

SECOND-HAND SMOKE

TRAINING FOR HEALTH CARE PROVIDERS



Children's Health and the Environment
WHO Training Package for the Health Sector
World Health Organization
www.who.int/ceh

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Notes:

- Please add details of the date, time, place and sponsorship of the meeting for which you are using this presentation in the space indicated.
- This is a large set of slides from which the presenter should select the most relevant ones to use in a specific presentation. These slides cover many facets of the problem. Present only those slides that apply most directly to the local situation in the region.

Learning objectives



- Define second-hand smoke (SHS)
- Recognize products related to SHS
- Understand the scope of the global issue of smoking
- Identify children's unique vulnerabilities to SHS
- Describe clinical effects of SHS exposure on children
- Find strategies to prevent and reduce SHS exposures

Figure:

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Outline



- Definitions
- Sources and epidemiology
- Clinical presentation
 - Signs and symptoms
 - Red flags for morbidity/mortality
 - Environmental health history
- Treatment and prevention
- Advocacy

Figure:

- © WHO/ SEARO / Anubhav Das. Illustration about tobacco in India.

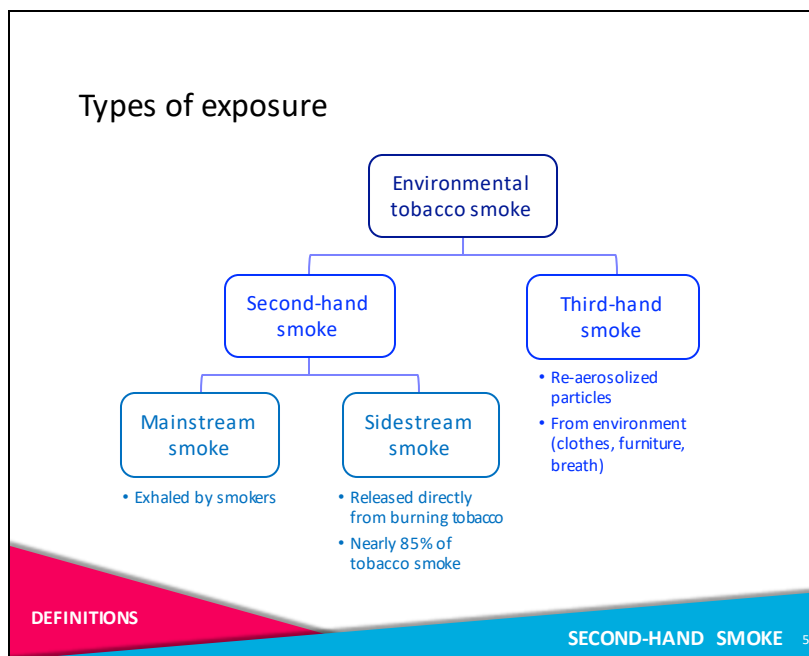
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- © WHO/ SEARO / Anubhav Das. Illustration about tobacco in India.



Multiple terms refer to exposures of non-users to tobacco smoke.

Environmental tobacco smoke (ETS) includes materials in the air originating from burned or heated tobacco. Exposure continues after smoking stops and includes second- and third-hand smoke.

Second-hand smoke (SHS) includes smoke released from actively burning tobacco products.

Sidestream smoke is formed from smouldering of cigarettes or other paraphernalia between puffs.

Mainstream smoke is emitted at the mouthpiece during a puff, then exhaled by a smoker

Third-hand smoke refers to particles re-suspended in air. Sources include furniture, clothing, and smokers' breath.

All forms of environmental tobacco smoke are detrimental to health. Children are at particular risk, not being able to control their environments and re-volatilizing third-hand smoke particles through active play and exploration. In the case of third-hand smoke, many of the same chemicals present in first- or second-hand smoke remain but may be transformed into other hazardous forms with currently unknown effects. This module focuses on the many well-researched aspects of second-hand smoke.

References:

- Oberg M, Woodward A, Jaakkola MS, Peruga A, Prüss-Ustün A (2011). Global estimate of the burden of disease from second-hand smoke. Geneva: World Health Organization. (https://www.who.int/tobacco/publications/second_hand/global_estimate_burden_disease/en/, accessed 27 February 2019).

Smoked tobacco products

Directly smoked

- Cigarettes
 - May be flavoured
- Cigars
- Cigarillos
- Bidi (beedi)
 - May be flavoured
- Kretek (clove cigarette)
 - Anesthetizes airway
- Pipe



Indirectly smoked

- Water pipe
 - Tobacco heated on a burner
 - Smoke is passed through a water chamber
 - Water cools smoke
 - Also known as shisha, hookah, narghile

DEFINITIONS

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Tobacco is smoked directly, or can be heated to release smoke into an inhalation system. Some previously regional means of smoking tobacco have become globally popular over time.

Electronic nicotine delivery system and e-cigarette use is rapidly increasing in many countries. Synthetic nicotine can be added to such products in any quantity leading to higher risks. Regulation has not always kept up with use of these products; therefore, nicotine users can often bypass smoking restrictions by using this product. Vapor is released into the environment, subjecting others to 'second-hand vaping' through environmental contamination. There is limited data on the short and long term impacts of this form of tobacco use, although some information suggesting that teens who use it are more likely to take up smoking has been published.

References

- WHO (2019). WHO global report on trends in prevalence of tobacco use 2000-2025, third edition. Geneva: World Health Organization. (<https://www.who.int/publications-detail/who-global-report-on-trends-in-prevalence-of-tobacco-use-2000-2025-third-edition>, accessed 24 December 2019).
- Miech R, Patrick ME, O'Malley PM, Johnston LD (2017). E-cigarette use as a predictor of cigarette smoking: results from a 1-year follow-up of a national sample of 12th grade students. *Tob Control* 26(e2):e106-e111. doi:10.1136/tobaccocontrol-2016-053291.
- Cobb CO, Hendricks PS, Eissenberg T (2015). Electronic cigarettes and nicotine dependence: evolving products, evolving problems. *BMC Med.* 13:119. doi:10.1186/s12916-015-0355-y.
- O'Connor RJ (2012). Non-cigarette tobacco products: what have we learnt and where are we headed? *Tob Control.* 21(2):181-90. doi:10.1136/tobaccocontrol-2011-050281.

Figure:

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Windows of exposure

Prenatal

- Maternal tobacco use or maternal SHS exposure
- Tobacco products, including nicotine, cross the placenta

Postnatal second-hand exposure

- Second-hand smoke (SHS)
- Transmission via breastmilk

First-hand exposure

- Smoking
- Smokeless tobacco
- Accidental oral, dermal or other exposure

DEFINITIONS

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Windows of exposure during development include three major forms.

- Prenatal exposures consist of maternal smoking or maternal SHS exposure.
- Postnatal second-hand exposures can occur via inhalation or breastmilk consumption
- First-hand exposures may occur when children use tobacco themselves.

Reference:

- Pronczuk-Garbino J, editor (2005). Children's health and the environment: A global perspective. A resource manual for the health sector. Geneva: World Health Organization. (<https://www.who.int/publications-detail/children's-health-and-the-environment>, accessed 8 December 2019).

Tobacco smoke content

Tobacco smoke contains
toxic, carcinogenic and
irritating substances

Over 7000 chemicals have
been identified in cigarette
smoke, at least 250 of which
are known to be toxic or
carcinogenic



DEFINITIONS

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Some of these chemicals can be found in other toxic mediums, such as:

- **Acetic acid:** found in vinegar
- **Ammonia:** found in detergent
- **Arsenic:** found in poison
- **Butane:** found in lighters
- **Cadmium:** found in batteries
- **Carbon monoxide:** found in exhaust gas
- **Hexamine:** found in barbecue starters
- **Methane:** found in sewer gas
- **Methanol:** found in rocket fuel
- **Nicotine:** found in insecticide
- **Paint**
- **Stearic Acid:** found in candle wax
- **Toluene:** found in industrial solvent

References:

- U.S. Department of Health and Human Services (2010). How tobacco smoke causes disease: the biology and behavioral basis for smoking-attributable disease: a report of the surgeon general. Atlanta, GA: U.S. Department

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