About Entrez
NCBI Toolbar

Text Version

Entrez PubMed
Overview
Help | FAQ
Tutorials
New/Noteworthy
E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI

Related Resources
Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: Neurotoxicol Teratol. 1998 Jul-Aug;20(4):391-400. Related Articles, Links

ELSEVIER FULL-TEXT ARTICLE

Effects of postnatal exposure of monkeys to a PCB mixture on spatial discrimination reversal and DRL performance.

Rice DC.

Toxicology Research Division, Bureau of Chemical Safety, Health Canada, Ottawa, Ontario. deborah_rice@hc-sc.gc.ca

Behavioral impairment as a consequence of PCB exposure beginning in utero has been reported in both humans and animals. The present study assessed the behavioral consequences of postnatal exposure to PCBs. Male monkeys (Macaca fascicularis) were dosed from birth to 20 weeks of age with 7.5 microg/kg/ day of a PCB mixture representative of the PCBs typically found in human breast milk (eight monkeys) or vehicle (four monkeys). Blood PCB levels at 20 weeks of age were 0.30-0.37 ppb for control and 1.84-2.84 ppb for treated monkeys, and fat levels were 50-198 and 1694-3560 ppb for the two groups, respectively. At about 4.5-5.0 years of age, monkeys performed on a series of three spatial discrimination reversal tasks, followed by a differential reinforcement of low rate (DRL) 30-s schedule of reinforcement. There were no differences between groups for the number of errors across reversals for any of the discrimination reversal tasks, whereas the PCB-treated group tended to have shorter median response latencies than the control group. On the DRL schedule, there were robust differences in performance between the treated and control groups. Treated monkeys displayed shorter mean and median interresponse times (IRTs), obtained fewer reinforcements, and emitted more nonreinforced responses. The treated groups also had more short IRTs (< or =10 s) than control monkeys. Performance of the treated group did not improve to control levels over the 51 sessions of the DRL 30-s schedule; their performance remained much less efficient than that of controls. The results of this study extend previous research in this cohort of monkeys, and provide further evidence that PCB exposure limited to the early postnatal period and resulting in environmentally relevant body burdens produces long-term behavioral effects.

PMID: 9697965 [PubMed - indexed for MEDLINE]

Display Abstract Show 20 Sort by Send to