

Childhood brain tumours linked to parental solvent use

December 8 2014, by Narelle Towie



Children born to men who worked with toluene or xylene—used in paint thinners, adhesives and lacquers—in the year before conception were four times as likely to develop a brain tumour, research has found. Credit: Litage Publishing

Children born to parents who work with paints, glues and other industrial solvents are more likely to develop brain tumours, WA researchers have found.

Brain cancer is the leading cause of [cancer death](#) in children under 10 years, according to the Cancer Council, and more than 115 new cases are diagnosed each year.

For the first time, scientists have compared the occupations of 306 parents whose children were diagnosed with brain tumours against 950 couples whose offspring do not have cancer.

They found the children of men who worked with chlorinated and petroleum-based solvents, such as those found in degreasers and cleaning chemicals, were at a higher risk of developing brain tumours.

The five-year study, led by University of Western Australia epidemiologist Dr Susan Peters, was part of a larger nationwide investigation into environmental and [genetic risk factors](#) run by the Telethon Institute for Child Health Research.

Dr Peters said her work showed that solvents containing chemicals called aromatic hydrocarbons posed the greatest risk.

Paint thinners, adhesives and lacquers

Children born to men who worked with toluene or xylene—used in paint thinners, adhesives and lacquers—in the year before conception were four times as likely to develop a brain tumour, according to the study, published in the *British Journal of Cancer*.

Men working with benzene in the year before conception were twice as likely to have a child who developed a [brain tumour](#).

Previous research has suggested a link between industrial solvents and [childhood brain](#) tumours, but the results were inconclusive and did not pinpoint problem chemicals.

The new research also showed that women working with chlorinated solvents, such as trichloroethylene, at any time before the child's birth, increased their risk of having their baby develop [brain cancer](#).

The team interviewed parents with [children](#) aged up to 15 years who had been diagnosed with brain cancer between 2005 and 2010.

Dr Peters cautioned that while the numbers appear high, childhood tumours are relatively rare and more research was needed on a global scale.

"It is the first study that has investigated the association between exposure to the different types of solvents and the risk of childhood brain tumours," Dr Peters says.

"What we found was mainly in males, so if the father had exposure to solvents in the year before conception, we saw that there was an increased risk of childhood brain tumours."

Dr Peters says fewer women work in occupations that expose them to the chemicals so there was less maternal exposure.

More information: "Childhood brain tumours: associations with parental occupational exposure to solvents." *British Journal of Cancer* 111, 998-1003 (26 August 2014) | [DOI: 10.1038/bjc.2014.358](https://doi.org/10.1038/bjc.2014.358)

Provided by Science Network WA

Citation: Childhood brain tumours linked to parental solvent use (2014, December 8) retrieved 28 April 2024 from

<https://medicalxpress.com/news/2014-12-childhood-brain-tumours-linked-parental.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.