



## Dieldrin in Fish

### What is Dieldrin?

Dieldrin is a synthetic chemical used to kill insects. It has a chemical structure similar to aldrin. Aldrin quickly breaks down to dieldrin. Pure aldrin and dieldrin are white powders with a mild chemical odor. The less pure powders used in industry have a tan color.

From the 1950s until 1970, dieldrin was used widely on corn and cotton. Due to concerns about damage to the environment and potentially to human health, the US Environmental Protection Agency (EPA) banned all uses of dieldrin in 1974, except to control termites. In 1987, EPA banned all uses.

### How might I be exposed to dieldrin ?

It is widespread in the environment, but at very low levels.

### What is the screening level for dieldrin in fish?

The Florida Department of Health's (DOH) fish screening level for dieldrin is 1.4 micrograms per kilogram (1.4 ug/kg). Florida DOH recommends limits on how many fish meals (one per week, two per week etc.) of a specified meal size (8 ounces) someone can eat over a given period (one month) with little or no harm to health. A consumption advisory is not a regulation. Instead, it is a voluntary recommendation made to help people protect their health. By following these advisories, you can get the many health benefits of eating fish yet avoid unwanted chemicals.

### How can dieldrin in fish affect my health?

Screening levels for fish are set at very low levels. Eating fish at or below the consumption advisories for your entire lifetime is unlikely to cause illness.

To set screening levels in fish, scientists study reports of people exposed to chemicals at work. They also study reports of experiments with animals. From these reports, they determine a "no-effect level" or level that doesn't cause illness. Then, to be on the safe side, scientists set the level hundreds or thousands of times less than the "no-effect level." Therefore, screening levels slightly above the guideline for a short time period does not significantly increase the risk of illness. The risk of illness, however, increases as the level of chemical increases and the length of time you eat the contaminated fish increases.

The type and severity of health effects associated with exposure to a particular chemical depends on a number of factors:

- How much of the chemical was someone exposed to each time?
- How long did the exposure last?
- How often did the exposure occur?
- What was the route of exposure? (Did someone eat, drink or breathe the chemical into their body?)

The health effects of chemical exposures on someone range widely from person to person. The guideline is set to protect the most sensitive individuals. Health effects are also determined by a number of personal factors. These include:

- How old are they?
- What gender are they?
- Is the person generally healthy or do they already have other health problems?
- What are their health habits? (For instance, do they drink alcohol or smoke tobacco?)
- How likely are they to be affected by exposure to a chemical, in general?

Little information exists about what kind of health risks are likely from eating fish with low levels of dieldrin for short periods. More information exists about what health effects might occur if someone has an exposure at higher levels in a different way, such as applying pesticides.

#### **How likely is dieldrin in fish to cause cancer?**

The ability of dieldrin to cause cancer in humans is unknown. At present, human studies do not show significant increases in cancer due to dieldrin exposure. However, dieldrin does cause liver cancer in mice. The International Agency for Research on Cancer (IARC) has determined that dieldrin is not known to cause cancer in humans. The U.S. EPA has determined that dieldrin may cause cancer in humans. Based upon the weight of evidence, dieldrin can be classified as a rodent carcinogen that is “likely to be carcinogenic to humans by the oral route of exposure.” Therefore, the screening level is set to protect against the risk of cancer.

Currently, cancer will affect about one in every three people in Florida, primarily due to smoking, diet, and hereditary risk factors. If you follow the advisory over your lifetime, the dieldrin in the fish you eat may not increase your cancer risk at all. At worst, using Environmental Protection Agency methods to calculate risk from a lifetime of eating contaminated fish, it is estimated that approximately one additional cancer case may develop in 100,000 people eating contaminated fish, according to this advisory. Eating fewer meals of contaminated fish will further decrease your cancer risk.

#### **Is there a medical test to see if I have been exposed to dieldrin?**

There are laboratory tests that can measure dieldrin in your blood, urine, and body tissues. Dieldrin stays in the body for months. The tests cannot tell you whether harmful health effects will occur. These tests are not routine at most doctor offices because they require special equipment.

#### **What should I do if I consumed fish with dieldrin levels above the screening limit?**

Most fish are not contaminated enough to cause harm after a single or a few meals. The health risk comes from eating fish that are above screening levels often and regularly over a very long period of time from certain water bodies. Advisories are issued for very low levels in fish to insure the safety of people who eat the fish. Your body will get rid of most of the dieldrin will be eliminated from your body over time once the source has stopped.

#### **Who should I consult to discuss my concerns about health effects from dieldrin exposure?**

Bring this fact sheet and discuss with your doctor, the professional with the best understanding of your overall health.

**For additional health information:** Please call the Florida Department of Health toll-free help line 877-798-2772. After hours, you may leave a voice mail. Or visit us online at: [www.myfloridaeh.com/com](http://www.myfloridaeh.com/com)

For more information about the health effects from exposure to this chemical in different situations and at higher levels than those usually found in fish, please see the ATSDR ToxFAQs for aldrin/dieldrin at: <http://www.atsdr.cdc.gov/tfacts1.pdf>