

Evaluation of Epidemiologic and Animal Data Associating Pesticides With Parkinson's Disease

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Exposure to pesticides may be a risk factor for developing Parkinson's disease (PD). To evaluate the evidence regarding this association in the scientific literature, we examined both analytic epidemiologic studies of PD cases in which exposure to pesticides was queried directly and whole-animal studies for PD-like effects after systemic pesticide exposure. Epidemiologic studies were considered according to study quality parameters, and results were found to be mixed and without consistent exposure-response or pesticide-specific patterns. These epidemiologic studies were limited by a lack of detailed and validated pesticide exposure assessment. In animal studies, no pesticide has yet demonstrated the selective set of clinical and pathologic signs that characterize human PD, particularly at levels relevant to human populations. We conclude that the animal and epidemiologic data reviewed do not provide sufficient evidence to support a causal association between pesticide exposure and PD. (J Occup Environ Med. 2005;47:1059–1087)