Chronic exposure to organophosphate (OP) pesticides and neuropsychological functioning in farm workers: a review

Por: Munoz-Quezada, MT (Teresa Munoz-Quezada, Maria)[1]; Lucero, BA (Andrrs Lucero, Boris)[1]; Iglesias, VP (Paz Iglesias, Veronica)[2]; Munoz, MP (Pia Munoz, Maria)[2]; Cornejo, CA (Alejandra Cornejo, Claudia)[1]; Achu, E (Achu, Eduardo)[1]; Baumert, B (Baumert, Britney)[3]; Hanchey, A (Hanchey, Arianna)[3]; Concha, C (Concha, Carlos)[4]; Brito, AM (Maria Brito, Ana)[5]...Más

INTERNATIONAL JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH
Volumen: 22
Número: 1
Páginas: 68-79
DOI: 10.1080/10773525.2015.1123848
Fecha de publicación: 2016
Ver información de revista

Resumen

Background: Previous studies have demonstrated that acute poisoning from exposure to organophosphate (OP) pesticides in agricultural workers causes adverse health effects. However, neuropsychological and cognitive effects of chronic occupational exposure to OP pesticides remain controversial.

Objective: To identify, evaluate, and systematize existing evidence regarding chronic exposure to OP pesticides and neuropsychological effects in farmworkers.

Methods: Using the PubMed search engine, a systematic review process was implemented and replicated according to the PRISMA statement. Eligibility criteria included workers over 18 years of age exposed to OP pesticides as well as assessment of neuropsychological and cognitive functioning. Search terms were in English and Spanish languages and included organophosphate and workers.

Results: Of the search results, 33 of 1,256 articles meet eligibility criteria. Twenty-four studies found an association between chronic occupational exposure to OP pesticides and low neuropsychological performance in workers. We classified nine of the studies to have study design limitations. Studies indicated occupational exposure to OP pesticides is linked to difficulties in executive functions, psychomotor speed, verbal, memory, attention, processing speed, visual-spatial functioning, and coordination. Nine studies find no relationship between OP pesticides exposure and neuropsychological performance.

Conclusions: Overall, evidence suggests an association between chronic occupational exposure to...
OP pesticides and neuropsychological effects. However, there is no consensus about the specific cognitive skills affected.

**Palabras clave**

**Palabras clave de autor:** Organophosphate pesticides; Neuropsychological functioning; Occupational exposure; Workers

**KeyWords Plus:** LONG-TERM EXPOSURE; CENTRAL-NERVOUS-SYSTEM; NEUROBEHAVIORAL PERFORMANCE; OCCUPATIONAL-EXPOSURE; AGRICULTURAL-WORKERS; SHEEP FARMERS; HEALTH; APPLICATORS; DISORDERS; COMMUNITY

**Información del autor**

Dirección para petición de copias: Munoz-Quezada, MT (autor para petición de copias)

Catholic Univ Maule, Fac Hlth Sci, Talca, Chile.

Direcciones:

1. Catholic Univ Maule, Fac Hlth Sci, Talca, Chile
2. Univ Chile, Sch Publ Hlth, Santiago, Chile
3. Univ Georgia, Coll Publ Hlth, Athens, GA 30602 USA
4. Minist Hlth, Reg Secretary, Talca, Chile
5. Reg Hosp Talca, Talca, Chile
6. Agr & Livestock Serv SAG, Talca, Chile

Direcciones de correo electrónico: mtmunoz@ucm.cl

**Editorial**

TAYLOR & FRANCIS LTD, 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND

**Categorías / Clasificación**

Áreas de investigación: Public, Environmental & Occupational Health

**Categorías de Web of Science:** Public, Environmental & Occupational Health

**Información del documento**

Tipo de documento: Review

Idioma: English

Número de acceso: WOS:000376601000008

ID de PubMed: 27128815

ISSN: 1077-3525

eISSN: 2049-3967
Información de la revista

- Impact Factor: Journal Citation Reports®

Otra información

Número IDS: DM8GZ
Referencias citadas en la Colección principal de Web of Science: 72
Veces citado en la Colección principal de Web of Science: 0