been shown to make children's existing asthma worse. Children with asthma who are exposed to secondhand smoke have more severe symptoms, use more medication, and miss more days of school than those not exposed.

Although many causes of asthma are not fully understood, secondhand smoke is one important cause and it is *avoidable*. Each year in California, secondhand smoke may cause up to 31,000 asthma attacks in children.



Immune System Damage & Infections

Infants and young children who are exposed to secondhand smoke are at higher risk for infections. This may be the result of damage to their developing immune systems.

Secondhand smoke has been shown to cause *lower respiratory infections* in children, including pneumonia and bronchitis. These infections can be especially severe and even life-threatening in children who already have chronic illnesses such as asthma or cystic fibrosis.

Secondhand smoke also has been shown to cause *ear infections* in children. Ear infections are more frequent and last longer in children exposed to secondhand smoke. Each year in California, children's exposure to secondhand smoke results in more than 50,000 doctor visits for ear infections. Surgery may be necessary if children do not respond to other medical treatments. Ear infections are also the most common cause of hearing loss in children.

Sudden Infant Death Syndrome (SIDS)

Sudden Infant Death Syndrome (SIDS), also called crib death, is the leading cause of death in children aged one month to one year. The causes of SIDS are not completely understood. However, it is known that the risk of SIDS is higher in infants exposed to secondhand smoke. Statewide, as many as 21 children may die each year from SIDS that is related to secondhand smoke.

Are Developing Babies at Risk During Pregnancy?



Yes. Secondhand smoke can affect a pregnant woman's developing baby. Babies born to mothers who are exposed to secondhand smoke tend to weigh less than babies not exposed. They are also more likely to be born early (preterm). Each year in California, secondhand smoke is estimated to cause as many as 4,700 early births.

Can Secondhand Smoke Increase the Risk of Cancer?

Yes. Secondhand smoke has been linked to lung cancer, nasal sinus cancer, and breast cancer. Cancer-causing chemicals may increase lifetime risk of cancer when exposure occurs during childhood, more so than in adulthood.

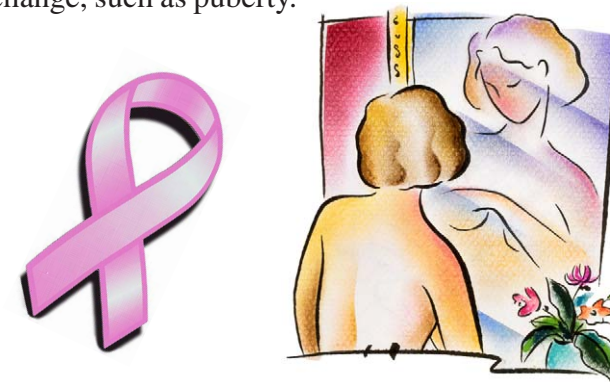


About 3000 people die each year in the U.S. from lung cancer caused by secondhand smoke

Is Secondhand Smoke Related to Breast Cancer?

Yes. Breast cancer is a major cause of disease and death in women. Although a family history of breast cancer has been identified as a risk factor for breast cancer, the causes of the disease are not completely understood.

However, recent studies have found that secondhand smoke is one cause of breast cancer in younger women, before the age of menopause (below age 50). Related studies have shown that the breast may be especially sensitive to toxic chemicals during times of development and change, such as puberty.



Therefore, it is particularly important for young women to avoid exposure to secondhand smoke when their breasts are developing, since chemicals in the smoke may cause changes that ultimately result in breast cancer.

Breast cancer is less common in young women than in older women, so only a small portion of breast cancer may result from secondhand smoke. Still, women (especially girls going through puberty) should avoid exposure to secondhand smoke since it remains one of the few *preventable* causes of breast cancer.

How to Contact Us

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For More Information

- Smokers Helpline (1-800-NO-BUTTS)
www.californiasmokershelpline.org/
- U.S. Centers for Disease Control
www.cdc.gov/tobacco/ets.htm
- U.S. EPA – What to do about secondhand smoke
www.epa.gov/smokefree/pubs/etsbro.html
- OEHHA Report:
www.oehha.ca.gov/air/environmental_tobacco/

State of California
Arnold Schwarzenegger, Governor
Linda Adams, Secretary, California EPA
Joan E. Denton, PhD, Director, OEHHA

