Cholinesterase Testing Protocol Algorithm

Worker will handle OPs or CEs and N-methylcarbamates for 30 hours or more in 30 consecutive days?

NO

STOP

YES

Exposure within the past 30 days?

YES

Working Baseline - obtain 2 tests that are > 3 days apart. Use higher value.

NO

Obtain at least one baseline

Worker exceeds or reaches 30 hours of exposure in 30 days since baseline or last follow-up test?

NO

NO Testing Required

YES

Return to handling ChE-inhibitors

Test >60% baseline?

YES

Repeat testing at scheduled intervals to reduce risk of exposure.

NO

Review pesticide handling practices

ACHE less than 70% or PChE less than 80% of baseline?

YES

Remove from workplace exposure

RBC or plasma CHE less than 80% of baseline?

YES

Within 1 week conduct follow-up monitoring test

NO

Developed by:

Threshold Exposure Level Definition:
Worker exceeds or reaches 30 hours of exposure in 30 days.

NOTES:
Obtain baseline prior to pesticides work or 30 days exposure free
RBC ACHE and Plasma PChE recommended. Plasma PChE only performing 1 test
2nd baseline recommended for improved precision but not essential
Carbamates do inhibit cholinesterase but the cholinesterase reactivates quickly making testing an unreliable in profiting overexposure.

Days to repeat test:
- For RBC ACHE: (% depression − 20)/0.83 = # of days to repeat test
- For Plasma PChE: (% depression − 20)/1.2 = # of days to repeat test

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