



Simple Steps to Reduce Your Child's Biggest Toxic Exposures

By Jane Sheppard
www.healthychild.com

This information is for educational purposes only and should not be used as medical advice. The education that Healthy Child provides is not intended to diagnose or treat any particular individual or condition. If you have any specific questions about any medical matter, consult your professional healthcare provider.

About the Author

For 20 years, Jane Sheppard has done extensive research into environmental toxins and their effects on babies and children. Jane created Healthy Child in 1997 to provide reliable information so parents can make informed choices about safe, non-toxic children's products.

About Healthy Child

Healthy Child helps parents create safe environments so children can thrive. Healthy Child is a mother-owned and managed small business. Our mission is to inspire and empower you to maintain an exceptionally healthy home environment and provide your family with the best possible care for healthy development and optimal vitality. We provide reliable information about toxic exposures so you can make informed decisions about safe, healthy alternatives to the many toxic products on the market. We do the necessary research so you don't have to spend your valuable time. We thoroughly check into the materials and manufacturing of our products, and we **only** offer products proven to be non toxic and safe for your whole family. Babies and children are the most vulnerable to toxic exposures, and we want to be sure they are protected.

read more [about Healthy Child](#)

Table of Contents

Baby Mattresses.....	5
What's in a Typical Baby Mattress?.....	5
Filling Material.....	5
Waterproof Covering.....	5
Chemical Fire Retardants	6
Baby Mattresses and Crib Death (SIDS).....	7
Are Older Mattresses Safer?	7
Alternatives to Toxic Baby Mattresses	8
What does Organic Really Mean?	8
Are Eco-Friendly or Plant-Based Mattresses Healthy?	9
Filling Material.....	9
Allergenic Materials.....	9
Surface Material (Covering).....	9
Food-Grade, Low Density Polyethylene.....	10
Fire Protection.....	10
Healthiest, Safest Options	12
Organic Baby Bedding	12
Furniture	13
Baby Furniture - Formaldehyde Emissions and Toxic Varnishes or Paints.....	13
Flame Retardants in Furniture and Other Household Products	13
Solutions and Alternatives.....	16
Household Cleaners	18
Baby's Skin Care and Bath Products	20
High quality, safe solutions	20
For additional healthy, non-toxic alternatives visit the Healthy Child Shopping Guide.....	21

Introduction

Keeping up with all the toxins around your child can be confusing and frustrating. It seems that everything – from toys and baby bottles to mattresses and household furnishings – contain potentially unsafe materials.

Today children are exposed to thousands of different chemicals. Most of these substances have never been tested for toxicity to infants and young children. Risk assessments done by the EPA show that up to age two, babies are, on average, ten times more vulnerable to carcinogenic chemicals than adults. Their neurological, immunological, respiratory, and other biological systems are still developing. Their ability to detoxify all the substances coming into their fragile systems is limited. Low-level chemical exposures during the susceptible period of development can cause more harm than high doses later in life. Chemical exposure during the critical period of brain development is particularly alarming.

Many parents assume that baby products are tested and would not be on the market if they were unsafe. But the fact is that most chemicals in products have never been evaluated for their safety - not even the most basic safety review. Even when science shows that a chemical is toxic and exposure is causing health issues, it can take years before manufacturers are banned from using it in products, if it is banned at all. Typically, when a chemical is finally banned, manufacturers are allowed to replace it with alternatives that are untested and likely just as toxic.

We simply cannot rely on our government or manufacturers to keep products safe. Therefore, it's up to us, as parents, to make informed decisions about which products we will allow into our children's environments.

When it comes to babies' fragile development, a common sense approach for parents is to adopt the precautionary principle, which acknowledges that it's better to be safe than sorry. The precautionary principle maintains that evidence of harm, rather than definitive proof of harm, should result in action. It may take 5-10 years or more between the known or suspected evidence of harm and the proof of cause and effect relationship that it takes to ban the substance. This timeframe can span your child's most important development years, and by then it's too late.

Although you may find this e-book alarming, my intention is not to spread fear. It is to empower you with knowledge and for you to know there are choices. As a new parent, you probably receive all kinds of well-meaning advice. The best advice of all is to become informed and then simply do the best you can with the resources you have and what feels right to you.

The good news is that there is a lot you can do to reduce or eliminate some of the major exposures and give your child a safer, more natural environment. This report will help you sort out the biggest and worst exposures and what to do about them. Fortunately, there are alternatives to many of the toxic products being sold.

At Healthy Child, we've been studying the issue of toxicity in baby products for 20 years. We have established an excellent and qualified advisory board of pediatric doctors and environmental scientists to help us provide reliable information. I'd like to share with you what we have learned and the safe, healthy alternatives that we have found.

Baby Mattresses

Your baby's mattress is likely to be the most prevalent toxic exposure, since it's up-close, extensive, and long-term. Babies sleep on a mattress for 10-14 hours or more a day during their most fragile developmental years. During this time, they are lying directly on the mattress, breathing in and absorbing chemical off-gassing. Baby mattresses include crib, cradle, bassinet, porta-crib, and co-sleeper mattresses. All of these types of mattresses typically contain materials that can be toxic. The good news is that there are safe and healthy alternatives, and I will get into this later. But first, let's take a look at why these mattresses are toxic.

What's in a Typical Baby Mattress?

Filling Material

Polyurethane foam is the filling material used in most baby mattresses. Polyurethane foam is made from petroleum and is highly flammable. Depending on how it's processed, polyurethane foam may contain various chemical additives, including formaldehyde, benzene, toluene, and other well established toxic chemicals.

Waterproof Covering

Many crib mattresses have a vinyl covering for waterproofing purposes. Vinyl (polyvinyl chloride or PVC) is considered to be one of the most toxic and environmentally unfriendly plastics used. Vinyl chloride, an intermediate component in the manufacturing of PVC, is a combination of petroleum and chlorine, and is a known human carcinogen.

Since PVC is a hard plastic, chemical plasticizers must be added to make it into a soft and flexible covering. These plasticizers (the most commonly used are phthalates) make up 30%-40% of the weight of the vinyl surface of a crib mattress. They are not bound to the vinyl and can leach out or off-gas into the surrounding air so babies can breathe them in and absorb them through their skin. Health effects associated with phthalates include reproductive harm, asthma, early onset of puberty, cancer, and kidney and liver damage.

It's important to know that although certain phthalates have been banned in the US, alternatives being used (including legal phthalate variants) are not tested and might be just as toxic. It may take years of additional research before safety can be determined. It appears that only three forms of phthalates are currently banned for mattresses, so it is legal for manufacturers to substitute with the non-banned phthalates. There is still a phthalate (DnHP), classified as a reproductive toxicant, allowed for use in mattresses.

No one really knows what level of additives in vinyl is safe for babies. So when you see a product description with "non-toxic vinyl" or "phthalate-free vinyl", you need to understand that there needs to be some type of plasticizer to make it soft and pliable, and it's probably far from non-toxic. And keep in mind that PVC or vinyl is petroleum and chlorine - not something you want your baby sleeping on.

The good news is that there are safe and healthy alternatives to toxic mattresses.

Chemical Fire Retardants

Polyurethane foam is highly flammable and will burn quickly if ignited. When it burns, extremely hazardous gases are formed and released into the air. Because of this, the U.S. government requires mattress manufacturers to meet strict flammability standards. Most do this by adding more toxic chemicals.

Polybrominated diphenyl ethers (PBDEs) are the primary fire retardant chemicals which have been used in mattresses for decades. PBDE exposure is linked to numerous adverse health effects, including immune suppression, hormone disruption, developmental delays, attention deficit, learning and memory problems, behavior changes, and cancer. The chemicals in foam products break down and leach out into the surrounding air. Research has shown that microscopic particles from fire retardant chemicals end up contaminating household dust. So babies are exposed to fire retardants in at least two ways:

- 1) Absorbing and breathing chemical off-gassing while sleeping on the mattress
- 2) Household dust - while crawling on the floor, they pick up dust, which sticks to their hands, and then goes in their mouths. The dust also sticks to toys and other items they chew on.

You can't purchase a mattress in the U.S. that does not pass fire-proofing laws, unless you have a prescription from a licensed physician. This goes for all mattresses – child and adult – and includes organic mattresses. So if you bought a mattress without a doctor's prescription (even 20 years ago), it contains fire retardant materials. If you bought a mattress more than a few years ago, it most likely contains pentaBDE, a banned form of PBDEs.

Because of the huge public outcry against PBDEs and because California has already banned some of them, mattress manufacturers are moving away from certain forms of PBDEs. But the alternative chemicals they are using may be just as toxic. They still need to meet the government flammability standards, and most mattresses are still filled with petroleum-based polyurethane foam or so-called "soybean foam", which remains highly flammable. So they are merely replacing the PBDE chemicals with other fire retardants, whether as additives or as barriers. Manufacturers are not required to test the chemicals they use for the effects on health and there is very little data available to show safety. In general, mattress manufacturers do not reveal the actual specific chemicals that are used to meet the government flammability regulations.

A common flame retardant now being used in baby mattresses is chlorinated Tris (TDCPP), which has been found to change the DNA of people exposed and is listed as a carcinogen. This is the same fire retardant chemical that was removed from children's flame retardant pajamas back in the late 1970s because it was suspected of causing cancer. But it wasn't formally banned, just voluntarily removed so now it's in couches and mattresses! It is absorbed through the skin – that's why it was removed from children's sleepwear. It's also now in the household dust of most homes.

In January 2013, the Chicago Tribune reported that they found chlorinated tris in 11 crib mattresses made in China and sold in the U.S. by Babies R Us, Foundations and Angeles brands.

Baby Mattresses and Crib Death (SIDS)

Several scientists claim that toxic gases released from crib mattresses, when breathed or absorbed by a sleeping baby, can cause crib death or sudden infant death syndrome (SIDS). These claims have not been 100% scientifically proven, nor have they been disproven, and there is urgent need for more research.

It is important to note that a 100% successful crib death prevention campaign has been going on in New Zealand for the past 19 years. Midwives and other healthcare professionals throughout New Zealand have been actively advising parents to wrap mattresses. During this time, there has not been a single SIDS death reported among the many (estimated over 200,000) New Zealand babies who have slept on mattresses wrapped in a specially formulated polyethylene cover. The SIDS rate in NZ has dropped dramatically since this mattress-wrapping campaign began. This is usually attributed to putting babies on their backs to sleep, which makes sense because babies sleeping face up are not exposed to as much toxic gas as those sleeping with their faces in the mattress.

It's my opinion that there is enough evidence to warrant taking a precautionary approach. The following article contains more information on the crib death issue:

[Has the Cause of Crib Death \(SIDS\) Been Found?](#)

Learn [why more research is not being done](#)

Are Older Mattresses Safer?

You may assume that once the chemical smell has subsided in an older mattress, it is probably safe. But off-gassing can be odorless. Remember that fire retardant chemicals have been used for decades, and polyurethane foam breaks down and releases into the environment over time, so don't assume that an older mattress is safer than a new one. There's a study that indicates that the re-use of infant mattresses triples the risk of crib death (SIDS).

Alternatives to Toxic Baby Mattresses



Most people assume that if a mattress is organic, then it must also be non-toxic and safe. This is not necessarily true. There are organic crib mattresses on the market that contain organic cotton as the filling, but the outer covering is vinyl or some other type of questionable material. In addition, fire retardants and other various chemicals may be added to the cotton and/or to the outer covering. Even organic mattress manufacturers must comply with U.S. fire retardant laws. Organic is definitely important when choosing a mattress, but the main thing to look for is whether the entire

mattress is non-toxic and safe for your baby.

What does Organic Really Mean?

Let's clarify what it means to be organic. When referring to agricultural products (regardless of whether edible, like apples and tomatoes, or non-edible, like cotton), organic refers to the way that the agricultural products are grown, raised, and processed. Only the fiber used in a mattress, such as cotton or wool, can be considered organic per the agricultural standards since these are agricultural products. Other materials in a mattress, such as a plastic covering or innersprings are not agricultural, therefore cannot be organic.

If cotton is organic, it is grown without the use of toxic pesticides and fertilizers. This is important because cotton is a highly sprayed crop and the residues from pesticides can remain in the cotton fiber. Plus organic cotton goes a long way to protect the health of our environment.

When wool is organic, the sheep are fed only organic food and raised without synthetic hormones and pesticides. For instance, the sheep are not dipped in pesticides to control ticks and lice. Organic livestock producers are also required to comply with ethical management practices that support the health of the animal and the environment. Additionally, the wool is cleaned and processed without the use of toxic chemicals.

The USDA National Organic Program (NOP) has created strict standards for producing and processing agricultural products to be sold as organic in the US. In order to ensure that these standards are being met, the NOP has accredited about 50 organizations throughout the world as organic certifiers. When agricultural producers want their products to be labeled as organic, they must adopt certain practices for three years and then go through a certification process with one of these NOP certifiers. If the producer meets all the NOP standards, they can become certified organic, which means their agricultural products can be sold or labeled as organic.

A mattress itself is not an agricultural product and therefore cannot be certified as organic by the USDA National Organic Program. However, standards have been developed to give consumers assurance of finished products (like shirts, jackets, and other such consumer items in addition to mattresses) made with organic fibers and textiles. These standards, called the Global Organic Textile Standards (GOTS), have become the recognized organic textile processing standards for mattresses. The standards require that all fiber and fabrics used within a mattress, with limited exceptions, must be made from National Organic Program (NOP) certified materials and processed in accordance with the Global Organic Textile Standard (GOTS). All other components (such as innersprings, fire protection, etc.) must meet stringent non-toxic standards. Although there are many GOTS approved certifiers throughout the world, the largest certifier in the US is Oregon Tilth Certified Organic (OTCO).

Are Eco-Friendly or Plant-Based Mattresses Healthy?

In recent years so-called green, eco-friendly, or plant-based mattresses have come on to the market. You may see them labeled with descriptions such as Eco Foam, Bio Foam, or Soybean Foam. What most of these manufacturers do is replace a small percentage of the polyurethane foam with plant-based ingredients. It looks great to call it “eco-friendly” or “green” but many of these mattresses are far from healthy or non-toxic. Soybean foam is usually polyurethane foam with 10-20% GMO soybean oil mixed in. It's at least 80% petroleum/chemical based and highly flammable so it needs fire retardant chemicals to comply with the laws. Any company can refer to their mattresses as “green”, “healthy”, or “eco-friendly” since there are no laws or guidelines that say they can't. Don't be fooled by this green-washing. You may be getting a load of toxic chemicals and off-gassing with these mattresses.

Some crib mattresses have surface fabrics made from bamboo. This sounds good, too, until you check into the manufacturing process. Strong chemical solvents are used in the processing of most bamboo, resulting in a cellulose fiber similar to rayon. “Bamboo” mattress coverings are usually a synthetic fabric blend with not much of the bamboo plant in the finished product.

Filling Material

Organic cotton is the perfect filling material for a baby mattress since it is natural, non-toxic, firm and breathable. Cotton will not burst into flames (like polyurethane foam) or release toxic fumes when ignited. Since cotton is a crop that is heavily sprayed with pesticides, fungicides and other chemicals, it is important for the cotton to be certified organic.

Wool is also commonly used in mattresses and bedding since it is naturally fire resistant, does not provide a favorable environment for dust mites, and handles moisture well. Wool is an excellent bedding material for many reasons. However, wool can be allergenic and you don't know if your baby will be allergic to wool. Wool can contain lanolin and certain alcohols known to have allergenic properties, and babies can be allergic specifically to the natural animal fiber in organic wool. Non-organic wool may contain chemical treatments, and some assumed allergies to wool are actually sensitivities to the chemicals used in processing the wool.

Latex (natural rubber) is also used as a crib mattress filling. Shopping for a latex crib mattress can be complicated since even natural latex can contain questionable chemicals added during processing. In addition, natural latex contains proteins that can be highly allergenic and known to cause anaphylactic shock. This is very rare, but you just don't know if your baby will be allergic to natural latex. According to the FDA, a product containing latex cannot be labeled as “hypoallergenic.”

Allergenic Materials

A precautionary approach regarding allergies is reasonable. It may be best to avoid baby mattress materials with allergenic properties. It's difficult to know in advance about a baby's allergies and allergies can develop over time.

Surface Material (Covering)

It's important to buy a baby mattress that is waterproof. Babies can generate a lot of wetness while they sleep, and this wetness can cause mold, mildew, fungus or bacteria to grow in the mattress. Since mold and fungus can be a health hazard for a baby, it's crucial to avoid getting moisture into the surface of a crib mattress. A non-

toxic plastic waterproof covering is essential to eliminate wetness and dust mites from a mattress. Plastic is currently the only viable way to make a mattress waterproof (without having to use additional covers). But not all plastics are the same. Some are quite toxic and environmentally unfriendly (as in vinyl) while others are less or non-toxic and more environmentally safe. It's imperative that the plastic be non-toxic.

Food-Grade, Low Density Polyethylene

Environmental scientists agree that low density, food-grade polyethylene is the safest plastic available. It has a simple molecular structure and does not contain phthalates or other unsafe additives. Unlike the production of vinyl, dioxins and other toxic chemicals are not released into the environment during production of low density polyethylene. This is the material used for the mattress covers designed to prevent SIDS in the crib death prevention campaign in NZ.

Since wool is moisture-resistant and dries quickly, wool puddle pads are widely used with mattresses that are not waterproof. But you can't count on wool puddle pads to waterproof a mattress. If there is a lot of wetness from a baby or child, it can go through to damage the mattress and create mold and mildew problems.

Fire Protection

The U.S. government requires mattress manufacturers and retailers to obtain a doctor's prescription from a customer before selling a mattress that does not meet federal fire safety standards. This is true for organic mattresses as well. Therefore, if you want a mattress that is not fire-proof, you must have a prescription from a physician licensed in your state that says "this patient requires a chemical-free mattress". This can be written by any licensed physician, including medical doctors (MD), osteopaths (DO) and chiropractors (DC). Fortunately, there are some organic mattresses on the market that pass fire-proofing standards without using toxic chemicals, and therefore, do not need a prescription.

Many organic mattresses contain chemical fire retardants. Yet they are called "organic" simply because the cotton filling is organic cotton. In stores or on websites, it may say "free of fire retardants" or "PBDE-free", but the truth is that there has to be something that is allowing it to pass the fire testing. The manufacturers may have replaced the PBDE chemicals with other non-tested fire retardants. It's difficult to get this information out of retailers or manufacturers since most do not reveal the specific chemicals used. Most mattress salespeople have no idea of the magnitude of this issue and don't have detailed answers since they are not informed.

Wool is fire-resistant, and is the most common fire protection used in natural, organic mattresses. If a wool-wrapped mattress has been tested and approved to meet flammability standards, the manufacturer is able to sell it without obtaining a prescription. There are companies that use only pure organic wool for this purpose. But be aware that some companies may use wool with chemical treatments added to boost the wool's fire resistance. Also keep in mind the allergen potential of wool.

Borate powder (boric acid) is also used to make mattresses fire resistant. Most mattresses treated with borate powder meet Federal flammability standards and do not require a doctor's prescription. There is conflicting information regarding the safety of using borate powder in mattresses. Since it is an insecticide and is potentially toxic, I would avoid borate powder.

PLA fiber is a sustainable, fire-resistant material that is beginning to be used in mattresses and bedding materials such as pillows and mattress pads. It's an excellent alternative to wool, since it's hypoallergenic and can be machine washed. PLA fiber is made from plant starch turned into a natural sugar and then fermented to create lactic acid. From lactic acid a molecule called lactide is created. Water is then removed and it gets crystallized to create a polymer – polylactide (PLA).

Healthiest, Safest Options

I've been doing research into safe, non-toxic mattresses for 20 years, and to date have found only one mattress manufacturer - Naturepedic - that meets all of the stringent guidelines for safe, non-toxic, **waterproof** baby mattresses. These are the mattresses recommended by Healthy Child and also by Healthy Child Healthy World.



Naturepedic is the only GOTS-certified company that uses low density, food-grade polyethylene for the purpose of waterproofing and dust mite proofing. Strict independent testing confirms there are no phthalates or any toxic chemicals in this polyethylene.

None of the Naturepedic baby or crib mattresses contain any wool or latex. They use certified organic cotton as the filling material. There is no polyurethane foam in any of their mattresses. They pass all Federal and State flammability standards using non-toxic, non-allergenic materials (organic cotton and PLA fiber) so no prescription is needed. There are no flame retardant chemicals, no antibacterial treatments or biocides, no glues or adhesives, no allergens, and no GMOs.

All Naturepedic baby and crib mattresses are GOTS certified. They are certified to the GOTS standard by Oregon Tilth Certified Organic (OTCO) and Control Union (CU).

In addition, all of their mattresses have passed independent testing by the strictest GREENGUARD Select standard for baby and children's products. GREENGUARD is an independent third party certification program with stringent product emission standards to ensure the highest air quality. The GREENGUARD Children & Schools standard takes into account the special sensitivities of children and requires that products meet strict emission levels of pollutants including VOCs, formaldehyde and phthalates. The new GREENGUARD Select standard takes it even further and is the most stringent testing available. All Naturepedic mattresses pass the GREENGUARD certification and are also certified for the stricter GREENGUARD Children & Schools standard as well as the new Select standard. Naturepedic is, so far to date, the only mattress company to be certified with the most stringent GREENGUARD Select certification.

You can find the Naturepedic baby and crib mattresses at Healthy Child:

[Organic Baby Mattresses](#) (bassinet, cradle, porta-crib, changing pads)

[Organic Crib Mattresses](#)

Organic Baby Bedding

It's also important that the bedding your baby sleeps in (mattress pads, sheets, blankets) is non-toxic. Vinyl or other toxic plastics are regularly used as the waterproofing material for many crib mattress pads. Sheets, mattress pads, and comforters can also be treated with harmful chemicals. Untreated organic cotton is the best material for sheets and mattress pads. Naturepedic has a line of non-toxic baby bedding that you can also find at Healthy Child.

See Healthy Child [Organic Baby Bedding](#)

Furniture

Formaldehyde Emissions and Toxic Varnishes or Paints

Many cribs, beds, changing tables, dressers, and other furniture are made from composite wood, medium density fiberboard (MDF), compressed wood, or particle board. These types of wood products have a high level of formaldehyde emissions that continues for several years after manufacturing. Studies have linked formaldehyde exposure at levels that are likely to be found in typical homes to an increased risk of respiratory symptoms, allergies, and asthma. Chronic formaldehyde exposure can also cause altered immunity and cancer.

In addition, most furniture contains varnishes or paints that also emit toxins.

To Minimize Your Child's Exposure to Toxins in Furniture:

- Provide adequate ventilation in your home.
- Avoid furniture made with MDF, particle board, or other types of composite wood.
- If you buy composite wood products, let them off-gas outside for several weeks before bringing them indoors.
- Buy furniture made of solid wood with natural, non-toxic finishes. This furniture can be expensive. If you can find unfinished furniture, you can paint or stain it yourself. Earth Safe Finishes is a company who makes an environmentally safe, toxin-free product line of paints, stains and finishes.

<http://www.earthsafefinishesstore.com/>

Flame Retardants in Furniture and Other Household Products

Toxic flame retardant chemicals are not just in mattresses but everywhere in the home. In addition to mattresses, most couch and chair cushions are made with polyurethane foam saturated with flame retardants. Televisions, computers and other electronics, and even the insulation of many homes are loaded with these chemicals. Fire retardants are also in car seats, changing table pads, toys, infant sleep positioners, and nursing pillows. Fire retardants leach out of household products into the surrounding environment and accumulate in dust. In addition to spending a lot of time lying on and playing on couches and mattresses, babies and young children crawl and play on the floor (which usually has dust) and then put their hands in their mouths.



It's a sad fact that American babies are born with the highest concentrations of flame retardants of babies anywhere in the world. Elevated concentrations of these chemicals are found in breastmilk and in babies' blood.

A new study has found toxic flame retardants in 85% of couches tested. These couches were bought between 1985 and 2010 from all over the U.S. The researchers found that a 2005 ban of a main PBDE chemical did nothing to change health risks since it was replaced by other toxic chemicals. They also found toxic flame retardants in 100% of the couches bought in California since 2005. Another new study found that toxic flame retardant chemicals are in the household dust in 13 of 16 homes tested in Northern California.

We've been warned about fire retardants for some time. Back in 2004 the environmental Working Group (EWG) found unexpectedly high levels of neurotoxic flame retardant chemicals in the household dust of every home sampled. And back in 2008 the EWG found that toddlers and preschoolers typically had 3 times as much hormone-disrupting fire retardant chemicals in their blood as their mothers.

Flame retardants in household furniture provide no meaningful protection from fires.

As I mentioned earlier, the banned chemicals were replaced with ones just as toxic or even more toxic. The most common flame retardant used now in furniture is chlorinated Tris (TDCPP), which has been found to change the DNA of people exposed and is listed as a carcinogen. This is the same fire retardant chemical that was removed from children's flame retardant pajamas back in the late 70s because it was suspected of causing cancer. But it wasn't formally banned, just voluntarily removed so now it's in couches and mattresses! Tris is now officially listed as a carcinogen in California, and the World Health Organization, the National Cancer Institute and the National Research Council have concluded that it's a cancer risk. It is absorbed through the skin – that's why it was removed from children's sleepwear. It's also now in the household dust of most homes.

Another chemical mixture found in the recent study is Firemaster 550. Not enough health studies have been done on this, but it's linked to rapid weight gain and early onset of puberty in young rats. Firemaster 550 contains two brominated compounds, known as TBB and TBPH, and these are similar to a plastic-softening phthalate that was recently banned in children's products because the phthalate is listed as a known carcinogen and developmental toxin.

A couch may contain up to two pounds of flame retardants, and it's very hard to find one without these chemicals. There's no way of knowing what specific chemicals are in your furniture and mattresses because they are considered trade secrets. Even the manufacturers may not know the specific chemical make-up because the chemical companies make their flame retardant mixtures proprietary and do not disclose the ingredients. If you call a retailer or manufacturer and ask about fire retardants in their products, they may say they don't use them, but most of the people you're talking to don't even know.

Currently, if it's made with polyurethane foam, it probably contains flame retardants since this foam is highly flammable. Unless a company is specifically making non-toxic, chemical flame retardant-free mattresses or furniture, you can be pretty sure the foam products you are buying do contain chemical flame retardants and there's no way of knowing exactly what these chemicals are.

You may be thinking that at least these chemicals are protecting your family from fires. This may come as a shock, but studies by the U.S. Consumer Product Safety Commission and Underwriters Laboratories found that flame retardants in household furniture provide no meaningful protection from fires. And the flame retardants make the fire more toxic! Without the flame retardants, a fire releases carbon dioxide. But when flame retardants are present, fires release far more soot, smoke and carbon monoxide—which is what kills you in a fire. Some chemicals release highly toxic dioxins when burned. Flame retardants are even in the insulation of many homes, which also makes the fire more toxic.

There's been a long campaign of deception by the tobacco and chemical industries to get us to believe that flame retardants reduce fires and save lives. Sadly, it's not true. These lies and all the money behind them are what has created this mass toxic exposure in our homes and our planet, and it's what's keeping new laws from being passed to ban these chemicals.

Read more about the deception:

[Flame Retardant Industry Campaign of Deception](#)

Solutions and Alternatives

On 2/14/14 I attended a symposium at UC Berkeley - 2014: The Flame Retardant Dilemma, presented by the Green Science Policy Institute. There was some hope expressed since a new law was just passed in California, considered a milestone in the long journey to remove flame retardants from products. But there are also significant hurdles yet to come.

Let's take a look at what's happening with the new 2013 law in California. It doesn't matter if you live elsewhere within the U.S. Manufacturers are not going to make two different sets of furniture - one set that can be sold in CA, and another for furniture sold in other states. This CA law will affect you no matter where you live in the U.S.

The previous law - Tech Bulletin 117 - required that furniture pass an open flame test. This requirement cannot be met without adding flame retardants to the foam. So all couch and chair cushions currently made with foam (and since the 1970s) contain flame retardants within the foam in order to pass.

The new law - Tech Bulletin 117-2013 will be mandatory on 1/1/15. This new law requires that furniture pass a smolder test, rather than an open flame. This means that manufacturers will no longer be *required* to use flame retardant foam. They will need to use some sort of flame barrier or flame retardants on the surface of the cushions in order to pass the smolder test.

Since the new law is not mandatory until 1/1/15 and it's currently difficult for manufacturers to get foam without fire retardants, it will take some time before consumers can find couches and chairs without these chemicals.

Flame retardant foam has not been banned; it's just no longer required to pass the tests. It's also important to note that the law excludes all mattresses and baby products (only couches and chairs considered in new law) so those products will continue to be made according to strict fire laws. Further bad news is that the surface fabrics of couches and chairs will now need to be flame retardant.

We are thoroughly looking into all available options, and we are determined to find the safest furniture available. Try to find new furniture stuffed with natural materials (not polyurethane foam), and avoid stain protectors. Stain resistant chemicals used on carpets and upholstery contain toxic PFOAs that also accumulate in household dust.

See my blog post [Alternatives to Toxic Couches](#) for updates on safer and healthier furniture.

You might be able to swap out your current cushions with new cushions that don't have the fire retardant chemicals mixed into the foam. Perhaps you can find a reputable foam and upholstery shop in your area. [FoamOrder](#) is a company in the SF Bay Area who will replace the foam with fire retardant-free natural latex foam. You may want to keep your current upholstery fabric or find out what the new upholstery is treated with in order to pass the smolder test. A wool barrier is the safest option.

You can reduce exposure by getting rid of old couches and chairs. But it's not good that toxic cushions are going into landfills. Furniture sent to dumps and landfills will continue to release flame retardants into the environment. The Green Science Policy Institute has created a [Safer Foam Exchange Program](#). 10% of sales through this program goes to support efforts to develop a responsible furniture disposal solution. They may be able to connect you with a participating foam and upholstery shop in your area.

In the meantime, do what you can to reduce exposures in your home as much as possible. To limit the toxic dust in your home you need to regularly vacuum and dust with a damp rag or mop.

A good HEPA air purifier is essential. It will trap the dust particles and remove them from your environment. My research shows that [Austin Air purifiers](#) are effective since they use a 4-stage filter containing proven filter mediums for cleaning the air. All the Austin Air purifiers have medical grade HEPA and activated carbon that address the worst household air contaminants. These purifiers do not emit any toxic by-products such as ozone. Austin Air purifiers have been tested by respected labs, including Battelle Laboratories and the U.S. Army Corp of Engineers. Extensive tests on flow rate, flow design, removal of vapors, gases and sub-micron particles have been performed on the Austin Air cleaners.

Austin air purifiers will reduce chemical off-gassing, household dust, asthma and allergy triggers, odors, bacteria, viruses, molds, pet dander, and other harmful particles from the air. The [Austin Air Healthmate Plus](#) is the one that will also reduce formaldehyde off-gassing.

View [Austin Air Purifiers](#)

[Asthma and Allergy Prevention with a HEPA Air Purifier](#)

[Indoor Air Pollution: How to Protect Your Children](#)

Household Cleaners

Everyday cleaning products, such as disinfectants, cleansers, bleach, window cleaners, air fresheners and aerosols, can contain numerous chemicals that are not safe for anyone, but especially babies and pregnant moms.

Breathing in volatile organic compounds (VOCs) from cleaning products can cause irritation and inflammation in a child's respiratory airways. Many of the chemicals in cleaning products can also cause cancer, reproductive problems, and other health issues.

A recent study found that children whose mothers used a lot of cleaning products while pregnant and shortly after birth were 41 percent more likely to have wheezing or asthma by the age of seven. Another study found that women who used the most cleaning products have double the risk of breast cancer.

Good news!



The good news is that toxic chemicals are not needed to remove dirt, bacteria, grease, and oils from your home. There are many cleaners with natural ingredients that work really well or even better. You can even make your own effective cleaners.

Companies don't have to disclose what is in their cleaning products so it's difficult to find out the exact ingredients. If you are purchasing products that say they are non-toxic, beware of vague or general claims on labels, such as "environmentally friendly", "biodegradable", or "eco safe". Avoid products that don't show ingredients and labeled only with generic terms like surfactants or preservatives. And be wary of products that have a strong smell.

With a new product called E-Cloths, you can clean your house very thoroughly with just water! This is a chemical-free way to remove dust, dirt, bacteria, and soap residues - and it really works well. E-cloths are proven to remove over 99% of bacteria from hard surfaces. You just spray with water and then wipe with the e-cloth. They collect dirt, grime and bacteria from the surface, and then you simply rinse the cloth under hot water, then re-use later. The bacteria is washed down the sink. If you wash the cloth once a week, the E-cloths are guaranteed to last for 6 years of cleaning.

[E-Cloths](#)

The Environmental Working Group has created an online guide for household cleaning products. This database provides easy-to-navigate safety ratings for more than 2,000 cleaning products:

[EWG Guide to Cleaners](#)

You can also make your own natural cleaners from simple kitchen ingredients. The Washington Toxics Coalition has created a guide to safer household cleaners and includes suggestions for safer products and recipes for making your own safe and effective cleaners.

[Cleaning Products](#)

Hand sanitizers, disinfecting sprays, antibacterial soap, and antibacterial wipes are popular to keep germs away from kids. These antimicrobials are not necessary, and there may be unintended consequences from using them. The Washington Toxics Coalition has also created an informational guide about antimicrobials.

[Antimicrobials](#)

Baby's Skin Care and Bath Products

Skin is our largest organ. Since skin is porous, what you rub into your baby's skin or scalp is likely to be absorbed into the bloodstream and circulated into tissues and organs. Some baby care products, such as baby powder, can also be inhaled or ingested by a baby. There are many ingredients in baby lotions, creams, shampoos, soaps, powders, oils, and diaper rash ointments that are potentially toxic.

According to the Environmental Working Group (EWG), personal care products contain known human carcinogens or developmental toxins, and more than one-third of all personal care products contain at least one ingredient linked to cancer.

There are many ingredients in baby products that are potentially toxic.

Ingredients are not required on labels so it may be challenging to know what chemicals you are rubbing into your baby's body. There is very little government scrutiny of skin care products in the U.S. Skin care ingredients are not reviewed or approved by the FDA, and companies are not required to do pre-market safety testing, even for products sold for babies and children.

Many bath and skin care products are contaminated with formaldehyde and/or 1,4-dioxane – chemicals linked to cancer and skin allergies. These chemicals are not ingredients in the products, but are toxic byproducts of chemical manufacturing and product formulation, so you won't find these chemicals on the product label.

Phthalates are used in many types of skin care products, especially fragrances. A 2008 study of infant phthalate exposure concluded the following "Phthalate exposure is widespread and variable in infants. Infant exposure to lotion, powder, and shampoo were significantly associated with increased urinary concentrations of monoethyl phthalate, monomethyl phthalate, and monoisobutyl phthalate, and associations increased with the number of products used. This association was strongest in young infants, who may be more vulnerable to developmental and reproductive toxicity of phthalates given their immature metabolic system capability and increased dosage per unit body surface area."

Avoid anything with phthalates in the ingredients list and products listing 'fragrance' as an ingredient. Use unscented products with plant-based ingredients. It's actually fairly easy to find safe, natural, non-toxic baby skin care products with pure, organic ingredients.

High quality, safe solutions

[Earth Mama Angel Baby](#)

Earth Mama Angel Baby uses exceptionally pure, organic ingredients in their products. They make an excellent line of 100% natural, certified organic skin and body care products to support the entire birth process and baby care. There are no phthalates, parabens, SLS, artificial preservatives, fragrances or dyes in any of their products. We are truly impressed with the ingredients they use in their bottom balm, baby oil, diaper rash soap, shampoo and wash, and baby lotion.

[Kabana Skin Care](#)

Kabana Skin Care makes a diaper rash treatment and sunscreen that uses zinc oxide and other safe, natural, non-toxic ingredients. Zinc oxide is the only FDA approved sunscreen active ingredient that is safe for use on babies under the age of 6 months. In order for an ingredient to be deemed natural by Kabana’s rigorous standards, it must either be directly derived from a living organism via a sustainable process and free of petrochemicals, or is a mineral that has a proven safety record for use on and in the human body.

[100% Pure](#)

100% Pure is a company that uses no synthetic chemicals, chemical preservatives, artificial fragrances, artificial colors, harsh detergents or any other unhealthy toxins. Truly 100% pure.

[Skin Deep Database](#)

The EWG has done a lot of research and created the Skin Deep database – a safety guide to cosmetics and personal care products. You can search for a product, ingredient, or company to find toxicity ratings.

For additional healthy, non-toxic alternatives visit HealthyChild.com

For updates to this report and reliable information on protecting your children, subscribe to [Healthy Child Newsletter](#)

Healthy Child Enterprises, LLC
www.healthychild.com