

## Teratological Effects of Chlorpyrifos in Mice

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### ABSTRACT

**Introduction:** Chlorpyrifos (CPF), an organophosphate insecticide, was evaluated for potential teratogenic effects in mice. A single oral dose of insecticide (i.e. 72, 36 18 or 9 mg/kg) was given to the pregnant females on gestation day6 (GD6). These doses correspond 50, 25, 12.5 and 6.25% to the calculated LD<sub>50</sub> value (144 mg/kg) for the pregnant mice. No signs of overt toxicity were observed at any of these doses.

**Method and Materials:** Fetuses recovered from 18, 36 and 72 mg/kg groups showed a variety of morphological defects i.e. microcephaly, hydrocephaly, agnathia, anophthalmia, enlarged meningio-encephalocoele, Spina-bifida, meromelia, micromelia, drooping wrists, rudimentary or kinky tails, round back, twisted spine, tortuous-limbs, flipper feet and sacral hygromas. Fetuses recovered from vehicle treated and 9mg/kg groups were apparently normal.

**Results:** Statistical analysis of the data based on single factor ANOVA and Duncan's Multiple Range Test have shown a dose dependent decrease in litter size ( $P < 0.001$ ) along with averaged per litter: fetal weight ( $P < 0.01$ ) and crown rump length ( $P < 0.05$ ). The extent of ossification in embryonic skeleton decreased progressively with increased maternal CPF exposure.

**Conclusion:** Based on these findings we conclude that, if treated on GD6, a single oral dose of 18 mg/kg CPF (12.5% of LD<sub>50</sub>) may lead to several craniofacial and skeletal anomalies in developing mice embryos, whereas its fetotoxic role is fairly dose dependent embryos.

**Key Words:** Chlorpyrifos, Teratogenesis, Feto-Toxicology.

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