

## **EFFECT OF LEAD EXPOSURE ON NEURAL PRECURSOR CELL PROLIFERATION AND DIFFERENTIATION**

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The effects of low-level lead (Pb) exposure on the proliferation and differentiation of neural precursor cells (NPC) was studied. Free-floating neurospheres were generated from the neocortical area of E-15 rats. Lead acetate (0.001-10  $\mu$ M) added to neurosphere cultures for 48 h in neurobasal media caused a significant reduction in proliferation and differentiation. Proliferation was affected at a concentration of as low as 0.01  $\mu$ M Pb significantly. In terms of differentiation, gliogenesis was affected more adversely than neurogenesis under these conditions as measured by the number of GFAP and MAP-2 positive cells. In addition to reduced gliogenesis it is also likely that Pb might directly be killing glial cells by either apoptosis or necrosis contributing to reduced astrocyte numbers and thereby severely affecting neuro-glial interactions in fetal brain development. These results support recent clinical findings of detrimental effects of low-level Pb-exposure on brain development.