



The adverse effects of indoor air pollution on babies' health

Studies of human exposure to air pollutants indicate that the air pollution in our homes is two to five times – and occasionally more than 100 times – higher than outdoor levels.¹

While you may not immediately experience adverse health effects when you're exposed to indoor air pollution, young children are particularly susceptible to the air quality in your home for a few key reasons.

For one, babies' lungs aren't fully developed until they become adults.² Furthermore, their tiny, developing bodies are less able to metabolize, detoxify, and excrete the toxicants contained in air pollution.³

It also doesn't help that children under the age of 24 months frequently spend most of their time in their room, which exposes them to airborne contaminants essentially around the clock. Constant exposure to these contaminants can cause numerous health problems, such as:

- dizziness
- coughing
- sinus congestion
- nausea
- fatigue
- headaches
- irritation of the eyes, nose, and throat
- asthma

What you can't see can harm your child

Indoor air pollution is caused by these primary pollutants: PM10 particles, PM2.5 particles, ultrafine particles (UFPs), volatile organic compounds (VOCs), and biological agents.

PM10 particles

PM10 particles are particulate matter that's smaller than 10 microns (for reference, a human hair is 50–70 microns in size). Many PM10 particles have natural sources. Examples of PM10 particles include:

- dust
- mold
- pollen

PM2.5 particles

PM2.5 particles are particulate matter that's smaller than 2.5 microns. Most PM2.5 in outdoor air is produced by human activity. Examples of PM2.5 particles include:

- vehicle exhaust
- factory emissions
- smoke from burning wood or other biomass fuels

Ultrafine particles (UFPs)

90% of all airborne particles are ultrafine particles – particulate matter that's smaller than 0.1 microns. UFPs are particularly dangerous because they're small enough to penetrate through your lung tissue and into your bloodstream. UFPs have been linked to heart attacks, strokes, asthma, and even cancer.

Volatile Organic Compounds (VOCs)

VOCs are compounds that vaporize (become a gas) at room temperature. Several sources emit these compounds, including:

- building materials
- carpets
- combustion sources (cigarettes, cooking, etc.)
- furniture
- home cleaning products
- paints, paint strippers, and other solvents
- personal care products (cosmetics, perfumes, etc.)

And, unfortunately, baby products and furniture aren't off the hook for emitting dangerous amounts of VOCs—several studies proved that baby crib mattresses, cribs, and changing tables emit VOCs.^{6,7} Other studies indicated that children exposed to Formaldehyde, one of the most common VOCs, have higher risks of acquiring asthma.

Biological agents

Biological agents are also a significant source of indoor air pollution:

- animal dander (from cats, dogs, etc.)
- dust mites

These biological agents can cause a myriad of health effects in infants, from diseases to allergies.

Here are 9 ways to improve the air quality in your baby's bedroom

All this distressing information may be too much to process at first, but don't panic—there are a few relatively simple steps you can take to safeguard your bundle of joy against indoor air pollutants:

1. Monitor your indoor air quality.

Monitoring the air quality in your baby's room is the first step in determining what measures you'll have to take to improve the air that your baby breathes. The most effective way to monitor the air quality of your baby's bedroom or nursery is to use the IQAir AirVisual Pro to take ultra-precise, hyperlocal measurements of the air quality index. The AirVisual Pro utilizes advanced laser technology to provide highly accurate air quality readings of tiny fine particles (PM2.5).

Once you've determined the exact air quality index of your baby's room, you'll have a better understanding of which of the following measures you can take to clean up the air in your child's bedroom.

2. Use an air purifier to clean the air

The easiest, most effective way to improve the air quality in your baby's room is to outfit it with an air purification system.

The Atem Desk is the most effective, portable air purifier for small rooms such as baby nurseries. It employs HyperHEPA filtration technology that's proven and certified by an independent third-party lab to effectively filter at least 99.5% of harmful ultrafine particles (UFPs) down to 0.003 microns. As a refresher, UFPs are the most damaging of all airborne particles because they are so easily inhaled, deposited into the lungs, and absorbed into the bloodstream. From there, the invasive contaminants can reach any organ in the body, including the brain, heart, and liver.

Best of all, the unparalleled performance of IQAir air filtration technology is achieved using only safe, proven, mechanical filtration technology, without producing potentially harmful byproducts like ozone, ions, and chemicals. If you're looking for the single best way to ensure that your baby breathes only the safest, purest air, the IQAir Atem Desk should be at the top of your baby nursery essentials.

3. Purchase non-toxic, naturally-finished furniture

Just because some furniture is marketed for babies doesn't mean that it's safe for babies. Before you purchase a baby crib, mattress, or other furnishings for your little one's room, ask the manufacturer about the formaldehyde emissions and material composition. Avoid baby furniture constructed from suspect materials like composite wood.

If your budgetary constraints limit you to cheaper, composite baby furniture, air out the furniture outdoors for about a week – this will reduce the VOCs that are outgassed in your baby's room.

4. Manage the humidity

High indoor humidity not only makes the air heavier and more difficult to breathe but also spurs the growth of harmful fungus, yeast, and bacteria. The ideal relative humidity of your baby's room should be around 40 percent. One cost-effective way to ensure the perfect humidity in your baby's bedroom is to furnish it with a dehumidifier. For best results, you'll have to clean the dehumidifier daily.

5. Ventilate the room

Even if you've placed an IQAir air purifier in your baby's quarters, it's recommended that you open the windows at least ten minutes a day to exchange the indoor air. If your home features a ventilation system, make sure it's cleaned and maintained regularly to prevent the growth of mold and bacteria.

6. Replace your window air conditioner or routinely change central air filters

If your window-mounted air conditioner is over three years old, use a flashlight and peek into the vent and housing—you'll likely spot progressed mold everywhere. Older air conditioners spew out exponential mold spores, which contaminate bedrooms and cause various illnesses.

If you have central air conditioning or heating, change the air filters and schedule a thorough cleaning of the HVAC unit. Replace old and compromised units to prevent the spread of illness.

7. Go green when remodeling

We've all seen the perennial scene in movies where the proud new parents remodel their baby's nursery via a cheesy montage, but the truth is that this is one of the most dangerous things you can do for your newborn. New carpeting, paint, and furniture all too often send the concentration of VOCs skyrocketing in your baby's room. According to a recent study, the optimal waiting period for the VOCs in recently renovated rooms to reach a safe level can be up to 60 days.⁸

If you absolutely must remodel your newborn's room, try to use only VOC-free paints, naturally-finished wood furniture, and low-pile carpet derived from natural fibers. Doing so will limit your infant's exposure to toxic fumes.

8. Reduce pet dander

Your furry four-legged friends shed dead skin cells and hair, which may negatively impact your baby's lungs and sinus health. To reduce the amount of pet dander that your baby inhales, regularly groom your pets and consider keeping them out of your child's room all together. Routinely wash your baby's bedding to ensure that pet dander is taken care of before it accumulates in high concentration.

Since pet dander is quite pervasive, it's inevitable that it'll find its way into your baby's room even if you follow the above steps. IQAir filtration systems are the perfect indoor pollution solutions because its HyperHEPA filtration technology effectively cleans up any pet dander in the air.

9. Use a HEPA filter vacuum

Vacuum the flooring and furniture in your baby's room with a HEPA filter vacuum cleaner. A HEPA-certified vacuum cleaner will filter and capture 99.7% of particulates below 0.3 microns. HEPA-certified vacuum cleaners are vital to curbing indoor air pollution because they effectively remove harmful, microscopic allergens from the carpeting.