

Environmental and Health Impacts of Pesticides and Fertilizers and Ways of Minimizing Them: Envisioning a chemical-safe world

Annex to Chapter 4.4 – Adverse human health effects of pesticides

Annex 4.4-1 Associations between pesticide exposure and diseases or other health outcomes which were reviewed by Ntzani *et al.* 2020, but for which no meta-analysis was performed.

See Box 4.4-3 of the main report. No meta-analysis was performed, generally, if insufficient relevant studies were available or if exposures or exposure assessments were highly heterogeneous.

Health outcome	Pesticide or pesticide class	Ntzani <i>et al.</i> 2020
Effects on adults		
Non-Hodgkin lymphoma	Lindane	No meta-analysis (MA) performed
Hodgkin lymphoma	Various	No MA performed
Leukemia	Various	No MA performed
Multiple myeloma	Pesticides ¹	No MA performed
Prostate cancer	Chlordecone	No MA performed
Kidney cancer	Various	No MA performed
Stomach cancer	Pesticides	No MA performed
Liver cancer	Various	No MA performed
Brain cancer	Various	No MA performed
Colorectal cancer	Various	No MA performed
Thyroid cancer	Various	No MA performed
Pancreatic cancer	Various	No MA performed
Skin cancer	Various	No MA performed
Cancer of lips, oral cavity or pharynx	Various	No MA performed
Esophageal cancer	Various	No MA performed
Larynx cancer	Various	No MA performed
Ovarian cancer	Various	No MA performed
Parkinson's disease	Lindane	No MA performed
	Dieldrin	No MA performed
Male fertility	Dibromochloropropane (DBCP)	Non-assessed
Amyotrophic Lateral Sclerosis (ALS)	Pesticides	No MA performed
Thyroid diseases	Various	No MA performed
Kidney diseases	Various	No MA performed
Immune/ autoimmune diseases	Various	No MA performed
Asthma (childhood)	Various	No MA performed
Alzheimer's disease and dementia	Various	No MA performed
Autism-spectrum disorders	Various	No MA performed
Effects on child development		
Congenital malformations	Pesticides (exposure during pregnancy)	No MA performed
Weight gain	p,p'-DDE (exposure during pregnancy)	Non-assessed
Neurodevelopment	Organophosphates (exposure during pregnancy)	Non-assessed
Brain tumours	Pesticides (exposure during pregnancy)	No MA performed

¹ Pesticides means pesticides in general, without distinction of specific classes or active ingredients.

Reference

Ntzani EE, Markozannes G, Tagas C, Rizos E & Karalexi M (2020). Epidemiological evidence review report: Exposure to pesticides and fertilizers and human health – Part A. Department of Hygiene and Epidemiology, University of Ioannina School of Medicine, Ioannina, Greece. Supporting document to Environmental and health impacts of pesticides and fertilizers and ways of minimizing them.
<https://www.unep.org/resources/report/environmental-and-health-impacts-pesticides-and-fertilizers-and-ways-minimizing>