

This fact sheet answers the most frequently asked health questions (FAQs) about methyl parathion. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: The general population is probably not exposed to methyl parathion. However, exposure to methyl parathion may occur at farms where it has been used as a pesticide. Under certain exposure conditions, methyl parathion can affect the central nervous system resulting in dizziness, headache, difficulty breathing, vomiting, diarrhea, tremors, blurred vision, sweating, and possibly death. This chemical has been found in at least 16 of the 1,585 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is methyl parathion? (Pronounced meth'ul par'ah-thie'on)

Methyl parathion is an insecticide that does not occur naturally in the environment. Pure methyl parathion exists as white crystals. Impure methyl parathion is a brownish liquid that smells like rotten eggs.

Methyl parathion is used to kill insects on farm crops, especially cotton. The EPA now restricts how methyl parathion can be used and applied; only trained people are allowed to spray it. Methyl parathion can no longer be used on food crops commonly consumed by children.

What happens to methyl parathion when it enters the environment?

- Methyl parathion enters the environment primarily through spraying on farm crops.
- Methyl parathion breaks down quickly to other chemical compounds by interacting with water, bacteria in the water, and sunlight.
- Methyl parathion sticks to soil and generally does not move from the soil to groundwater.
- Methyl parathion does not appear to accumulate in fish or plants.

How might I be exposed to methyl parathion?

- Most people are not exposed to methyl parathion in the air they breathe or on things they touch, unless they live next to areas being sprayed.
- Farm workers, chemical sprayers, and people who work in factories that make methyl parathion are most likely to be exposed.
- People who live near farms where methyl parathion is used or near landfills where methyl parathion has been dumped may be exposed.
- Individuals may also be exposed by going into fields too soon after spraying.

How can methyl parathion affect my health?

Methyl parathion interferes with the normal way that the nerves and brain function. Exposure to very high levels of methyl parathion for a short period in air or water may cause death, loss of consciousness, dizziness, confusion, headaches, difficult breathing, chest tightness, wheezing, vomiting, diarrhea, cramps, tremors, blurred vision, and sweating. Changes in mental state may last several months after exposure to high levels of methyl parathion has ended. If people are exposed to levels of methyl parathion below those that affect nerve function, few or no health problems

ToxFAQs™ Internet address is <http://www.atsdr.cdc.gov/toxfaq.html>

seem to occur. A reduced ability to fight infections has also been seen in some animal studies; we do not know if this would also occur in humans.

How likely is methyl parathion to cause cancer?

There is no evidence that methyl parathion causes cancer in people who are regularly exposed, such as farmers and pesticide applicators, or in animals. The EPA and International Agency for Research on Cancer (IARC) has determined that methyl parathion is not classifiable as to human carcinogenicity.

How can methyl parathion affect children?

It is likely that health effects seen in children exposed to high levels of methyl parathion will be similar to the effects seen in adults. It is not known whether children are more sensitive to the effects of methyl parathion than adults. There is some indication that young rats may be more sensitive than adults to nervous system effects.

Birth defects have not been observed in humans exposed to methyl parathion or in the offspring of animals that ingested methyl parathion while pregnant.

How can families reduce the risk of exposure to methyl parathion?

The general population is not likely to be exposed to large amounts of methyl parathion. Some people living in the areas where methyl parathion is used on crops may be exposed to greater amounts of methyl parathion. Therefore, staying away from fields that have been recently sprayed may reduce exposure.

Children should avoid playing in soils near uncontrolled hazardous waste sites where methyl parathion may have been discarded.

Is there a medical test to show whether I've been exposed to methyl parathion?

Methyl parathion can be detected in your blood and its breakdown product can be detected in your urine, but only within about 24 hours after your last exposure. If exposure is known or suspected, a test can be done that measures cholinesterase levels in your blood. However, low levels of cholinesterase may be a result of methyl parathion exposure or it could be caused by factors other than methyl parathion. These tests are not usually available at your doctors office, but your doctor can send the samples to a laboratory that can perform the tests. None of these tests, however, can predict whether you will experience any health effects.

Has the federal government made recommendations to protect human health?

The EPA allows 0.002 milligrams of methyl parathion per liter of drinking water (0.002 mg/L) for lifetime exposure of adults.

The NIOSH recommends that a person in the workplace not be exposed to more than 0.2 milligram of methyl parathion per cubic meter of air (0.2 mg/m³) for a 10-hour workday, 40-hour workweek.

The EPA allows a maximum of 0.1-1 part methyl parathion per million parts (0.1-1 ppm) of certain types of food.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2001. Toxicological Profile for Methyl Parathion Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

