Jorge's New Job

Cholinesterase Testing in Washington State

My boss sent me here for some kind of test.
Acknowledgments

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We wish to thank the University of California for granting this permission.

For information about ordering Jorge’s New Job (California), write to:

University of California
ANR Communication Services
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Oakland, CA  94608-1239
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Assistance from the Washington Department of Labor and Industries

For more information about Washington State’s cholinesterase monitoring rule, visit www.LNI.wa.gov/Safety/Topics/AtoZ/ or call the L&I office nearest you. (Telephone numbers are listed in the government or white pages of telephone directories.)

For more information about Jorge’s New Job (Washington, F417-213-909), call 1-800-423-7233 (1-800-4BE-SAFE). Or write to:

Training and Outreach Services
Department of Labor and Industries
PO Box 44641
Olympia, WA  98504-4641
Now that Felipe has left, I want you to take over his job. I want you to take over more of the insecticide spraying. Before you start, I need to send you over to the doctor for some tests.

Tests? What kind of tests? A safety rule lets you have a blood test for the kinds of pesticides you'll be using.

I've been spraying for two years and I've never needed any blood test.

Yeah, but you've been spraying mostly herbicides and fungicides. Now you're going to take over the insecticide spraying too, and you'll be doing a lot more pesticide work.
Next day Jorge goes to the clinic.

The rule says that if I have you working with certain kinds of pesticides for extended periods, I have to provide blood tests.

Tests? You mean like more than one?

Yes. You may need to get tested every 30 days. It depends on how much spraying you end up doing.

I'm Jorge Soto. My boss sent me here for some kind of blood test.

Oh, right. You're here for a cholinesterase test.

That's what it says here. The technician will explain more.

The receptionist sends Jorge back to the laboratory where he meets the technician.
Why do I have to have this test? And what is cholin-something-or-other? Is it the same as cholesterol?

No. Cholesterol and cholinesterase are **totally** different. You do not have to be tested. You decide after I give you some information.

So what should I know before I decide?
Cholinesterase is a substance in your body that your nervous system needs to work right. Exposure to some kinds of pesticides reduces the amount of cholinesterase in your body.

When this happens you may suffer dizziness, headache, nausea, loss of muscle control, and even unconsciousness. If the poisoning is really serious you could die.
Since a lot of your cholinesterase has to stop working before you begin to feel sick, it might take several exposures before you started having symptoms. Of course one large exposure could do it, too.

The test results can let us know if you’ve been exposed long before you get sick.
Jorge listens and watches carefully as the technician takes the blood sample.

This first blood test lets us know how much cholinesterase your body has normally—what we call your **baseline**. That’s why we need to take a blood sample **before** you start working with cholinesterase-inhibiting insecticides.

You have these periodic blood tests so we can measure the level of active cholinesterase in your body.
When you come back for follow-up blood tests, if your cholinesterase has dropped to a certain level below your baseline test, we will tell your boss to keep you away from pesticides that affect cholinesterase.

In Washington State, employers have to follow our recommendations. Your boss has to pay your wages and benefits while you can’t handle these pesticides.

Remember, your cholinesterase level could get very low without you feeling sick at all. But at some point, one additional exposure will be all it takes to make you seriously ill.
Fortunately, when you stop being exposed to these pesticides, your cholinesterase level will go back to normal, usually within one to three months, and you can go back to your regular job.
Once your cholinesterase activity is back to 80% of normal, you can begin to work with cholinesterase-inhibiting insecticides again.

But there is something you need to consider. If you come in for a blood test and your cholinesterase is low, something is probably wrong at work.
Maybe your employer is not providing you with the right kind of protective equipment or hasn’t given you a clean place to wash up.

Or maybe you aren’t using all the required protection or following safe work practices.

Whoa, wait a second. There are no cartridges in this respirator. Hey, boss . . .

Oh right; I forgot to tell you. We keep the new cartridges in that cabinet over there.
Whatever your problem is, you and your boss should work together to figure out what needs to change in your work situation to keep you from getting exposed.

Back in the laboratory

You need to put in a new pair daily, so let me know if you are running low.

Yeah, I definitely plan to keep myself healthy. You know, I’ve been spraying weeds and using some fungicides at work. Will this blood test show if I’ve been exposed to too much of those kinds of pesticides?
No. This blood test only measures cholinesterase, and since only certain specific pesticides affect cholinesterase, even a serious exposure to another kind of pesticide won’t show up on this test.

Before the guy I’m replacing left, I used to spray Guthion and sometimes other insecticides once or twice a month. The last time I sprayed Guthion, it was *really hot* and I took off my respirator. Will this blood test show if I got exposed to too much Guthion that time?

Don’t take off your respirator while you are working! That’s *really dangerous*! But to answer your question: no, probably not.
Cholinesterase testing can’t tell you everything you need to know about your exposure to pesticides, but it can warn you if you are getting exposed to a harmful amount of some of them.

Remember, when exposure to pesticides that affect cholinesterase has ended, your cholinesterase slowly returns to normal. So this blood test can’t tell if you’ve been exposed in the past. It has to be a pretty recent exposure.
In Washington State, medical monitoring is required only for organophosphates or N-methyl-carbamate products with the signal words “DANGER” or “WARNING” (Toxicity Category I or II). Some examples of covered products are included in the following list. For a full list, go to the Washington State Department of Agriculture's pesticide web page: agr.wa.gov/PestFert/Pesticides/WorkerProtection.htm

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