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Chemical health risks of conventionally produced foods

Here's what we know about those pesticides, hormones, antibiotics, and other chemicals used in the production of conventional meats, vegetables, and other foods:

Pesticides. More than a dozen formerly widely used pesticides have been banned, restricted, or voluntarily withdrawn by manufacturers since 1996, when a new federal law required pesticides to meet safety standards for children, whose developing immune, central-nervous, and hormonal systems are especially vulnerable to damage from toxic chemicals. Under that law, more pesticides are being investigated each year and banned or are undergoing lowering of limits on what can safely be tolerated, but consumers can still easily consume small amounts of more than 30 pesticides daily when eating a healthful variety of foods.

New evidence also shows that contrary to previous scientific belief, pesticides in a woman's bloodstream can be passed to a fetus in the womb. A study released in 2005 in which umbilical-cord blood of 10 children was collected by the Red Cross and tested for pollutants showed that 21 pesticides crossed the placenta.

Eating an organic diet can limit further exposure, however. A study supported by the Environmental Protection Agency and published in 2005 measured pesticide levels in the urine of 23 children in Washington State before and after a switch to an organic diet. Researchers found that after just five consecutive days on the new diet, specific markers for commonly used pesticides decreased to undetectable levels, and remained that way until conventional diets were reintroduced. The study's conclusion: "An organic diet provides a dramatic and immediate protective effect" against such pesticide exposure.

"A lot of these pesticides are toxic to the brain," says Philip Landrigan, M.D., a professor of pediatrics and preventative medicine at Mount Sinai School of Medicine in New York City. "We have very good evidence that exposure of the fetus to organophosphorus pesticides produces babies with small head circumference, which is a risk factor for reduced intelligence and behavioral disturbances."

Hormones. Studies suggest that synthetic growth hormones may be carcinogenic and that exposure to them may be linked to the precocious onset of puberty in girls. The USDA bans the use of such hormones in all poultry (organic or not), but when it comes to hogs, beef, or dairy cattle, only organic producers are legally bound not to use them.

Antibiotics. Farmers' widespread use of antibiotics to speed up animals' growth and to deal with health issues that crop up from keeping animals in overcrowded and unsanitary pens has helped spawn antibiotic-resistant bacteria. This resistance increases the odds that a drug that might have saved your life if you were to be hit by, say, a life-threatening case of food poisoning will now do you no good.

Other toxins. Nonorganic foods can expose you to a range of other contaminants with potential health risks. Conventionally raised chicken, for example, eat feed that can contain neurotoxins, such as arsenic or heavy metals. And the animals' feet may be dipped in motor oil as a treatment for an ailment known as scaly leg mite.



GOOD EATS?

Conventionally fed cows receive a steady diet of hormones and antibiotics before slaughter.