

FACT SHEET

ORGANOPHOSPHATES: HEALTH EFFECTS, HEALTH CHECKS AND FIRST AID

Organophosphates are an active ingredient in insecticides that kill bugs and insects in orchards, vineyards, vegetable and cereal crops. They are usually applied from a knapsack sprayer or from spraying equipment pulled by a tractor. Because of their chemical make-up, they're also harmful to human health. However, different sprays affect your health in different ways, and the amount of harm they may cause you can also vary.

This factsheet applies to employers, employees, contractors, principals and self-employed people who work with organophosphates.

ORGANOPHOSPHATE HEALTH EFFECTS

When organophosphates are sprayed, the fine mists and droplets can enter your body by breathing them in, or by absorption through your skin. They're dangerous because they disrupt the way your nervous system works.

There are different types of organophosphates, with different concentrations. Harmful effects can differ according to the organophosphate brand and concentration. The effects will also depend on how long or how often you've been exposed.

It's not a good idea to be exposed to any amount, because they're capable of causing a lot of harm. Depending on how you're exposed, and how concentrated the

organophosphates are, you could experience symptoms ranging from mild fatigue and headaches, numb fingers and toes, muscle twitches or pupil constriction through to unconsciousness, rattling sounds in the lungs, heart attacks or even death.

ORGANOPHOSPHATE HEALTH CHECKS

Before you use or handle organophosphates, you should have your blood tested to find out what your base cholinesterase levels are.

Cholinesterase helps the nervous system work properly, and it's affected by organophosphates, so it's important to see what your levels are before you start working with them. The levels will vary from person to person, so there's no level that's correct for everyone.

Blood tests are the best way to find out if you're affected by organophosphates because they are absorbed through the skin and into your blood.

When you're working with organophosphates, you should have regular blood tests to check your cholinesterase levels. If the tests show that your cholinesterase levels have dropped, you have to stop working with organophosphates until they return to normal levels.

Your medical provider will tell you when you should have the tests, and whether or not it's safe for you to work with organophosphates.

Informed consent

If you're an employer, you need to get informed consent from employees if you are going to monitor their health with blood tests.

Informed consent consists of:

- > good communication between the employer, employees, unions (where applicable) and medical provider
- > providing information so employees can make an informed choice about medical monitoring
- > employees freely giving their consent for monitoring.

Issues with blood tests

There are many reasons why you might not want to have a blood test – cultural or religious reasons, pre-existing medical conditions, or you're frightened of needles or blood.

However, if you work with organophosphates, you need to have your blood tested, since there aren't any other effective ways to check your health. If you're an employee or a contractor, talk to your employer or principal about this, as you might be able to do work that doesn't involve handling organophosphates, or work in areas where they are not being sprayed. If that isn't possible, you might not be able to work at the site.

FIRST AID

If someone has been poisoned by organophosphates, here is some first aid advice:

- > Make sure it is safe to help the patient. Protect yourself if large quantities of organophosphates are present.
- > Move the person to a safe area – wear personal protective clothing to protect yourself from organophosphates that might be on the person's clothing or skin.
- > Call the National Poisons Centre for advice on 0800 764 766.
- > Phone 111 for an ambulance if the person isn't breathing.

- > Remove the person's contaminated clothing, and follow the advice below:

If inhaled

- > Loosen tight clothing and check the person's airway, breathing and circulation.
- > Give oxygen if it is available.
- > Keep the person warm and comfortable.

Skin contact

- > Loosen tight clothing, check the person's airway, breathing and circulation.
- > Wash contaminated skin thoroughly with water and soap. Continue washing the skin for at least 15 minutes.
- > Keep the person warm and comfortable.

Eye contact

- > Loosen tight clothing, check the person's airway, breathing and circulation.
- > Flush the eyes thoroughly with water for at least 15 minutes. Have the person blink as much as possible.
- > Hold the eyelids open if necessary.
- > Do not attempt to remove contact lenses until after the eyes have been flushed. Remove the lenses with clean fingers.

Swallowed

- > Loosen tight clothing, check the person's airway, breathing and circulation.
- > If the person is awake and can drink, give them a small amount of fluid to drink.
- > Do not administer chemical antidotes or medicine unless told to do so by a medical professional.
- > Keep the patient warm and comfortable.
- > Do not give fluids or induce vomiting if the person is unconscious.

FURTHER INFORMATION

Environmental Protection Authority,
www.epa.govt.nz. See Using Insecticides Safely.

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