

Rats gain excess weight after developmental exposure to the organophosphorothionate pesticide, chlorpyrifos

Abstract

Pesticides that target molecules with critical roles in brain function deserve careful scrutiny for potential developmental neurotoxicity. In this study, time-pregnant rats were dosed daily by gavage with chlorpyrifos (2.5 mg/kg) from gestational day 7 through the end of lactation on postnatal day 21 (PND 21), and offspring were weighed regularly from birth until brain harvest at PND 22 or young adulthood (PND 95-101). The chlorpyrifos exposure caused excess weight gain in males beginning at PND 45 and reaching levels 10.5% above control by PND 72, while volumetric measurements showed that the exposed males were also 12% larger than controls.

The body weight response showed an inverted U-shaped relation to chlorpyrifos dose. These data suggest delayed disturbances in body weight and density as previously unsuspected adverse consequences of developmental exposure to an environmental pesticide. Although we do not regard our findings as definitive evidence that chlorpyrifos exposure is a risk factor for obesity, the potential implications nonetheless deserve serious consideration.

<http://www.sciencedirect.com/science/article/pii/S0892036207003431>