Smart Meat and Dairy Guide for Parents and Children

Safer, sustainable food for healthy children and a healthier environment

Meat and dairy products can be part of a healthy well-balanced diet. They are good sources of protein, iron, calcium, vitamin D and other nutrients essential for children and pregnant and nursing women. But these foods also can contain toxic pollutants at varying levels, including dioxins, polychlorinated biphenyls (PCBs) and flame retardants.

The industrial or factory-style production that dominates meat and dairy production today can create environmental pollution that contaminates our food. It can also contribute to disease-causing bacteria on food.

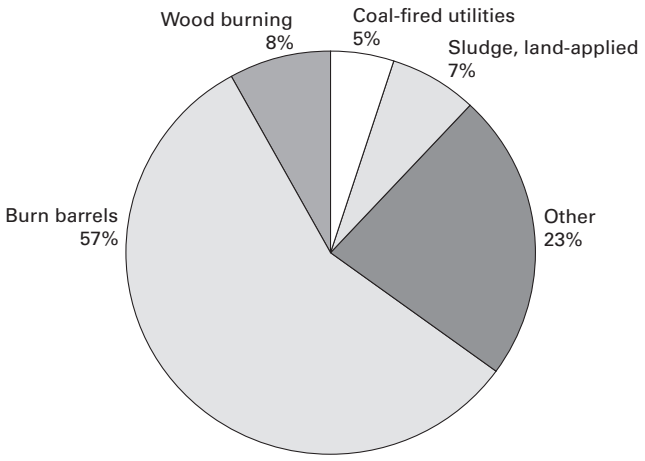
Government and industries need to do a better job of cleaning up the food supply. However, parents can reduce their family's exposure to chemicals by making informed food choices. This guide will help you choose meat and dairy products produced more sustainably and with lower levels of pollutants, protecting both your family's health and the environment.

Chemicals of concern

Meat and dairy products contain animal fat and, therefore, higher levels of certain toxic chemicals that accumulate in fat, like dioxins and PCBs. Besides being "fat friendly," these chemicals persist in the environment and in living tissues. Since it takes seven to 11 years for the human body to eliminate half of its dioxins and PCBs, it is especially important for girls and young women planning to have children someday to reduce their own exposure whenever possible.[1] Boys and men can also be impacted, as animal studies demonstrate that dioxins and PCBs can reduce male fertility.[2,3]

Dioxins are a class of some 420 compounds of which 29 are known to be toxic. They are unintentional byproducts of industrial activities like metal smelting and refining, chemical manufacturing, biological and photochemical processes and combustion. Burning chlorine-containing products (PVC plastic, for example) generates dioxin. Backyard burn barrels are the largest source—57 percent—of new dioxin emissions today. Burning wood and land application of sewage sludge are the next largest sources.[1]

Dioxin sources, 2002-2004



Dioxins released into the air settle in water bodies, where they build up in fish, and on grasslands, where grazing cows ingest them. People are exposed to dioxins through consumption of meat, fish and dairy products. Fetuses are at greatest risk from exposure to dioxins, which cross the placenta during pregnancy. Fetal exposure to dioxins and dioxin-like compounds is correlated with the mother's body burden of these chemicals.[1]

> "Dietary intake is widely believed to contribute up to 90 percent of human exposure to dioxin-like chemicals."
>
> *—Institute of Medicine, 2003*[1]

PCBs are a class of 209 dioxin-like chemicals used in electrical equipment, hydraulic fluids, adhesives and other

products. Although banned in the United States in 1979 due to evidence of toxicity even at low levels, their widespread use and persistence in the environment ensures that PCBs will continue to remain a significant source of environmental and food contamination for many years. Like dioxins, PCBs build up in the food chain in meat, fish and dairy products.

Human health impacts from long-term exposure to low levels of dioxins and PCBs include:

- Cancer. The World Health Organization classifies dioxin as a human carcinogen and PCBs as probable human carcinogens.[4] Although the Environmental Protection Agency also considers dioxins and PCBs to be carcinogens, a causal link from long-term, low-level human exposures is less clear.[1]

> The EPA "concluded that dioxins could adversely affect human health at lower exposure levels than previously thought and that some adverse noncancer effects, such as reproductive and developmental impairments, could occur at or near the levels to which the general population is now being exposed."[5]

- Non-cancer health effects include adverse effects on thyroid hormone, brain development, reproduction, immune system and birth weight.[1] Dioxins and PCBs are especially toxic to growing, developing brains in fetuses and young children. Prenatal exposure can result in permanent IQ deficits.[6,7]
- Changes in behavior. Dutch researchers found that dioxin and PCB exposure changes behaviors typically displayed by boys and girls. Specifically, higher PCB dietary exposures were associated with girls displaying more "masculine" behaviors and boys displaying more "feminine" behaviors. Likewise, higher dioxin diet exposures were associated with more feminized behavior in both boys and girls.[8]

Flame retardants. Certain brominated flame retardant chemicals (BFRs) are widely used in foam products, textiles, electrical equipment, building materials and transportation. Chemically, they resemble PCBs. BFR levels are increasing exponentially in breast milk and food, even while levels of dioxins and PCBs have slowly declined over time.[9] Levels in U.S. women's breast milk are reported to be 10–100 times higher than levels in European women.[10]

> Despite the presence of dioxins, PCBs and BFRs in breast milk, it is still is the best food for babies. Benefits from breast feeding far outweigh potential risks.

Although data on human health effects are lacking, animal studies confirm that BFRs are toxic to developing organisms with adverse effects on the brain, reproductive system and liver. They also disrupt thyroid function.[11,12] Dietary intake of animal-based foods is a significant contributor to high body burdens of BFRs in the United States.[13]

Higher risks to children and fetuses

Young children's immature immune systems, rapid development and different eating patterns make them more vulnerable to toxic exposures. Pound for pound, children ages 1-2 eat nearly four times as much food as the average person—so they can proportionally consume more food contaminants.[14] Although children under 5 eat less meat and fish than adults, they consume twice as much milk and dairy products.[1]

Ecological impacts of industrial meat and diary production

Today's food production is increasingly industrial. An estimated 54 percent of U.S. livestock and poultry are now concentrated on 5 percent of farms, and the largest such farms keep getting larger.[15] Factory-style food production includes many practices for short-term economic gains, but with negative impacts on the environment or human and animal health. Factory farms create air and water pollution and expose workers to unsafe working conditions. For more information see iatp.org/foodandhealth. Other problems include:

- Concentration of contaminants in animal feed. Recycling of animal fats into animal feed is a major source of concentrated dioxin-like chemicals. Cow fat is routinely fed to pigs and chickens and pig and chicken fat to cows, thus increasing the concentration of these contaminants in these animals.[1] Choosing meat carefully, such as from grass-fed animals, avoids this problem.
- Use of growth hormones in milk production. To boost milk production, about 22 percent of dairy farmers inject their cows with synthetic (recombinant) bovine growth hormones, called rBGH or rBST.[16] Cows given

these hormones are more prone to udder infections[17] which require more antibiotic treatment.

Health risks from rBGH milk?
Since the U.S. Food and Drug Administration required only limited rodent testing before approving rBGH, potential human health impacts from consuming dairy products from rBGH-treated cows are uncertain. There is evidence that milk from treated cows contains higher levels of IGF-1, an insulin-like growth factor and a natural hormone in cows.[18] Increased IGF-1 in human blood and high consumption of protein and dairy products in general have been linked with a higher risk of breast and prostate cancers.[19,20] However, it is unknown if consuming rBGH milk poses an increased health risk. Because of human and animal health concerns, rBGH milk is not sold on the European market.

▪ Routine antibiotic use. The routine addition of antibiotics to poultry and hog feed contributes to the worsening problem of antibiotic resistance facing humans. Up to 70 percent of antibiotics used annually in the U.S. are given to healthy animals to promote growth and compensate for unsanitary conditions in "factory farms."[21] Most antibiotics in feed pass unchanged into manure, polluting nearby air and water. Routine antibiotic use on the farm contributes to retail meat contaminated with drug-resistant, disease-causing bacteria as well.

Conclusion

Choose lower-fat, sustainably produced meat and dairy products to protect children from chemical exposures while supporting a healthier environment. Here are a few tips for reducing your family's exposure to chemical contaminants commonly found in meat and dairy products. These are general guidelines, so don't worry if you can't always follow them.

Tips for healthier meat and dairy consumption

▪ Select lean meat cuts and cut off visible fat before cooking.[1]

▪ Use lower-fat cooking methods including broiling, grilling, roasting or pressure-cooking, as cooking and preparation methods can reduce dioxin levels by up to half.[22,23,24] Do not use lard, bacon grease or butter for frying—dioxins concentrate in these fats. If you pan fry, discard the fat after cooking. Avoid gravies made from meat fat or juices.

▪ Serve low-fat milk to adults and children age two and older. Children under age two need milk with a higher fat content.

▪ Choose other low-fat dairy products including cheese, yogurt and cottage cheese.

▪ Buy organic. Try to buy certified organic pork, beef and poultry from animals raised without use of antibiotics, genetic engineering, irradiation, sewage sludge and artificial ingredients.

▪ Look for grass-fed beef. Beef from grass-fed cattle is leaner, lower in fat and calories,[25] while higher in vitamin E[26] and antioxidants than beef from cattle raised on a corn diet. It is also lower in saturated fats and higher in omega-3 fats.[27] One study showed eating grass-fed beef helped reduce "bad" cholesterol and increased "good" cholesterol.[28] Cattle raised on pasture rather than on corn-based diets also may be less susceptible to contamination with E. coli and other disease-causing bacteria.[29]

▪ Use the Eat Well Guide, an online guide to sources of organic, sustainably-raised meats and dairy products near you. eatwellguide.org

▪ Use proper handling and cooking practices to reduce risk of food poisoning. See FDA recommendations at cfsan.fda.gov/~dms/fdunwelc.html

Following these guidelines will not only reduce your intake of toxic chemicals, but will also help control weight.

What else can parents do?

- Ask local supermarkets to carry more organic and grass-fed meat and dairy products.
- Ask schools and child care centers to include low-fat, hormone-free meat and dairy products in the lunch program.
- If you live in a rural area, instead of using a back-yard burn barrel, have your trash hauled to a municipal waste site.

More resources and links at iatp.org/foodandhealth or contact

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Other organizations working on these issues

Pollution prevention

- Center for Health, Environment and Justice chej.org
- Health Care Without Harm noharm.org
- Keep Antibiotics Working keepantibioticsworking.com

Preventing foodborne illness

- FDA cfsan.fda.gov/~dms/fdunwelc.html

Grass-fed beef

- Eat Wild eatwild.com

Factory farming

- IATP iatp.org/foodandhealth

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