

Each stage of a woman's life sets the path for her future health and possibly the health of her children. The previous section highlights the many factors that influence whether or not exposure to environmental contaminants will contribute to health problems. This section highlights how the timing of exposure may affect our health and the health of future generations.



## Lifecycle and the Environment



### In Utero

Before a baby is born, critical development happens in all organs and tissues, including the rapidly growing brain, reproductive and endocrine (or hormone) systems. What babies are exposed to in the womb may have long-term health effects.

- The risk for attention deficit disorder and learning disabilities can be increased if a fetus is exposed to certain contaminants. For example, there are some fish that pregnant women should avoid because they contain methylmercury, which can adversely affect brain development. But there are types of fish that pregnant women should eat because they are rich in important nutrients.
- Exposure to indoor and outdoor air pollutants (including secondhand smoke) has been linked to adverse birth outcomes, such as low birth weight and increased risk for developing asthma.
- Exposure to chemicals in the womb that affect the endocrine system may increase the risk of numerous types of cancer later in life. For example, animal studies indicate that pre-natal exposure to Bisphenol A (which is used in polycarbonate plastics, the lining of food cans and other products) may increase the risk of breast cancer later in life.



### Infants & Children

More growth and development takes place in a baby's first year than at any other time. Early childhood is also an important period of development. The early years are a critical time to provide good nutrition and a healthy environment.

- Chemicals in secondhand smoke are very damaging to a young child's health. They have been linked to increased risk for sudden infant death syndrome, middle ear infections, lower respiratory tract illness, prevalence of wheeze and cough and worsening asthma.
- Once children can crawl, they are exposed to floor dust that may contain lead, flame retardants or other substances that may harm brain development.
- When it comes to eating, children are not just little adults. Health impacts from food contaminants such as pesticides or heavy metals can be greater because children consume more food per pound of body weight than adults and because childhood is such a vulnerable time of development.
- Children may also be exposed to pesticides and harmful cleaners at school.



### Teens

Teenage years are also a time of rapid growth. Girls' bodies begin producing higher levels of estrogen and progesterone, their reproductive tract undergoes change to prepare for pregnancy and their breasts go through rapid development. All of these changes make their bodies vulnerable to environmental contaminants.

- Teens often begin using makeup and personal care products, many of which contain ingredients that may be harmful to their health. While the chemicals present in any one cosmetic product alone may not cause harm, teenagers, like adults, use on average more than 10 personal-care products every day.
- Each day, nearly 6,000 children under 18 years of age start smoking, and 2,000 of them will become regular smokers. Approximately 90 percent of smokers begin smoking before age 21. Studies indicate that when multiple factors are taken into account, such as the length of time a person has been a smoker and the amount she or he smokes, smoking during adolescence causes more damage than at other times, especially increasing the risk for lung cancer. Secondhand smoke may also increase risk for breast cancer, and developing breast tissue may be quite sensitive to environmental contaminants.



### Early Adulthood

This is a time of adjusting to full-time jobs or other adult responsibilities. Finding ways to maintain good health habits while making the transition into adulthood is important, including eating well, maintaining or establishing an exercise routine and choosing healthier products around the home.

- Entering the workforce may entail being exposed to contaminants from toxic cleaners, chemicals used in manufacturing or other sources. Federal standards for occupational safety are often not strong enough and are not always well enforced. Workplace exposures may increase a woman's risk for many health concerns, such as cancer.
- Young women may be thinking of becoming a mother at some point in their lives, but exposures to chemicals even years before they try to have children may impact their ability to become pregnant and/or have a healthy, full-term child. For example, endometriosis, which may be caused by chemical exposures, can impair fertility. Occupational exposure to certain chemicals is also known to threaten a woman's ability to have a healthy child.



### Pregnancy

In the words of Katsi Cook, a Native American midwife, a woman's body is the first environment. Whatever a pregnant woman is exposed to, her baby may also be exposed to; the placenta does not protect the fetus from environmental contaminants. Eating nutritious food, exercising and avoiding environmental contaminants when possible are especially important during pregnancy.

- Exposure to chemicals on the job when pregnant can be especially dangerous. For example, beauty salon workers and women working at dry cleaners may have a higher rate of miscarriage from contaminant exposures in the work place.
- Choosing healthier products around the house is especially important when a woman is pregnant. For example, studies have found that phthalates—chemicals used in vinyl plastic and some personal care products such as nail polish—may harm male babies' reproductive organs. Pregnant women also should avoid using indoor pesticides, which can increase the baby's risk for being born prematurely and harm its development in the womb.



### Menopause

A woman's changing hormones during menopause can cause obvious effects like hot flashes and night sweats, but a lifetime of exposure to contaminants may affect the onset of menopause and have other effects on a woman's health.

- A woman's risk for cardiovascular disease, including coronary heart disease and stroke, may increase as a result of menopause because estrogen, which decreases during menopause, serves as protection from these problems. When this natural protection decreases over time, lifetime risk factors for cardiovascular disease such as exposure to environmental contaminants may be more pronounced.
- Menopause often accelerates bone disintegration which can release contaminants stored in the bone. For example, the release of lead stored in a woman's bones may impact her memory and her ability to think clearly.
- Chemical exposures throughout life may induce early or premature menopause and increase the risks of illness and death in the post-menopausal period.



### Seniors

The likelihood of having a stroke, heart disease, cancer or most other illnesses, whether related to environmental contaminants or not, increases after age 65. The way a woman has treated her body her whole life and the environmental contaminants she has been exposed to can affect her health and well-being in her later years.

- It is normal for people's immune systems to grow weaker as they age, but a lifetime of exposure to environmental contaminants may further suppress an older woman's immune system.
- Many women become less active as they age, which can lead to spending more time indoors and increase the chance of being exposed to indoor air pollutants. Effects from smoking or using cleaners and pesticides can be magnified if most of a woman's time is spent indoors in a poorly ventilated room.
- Exposure to outdoor air pollution can also pose significant risk to older adults. For example, particle pollution and ozone (from car and other industrial emissions) may aggravate lung diseases.