

From *Studies On The Slab*, “The Giblets”

Of Mice And Men

In 2007, a study was published in the *Journal of Periodontology* showing that subjects with periodontitis (a potentially serious gum disease) who were exposed to secondhand smoke were supposedly more likely to develop bone damage, the number one cause of tooth loss. According to the president of the American Academy of Periodontology, “This study really drives home the fact that even if you don’t smoke the effects of secondhand smoke can be devastating.”ⁱ That statement was followed up by a caution from DMD Dr. Kenneth Mogell, “... secondhand smoke has effects well beyond what we might have thought!”ⁱⁱ And finally, as usual, a web page titled, “Secondhand Smoke Harms Children’s Health,” dragged the children in with a warning that “Periodontal disease [is] a leading cause of tooth loss.... No amount of secondhand smoke is safe for children. If you smoke, ... quit. It’s important for your health and the health of your children.”^{iii,iv}

Sounds pretty serious, right? Kind of makes you think that parents who smoke will end up raising herds of toothless young geezers who’ll be laughed at in school. And that’s exactly the image that was meant to be conveyed. But what the headlines and quotes artfully hide is that the study was done using highly concentrated clouds of smoke and that the “subjects” studied were actually thirty-six specially bred Wistar *rats!* Dr. Nogueira-Filo *et al.* published their research with the intimidating title of “Low- and High-Yield Cigarette Smoke Potentiates Bone Loss During Ligature Induced Periodontitis”^v Most newspaper readers and TV news viewers would never know the crucial facts: not only did the researchers study rats’ teeth instead of children’s teeth, but the rats were exposed to levels of smoke far beyond anything ever experienced by any child on the face of the earth.

Basically, the rats were locked in a chamber measuring eight-tenths of a single cubic foot while the smoke from ten cigarettes was pumped through it. Eight minutes later, the half-suffocated animals would be dragged out, revived if necessary, and set aside to wait until their next visit to smoking hell. They got these treatments three times a day for a month and were then mercifully put out of their misery and dissected to determine whether any symptoms of damage to their gums could be detected. Oh, and to load the dice even more, the rats were initially given ligatures (wounds) around which the gums were valiantly trying to heal despite the repeated tortures of the antismoking scientists.

How much smoke were they exposed to? Was it anything like what little Johnny and Janie might suffer while living with a smoking parent? Well, ten cigarettes in an eight-tenths cubic foot chamber would create the same concentration as a thousand cigarettes burned in a standard phone booth of about eighty cubic feet.¹ The experiment basically modeled a situation in which you would take your child to a dentist for a particularly nasty dental procedure, one that required deep stitches in his or her gums, and then brought that child home to be locked in a phone booth three times a day while you blew the smoke from 1,000 cigarettes at a time through that booth. The study showed that if you did that for a whole month, their gums might not have healed quite as well as if you hadn't done that – although that's only necessarily true if your child is a specially bred Wistar rat.

To bring it closer to the real world, say you lived in a two story home offering 1,000 square feet per floor and ten-foot-high ceilings. That home would have roughly 20,000 cubic feet of air space; the equivalent of 250 phone booths. So, to duplicate the conditions of the experiment, you'd need to sit down and smoke roughly three quarters of a million cigarettes a day while your little ones tried to watch the Teletubbies through the haze. And then, when you brought your sweet and somewhat desiccated

¹ Phone booths are usually only around 70 cubic feet in volume, but for mathematical simplicity we'll assume we had some help from Dr. Who in building this one.

little loves back to the dentist a month later, you'd find that maybe they weren't doing quite as well as you'd expected.²

But what about exposures at a far lower level? Say, 750 instead of 750,000 cigarettes a day? Or just 75? Or maybe only 7 cigarettes smoked several years ago by a maiden aunt on your front porch? Well, according to the claims of the newest research headlined in 2011, even that maiden aunt of times past could be a heartless killer of children yet unborn.

The research, headed by Dr. Virender Rehan of UCLA, a principal investigator at Los Angeles BioMed, was published in the July, 2011 issue of the *American Journal of Physiology*,^{vi} and it was, as usual for this sort of stuff, headlined all over the world. With "Thirdhand Smoke" abbreviated as THS here, some of the typical headlines were "THS Hurts Infant Lungs,"^{vii} "Unborn babies at risk from THS"^{viii} "THS Dangerous to Unborn Babies' Lungs,"^{ix} and "THS Affects Infant's Lungs."^x Quotes from those stories included such notes as:

Prenatal exposure to toxic components of a newly recognized category of tobacco smoke ... can have as serious or an even more negative impact on an infant's lung development as postnatal or childhood exposure to smoke ... long after smokers have finished their cigarettes ... [THS is] a stealth toxin because it lingers on the surfaces in the homes, hotel rooms, casinos and cars used by smokers... babies [are] especially vulnerable to the effects of thirdhand smoke ... The dangers of thirdhand smoke span the globe ... more damaging than secondhand smoke or firsthand smoke ... pregnant women should avoid homes and other places where thirdhand smoke is likely to be found to protect their unborn children against the potential damage these toxins can cause to the developing infants' lungs.

A scary picture. An invisible stealth toxin. More "negative impact" than secondhand smoke. More damaging than firsthand smoke. Babies especially vulnerable. A danger that spans the globe! Several stories emphasized the concept that even touching a surface in a home where smokers might have smoked a long time ago could lead to a lifetime of respiratory pain and suffering for innocent children not even born yet.

² That's assuming that anyone in your home or the surrounding neighborhood actually survived the 750,000 cigarettes per day regimen in the first place.

None of the stories went into any detail at all about the actual research other than occasionally mentioning a few of the scary chemical names of the “stealth toxins” left behind by smokers. In order to find out more, I had to request a copy of the study itself from the researchers. Given all that I’ve seen, I should not have been surprised by what I found. Nonetheless, I was.

The study didn’t examine mothers touching surfaces in homes where someone smoked in the past. It didn’t examine mothers being hugged by smokers. It didn’t even examine mothers being touched by someone who might have once walked through a room where George Washington might have smoked a pipe before sleeping and leaving one of his ubiquitous signs.

The study once again simply examined rats. More specifically, it examined baby rats. More specifically than that, it examined tiny unborn baby rats who were bloodily ripped out of their mommy rats’ guts and then torn wide open so that their innocent little unborn rat lungs could be yanked out, thrown on a slab, chopped brutally into teenie-weenie one millimeter cubes, and then soaked with concentrated solutions of chemicals that can just barely be detected at nanogram levels in nitrous-acid filled rooms where people have smoked heavily. Some isolated cells in those little bits of tortured fetal rats’ lungs were then found to have undergone changes that could be related in some vaguely arguable way to abnormalities in human lungs that might sometimes correlate with conditions that were nebulously correlated in some way to asthma.

None of that information was given in the news stories. Almost none of it was provided in the study abstract. The little that was provided in the abstract would have been quickly overlooked by most reporters after they were hit with the following opening line: “The underlying mechanisms and effector molecules involved in mediating in utero smoke exposure-induced effects on the developing lung...”

If any reporters *did* manage to stay awake after that, rather than simply heading straight to the press release with all its juicy quotes (and no hint of rodents), they might have noticed the one mention of the word “rat” in the following excerpt: “Fetal rat lung explants were exposed to

nicotine, 1-(N-methyl-N-nitrosamino)-1-(3-pyridinyl)-4-butanal (NNA), or 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK).” Even that explicit mention would have been blasted out of almost anyone’s consciousness once they hit the phrase “breakdown of alveolar epithelial-mesenchymal cross-talk, reflecting lipofibroblast-to-myofibroblast trans-differentiation.”³

No one, anywhere in the world, reading any news stories that I was able to find in English, would have had the slightest clue that this study had done anything other than observe the horrible effects of thirdhand smoke exposure on human children who had suffered from their mothers’ unwise visits to those George Washington tourist traps.

In case there is any doubt about how this research was misrepresented to the public, let me present a quote from ModernPregnancyTips.com,^{xi} a source that you would certainly expect to be concerned about presenting such information accurately. It’s also a source that you would expect to be responsible about correcting unreasonable fears that might plague mothers-to-be. In the story on their website, though, not only did they quote the concerns of the original THS creator, Jonathan Winickoff, in warning about the danger of even “touching [the] toxic substances [on] contaminated surfaces,” but they then compounded the fear by explaining the study’s findings as follows:

The researchers on the study looked at the way that these tobacco toxins affected the normal lung development in infants. They found that exposure during the prenatal period caused significant disruption in the normal lung tissue growth, which can lead to serious respiratory ailments later in life...

Note the use of the word “infants.” Do you see *anything* there that even hints that they simply chopped up fetal rat lungs and poured chemicals on them? To make the irresponsibility stand out even more strongly, my attempts at adding corrective material for their readers – material that may have actually *saved* some pregnancies by relieving the emotional stress on expectant moms who read the article – were simply censored

³ No, I did not make any of that up.

into oblivion by Modern Pregnancy Tips.⁴ Did that censorship result in the death of any unborn children from the unjustified stress it surely caused some pregnant women? No one will ever know.

The final nail in the coffin that showed how the researchers wanted their research to be perceived can be seen in an article in *Science Daily*, where they state “[Dr. Rehan] said this is the first study to show (that) the exposure to the constituents of thirdhand smoke is as damaging and, in some cases, more damaging than secondhand smoke or firsthand smoke.”^{xii}

So thirdhand smoke is now claimed to be more damaging (at least “in some cases”) than *firsthand* smoke??? By the time we get to fifthhand smoke, thermonuclear weapons will have been rendered obsolete! As a statement to the media by a professional, and supposedly responsible, scientific researcher, such wording is simply unforgiveable. “The constituents of” may be an important qualifier to scientists, but as a media statement to the general public, the message was clear: a deadly threat from invisible traces left behind by smokers can be more dangerous than actually smoking.

When you look at the reality of the findings of the study compared to the ultimate social effects that this sort of misleading presentation will have on untold thousands, or even millions, of families, it is hard to avoid the feeling that the researchers engaged in outright criminal conduct roughly equivalent to screaming *FIRE!* in the middle of a crowded movie theater after seeing Humphrey Bogart take a puff in *Casablanca*.

ⁱ Science Daily. “Secondhand Smoke Linked To Risk Of Tooth Loss,” *ScienceDaily.com*, April 4, 2007. <http://www.sciencedaily.com/releases/2007/04/070403153859.htm>.

ⁱⁱ Mogell KA. “Periodontal Disease and secondhand smoke,” *DrMogell.com*, June 5, 2007. <http://www.drnogell.com/blog.htm>.

⁴ If you happen to be near your computer you might want to compare <http://tinyurl.com/iCytePage> to <http://tinyurl.com/CensoredPage> – you’ll see where the corrective posting was removed by the webmeister. The “iCyte” page copy is a dated capture of the original, saved at the iCyte website, as will be explained in more detail later.

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- iii Sims, J. "Secondhand Smoke Harms Children's Health," *DeltaDental.com*, December 13, 2010. <http://oralhealth.deltadental.com/Search/22,21375>.
- iv MedlinePlus. "Secondhand Smoke," *National Institutes of Health*, <http://www.nlm.nih.gov/medlineplus/secondhandsmoke.html>.
- v Nogueira-Filho G, Rosa BT, César-Neto JB, *et al.* "Low- and High-Yield Cigarette Smoke Inhalation Potentiates Bone Loss During Ligature-Induced Periodontitis," *Journal of Periodontology*, April 2007, Volume 78, Number 4, pp. 730-735. dx.doi.org/10.1902/jop.2007.060323.
- vi Rehan V. "Thirdhand smoke: a new dimension to the effects of cigarette smoke on the developing lung," *American Journal of Physiology, Lung Cellular and Molecular Physiology*, July 2011, Volume 301, Issue 1, pp. L1-L8. dx.doi.org/10.1152/ajplung.00393.2010.
- vii UPI. "Thirdhand Smoke Hurts Infant Lungs," *UPI.com*, April 19, 2011. http://upi.com/Health_News/2011/04/19/Thirdhand-smoke-hurts-infant-lungs/UPI-49871303262530.
- viii Mandel H. "Unborn babies at risk from third-hand smoke," *Examiner.com*, April 20, 2011. <http://www.examiner.com/article/unborn-babies-at-risk-from-third-hand-smoke>.
- ix California State News. "Thirdhand Smoke Dangerous to Unborn Babies' Lungs," *california.stateneews.net*, April 20, 2011. <http://california.stateneews.net/story/771641>.
- x India Times. "Thirdhand Smoke Affects Infant's Lungs," *Indiatimes.com*, May 12, 2011. http://articles.timesofindia.indiatimes.com/2011-05-12/health/29450221_1_smoke-lung-child-hood-exposure.
- xi ModernPregnancyTips. "Thirdhand Smoke Can Damage Unborn Babys Lungs," *modernpregnancytips.com*. <http://www.modernpregnancytips.com/pregnancy-health/third-hand-smoke-can-damage-unborn-babys-lungs>.
- xii ScienceDaily. "'Thirdhand Smoke' Poses Danger to Unborn Babies' Lungs, Study Finds," *ScienceDaily.com*, April 19th, 2011. <http://sciencedaily.com/releases/2011/04/110419101231.htm>.
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