



# Organophosphates: Health surveillance

## Guide for employers

### What are organophosphates?

Organophosphates (OP) are a group of pesticides (insecticides, herbicides and fungicides) which may be applied to a range of crops, often by spraying.

### What organophosphate pesticides are used in Australia?

Acephate	Diazinon	Mevinphos	Profenofos
Azamethiphos	Dichlorvos	Naled	Propetamphos
Azinphos-methyl	Dimethoate	Naphthalophos	Prothiofos
Cadusafos	Ethion	Omethoate	Temephos
Carbofuran	Fenamiphos	Oxydemeton-methyl	Terbufos
Chlorfenvinphos	Fenitrothion	Parathion	Tetrachlorvinphos
Chlorpyrifos	Fenthion	Parathion-methyl	Thiometon
Chlorpyrifos-methyl	Maldison (Malathion)	Phorate	Trichlorfon
Coumaphos	Methamidophos	Phosmet	
Cythioate	Methidathion	Pirimiphos-methyl	

### What is the hazard?

Exposure to organophosphate pesticides by skin absorption, inhalation of spray mist, or accidental swallowing can cause:

Headache	Slurred speech
Sweating	Convulsions
Blurred vision	Coma
Anxiety	Respiratory and circulatory problems
Restlessness	Muscle weakness 1-4 days after exposure, continuing for up to several weeks
Confusion	

High level exposure can be fatal.

Ongoing overexposure may cause lack of appetite, weakness, tingling or burning feelings in the hands or feet, and muscle wasting.

## **What types of activities with organophosphate pesticides may present a health risk?**

- Agricultural and horticultural activities like mixing, loading and applications where direct handling of the chemical occurs
- Pest control activities, by operators who use OP regularly
- Manufacture of OP
- Veterinary activities like cattle and sheep dipping

The health risk will depend upon the frequency and duration of use, concentration of OP handled, and control measures in place.

## **What is health surveillance?**

Health surveillance is monitoring a person to identify changes in their health resulting from exposure to a hazardous substance. Blood or urine testing may be conducted.

## **Why should health surveillance be conducted?**

Health surveillance may detect harm to health before the problem gets too serious, allowing controls to be improved to protect workers' health.

## **What regulations apply to health surveillance?**

If the health of a person is at risk as a result of exposure to organophosphate pesticides at work, the employer must ensure that health surveillance is carried out in accordance with the *Occupational Safety and Health (OSH) Regulations 1996*. Regulation 5.1 defines 'health surveillance' and regulation 5.23 requires an employer, main contractor or self-employed person to provide health surveillance to a worker in relation to hazardous substances.

## **Who can provide health surveillance?**

Health surveillance must be conducted by an Appointed Medical Practitioner (AMP), who is a doctor with adequate training in relation to organophosphate pesticides and who has been appointed by the employer after consultation with the worker/s. WorkSafe has a list of doctors who conduct health surveillance work, although not all such doctors are listed.

If the doctor you choose has not conducted health surveillance for organophosphate pesticides previously, it is essential for them to contact WorkSafe's occupational physician on 1300 307 877 to ensure they are aware of their duties under OSH legislation.

## How often should health surveillance for OP be conducted?

This will be based on medical advice, however Safe Work Australia provides the following guidance. (Extract from [Hazardous Chemicals Requiring Health Monitoring](#))

Definition of pattern of use	Action required
<b>Baseline</b>	Baseline measurement should be carried out – two are desirable – at a time when there has been at least four weeks without exposure.
<b>Very occasional use</b> If use of organophosphate pesticides is only half a day every month or less, then this is <i>very occasional use</i> .	Use should be recorded. No test is needed unless the worker has symptoms which could be related to organophosphate pesticides during or after use, or there has been an exposure incident leading to symptoms.
<b>Intermittent use</b> If use of organophosphate pesticides is for two to three days at a time, all day with gaps of time of a month or more between use, then this is <i>intermittent use</i> .	Use should be recorded. Test during the period of peak exposure/use. Testing provides valuable information on the effectiveness of controls. Controls must be updated if levels of exposure indicate high work-related exposure. No further testing is needed unless the worker has symptoms which could be related to organophosphate pesticides during or after use or there is concern overexposure may have occurred.
<b>Seasonal use</b> If use of organophosphate pesticides is say four days a week, and extends over a long season then, this is <i>seasonal use</i> .	Use should be recorded. For heavy or seasonal use, testing should occur during the period of peak exposure/use. Workers exposed should be tested at the end of the work shift on the last day of a work week, early in the season, once work practices have settled, in order to check the effectiveness of work practices and controls. Adjustments to controls can then be made if necessary. Workers should be advised of their results. The timing of further tests should be based on the nature of the work and previous test results. A worker having greater than 20% cholinesterase depression from baseline values should be retested at an early stage. No further test is needed unless the person has symptoms which could be related to organophosphate pesticides during or after use or there is concern overexposure may have occurred.

## What further information is available?

Organophosphate pesticides health surveillance reporting form (for the AMP to report results to WorkSafe): <http://www.commerce.wa.gov.au/publications/organophosphate-health-surveillance-notification-form>

Safe Work Australia guidance:

- [Health Monitoring for Exposure to Hazardous Chemicals - Guide for persons conducting a business or undertaking](#)
- [Health Monitoring for Exposure to Hazardous Chemicals - Guide for workers](#)
- [Health Monitoring for Exposure to Hazardous Chemicals - Guide for medical practitioners](#)
- [Hazardous Chemicals Requiring Health Monitoring](#)

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