

## **Secondhand Smoke Is Linked to Hyperactivity and Bad Behavior in Children: What about Third-hand Smoke?**

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**1.** Breathing in secondhand tobacco smoke (SHS) -- smoke from cigarettes as inhaled by people who are not smoking -- may have mental health, as well as physical consequences for a child. According to a report by the United States Surgeon General, secondhand smoke affects children: children exposed to it can suffer middle ear infections, impaired lung function and are more susceptible to sudden death.

**2.** British researchers have revealed an association between secondhand smoke and psychological distress among children. They report that children who are regularly inhaling environmental tobacco smoke (secondhand smoke) have a higher risk of developing hyperactivity, "conduct disorder" (bad behavior), and some other mental health problems. In addition, there has been growing evidence over the last few years that parents and guardians should make every effort to make sure children are not exposed to environmental tobacco smoke.

**3** Mark Hamer, PhD, from University College London gathered data on the physical and mental health of 901 children aged 4 to 8 years, all of them non-smokers. Their saliva was tested for cotinine, a by-product of tobacco smoke, in order to measure the levels of secondhand smoke exposure. The participants were also asked to report on how frequently they were exposed to environmental tobacco smoke. Forty percent of the sample demonstrated high SHS exposure (cotinine level >0.70 ng/mL).

**4** The children's parents were asked to complete a "Strengths and Difficulties" Questionnaire in order to assess the child's psychological distress, i.e., the questionnaire helped the researchers determine what emotional, behavioral or social problems the children might have. The questionnaire had a top score of 40 -- the higher the score meant the more problems the child had.

**5** The difference in the results was quite evident. Children with higher cotinine levels were more likely to live in areas of greater socioeconomic needs with chronically sick parents or in single-parent families. When environmental smoke was breathed in, it was most likely to occur in the child's home. SHS exposure was associated with poorer mental health among children. The investigators found that the presence and severity of mental health problems was closely linked to whether a child breathed in secondhand smoke, as well as how regularly. Hyperactive children and those with conduct disorders had high salivary cotinine levels.

**6** However, nobody knows the link between secondhand smoke and mental problems. Genetics may play a factor, or perhaps chemicals in tobacco smoke may influence brain chemicals, such as dopamine.

**7.** Each of us is breathing in secondhand smoke when in a room where people are smoking. The next danger which arises: third-hand smoke. If you have ever owned a car that was previously owned by a smoker, you are familiar with a smell of smoke in the car which seems to be glued to the seats and to the other parts in the car. That's third-hand smoke. If you've ever shared an elevator with someone who has just smoked a cigarette, you were exposed to third-hand smoke.

**8.** Dr. Carl Werntz, from the West Virginia University Department of Community Medicine stated recently, "There are people doing research in order to look at the risks of third-hand smoke, especially at how it might be affecting people who are exposed to it. We know there are health risks from smoking, and health risks from secondhand smoke, so there are also concerns that third-hand smoke is dangerous."

**9.** Whether by choice or by law, smokers now take their cigarettes outside the room, classroom, school, office, department store, and off the school yard; thus, sparing the people inside from secondhand smoke. But even after the cigarette has been

stubbed out, smokers carry toxic chemicals on their hair and clothing. "People will sometimes say 'I don't expose my children to cigarette smoke because I do that outside', Werntz added. "The problem is that their clothes and hair have smoke on them when they come inside, and this is where they expose their children to the third-hand smoke. Third-hand smoke stays in any soft surfaces, like in a carpet, in the home. This means that children are especially at risk to third-hand smoke exposure, since they frequently crawl or sit on the carpet-covered floor. The risk of respiratory tract infections in children from infancy to 13 years of age more than doubled in households in which parents smoked cigarettes but claimed to smoke only outside, said Edward Dompeling, MD, professor of pediatric lung diseases at Maastricht University Medical Center in the Netherlands.

**10.** Although it is known that toxins from cigarette smoke remain in carpets and furniture, it is not known exactly how harmful third-hand smoke is. That remains to be seen. Research looking into the effects of third-hand smoke is new and ongoing. "Our findings suggest that interventions aimed at preventing second-hand smoke exposure in children may consider also including strategies and education to prevent third-hand smoke exposure in children," Dompeling told MedPage Today.

**SOURCE:** Secondhand Smoke: "Objectively Measured Secondhand Smoke Exposure and Mental Health in Children - Evidence From the Scottish Health Survey"

Mark Hamer, PhD; Tamsin Ford, PhD; Emmanuel Stamatakis, PhD; Samantha Dockray, PhD; G. David Batty, PhD

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**SOURCE:** Third-Hand Smoke: Copyright 2010 West Virginia Media

## I. Comprehension Questions

### 1. Circle the correct answer.

The examples at the end of paragraph 1 illustrate **mental / physical** health problems that children suffer from secondhand smoke.

### 2. Paragraph 2.

List TWO synonyms that the author uses for cigarette smoke inhaled by non-smokers

a. \_\_\_\_\_

b. \_\_\_\_\_

### 3. What is the relationship between paragraphs 2 and 3?

- a. cause and effect
- b. exemplification
- c. addition
- d. contrast

### 4. Put a check (✓) next to the **THREE** research methods Mark Hamer did **NOT** use?

\_\_\_ Children aged 4 – 8 filled out a questionnaire

\_\_\_ Both smokers and non-smokers were studied

\_\_\_ Reviewing both mental and physical health of children

\_\_\_ Taking samples of saliva from children aged 4 – 8

\_\_\_ Creating a rating scale 0 – 40, with 40 meaning lowest problems

### 5. Children with higher exposure to SHS came from wealthier families

**True / False**

Support your answer by quoting from the text:

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6. Paragraph 6

Complete the following sentence:

Although some children who inhaled secondhand smoke had mental health problems, \_\_\_\_\_

7. How does the usual behavior of children increase their exposure to third-hand smoke?

\_\_\_\_\_

8. **Circle the correct answer.**

Contrary to the dangers of secondhand smoke, the dangers of third-hand smoke **are / are not** understood.

9. In the last paragraph the writer says, "That remains to be seen".

What might be the potential topic for future research/study/investigation?

\_\_\_\_\_

10. What is the main idea of the article?

- a. Secondhand and third-hand smoke have equally dangerous physical and emotional effects.
- b. Effects of secondhand smoke are known while the effects of third-hand smoke need to be studied.
- c. Driving a car previously owned by a smoker may have dangerous effect on your health.
- d. Children are particularly vulnerable to the harmful effects of third-hand smoke.

## II. Vocabulary

### Exercise 1

Which words in the article mean the same as the words below?

Para. 1 results, effects, outcomes

Para. 1 bodily

Para. 2 proof, data

Para. 3 contact, interaction

Para. 3 people doing the activity  
of smoking

Para. 5 psychological

Para. 5 researchers acting like  
detectives

Para. 6 connected

Para. 7 before, earlier

Para. 8 a group in society

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### Exercise 2

Which words in the article mean the opposite of the words below?

Para. 1 mental \_\_\_\_\_

Para. 2 peacefulness \_\_\_\_\_

Para. 3 smokers \_\_\_\_\_

Para. 4 bottom score \_\_\_\_\_

Para. 4 weaknesses \_\_\_\_\_

Para. 5 similarity \_\_\_\_\_

Para. 5 occasionally \_\_\_\_\_

Para. 6 not linked \_\_\_\_\_

Para. 7 currently \_\_\_\_\_

Para. 8 benefits \_\_\_\_\_

### Exercise 3 Complete the sentences with words from the word bank

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mental

physical

evidence

function

participants

investigators

previously

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1. Parents and teachers are the main \_\_\_\_\_ in the child's life.
2. Running, jumping, swimming, dancing and playing football are the \_\_\_\_\_ activities most children enjoy.
3. At the scene of an accident, \_\_\_\_\_ look for \_\_\_\_\_ that can explain why the incident happened.
4. Hyperactivity, "conduct disorder" and Attention Deficit Disorder (ADD) are \_\_\_\_\_ problems.
5. People who are addicted to smoking cigarettes, cannot \_\_\_\_\_ without them.
6. The teacher has \_\_\_\_\_ agreed to allow her students to hand in a paper \_\_\_\_\_ instead of taking a test.