

# Safe Food: Crucial for Child Development

The proper development of the human brain is one of the biggest mysteries of biology. This complex, rapid process – at times 250 000 neurons are added per minute – is uniquely vulnerable to environmental influences in air, water and, in particular, food.

Babies with toxoplasmosis, contracted by the mother from a parasite in undercooked meat, suffer brain damage and blindness. This disorder affects up to 1 in every 1000 live births. Methylmercury, which also harms brain development, is a particular threat to children living in coastal areas who eat predatory fish such as swordfish and shark.

Children come into contact with microbes and hazardous chemicals through many pathways: through the placenta to the developing fetus, through breast milk to the nursing infant, or directly through contaminated food. The young are more susceptible to foodborne diseases because they eat more in proportion to their body weight than adults, have rapidly growing organ systems, and have fewer defences against toxins.

Dioxins, dibenzofurans, and polychlorinated biphenyls are persistent organic pollutants (POPs) that work their way up the food chain by dissolving and remaining stored in the body fat of animals. These so-called 'endocrine disruptors' may upset a child's hormone balance.

Food safety is one of the most important preventive measures to protect infants and children. The solution lies in good hygiene and, ultimately, in reducing emissions of hazardous substances into our environment.



Foodborne pathogens are responsible for up to 70% of diarrhoea in infants and children worldwide.

## Safer breast milk

Dioxin (TEQ) concentration in human breast milk 1988–2002  
picograms per gram of fat (pg/g)

1988 1993 2002



In Europe, this downward trend will be sustained, with many countries having implemented the Stockholm Convention (2001) to reduce or eliminate the emission of 12 persistent organic pollutants (POPs) into the environment.

*The advantages of breastfeeding far outweigh the potential risks from environmental pollutants. Taking into account breastfeeding's short- and long-term health benefits for children and mothers, WHO recommends breastfeeding in all but extreme circumstances.*

## Fetus at risk

Many contaminants in the diet of pregnant mothers present a hazard to the developing fetus:

- **Toxoplasmosis** Women infected during pregnancy can transmit the infection to the fetus, leading to stillbirths, birth defects and mental retardation.
- **Listeriosis** Women infected during pregnancy can transmit the infection to the fetus, leading to spontaneous abortion or infants born with visual and mental problems.
- **Heavy metals** Lead and methylmercury can cross the placenta. These neurotoxic substances result in IQ depression and behavioural problems.
- **POPs** POPs (persistent organic pollutants) can cross the placenta and lead to behavioural problems, hormone disturbances, and cancer.
- **Alcohol** Maternal prenatal alcohol use causes severe birth defects and developmental disabilities, ranging from growth retardation and subtle changes in IQ to fetal alcohol syndrome characterized by brain disorders and facial malformations.

