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Thirdhand Smoke is a Public Health Concern

Thirdhand smoke (THS) is now recognized as a health hazard. THS is residual secondhand smoke that imbeds into upholstery, rugs, and onto walls, and other surfaces, lingering for weeks. New studies indicate that THS may be more dangerous than secondhand smoke, since THS does not dissipate quickly, and continuously emits respirable particles long after secondhand smoke takes place. [Click here](#) to learn more from an April 1, 2010 ABC interview with Dr. Jonathan Winikoff, a pediatrician at Massachusetts General Hospital for Children in Boston.

Learn more about THS exposure concerns on our website http://njgasp.org/children_ths.htm. See also GASP's presentation entitled, *Hot Topics In Tobacco Control*, presented at NJ Environmental Health Association Educational Conference and Exhibition, Atlantic City, NJ, March 7, 2011.

Studies and Journal Articles

1. The October 30, 2010 issue of Tobacco Control Journal published the [San Diego State University study](#). "When smokers move out and non-smokers move in: residential thirdhand smoke pollution and exposure". The researchers concluded:

"THS in a home lingers for more than 2 months, after the smokers move out." THS accumulates in smokers' homes and persists when smokers move out even after homes remain vacant for 2 months and are cleaned and prepared for new residents. When non-smokers move into homes formerly occupied by smokers, they encounter indoor environments with THS polluted surfaces and dust. Read this Tobacco Control Journal editorial ["Thirdhand smoke: here to stay"](#) by Suzaynn Schick, discussing the above study and the health concerns with thirdhand smoke.

2. A new potential health hazard from THS was revealed in a February 2010 study by the U.S. Department of Energy. The study concluded that nicotine in THS (which is tobacco smoke residue that imbeds into surfaces, e.g. furniture, carpet, clothing, skin, etc.), when it reacts with nitrous acid, a common indoor air pollutant, forms dangerous carcinogenic tobacco-specific nitrosamines (TSNAs), such as NNN and NNK. Key findings in the study's [February 8, 2010 press release](#):

"We know that these residual levels of nicotine may build up over time after several smoking cycles, and we know that through the process of aging, third-hand smoke can become more toxic over time... What we see in this study is that the reactions of residual nicotine with nitrous acid at surface interfaces are a potential cancer hazard, and these results may be just the tip of the iceberg."

[Click here](#) for a NY Times article with information from the January, 2009 *Pediatrics* study, which discusses the hazards of exposure to THS, present on the walls, in carpeting, furniture, etc., that lingers beyond the extinguishing of a cigarette or cigar. [Click here](#) for the study abstract. Key findings:

- o Carcinogens and toxins in third-hand smoke may affect brain development in babies and young children.
- o Young children crawl on carpeting and suck on clothing, upholstery, skin, etc. that has third-hand smoke residue.
- o Increasing awareness of how third-hand smoke harms the health of children may encourage home smoking bans.

- o Professor Winickoff is also concerned about new mothers who smoke, saying: "And if you breastfeed, the toxins will transfer to your baby in the breast milk." See press release at <http://www.massgeneral.org/about/pressrelease.aspx?id=1091>.

NY TIMES, January 3, 2009

http://www.nytimes.com/2009/01/03/health/research/03smoke.html?_r=1&em=&pagewanted=print

A New Cigarette Hazard: 'Third-Hand Smoke'

By RONI CARYN RABIN

Parents who smoke often open a window or turn on a fan to clear the air for their children, but experts now have identified a related threat to children's health that isn't as easy to get rid of: third-hand smoke.

That's the term being used to describe the invisible yet toxic brew of gases and particles clinging to smokers' hair and clothing, not to mention cushions and carpeting, that lingers long after [second-hand smoke](#) has cleared from a room. The residue includes heavy metals, carcinogens and even radioactive materials that young children can get on their hands and ingest, especially if they're crawling or playing on the floor.

Doctors from MassGeneral Hospital for Children in Boston coined the term "third-hand smoke" to describe these chemicals in a new study that focused on the risks they pose to infants and children. The study was published in this month's issue of the journal *Pediatrics*.

"Everyone knows that second-hand smoke is bad, but they don't know about this," said Dr. Jonathan P. Winickoff, the lead author of the study and an assistant professor of [pediatrics](#) at Harvard Medical School.

"When their kids are out of the house, they might smoke. Or they smoke in the car. Or they strap the kid in the car seat in the back and crack the window and smoke, and they think it's okay because the second-hand smoke isn't getting to their kids," Dr. Winickoff continued. "We needed a term to describe these tobacco toxins that aren't visible."

Third-hand smoke is what one smells when a smoker gets in an elevator after going outside for a cigarette, he said, or in a hotel room where people were [smoking](#). "Your nose isn't lying," he said. "The stuff is so toxic that your brain is telling you: 'Get away.'"

The study reported on attitudes toward smoking in 1,500 households across the United States. It found that the vast majority of both smokers and nonsmokers were aware that second-hand smoke is harmful to children. Some 95 percent of nonsmokers and 84 percent of smokers agreed with the statement that "inhaling smoke from a parent's cigarette can harm the health of infants and children."

But far fewer of those surveyed were aware of the risks of third-hand smoke. Since the term is so new, the researchers asked people if they agreed with the statement that "breathing air in a room today where people smoked yesterday can harm the health of infants and children." Only 65 percent of nonsmokers and 43 percent of smokers agreed with that statement, which researchers interpreted as acknowledgement of the risks of third-hand smoke.

The belief that second-hand smoke harms children's health was not independently associated with strict smoking bans in homes and cars, the researchers found. On the other hand, the belief that third-hand smoke was harmful greatly increased the likelihood the respondent also would enforce a strict smoking ban at home, Dr. Winickoff said.

"That tells us we're onto an important new health message here," he said. "What we heard in focus group after focus group was, 'I turn on the fan and the smoke disappears.' It made us realize how many people think about second-hand smoke — they're telling us they know it's bad but they've figured out a way to do it."

The data was collected in a national random-digit-dial telephone survey done between September and November 2005. The sample was weighted by race and gender, based on census information.

Dr. Philip Landrigan, a pediatrician who heads the Children's Environmental Health Center at Mount Sinai School of Medicine in New York, said the phrase third-hand smoke is a brand-new term that has implications for behavior.

"The central message here is that simply closing the kitchen door to take a smoke is not protecting the kids from the effects of that smoke," he said. "There are carcinogens in this third-hand smoke, and they are a [cancer](#) risk for anybody of any age who comes into contact with them."

Among the substances in third-hand smoke are hydrogen cyanide, used in chemical weapons; butane, which is used in [lighter fluid](#); toluene, found in paint thinners; arsenic; lead; [carbon monoxide](#); and even polonium-210, the highly radioactive carcinogen that was used to murder former Russian spy [Alexander V. Litvinenko](#) in 2006. Eleven of the compounds are highly carcinogenic.

Health Dangers of Youth Hookah Smoking

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Background

- Hookah (shisha, goza, narghile) is a water pipe used to smoke maassel (flavored tobacco). Maassel is charcoal-heated, creating smoke that passes through water, and inhaled via a hose.
- Originated 4 centuries ago (Asia/Africa).
- Increased popularity in USA since 1990s.
- Fruit/candy flavors appeal to young adults.

Harmful Health Effects

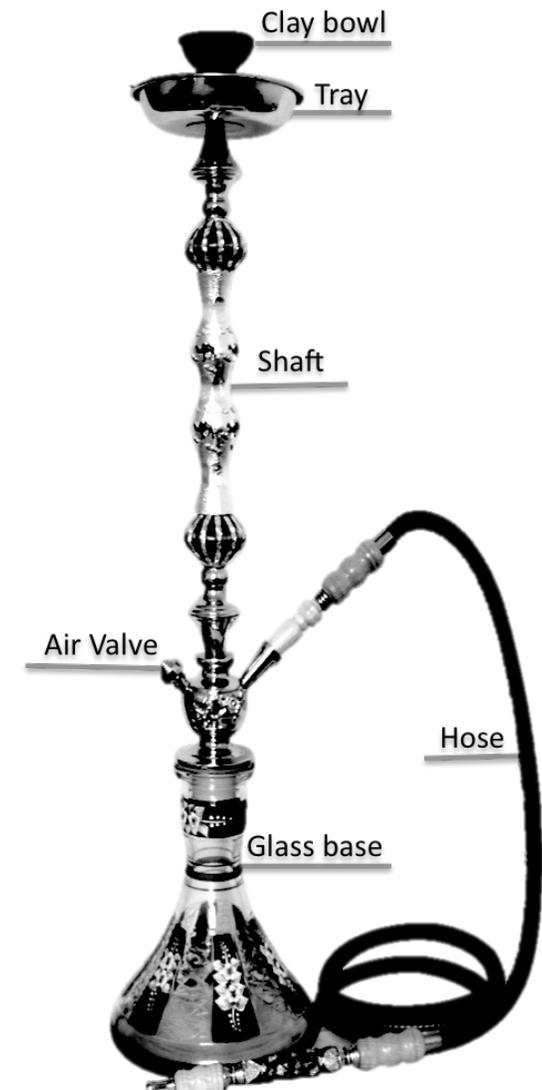
- Hookah smoke contains numerous toxins known to cause lung cancer, heart disease and adverse effect on pregnancy. 2005 World Health Organization (WHO) Advisory Note.
- Secondhand hookah smoke has the same disease risks caused by secondhand cigarette smoke (WHO).
- In one session, a hookah smoker inhales up to an equivalent of 100 cigarettes. Hookah smoke contains nicotine, the addictive component of tobacco smoke, tobacco-related carcinogens, tar, carbon monoxide (CO), and heavy metals.
- Hookah smokers have high CO breath levels of 40-70 ppm, twice a heavy smoker. Normal nonsmoker CO levels are 3 ppm.
- "Sharing a hookah may increase the risk of transmission of tuberculosis, viruses such as herpes or hepatitis, and other illnesses" via communal use of non-sterile apparatus (CDC).
- Individual mouth pieces do not eliminate the risk of transmitting infectious diseases. 17% of TB cases in the eastern Mediterranean are attributable to smoking of water pipes (WHO).
- H1N1 flu virus may be spread through hookah smoking.

New Jersey State Laws

- 2006 New Jersey Smoke-Free Air Act (NJSFAA) allows a smoking lounge if in existence as of 12/31/04, meets strict enclosure and ventilation requirements and only "incidental" (minor/occasional) food service.
- 2007 NJ Department of Health Regulations help to implement the NJSFAA, in that a Tobacco retail establishment (TRE) waiver to allow smoking at a business is solely to sample a product to be consumed off-premises. Cannot use a TRE waiver for an indoor smoking lounge. No food/beverage served if granted TRE waiver.
- NJ Smokefree College Residential Housing Act requires all college-owned or operated residential housing on and off-campus to be 100% smokefree.
- State law prohibits the selling, furnishing or giving of tobacco in any form to a person under age 19.

Young Adult Use Prevalence

- 2007 American Legacy Foundation Survey (ages 18-24): 42% surveyed believe that hookah smoking is less dangerous than cigarette smoking; 32% believed that hookah smoking is less addictive than smoking cigarettes.
- 2008 University of Pittsburgh survey: 40.5% of 647 students reported smoking a hookah. 88% would smoke it again. 52.1% believed tobacco smoking from a waterpipe was less addictive than cigarette smoking.
- 2008 NJ Youth Tobacco Survey (NJDHSS): 9.7% of high school students smoke tobacco/flavored tobacco hookah; 4.1% of middle school students smoke tobacco/flavored tobacco hookah.



Source: http://njgasp.org/quit_tobacco.htm

Tobacco Cessation Services Resources in New Jersey

Here are resources to help you quit tobacco. Two resources are state-funded and are at no or low cost. Privately-funded cessation centers are also listed, at no, low and/or regular cost. Check with your healthcare provider for coverage as well.

New Jersey State Funded Cessation Services:

- **[NJ Quitline/\(800\) QUIT-NOW](#)** is New Jersey's state-sponsored quit tobacco program. It is a free quitline service with educational materials and tobacco cessation trained coach/specialists who can help you quit smoking or tobacco. You can call the phone numbers (866) 657-8677 or (800) 784-8669 for more information.
- **[Mom's Quit Connection](#)**
Mom's Quit Connection (MCQ) is a free smoking cessation support program, sponsored by New Jersey's Department of Health and Senior Services. The program supports pregnant women, and mothers, families and caregivers of young children who need help trying to quit tobacco. Contacts:
Merle Weitz, 856-675-5322 mweitz@snjpc.org
Cathy Butler, 856-675-5289 cbutler@snjpc.org



Privately Funded Cessation Services Available in New Jersey:

- **[Atlantic Health](#)**. Call 800-247-9580 or Lisa Picciuti, LCSW 973-971-7971, or go to atlanticealth.org, click on Classes and Screening and select "Hypnosis for Smoking Cessation" from the dropdown menu. Services Union, Essex, Sussex and Morris counties. Atlantic Health offers low-cost CT scans to help detect lung cancer. Open to persons age 45+ who are smokers or have had significant exposure to secondhand smoke. See http://njgasp.org/Atlantic_Health_2-2010_IELCAP.pdf .
- **[American Lung Association](#)**. Quit services offered by the American Lung Association can be found by clicking on the above link or by calling 800-586-4872.
- **[HiTOPS, Inc.](#)** iQuit! Program for 13 to 27 year olds through counseling and possible Nicotine Replacement Therapy. Ivy Pearlstein 609-683-5155 x212 ivy@hitops.org
- **[Saint Barnabas Behavioral Health Center](#)**
Essex/Union: Dennis Lee (Tobacco Treatment Specialist) at 973-926-7978 denlee@sbhcs.com
Ocean/Monmouth: Helene Long, CTTS (Tobacco Treatment Specialist) at 732-886-4149 hlong@sbhcs.com
- **[Shore Memorial Hospital \(Atlantic County\)](#)**. 609-653-3440, quitcenter@shorememorial.org
NOTE: This program is very affordable and open to anyone.
- **[Somerset Medical Center \(Somerset\)](#)**. Dr. Chris Kotsen, 908-685-2442 ckotsen@somerset-healthcare.com
- **[UMDNJ Tobacco Dependence Program, School Of Public Health](#)**. Dr. Michael Steinberg, 732-235-8222 clinic@tobaccoprogram.org NOTE: This program services the community now as well as UMDNJ oncology patients. If you want to help people quit tobacco, learn about becoming a certified tobacco treatment specialist through the [UMDNJ School of Public Health Tobacco Training Program](#).

Federal Smoking Cessation Websites:

- **[Surgeongeneral.gov/tobacco](http://surgeongeneral.gov/tobacco)** has the latest information on how to quit from the Surgeon General's website which includes new, effective clinical treatments for tobacco dependence and the latest information to help people quit smoking.
- **[Smokefree.gov](http://smokefree.gov)** was created by the Tobacco Control Research Branch of the National Cancer Institute and is a collaborative site with other institutions. The site provides a step-by-step quit guide, tools for quitting, information on quitting and the ability to speak to a counselor.
- **[Quit Tobacco](#)** was created by the US Department of Defense and is focused on helping US military personnel.

[Self magazine's November 2010 issue](#) shares strategies on how to quit smoking, including a quit smoking contract to print, sign and share. Contract at <http://njgasp.org/Quit-Smoking%20Contract%20Self%20magazine.pdf>