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# FitPregnancy

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**THE NATURAL  
NURSERY  
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# *thinking* GREEN

Now that you're expecting, your immediate environment is more important than ever. Here's how to steer clear of potentially harmful substances and make your space a healthier place. From the moment you find out you're pregnant, your desire to keep yourself and your child as healthy as possible kicks into high gear. That means eating a balanced diet, exercising sensibly and making your surroundings safe. The most difficult part: protecting yourself and your unborn child from toxins present in the air we breathe, the food we eat, the water we drink and the household products we use. Although we don't have room to list every potential hazard (nor should you worry about them all), here are the most important ones to watch out for at home, at work and outdoors.

BY AMY PATUREL, M.S., M.P.H., AND KATHY SUMMERS  
PHOTOGRAPHY BY JOHN LICHTWARDT



## The air we breathe }

**AT HOME** "Indoor pollutants are often more hazardous than those outside," says Ted Schettler, M.D., M.P.H., science director of the Science and Environmental Health Network and co-author of *In Harm's Way: Toxic Threats to Child Development* (Greater Boston Physicians for Social Responsibility, 2000). "Cooking, cleaning, certain hobbies—all of these things can emit harmful chemicals."

A study published in the *Journal of Exposure Analysis and Environmental Epidemiology* reveals that toxic chemicals, including lead, pesticides and other contaminants, are routinely found in household dust. What's more, cleaning recirculates chemicals, creating a "personal cloud" of exposure that's even higher than normal indoor-air concentrations.

"If you use household sprays [e.g., hair spray, deodorants or aerosol cleansers], you're creating a cloud of synthetic chemicals and nasty solvents around you," Schettler says. "It's not only the presence of hazardous chemicals but the concentration and duration of exposure that matters." That said, you probably don't need to worry if you've been using these products in normal amounts; just follow the "Breathe-Easy Tips," below, to decrease the risks.

### Breathe-easy tips

- » Increase ventilation whenever possible.
- » Keep windows and doors open to release pollutants when vacuuming, dusting, frying, painting or folding clothes.
- » Use household products according to manufacturers' directions and never mix products unless directed on the label.
- » When using spray cleansers, keep the nozzle close to the area of application, spray in short, directed bursts and avoid human and pet traffic until you wash the area with soap and water.
- » When entering your home, leave shoes at the door; they track in harmful chemicals from the outdoors.
- » Pay attention to air-quality advisories, particularly if you live in a big city, and don't exercise outdoors during advisory alerts.
- » Try to limit the amount of time you spend inside the car (some pollutant levels can be higher inside vehicles than outside) and in traffic-heavy areas; look for less-traveled routes.
- » Hold your breath or turn your head when you see exhaust or while putting gasoline in your car.

A constant desire for a nice smelling room can spell trouble, however. A recent United Kingdom survey of more than 10,000 mothers and their children linked daily use of air fresheners (including sticks, sprays and aerosols) with a 32 percent increase in infant diarrhea compared with homes where air fresheners were used once a week or less. And, moms living in air-freshened homes had 10 percent more headaches.

Unfortunately, freshening a room with a few scented candles made from paraffin wax also can be damaging. When fragrance oils are incorporated into paraffin candles, they produce more soot and can even release carcinogens such as benzene and toluene. If you rely on candles to de-stress, use safer soy candles (they're widely available online), which tend to burn without emitting harmful chemicals. Or, instead of candles, consider a vase of fresh, sweet-smelling flowers.

One of the most devastating contaminants for both you and your baby is tobacco smoke, regardless of whether you're the one smoking. In a study of nonsmoking women, newborns' levels of cotinine (a chemical that forms in the body when exposed to nicotine) are actually higher than their mothers'. Exposure to secondhand smoke during pregnancy is linked to lower birth weight and increased risk of cancer in both mom and baby. Don't smoke (while pregnant and as a new mother) and avoid areas where others are smoking. Don't allow anyone to smoke inside your home or car.

**AT WORK** In many instances, pollutants in the workplace are similar to those at home, unless you work in an industrial environment, near a construction site or in any location that requires frequent exposure to hazardous chemicals. Concerned about what may be present? Ask to review your company's Material Safety Data Sheets, the U.S. Department

Concerns about lead, mercury and other potential contaminants lurking in your water may have you thinking twice before reaching for the tap.

of Labor Occupational Safety & Health Administration's (OSHA) required listing of chemicals and potential hazards for employees. Then, take the information to your physician.

**OUTDOORS** Try to avoid outdoor pollutants, specifically motor-vehicle exhaust and smog, says Michelle Wilhelm, Ph.D., adjunct assistant professor of epidemiology at the University of California, Los Angeles, School of Public Health.

In a study published in the *Environmental Health Perspectives*, researchers collected blood samples from 265 mothers and the umbilical cords of their newborns. While blood levels of polycyclic aromatic hydrocarbons (think motor-vehicle exhaust) were estimated to be about 10 times lower in fetuses than in mothers because of the protection offered by the placenta, the levels of DNA damage among mothers and newborns were comparable. This suggests that the fetus is more susceptible to DNA damage than the mother. In another study, researchers at the Columbia University Center for Children's Environmental Health in New York studied 60 newborns whose mothers wore portable air monitors during their last trimester and found that babies' DNA can be damaged by the polluted air their mothers breathe during pregnancy.

## Coming clean }

**HOUSEHOLD PRODUCTS** Most expectant parents want the house to sparkle, but can the same chemicals that give common household cleaners their clout also cause harm?

### Absolutely avoid

Rather than worry about every potential exposure that may or may not affect your baby, focus on avoiding the following proven hazards:

- » Tobacco smoke
- » Pesticides
- » Paint fumes
- » Improperly maintained stoves
- » Kerosene heaters
- » Solvents

Tom Natan, Ph.D., research director for the National Environmental Trust, agrees. "While we don't know enough about these products, most are probably safe when used as directed in limited amounts and only when necessary," he says.

There are no federal requirements to test for or warn consumers about long-term health effects or fetal damage from using household cleaners, so a list of all the chemicals pregnant women should avoid doesn't exist. But a recent study from the University of Bristol in the United Kingdom found that babies of women who frequently used chemical-based cleaners while pregnant are more than twice as likely to have breathing problems.

However, says Brad Imler, Ph.D., president of the American Pregnancy Association, "your exposure is probably limited and the likelihood of complications is negligible."

The bigger concern is multiple exposures. "You don't always know where the dangers are and you're potentially exposed more often than you think throughout the day," explains Natan, who believes soap, hot water and elbow grease are vastly underrated. "You don't have to kill bacteria; you can just remove them from surfaces by scrubbing and using hot water," he says.

"Green" household cleaners are widely available, but not all of these products are safe. Since manufacturers don't have to list every ingredient, you can't know for sure what's in them. On the honor system, true green companies claim to list all ingredients on labels, and some, such as Earth Friendly Products ([www.ecos.com](http://www.ecos.com)) even list the toxic ingredients typically found in household products that you *won't* find in their products on their website. For more information on any product, call the toll-free number listed on the package or visit the company's website.

When you must use strong chemicals, use them sparingly in well-ventilated areas and follow the manufacturers' instructions. Better yet, get someone else to do the dirty work. For a chart listing the common concerns about household cleaners and how to stay safe when using them, as well as "green" alternatives, go to [www.fitpregnancy.com/cleaners](http://www.fitpregnancy.com/cleaners).

## What's in your tap water? }

Obstetricians consistently stress the importance of drinking fluids during pregnancy. But concerns about lead, mercury and other potential contaminants lurking in your water may have you thinking twice before reaching for the tap.

Of particular concern is lead, which can cause premature birth, low birth weight and permanent damage to a baby's developing nervous system. "Lead is one of the most toxic metals to children, and it's more prevalent than we suspect," says Mark Woodin, Sc.D., professor of environmental health in the civil and environmental engineering department at Tufts University School of Medicine in Boston. In fact, the Centers for Disease Control and Prevention estimates that nearly 900,000 children ages 1 to 5 in the United States still have elevated blood lead levels. And while water rarely is the sole cause of lead poisoning, it can be a significant contributing factor.

### Scoping the web

- » U.S. Environmental Protection Agency/Sources of Indoor Air Pollution, [www.epa.gov/iaq/voc.html](http://www.epa.gov/iaq/voc.html)
- » Health Care Without Harm, [www.noharm.org](http://www.noharm.org)
- » Inform Inc., [www.informinc.org](http://www.informinc.org)
- » Organization of Teratology Information Services, [www.otispregnancy.org](http://www.otispregnancy.org)
- » Pesticide Action Network North America, [www.panna.org](http://www.panna.org)



## Should you eat organic?

Some research shows that organic foods (those grown without pesticides and antibiotics) are not nutritionally superior to those produced conventionally. But a University of California, Davis, study of organic berries and corn found that they contained 60 percent more antioxidants than their nonorganic counterparts. Regardless, eating organic at least some of the time is a great way to minimize pesticide intake. According to the Environmental Working Group, here are the most and least pesticide-laden foods when grown conventionally.

MOST CONTAMINATED	LEAST CONTAMINATED
Apples	Asparagus
Bell peppers	Avocados
Celery	Bananas
Cherries	Broccoli
Grapes (imported)	Cauliflower
Nectarines	Kiwi
Peaches	Mangoes
Pears	Onions
Potatoes	Papaya
Red Raspberries	Pineapples
Strawberries	Sweet corn
Spinach	Sweet peas

On average, municipal water systems are required to ensure that tap water does not exceed 15 micrograms of lead per liter. Even so, an enormous amount of water in this country is not tested, Woodin claims. "Piping systems in big cities like Boston, Los Angeles and New York are a huge problem, and even though they're periodically tested, you just don't know what's coming out of your tap," he says.

To get your water tested, which costs anywhere from \$15 to hundreds of dollars, contact the U.S. Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800-426-4791, or do it yourself. You can purchase a Watersafe Drinking Water Testing Kit (\$17, [www.water-safestkits.com](http://www.water-safestkits.com)). According to the EPA, you also can minimize any potential exposure to toxic chemicals by running cold water down the drain for 30 seconds to two minutes before drinking it and using cold water for drinking and cooking (hot water tends to leach more lead).

Better yet, invest in a high-quality water filter. "The filter will remove lead, chlorine, mercury and other chemicals," Woodin says. "And, even if there are no problems with your tap water, filtered water tastes better and it might make you drink more." For a list of water filters capable of removing lead, visit [www.nsf.org/certified/dwtu/](http://www.nsf.org/certified/dwtu/) (NSF International is a nonprofit public health and safety group that tests and certifies home water-treatment devices) or contact the Water Quality Association at 630-505-0160 or [www.wqa.org](http://www.wqa.org).

## Plastic precautions }

You may have heard of the controversy over the chemicals in some kitchen storage containers, plastic baby bottles and baby toys. Government regulators assure us these products are safe, even for pregnant women and infants. But concerned scientists and environmental groups disagree, citing years of disturbing results from research conducted on lab animals.



"We can't tell from animal studies exactly how exposure at different times during pregnancy affects a developing human fetus, but these chemicals may impact health at much lower exposure levels than previously believed, if the effects seen in animal studies also occur in humans," says Tom Natan, Ph.D., research director for the National Environmental Trust. "We certainly don't want to imply that there's danger lurking in every plastic container, but it makes sense to protect yourself," he adds. Until the experts sort out the potential problems, Natan recommends making a few simple changes to your normal routine. Here are some pointers for using plastic safely:

"We certainly don't want to imply that there's danger lurking in every plastic container, but it makes sense to protect yourself."

■ Look for the Society of the Plastics Industry (SPI) identification code stamped on products (a number inside a triangle with chasing arrows). Choose baby bottles made with polyethylene (#2 or #4) or polypropylene (#5). For information on products that don't have these numbers, call the manufacturer's toll-free number or check the company's website.

Some experts also suggest discarding clear, rigid plastic bottles that are worn or scratched. Safe replacements include Avent Via Nurser Kit, Evenflo Classic Glass Nurser bottles and Playtex Original Nurser bottles (these brands are available at mass retailers including Babies "R" Us and Target). For more on plastics and baby bottles, visit the U.S. Environmental Protection Agency's website, [www.epa.gov](http://www.epa.gov).

■ Look for toys and furniture that don't contain polyvinylchloride (PVC) #3. These may contain plasticizers called diisononyl phthalates (DINP) shown to cause birth defects, cancer and organ damage in mice. New PVC products

often have a strong odor; if it smells like a new shower curtain, it's probably PVC. Companies that make phthalate-free toys include Gerber (800-443-7237, [www.gerber.com](http://www.gerber.com)); Little Tikes (800-321-0803, [www.littletikes.com](http://www.littletikes.com)); and The Natural Baby Catalog (800-922-7397, [www.shop.store.yahoo.com/naturalbaby](http://www.shop.store.yahoo.com/naturalbaby)).

■ Microwave foods only in glass or microwave-safe plastic containers such as Tupperware and Rubbermaid. "And, microwave formula in a glass measuring cup and pour it into the plastic bottle after it cools," Natan says. Today's plastic wraps such as Glad Cling Wrap, Saran Wrap and Ziploc Storage Bags are considered safe, but Natan recommends glass food covers when microwaving. "The problem isn't chemicals leaching out, but the plastic itself melting into the food at high temperatures," he says.

(CONTINUED ON PG. 140)

## Green resources

**[AFM Safecoat Paint]** 619-239-0321, [www.afmsafecoat.com](http://www.afmsafecoat.com).

**[Alternative Baby]** Organic cotton diapers, clothing and toys. 800-469-1126, [www.alternativebaby.com](http://www.alternativebaby.com).

**[Earthwise Floors]** Natural and renewable flooring products for your home. 800-732-7102, [www.earthwisefloors.com](http://www.earthwisefloors.com).

**[Earthy Birthy Mama]** Natural skin-care products for baby, cloth diapers and clothing for you and your baby. 866-326-5439, [www.earthybirthymama.com](http://www.earthybirthymama.com).

**[Ecobaby Organics]** Organic crib bedding, mattresses, clothing and more. 800-596-7450, [www.ecobaby.com](http://www.ecobaby.com).

**[Giggle]** Organic baby clothing, natural skin-care products, furniture and toys. 800-495-8577, [www.egiggle.com](http://www.egiggle.com).

**[Horizon Organic]** Organic infant formula with iron. 888-494-3020, [www.horizonorganic.com](http://www.horizonorganic.com).

**[Lifekind]** Organic bedding, household products and more. 800-284-4983, [www.lifekind.com](http://www.lifekind.com).

**[Natura World]** Wool and unbleached cotton adult and baby bedding. 888-628-8723, [www.naturaworld.com](http://www.naturaworld.com).

**[Nature's One]** Baby's Only Organic dairy- and soy-based formulas and DHA/ARA supplement. 614-898-9758, [www.naturesone.com](http://www.naturesone.com).

**[The Old Fashioned Milk Paint Co.]** Nontoxic paint. 978-448-6336, [www.milkpaint.com](http://www.milkpaint.com).

**[Our Greenhouse]** Natural products for you, your home, your baby and your pet. 203-364-1484, [www.ourgreenhouse.com](http://www.ourgreenhouse.com).

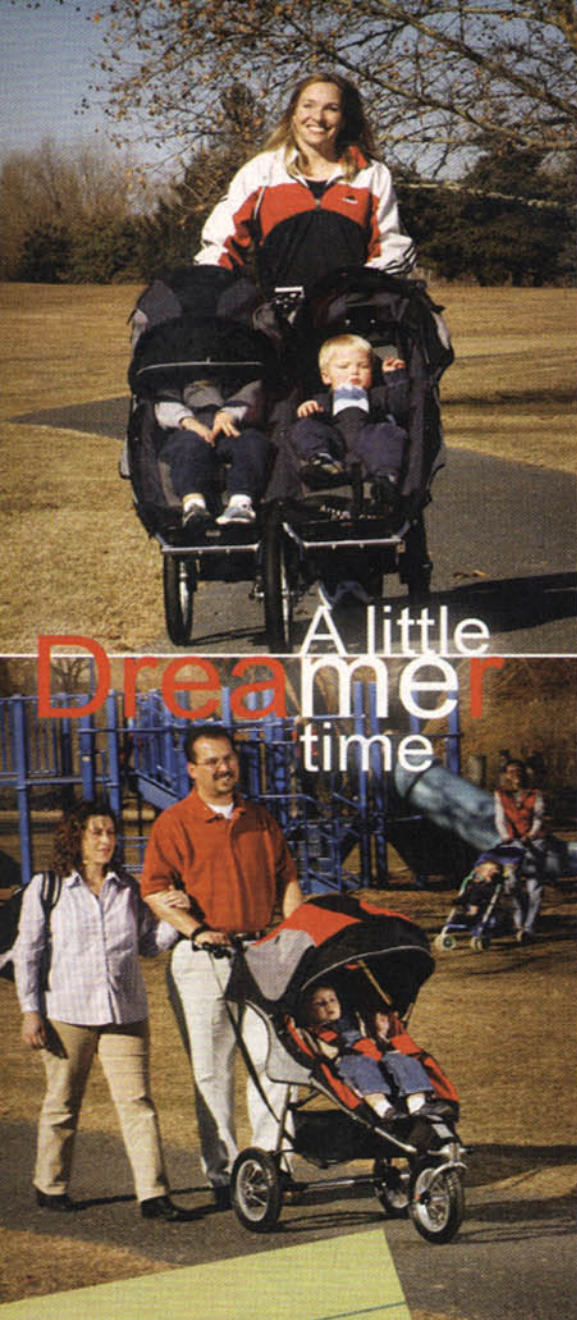
**[Pangaya]** Hemp, Tencel and organic cotton clothing. 800-872-6618, [www.pangaya.com](http://www.pangaya.com).

**[Pitter Patter Collections]** Hemp crib and twin bedding designs. 505-751-9067, [www.pitterpattercollections.com](http://www.pitterpattercollections.com).

**[The Real Milk Paint Co.]** Nontoxic paint. 800-339-9748, [www.realmilkpaint.com](http://www.realmilkpaint.com).

**[Seventh Generation]** Environmentally friendly household cleaners and baby products. 800-456-1191, [www.seventhgeneration.com](http://www.seventhgeneration.com).

**[Under the Nile]** Organic cotton baby clothing, bedding, toys and more. 800-883-4402, [www.underthenile.com](http://www.underthenile.com).



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## Thinking green

continued from pg. 104

### Nursery au naturel }

While launching a remodeling project before your baby's arrival may seem like a good idea, it requires a lot of different building materials—glues, paints and chemical solvents. "Suddenly your house turns into a construction site with contamination levels that can be problematic," says Ted Schettler, M.D., M.P.H., science director of the Science and Environmental Health Network. Here are some precautions you can take:

- Take a primer on paint. "Oil-based paints pose a theoretical risk of exposure to volatile organic compounds (VOCs) while the paint is drying," says Robert Geller, M.D., medical toxicologist and associate professor of pediatrics at Emory University School of Medicine in Atlanta. Latex paint has very low toxicity but poses a slight risk if used extensively in a poorly ventilated area. If you're doing the painting, open the windows or run a fan and take frequent breaks; if you are using oil-based paint, wear a protective mask specifically recommended by the manufacturer to protect against paint fumes. If you're doing extensive painting, use a nontoxic, non-VOC- or low-VOC-containing paint, or ask someone else to paint the nursery for you and stay out of the house while the paint dries and the fumes dissipate.

Most major paint manufacturers offer low- or non-VOC water-based paints. Some companies manufacture milk paints, made from the milk protein casein, lime and naturally occurring mineral pigments (two to try: The Old Fashioned Milk Paint Co. and The Real Milk Paint Co.). The American Pregnancy Association recommends artists choose water colors, acrylic and tempera paints over oil paints, and avoid latex paints that contain solvents such as ethylene glycol, ethers and biocides.

If your home was built before 1978, the walls may still contain lead-based paint. The U.S. Environmental Protection Agency recommends contacting a certified lead abatement contractor before removing old paint, or someone in your household can test for lead dust using a

test kit (\$30, available from the National Safety Council, [www.nsc.org/issues/lead](http://www.nsc.org/issues/lead)). If you're pregnant, leave the house while someone else does the peeling, stripping and painting, and don't return until the room has been well ventilated.

- Get naturally floored. New carpet can emit harmful chemicals from carpet fibers, backing material and adhesives, dyes and fire retardants. If you're buying new carpeting, ask the installer to air out the rolls for 24 hours before installation. Open the windows for ventilation and, if possible, stay out of the room until the air clears (48 to 72 hours after installation). Look for carpets that carry the new Green Label Plus logo, which identifies products with low VOC emissions. Consider all-natural wool, jute or sisal carpeting, or a natural linoleum, tile, hardwood or cork floor.

- Be choosy about furniture. Family heirlooms, such as antique rocking chairs or cribs, won't meet current safety standards if they were finished with lead-based paint. However, furniture designed especially for babies after the 1970s shouldn't pose a toxic hazard even if a child chews on it, Geller says. Newly installed unfinished plywood or particleboard can produce formaldehyde vapors, so cover the exposed wood with a low- or non-VOC finish or sealer such as AFM Naturals Oil Wax Finish or Safecoat DuroStain.

- Create a no-PBDE (polybrominated diphenylethers) zone. Several new animal studies suggest that a common flame retardant (deca-PBDE) used in carpets and upholstery can impair a baby's developing central nervous system and brain. PBDEs can cross the placenta, transfer through breast milk and get absorbed from the gases that vaporize from household products. The effects depend on the amount of exposure over time.

To lessen the toxic load, consider buying an organic baby mattress and bedding. Many companies now sell beautiful organic products that are free of formaldehyde, dioxins, fire retardants, pesticides and synthetic petrochemicals (see "Green Resources" on pg. 104). Each potential toxin you eliminate is a baby step toward better health. ☺

**Amy Paturel, M.S., M.P.H.**, is a freelance writer in Santa Barbara, Calif. **Kathy Summers** is a freelance writer in Phoenix.