



**On average, children are six times more active than adults, requiring three times as much oxygen in a day relative to their size.**<sup>1,2</sup>

Concentrations of pesticides and chemicals from cleaning products and building materials are five to 10 times higher in the areas that children spend most of their time.<sup>1,2</sup>

In Australia, more than one child a week aged up to four is hospitalised due to a poisoning from solvents, pesticides and plants, and more than half of these children are less than one year old.

## The risks<sup>1,2</sup>

Major lung development in children occurs before birth and in the first one to two years after birth, and continues until five to eight years of age.

During this time the effects of inhaling chemicals from the household environment can cause problems with healthy lung function.

The use of pesticides in the home –including the burning of mosquito coils – releases numerous chemicals, including formaldehyde, which can have both long and short-term consequences on children's health.

While immediate poisoning can occur, children are most often exposed to pesticides and household chemicals in low doses over long periods of time.

Biological contaminants in the household include moulds, dust mites, fungi and bacteria – all of which can be a source of allergens and infections.

Indoor moulds can be a significant source of allergens; the most common indoor moulds include *cladasporium*, *penicillium*, *aspergillus* and *alternaria*.

Toxic compounds are found in household products such as paints and paint-strippers, cleaners and disinfectants, air-fresheners, aerosols, stored fuels and dry-cleaned clothing.

Products used in building and construction can be highly toxic when inhaled and exposure can be worse in homes with poor ventilation.

## Health effects in children

### Biological contaminants:<sup>1,2,4,5</sup>

- Headaches, difficulty concentrating, hypersensitivity reactions, allergic rhinitis and worsening of asthma are common.
- Fungal Infections, including thrush (*candidiasis*), which appears as whitish, velvety sores in the mouth and aspergillosis, which can lead to coughing, wheezing and chest pain.

- Some moulds also produce mycotoxins which can severely affect the immune system, nerves, and the liver and can be potentially cancer causing.

### Household products<sup>1</sup>

- Irritation of the nose, throat, eyes and skin.
- Episodes of nausea and vomiting, dizziness, nosebleeds and fatigue are also common.

### Pesticides and formaldehyde<sup>1,2</sup>

- Inhalation of chemicals from pesticides can lead to immediate poisoning and allergic reactions, as well as and long-term effects on nervous, immune and endocrine system development.
- Formaldehyde irritates the eyes and airways and can lead to immediate reactions, such as chest tightness and wheezing.

## Prevention

Remember children are not little adults and have a much higher rate of absorption of chemicals and allergens through inhalation than adults.

- Avoid the use of chemicals for cleaning in the home; instead, use natural-based products such as vinegar.
- During any home renovations, ensure there is proper ventilation.
- Avoid burning mosquito coils, and the use of insecticides and pesticides inside the home.
- Ensure your home is adequately ventilated and air-conditioning systems are kept clean.
- Make sure mattresses, bedding, carpets and upholstered furniture are clean and dry to limit the growth of dust mites, fungi and bacteria.

### Sources

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