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Swiss association for tobacco control

Protecting the Vulnerable: The Health Impact of Passive Smoking

Key Messages

- No safe exposure: Even brief contact with secondhand smoke harms lungs, heart, and immune defences.
- Vulnerable populations most affected: People with asthma, COPD, heart disease, or genetic conditions face the greatest risks.
- Protection through smoke-free spaces: Homes, hospitals, and public areas must remain entirely smoke-free to prevent avoidable harm.

Introduction

Passive smoke is a widespread and dangerous health hazard that affects everyone, but it poses a particularly serious threat to vulnerable populations—especially those with preexisting respiratory or cardiovascular conditions, surgical patients, and individuals with genetic susceptibilities.

Respiratory Vulnerabilities

Chronic Respiratory Conditions

People with chronic respiratory diseases are especially vulnerable towards passive smoke. In adults with asthma, secondhand smoke (SHS) exposure has been linked to more severe symptoms and a higher likelihood of hospitalisation. Despite this, a majority of afflicted adults are regularly exposed to SHS (Eisner et al., 2005). Additionally, patients suffering from chronic obstructive pulmonary disease (COPD) experience more flare-ups, severe symptoms and reduced quality of life when subjected to SHS (Putcha et al., 2016).
These risks are not limited only to conventional tobacco smoke. Exposure to e-cigarette vapor also causes measurable respiratory stress, raising concerns about newer forms of SHS (Tzortzi et al., 2018). In surgical settings, SHS increases the risk of perioperative respiratory complications and prolongs recovery (Simsek et al., 2016).
Furthermore, SHS impairs lung development, increasing the risk of asthma, wheezing, and respiratory infections throughout childhood and into adulthood (Vanker et al., 2017). It also worsens respiratory infections such as respiratory syncytial virus (RSV),

leading to lower oxygen saturation and more severe clinical symptoms (Maedel et al., 2018) and pneumonia, with affected individuals more likely to require intensive care and longer hospital stays (Ahn et al., 2015).

Immune and Inflammatory Effects

SHS not only damages the body directly but can also weaken its defences by attacking the immune system. As shown in a study by Bhat et al. (2018), passive smoke can impair the body's ability to fight respiratory infections and increase lung inflammation. In individuals with allergic airway diseases, SHS increases inflammatory responses, thus worsening symptoms (Diaz-Sanchez et al., 2006). Effects such as these are particularly dangerous for people with preexisting conditions, as they increase susceptibility to infections and chronic inflammation.

Genetic and Environmental Interactions

Some individuals are genetically more susceptible to the harmful effects of SHS. Meyers et al. (2005) found that SHS exposure can activate or worsen genetic risks for asthma and bronchial hyperresponsiveness. Similarly, Collaco et al. (2008) showed that SHS can also significantly reduce lung function for individuals with cystic fibrosis, a genetic disorder that primarily affects the lungs (Collaco et al., 2008).

Cardiovascular and Systemic Risks

The cardiovascular system is also highly sensitive to passive smoke. Adams et al. (2015) found that passive smokers exhibit vascular inflammation and endothelial dysfunction similar to active smokers. SHS contributes to thousands of coronary heart disease (CHD) deaths annually, with estimates ranging from 2,148 to nearly 14,000 in Germany alone (Gallucci et al., 2020; Heidrich et al., 2007). Despite these risks, many hospitalised CHD patients continue to be exposed to SHS, and the issue remains under-addressed (Japuntich et al., 2015).

Conclusion

The evidence is clear: secondhand smoke is not a minor nuisance—it is a serious health threat, especially for vulnerable populations. It worsens existing diseases, increases the risk of new illnesses, and amplifies the effects of genetic predispositions. Public health policies must prioritise smoke-free environments, especially in homes, hospitals, and public spaces. Greater awareness, clinical attention, and preventive action are essential to protect those most at risk from the harm of passive smoke.

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