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 1: [Neurotoxicol Teratol.](#) 1993 Mar-Apr;15(2):71-83.**ELSEVIER** Links
FULL-TEXT ARTICLE**Utility of a neurobehavioral screening battery for differentiating the effects of two pyrethroids, permethrin and cypermethrin.****[McDaniel KL](#), [Moser VC](#).**

ManTech Environmental Technology Inc., Research Triangle Park, NC 27709.

The ability of a neurobehavioral screening battery to differentiate the effects of two pyrethroids, permethrin and cypermethrin, was assessed in this experiment. Although the structures of these pesticides differ only in the alpha-cyano group, the behavioral syndromes associated with the Type I and II pyrethroids are quite different. The tests included a functional observational battery which is a series of subjective and quantitative measures of neurological function and behavior, and an automated measure of motor activity. Our results verified previous reports in the literature describing these different syndromes, i.e., aggressive sparring behavior, fine to whole-body tremor, hyperthermia, and decreased motor activity for the Type I pyrethroid permethrin, and pawing, burrowing, salivation, whole body tremor to choreoathetosis, hypothermia, and lowered motor activity for the Type II pyrethroid cypermethrin. In addition, we report that permethrin produced decreased grip strengths, increased resistance to capture, increased reactivity to a click stimulus, and induced head and forelimb shaking and agitated behaviors, whereas cypermethrin produced pronounced neuromuscular weakness and equilibrium changes, retropulsion, lateral head movements, alterations in responses to various stimuli, and increased urination. Although there were similarities in some effects (e.g., decreased motor activity), the pesticides differed sufficiently in their overall behavioral profiles, and severity and time course of effects, to discriminate these two compounds. Thus, this type of screening approach is sensitive enough to differentiate these pyrethroids for hazard identification purposes.

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