Agent Orange toxin may be linked to autistic traits

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Infants exposed to a toxin in Agent Orange before and after birth may have specific alterations in higher brain function related to social and communication abilities. These findings are reported in a study in Molecular Psychiatry.

Dioxins are toxic by-products of various industrial processes, such as herbicide manufacturing and waste incineration. Dioxin levels were recently found to be three- to four-times higher in the breast milk of mothers living in areas of Vietnam that were contaminated by Agent Orange and other herbicides during the Vietnam War, from 1961 to 1971, as compared to those in uncontaminated areas. High dioxin levels
in breast milk indicate that the child has been exposed to the toxin, although the route of exposure occurs primarily through maternal blood prior to birth.

Muneko Nishijo and colleagues investigated the effects of dioxin exposure on child development in 153 three-year-old children. High exposure to all dioxins, measured in the breast milk of the mothers, was associated with significantly lower neurodevelopmental scores in boys, primarily affecting cognitive, language and motor skills. High exposure to the most toxic dioxin called TCDD (2,3,7,8-tetrachlorodibenzo-p-dioxin) was linked to significantly higher scores on the Autism Spectrum Rating Scale in both genders, evidenced by behaviour such as difficulty in social interactions. The results suggest that children who were primarily exposed to TCDD show particular alterations reminiscent of autistic traits, without disruptions to general neurodevelopment.

The authors note that the results must be interpreted with caution, as the behavioural development tests used were not standardized for the Vietnamese population.

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