

# Detrimental Health effects of second hand smoking

Dr. Nupur Chatterji<sup>1</sup>, Dr. Renu Saraswat<sup>2</sup>

Associate Professor, Department of Chemistry Meerut College, Meerut

Submitted: 10-04-2022

Revised: 26-04-2022

Accepted: 28-04-2022

## ABSTRACT:

Passive smoking or second hand smoke is breathing in other people's tobacco smoke. Second hand smoke comes from cigarettes, pipes, cigars and hookah. The two types of second-hand smoke are mainstream smoke that is breathed out by someone who smokes and the other is side stream smoke that comes from the burning end of the tobacco product. Passive smoking is dangerous and causes many common clinical conditions like coughing, and wheezing, headaches, sore throats, eye and nasal irritation etc. Tobacco smoke releases almost 5000 chemicals many of which are harmful which easily spreads and stays in the air for quite a long time. Passive smoke puts people at higher risk of smoking related disease like sore throat and cough, headaches, irritation of eyes and nose, cardiovascular disease, stroke and increases the risk of certain types of cancer and also increased risk of chronic obstructive pulmonary disease (COPD).

**Key Words:** Passive Smoke, Second Hand Smoke, Main-stream smoke, side-stream smoke, cardiovascular disease, cancer, chronic obstructive pulmonary disease.

## I. INTRODUCTION

"Environmental tobacco smoke" (ETS) is the term used to characterize tobacco combustion products that are inhaled by non-smokers when they are in proximity of burning tobacco which contains around 4000 compounds, many of which are carcinogens. Most of this ETS is from sidestream smoke that is emitted from the burning tip of the cigarette. It is hazardous as it contains a very high concentration of ammonia, benzene, nicotine, carbon monoxide and many carcinogens. Non-smokers who are chronically exposed to ETS assume health risks that are similar to those of light smokers as they breathe the same harmful chemicals as the smokers do. The term second hand smoke captures the involuntary nature of the exposure most non-smokers are exposed to and do not want to breathe tobacco smoke which poses

adverse health effects including cancer, respiratory infections, allergies and asthma and angina in adults with preexisting health conditions. ETS is a known as an agent for human carcinogen. Almost 5000 non smokers are estimated to die each year of lung cancer.

## Side Stream Smoke and effect on pregnancy and children :

Smoking during pregnancy results in low birth weights however its relation to childhood cancer is not known. An increased SID reports almost 1000 deaths annually. Children whose parents smoke are more prone to respiratory infections and require frequent hospitalization for bronchitis and pneumonia and to a smaller rate of increased lung function in comparison to children of parents who do not smoke. Children exposed to ETS are prone to middle ear infections and also have fluid in their ears more often which exposes them to operations to put the ear tubes for drainage, respiratory symptoms and impaired lung functions, lower respiratory infections and may even lead to sudden infant death syndrome sometimes (SIDS). It is the sudden, unexplained, unexpected death of an infant in the first year of life and is the leading cause of death in otherwise healthy infants.<sup>6</sup> Secondhand smoke increases the risk for SIDS by affecting the brain in ways that interfere with the regulation of an infant's breathing. These infants have higher concentrations of nicotine in their lungs and higher levels of cotinine (a biological marker for secondhand smoke exposure) than infants who die from other causes.

Older children whose parents smoke get sick more often. Their lungs grow less than children who do not breathe secondhand smoke, and they become prone to bronchitis and pneumonia, wheezing and coughing triggering asthma attacks in children which may put the child's life in danger.

### **Passive Smoke and Cardiovascular Disease and Stroke :**

Those non smokers who are exposed to second hand smoke at home or work increasing their risk to heart disease by 25-30 percent and stroke by 20 – 30 percent. Exposure to second hand smoke has immediate adverse effects on the cardiovascular system and results in the casuation of stroke and coronary heart disease. Almost 30,000 premature deaths from heart diseases and about 10,000 deaths due to stroke are reported among non-smokers worldwide.

Breathing secondhand smoke interferes with the normal functioning of the heart, blood, and vascular systems in ways that increase the risk of having a heart attack. Even brief exposure to secondhand smoke can damage the lining of blood vessels and cause your blood platelets to become stickier. These changes can cause a deadly heart attack.

People who already have heart disease are at especially high risk of suffering adverse effects from breathing secondhand smoke and should take special precautions to avoid even brief spells of exposure.

### **Second Hand smoke and Cancer :**

Cancer is found in many non smokers who have never smoked but are exposed to second hand smoke either at home or at work. These non-smokers are exposed to SHS and inhale many of the cancer causing substances and poison that the smokers are exposed to. Even brief exposures to SHS damages the cells and the cancer process is initiated. More the exposure to SHS, higher is the level of developing cancer. The most commonly found cancer types are that of the larynx (voice box), nasopharynx (the portion of the throat behind the nose), nasal sinuses, breast. Exposure of mothers and children to SHS is found linked to childhood cancers like lymphoma, leukemia and brain tumours.

### **Effects Of Second Hand Smoke Exposure, Diagnosis and Treatment:**

Secondhand Smoke effects most people who are near exposed to exhaled or burnt tobacco especially bartenders, restaurant servers, pregnant women, infants, children and those with preexisting diseases like heart disease and even pets. Regular exposure to passive smoking damages the heart and lungs. Within minutes of exposure arteries start hardening just as in a person who smokes, blood starts clotting and fat deposits in blood vessels increasing irregular heart beat or arrythmia thus triggering serious cardiac problems.

Most people who are exposed to passive smoking are usually not tested for the same. Pulmonary or lung function tests are conducted to identify conditions that are related to identify the conditions of second hand smoke in later stages. No treatment is available for the reversal of second hand smoke inhalation. Medications for the management of blood pressure, heart disease and inhalers for the treatment of asthma are administered to control these conditions.

## **II. CONCLUSION**

To save individuals from SHS smoke free surroundings are necessary as tobacco smoke inside a room tends to hang in mid-air rather than disperse. Hot smoke rises, but tobacco smoke cools rapidly stopping its upward climb. Since the smoke is heavier than the air, the smoke starts to descend. Studies show that toxins from smoke do not go away and remain in hair, clothes, carpets and even on furniture and are referred to as “thirdhand smoke”. With the ever increasing hazards of Second Hand Smoke stringent laws should be imposed to curb smoking.

## **REFERENCES :**

- [1]. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014 [accessed 2017 Jan 11].
- [2]. Institute of Medicine. Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence external icon. Washington: National Academy of Sciences, Institute of Medicine, 2010 [accessed 2017 Jan 11].
- [3]. American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts; Controversies Regarding the Sleeping Environment; and New Variables to Consider in Reducing Risk. Pediatrics 2005;116(5):1245–55 [cited 2017 Jan 11].
- [4]. Institute of Medicine. Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence external icon. Washington: National Academy of Sciences, Institute of Medicine, 2010 [accessed 2017 Jan 11].

- [5]. American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts; Controversies Regarding the Sleeping Environment; and New Variables to Consider in Reducing Risk. *Pediatrics* 2005;116(5):1245–55 [cited 2017 Jan 11].
- [6]. International Agency for Research on Cancer. Tobacco smoke and involuntary smoking. Vol 83, 1 – 1413 (2004).
- [7]. California Environmental Protection Agency. 2005. Identification of Environmental Tobacco Smoke as a Toxic Air Containment Executive Summary.