

We all worry about the population explosion—but we don't worry about it at the right time.

Arthur Hoppe, attributed

Forum

Pesticides in Baby Food

Sixteen pesticides have been detected in eight brand-name baby foods, according to a study by the Environmental Working Group and the National Campaign for Pesticide Policy Reform, two public interest groups based in Washington, DC.

In their study, the EWG and the NCPPR collected a random sampling of 76 jars of baby food from grocery store shelves in Denver, Philadelphia, and San Francisco. The group chose fruits and vegetables babies most commonly eat during their first year of life. Of these, 53% harbored traces of one pesticide, and 18% had two or more pesticides. Plums contained the highest amounts at 46 parts per billion and peaches contained 29 parts per billion. Pears had the highest number of multiple pesticides overall (five).

The report, *Pesticides in Baby Food*, was published in July by the EWG and the Tides Foundation (available on the World Wide Web at: <http://www.ewg.org>) and indicates that all levels of pesticides found were below federal standards. While these standards are set with safety considerations for infants, children, and other sensitive populations, the actual risk assessments are based on an average adult. According to the EWG, the concern is that pesticides are not currently "tested for safety in the way babies are exposed to them," and that babies and young children "react differently than adults to many drugs and toxic substances."

These findings are consistent with the conclusions of a five-year investigation by

the National Academy of Sciences, published in 1993 in the report *Pesticides in the Diets of Infants and Children*, which suggests that federal standards embodied in the Delaney Clause may not adequately account for the special vulnerability of infants and growing children to chemical substances. Nor do these standards account for the total doses of pesticides that babies receive from many other sources, including fresh produce, drinking water, possibly breast milk, or from the additive effects of these pesticides.

Some groups believe government standards are outdated and should be strengthened to provide broader protection to children. Other groups agree that federal standards are flawed, but see them as antiquated for other reasons. Scientists can measure one-billionth of the amount of a chemical now, for example, as compared with the 1950s when standards were set.

For almost four decades, the Delaney Clause, which bans the use of food additives shown to cause cancer in people or animals, has provided at least some measure of protection to the public food supply. The clause was passed in 1958 as an amendment to the Food, Drug and Cosmetic Act. However, this law is being challenged as obsolete. The current debate centers on whether Delaney should be repealed and, if so, what should take its place. Two bills are currently pending that would revise legislation governing food safety. HR 1627 would relax regulations by repealing the Delaney Clause and amending the Federal Insecticide, Fungicide

and Rodenticide Act by bringing the separate standards for pesticide products under one umbrella. This bill calls for the EPA to apply a negligible risk standard to both raw and processed foods. HR 1771 also allows a negligible risk standard, but would require the EPA to determine whether a pesticide causes cancer, damages developing neurological, immune, or reproductive systems, or has other serious, adverse health effects in children before the

agency could set tolerance levels. The bill would also require warning labels on foods that have been sprayed with a known or probable carcinogen.

Philip Landrigan, professor of pediatrics at the Mount Sinai School of Medicine in New York City, and chair of the committee that prepared the 1993 NAS report, believes the pesticide regulatory system in the United States is flawed because of its approach for setting food tolerances. Instead of being based on health considerations, says Landrigan, they are based on field trials conducted by pesticide manufacturers and are "a balancing process in which health considerations are weighed against economic factors and agricultural practices." Landrigan believes that HR 1627 is inconsistent with the recommendations of the NAS report because it "will perpetuate the current inadequately controlled exposure of children to pesticides in their diets."

Richard Wiles, vice president for research of the EWG, argues that Congress is moving toward weakening what he sees as already weak laws governing food safety for kids. For example, in describing the EWG study, he notes that a fungicide called iprodione was found in more samples and at higher levels than any other pesticide. EPA studies identify it as a probable human carcinogen, yet it slips through the regulatory cracks in the Delaney Clause. Language within the clause prohibits any amount of a cancer-causing pesticide "that concentrates during food processing." Iprodione levels do not concentrate in baby foods; thus, it passes the safety test. "There are no standards out there that are specifically designed to protect infants from pesticides in their diet, or from the environment in general," says Wiles.

Physicians for Social Responsibility, another Washington-based group, has also studied these issues. *Beyond Delaney—Preventing Exposures to Hazardous Pesticides*, a 1995 report by the group, updates the NAS study. The group supports the recommendations of the NAS, and likewise favors stronger regulations to safeguard young children from exposures to toxic chemicals.

Joseph Schwartz, associate director for policy of Physicians for Social Responsibility, says the debate over the Delaney



Joseph Tart

Baby beware. Samples of common baby foods from Denver, Philadelphia, and San Francisco revealed that 53% had traces of one pesticide and 18% had two or more pesticides.

Clause is important because it's time to begin phasing out the most unsafe pesticides on the market and provide the right kinds of incentives for safer biological alternatives. "We are looking for an opportunity to influence pesticide legislation reform, so five or ten or twenty years from now, farmers are not limited to the same pesticides their parents and grandparents were using," he says. "We can do better than that."

The agricultural community believes it is doing better than that. Will Carpenter, former vice president and general manager of Monsanto Agricultural Company, says that advances in biotechnology, coupled with integrated pest management strategies, are allowing great strides in reducing pesticide usage. "Within 5 to 10 years, the two biggest uses of insecticides in this country will drop precipitously," he says. "This is due to our ability to genetically vaccinate cotton and corn plants with a gene from a disease microbe. The insect eats the plant leaves, gets sick, and stops feeding," Carpenter continues, "Also, farmers are shifting to no-till/conservation tillage in greatly increasing numbers. This practice reduces soil erosion to 1% of what it once was, so pesticides stay in the soil on site, where they belong, instead of running into our reservoirs."

Meanwhile, the worldwide agricultural industry shoulders the responsibility of providing an adequate supply of food for millions of people in the world each day. Carpenter says pesticides are necessary if these goals are to be met. Carpenter opposes strict government regulations—especially when they are as old as Delaney. "I like to think we can do without them," he says.

At present, the Delaney Clause stands while alternative legislation is stalled at various stages in Congress. Whatever decision Congress reaches regarding the Delaney Clause, most participants in the debate agree that the major objective must continue to be protection of public health, especially children's health.

Milk May Do a Body Good

Researchers in Sweden have isolated a substance from human milk that destroys cancer cells while leaving healthy cells unaffected. The research, published in the August 15 issue of the *Proceedings of the National Academy of Sciences*, may stimulate a new approach to developing antitumor drugs and suggests that breastfeeding may play yet another important role in infant health.

The discovery grew out of a serendipitous

EHPnet

Recent reports in both the scientific and the popular press have focused attention on the potential hazards of radon exposure in homes. In the June 7 issue of the *Journal of the National Cancer Institute*, Jay Lubin and colleagues published an extensive analysis of 11 studies of radon-exposed mine workers that demonstrates that radon exposure in homes may account for as many as 14,400 lung cancer deaths per year. A research article in this issue of *EHP* suggests that EPA figures may overestimate radon risks by failing to account for residential mobility (see p. 1144).

The Radon Home Page (<http://sedwww.cr.usgs.gov:8080/radon/radonhome.html>), created by the United States Geological Survey (USGS), part of the Department of the Interior, provides information for citizens and scientists on basic and applied research on geology and geochemistry of radon in rocks, soils, and water.

Radon gas results from the natural breakdown of uranium in soil, rock, and water. Although levels of radon vary from place to place, high levels of indoor radon are found in every state. People may feel especially vulnerable to radon exposure because humans are unable, via their own senses, to detect radon. The Radon Home Page provides a means of becoming better educated about radon and of learning how to reduce potential radon risks. In addition to basic information on radon in the geologic environment, the site provides a hyperlink to *The Citizen's Guide to Radon* and other consumer publications on radon from the EPA, as well as a list of radon-related publications.

The Radon Home Page contains a hyperlink to two maps describing radon potential by state and by EPA region. More detailed information may be obtained from USGS geologic radon potential books (which can be ordered from the USGS or obtained from a local library). These reports describe the geology, soils, radioactivity, generalized housing construction characteristics, and other relevant information, and include discussions of the geologic factors controlling radon potential in each state. The site also describes the



Radon Home Page



High Radon Homes Project, which is a cooperative effort of the USGS, the EPA, the Department of Energy, and Lawrence Berkeley National Laboratory that aims to develop a model for identifying the proportion of homes in an area where occupants are suffering high exposures (occupant exposures exceed the occupational radiation limit of 20 picocuries per liter) to radon decay products. Information from this project will be used to convey information to the public on high radon areas, assist homeowners in testing and remediation, develop procedures and codes for new construction, and confirm scientific investigations in high radon areas. Such information, coupled with epidemiologic studies, may also be useful in determining the cancer risk associated with high residential exposures to radon.

For research scientists, The Radon Home Page includes a section on basic and applied geographic radon research. Hyperlinks in this section take the user to abstracts of current work in fault and shear zones in the eastern United States, glacial deposits of the upper Midwest, and terrestrial gamma radioactivity of the contiguous United States.

observation made by Anders Håkansson, a graduate student in clinical immunology at Lund University in Sweden. Håkansson originally set out to study how milk affects the attachment of pathogenic bacteria to lung cells, an important step in the disease process. Like many investigators, he used malignant, or transformed, lung cells in his experiment because these can be cultured more easily

in vitro than normal cells. When the malignant cells were exposed to milk, the cells died. This observation stimulated further research by Håkansson and collaborators at Lund University and at the Karolinska Institute in Stockholm.

The investigators isolated the active component of milk, the common milk protein lactalbumin. For reasons not understood, the cytotoxic effect was not