

**INFORMATION FOR FARM WORKERS
Cholinesterase Monitoring for Pesticide Handlers**

What is happening?

A Department of Labor & Industries rule (WAC 296-307-148) requires agriculture employers to provide blood testing to workers who handle pesticides that can lower “cholinesterase” in the body.

What is cholinesterase?

Cholinesterase is a protein in the body that acts as the nervous system’s “off switch” and helps to make the nervous system work properly.

Which pesticides lower cholinesterase?

Organophosphate and carbamate pesticides can lower cholinesterase levels. Examples of organophosphate and carbamate pesticides commonly used in Washington State include azinphos-methyl (Guthion), chlorpyrifos (Lorsban), carbaryl (Sevin), diazinon, and phosmet (Imidan).

What happens when cholinesterase levels are low?

You could become ill from overexposure to organophosphate or carbamate pesticides. Overexposure could occur through such actions as not wearing a respirator when required or not washing after applying pesticide. In most cases, decreases in cholinesterase of up to 50% do not cause illness. However, workers with low cholinesterase levels could become sick if pesticide exposure continues. Symptoms can include headaches, diarrhea, dizziness, blurred vision, difficult breathing, unconsciousness, and even death.

How does the cholinesterase monitoring program work?

The rule requires employers to record all hours that a worker handles (mixes, loads, applies) organophosphate or carbamate pesticides with the words “DANGER” or “WARNING” on the label. Workers who handle these pesticides for 30 or more hours in any 30-day period must participate in a cholinesterase monitoring program. The monitoring program includes:

- A discussion with a health care provider about cholinesterase testing;
- A decision by the worker to participate or not participate in the blood testing (The employer **MUST NOT** discourage the worker from participating in the blood testing);
- A blood test taken **BEFORE** the worker is exposed to pesticides, to determine his normal (*baseline*) cholinesterase level;
AND
- Blood tests taken when the worker handles these pesticides for 30 or more hours in a 30-day period. These tests will tell whether the worker’s cholinesterase levels have dropped.

What is the blood test for?

When a blood sample is taken, two types of cholinesterase are measured: plasma (serum) and red blood cell cholinesterase. The first test is your personal baseline and each test after that is compared to the baseline to see if there has been a change.

- If your cholinesterase level is low enough to suspect pesticide overexposure then your employer must review your work to try and find out how you are being exposed and then correct these problems;

OR

- If your cholinesterase level is very low then you must also be temporarily removed from handling these pesticides and from other possible exposures, such as harvesting or thinning, until your cholinesterase returns to a safe level.

How do I know what level is too low?

- If your red blood cell or plasma (serum) cholinesterase levels are **lower than 20%** of your baseline level, your employer must review your pesticide handling practices to try and find out how exposures are occurring and make corrections.
- If your red blood cell cholinesterase level falls **30% or more** from your baseline or your plasma (serum) cholinesterase level falls **40% or more** from your baseline level, your employer must remove you from handling and other possible exposures to cholinesterase-inhibiting pesticides.

In both situations, the employer has to pay your full salary, maintain your seniority and benefits until your cholinesterase level gets back to normal or for three months, whichever comes first. You have the right to ask for your cholinesterase test results from the employer, clinic or doctor who did the exam.

What happens with the cholinesterase test information? The doctor sends a report to your employer telling him that you have had a test and what the results mean. Your employer will make sure that you receive a copy of this report. If your cholinesterase level drops more than 20% your employer will review your work and figure out the problem and, if needed, temporarily remove you from working with the pesticides.

What are the benefits of having a cholinesterase-monitoring program? The program will identify workers who have been overexposed to pesticides and remove workers from further exposure before they become poisoned.

Who pays for the cost of the cholinesterase testing? Your employer pays all costs of the program. This includes all medical, travel, and training costs.

How do employees obtain copies of cholinesterase-monitoring records? Your employer is required to provide a copy of doctor's reports to you. You can also request other records such as handling hours, test results, and work evaluations.

Questions? L&I has a publication titled "Jorge's New Job" that describes the cholinesterase monitoring rule and medical testing program. To get a copy of "Jorge's new Job" or for any other questions contact your local L&I office.

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