Why Your Couch Is Killing You

A flame-retardant chemical known as chlorinated tris (TDCIPP) was *removed* from children's pajamas in the 1970s amid concerns that it may cause cancer, but now it's a ubiquitous addition to couch cushions across the US.

It can easily migrate from the foam and into household dust, which children often pick up on their hands and transfer into their mouths. A new study by scientists at the Environmental Working Group (EWG) and Duke University revealed just how ubiquitous this chemical actually is, as they found traces (and more) of TDCIPP in every study participant tested.

Children May Have Fives Times More Flame-Retardant Chemicals Than Their Moms

Aside from finding TDCIPP in 100 percent of study participants, the researchers found the average concentration in children was close to five times that of their moms.1 High levels of flame-retardant chemicals used to make FireMaster flame-retardant products were also detected.

Children are thought to have higher exposures to many types of chemicals because they spend more time on the floor, where contaminated dust settles, and also put their hands in their mouths more often than adults.

Since these toxins are not chemically bound to the plastics, foam, fabrics, and other materials to which they're added, they easily leach out into your home where they accumulate in household dust.2 As reported by EWG:3

"A study of house dust collected in California homes in 2006 and in 2011 found 41 different fire retardant chemicals in at

least half of the samples. The same study reported significantly higher levels of Firemaster ® 550 compounds in 2011 compared to 2006, indicating increasing use.

The levels of TDCIPP in some house dust exceeded the U.S. Environmental Protection Agency's health risk guidelines."

The Duke researchers revealed in a separate study that children who wash their hands at least five times a day have 30 percent to 50 percent lower levels of flame retardants on their hands than children who wash their hands less frequently.4

Unfortunately, even though children are among those most at risk from flame-retardant chemicals' ability to disrupt and harm development, *products intended for kids and babies* are among those *most likely to be doused in flame-retardant chemicals.*

For instance, such chemicals were detected in 60 percent of 2011 car seats tested by The Ecology Center,5 most likely in the polyurethane foam. A separate study in *Environmental Science & Technology*6 also detected flame-retardant chemicals in 80 percent of the following children's products tested:

Nursing pillows	Baby carriers	Car seats
Changing table pads	High chairs	Strollers
Bassinets	Portable cribs	Walkers
Baby tub inserts and bath slings	Glider rockers	Sleeping wedges

Couch Cushions and Mattresses Are Among the Worst Offenders

In 1975, California Technical Bulletin 117 (TB117) was passed. It requires furniture sold in California to withstand a 12-second exposure to a small flame without igniting.

Because of California's economic importance, the requirement became more or less a national standard, with large amounts of flame-retardant chemicals added to household goods.

Research published in *Environmental Science & Technology* revealed that 85 percent of couch foam samples tested contained chemical flame retardants.7The samples came from more than 100 couches purchased from 1985 to 2010.

As of July 1, 2007, all US mattresses are required to be highly flame retardant as well, to the extent that they won't catch on fire if exposed to a blowtorch. This means that the manufacturers are also dousing them with highly toxic flame-retardant chemicals, which do NOT have to be disclosed in any way.

If you want to avoid flame retardants in your mattress, you can have a licensed health care provider write you a prescription for a chemical-free mattress, which can then be ordered without flame retardants from certain retailers.

You can also find certain natural mattresses on the market that don't contain them. For instance, most wool mattresses do not have flame-retardant chemicals added because wool is a natural flame retardant.

Given the blatant dangers posed by flame retardants, in late November 2013 California's governor ordered that TB117 be rewritten to ensure fire safety without the use of these chemicals. Starting in January 2014, furniture manufacturers began producing furniture that's not required to use flame-retardant chemicals, and full compliance is expected by January 2015.

Unfortunately, the updated law only states that the chemicals are no longer required; it doesn't ban them outright. This means that some companies may continue to use them, and if you're in the market for new furniture, you'll need to ask for that made *without* flame-retardant chemicals.

What Are the Health Risks of Flame-Retardant Chemicals?

Flame-retardant chemicals have been linked to serious health risks, including infertility, birth defects, neurodevelopmental delays, reduced IQ scores and behavioral problems in children, hormone disruptions, and various forms of cancer.

The risks may be especially dangerous to children, as research revealed that children born to women who were exposed to high levels of flame-retardant chemicals called polybrominated diphenyl ethers (PBDEs) during pregnancy had, on average, a 4.5 point decrease in IQ.8 Such children are also more prone to hyperactivity disorders.

PBDEs were voluntarily withdrawn from the American market in 2004, but there are still many products on the market that were manufactured before that time – and these products can continue to release PBDEs into your environment.

Previous research has suggested PBDEs may also lead to decreases in TSH (thyroid-stimulating hormone).9 When present with normal T4 levels, low TSH is typically a sign that you're developing hyperthyroidism, which can have significant ramifications both for you and your unborn child if you're pregnant.

And these chemicals aren't only dangerous when they transfer into your household dust and indoor air. Ironically, when and if they do catch fire, these chemicals outgas toxins into your air that may kill you faster than "regular" smoke alone. When on fire, objects doused in flame retardants (yes, they can still catch fire) give off higher levels of carbon monoxide, soot, and smoke than untreated objects. These three things are more likely to kill a person in a fire than burns, which means flame-retardant chemicals may actually make fires more deadly.

Flame-retardant chemicals belong to the same class of chemicals as DDT and PCBs (organohalogens), and like the former, they too build up in the environment. These chemicals also react with other toxins as they burn to produce cancer-causing dioxins and furans. This helps explain why female firefighters aged 40 to 50 are six times more likely to develop breast cancer than the national average, likely due to California's early use of flame-retardant chemicals. Firefighters of both genders also have higher rates of cancer, in part because of the high levels of dioxins and furans they're exposed to when flame-retardant chemicals burn.

Flame-Retardant Furniture Probably Won't Save Your Life in a Fire…

Flame-retardant chemicals were developed in the 1970s, when 40 percent of Americans smoked and cigarettes were a major cause of fires. The tobacco industry, under increasing pressure to make fire-safe cigarettes, resisted the push for self-extinguishing cigarettes and instead created a fake front group called the National Association of State Fire Marshals. The group pushed for federal standards for fire-retardant furniture… and their efforts paid off.

The chemical industry claims that fire-retardant furniture increases escape time in a fire by 15-fold. In reality, this claim came from a study using powerful, NASA-style flame retardants, which did give an extra 15 seconds of escape time. This is not the same type of chemical used in most furniture, and government and independent studies show that the most widely used flame-retardant chemicals provide no benefit for people while *increasing* the amounts of toxic chemicals in smoke. Drops in fire-related deaths in recent decades are not related to the use of flame-retardant chemicals, but instead are due to newer construction codes, sprinkler systems, fire alarms, and self-extinguishing cigarettes.

Reduce Your Family's Exposure to Flame Retardants

There's a good chance flame-retardant chemicals are lurking in your home right now. Until these chemicals are removed from use entirely, tips you can use to reduce your exposure around your home include:10

- Be especially careful with polyurethane foam products manufactured prior to 2005, such as upholstered furniture, mattresses, and pillows, as these are most likely to contain PBDEs. If you have any of these in your home, inspect them carefully and replace ripped covers and/or any foam that appears to be breaking down. Also, avoid reupholstering furniture by yourself, as the reupholstering process increases your risk of exposure.
- Older carpet padding is another major source of PBDEs, so take precautions when removing old carpet. You'll want to isolate your work area from the rest of your house to avoid spreading it around, and use a HEPA filter vacuum to clean up.
- You probably also have older sources of the PBDEs known as Deca in your home, and these are so toxic they are banned in several states. Deca PBDEs can be found in electronics like TVs, cell phones, kitchen appliances, fans, toner cartridges, and more. It's a good idea to wash your hands after handling such items, especially before eating, and at the very least be sure you don't let infants mouth any of these items (like your TV remote control or cell phone).
- As you replace PBDE-containing items around your home, select those that contain naturally less flammable materials, such as leather, wool, and cotton.
- Look for organic and "green" building materials, carpeting, baby items, mattresses, and upholstery, which will be free from these toxic chemicals and help reduce

your overall exposure. Furniture products filled with cotton, wool, or polyester tend to be safer than chemical-treated foam; some products also state that they are “flame-retardant free.”
- PBDEs are often found in household dust, so clean up with a HEPA-filter vacuum and/or a wet mop often.

Another Way Your Couch Can Kill You That Has Nothing to Do with Chemicals…

Flame-retardant chemicals are only one major health risk linked to sitting on your couch. The other? Sitting in and of itself, assuming it’s done excessively (and most people sit excessively). One 2012 analysis that looked at the findings from 18 studies found that those who sat for the longest periods of time were twice as likely to have diabetes or heart disease compared to those who sat the least.11 Sitting for extended periods of time also increases your risk for premature death, and separate research found that women who sat for more than seven hours a day had a 47 percent higher risk of depression than women who sat for four hours or less per day.12

Even temporary vigorous exercise can’t completely compensate for the damage incurred by prolonged daily sitting. In fact, it’s becoming increasingly clear that staying active—and by that I mean engaging in virtually *any* physical movement—as much as possible, throughout the day, is critical for health and longevity. So keep in mind that your couch can kill in one of two ways… via chemical exposures and by seducing you into too much sitting.

Of course, you may also be doing a lot of sitting elsewhere, like at your office desk or in your car. The following videos, featuring Jill Rodriguez, offer a series of helpful

intermittent movement beginner and advanced exercises you can do right at your desk (or virtually anywhere). For a demonstration of each technique, please see the corresponding video in the two tables below. I suggest taking a break to do one set of three exercises anywhere from once every 15 minutes to once per hour throughout your day. For even more suggestions, please refer to my previous article on intermittent movement.

Technique #1: Standing Neck-Stretch: Hold for 20 seconds on each side.

Technique #2: Shoulder Blade Squeeze: Round your shoulders, then pull them back and pull down. Repeat for 20-30 seconds.

Technique #3: Standing Hip Stretch: Holding on to your desk, cross your left leg over your right thigh and "sit down" by bending your right leg. Repeat on the other side.

Technique #4: The Windmill: Stand with feet shoulder-width apart, then pivot your feet to the right. Push your hip out to the left. Raising your left arm skyward, and your right arm toward the floor, lower your body toward the floor while looking up, and then raise your torso back to standing position. Repeat on the other side.

Technique #5: Side Lunge: Starting with your feet together, take a medium step sideways, and bend down as if you're about to sit. Use your arms for balance by reaching out in front of you. Return to starting position, and repeat 10-20 times. Repeat on the other side.

Technique #6: Desk Push-Up: Place hands a little wider than shoulder-width apart on your desk. Come up on your toes to make it easier to tip forward. Do 10 repetitions.

Technique #7: Squat to Chair: With your feet shoulder-width apart, sit down, reaching forward with your hands, and stand back up in quick succession. Do 15-20 repetitions.

Technique #8: Single Leg Dead Lift: Place your right hand on your desk, and place your weight on your right leg. Fold your torso forward, while simultaneously lifting your left leg backward. Do 10 repetitions on each side.

Technique #9: Mountain Climber: Get into a push-up position on the floor. Pull your right knee forward to touch your right wrist or arm, then return to push-up position. Repeat on the other side. Try to pick up the pace, and do 20 quick repetitions.

Standing Neck Stretch	Shoulder Blade Squeezes	Standing/Seated Hip Stretch
Windmill	Side Lunge	Push up
Squat to Chair	Single Leg Dead Lift	Mountain Climber

Related Reading:

- *Textile Industry's Health and Environmental Impacts – What Are You Wearing?*
- *Corporations, Our Health, and a History of Failed Technologies*
- *How Candida Leads to Depression, Anxiety, ADHD, and Other Mental Disorders*
- *Insomnia – A Comprehensive Look with Natural Remedies*
- *Charges Brought upon Doctor and Advocate for Toxic Flame Retardant Chemicals*
- *Sleep More, Sleep Better*
- *Why Your Couch Is Killing You*
- *What's Ailing You? Could it be Your Mattress?*

Related Products:

- Green Lifestyle Market – Home