

Taste and smell dysfunction in childhood cancer survivors

2 May 2014, by Rob Payne



The percentage of childhood cancer survivors suffering taste dysfunction was high. Credit: Dick Vos

Childhood cancer treatments such as chemotherapy and radiation therapy may have long-term negative impacts on taste and smell function, new research suggests.

The study by Sydney Children's Hospital and the University of New South Wales with Murdoch University involved 51 [childhood cancer](#) survivors, with an average age of 19.7 and an average of 12 years since treatment completion.

The researchers found that while only about four per cent of participants had a smell dysfunction, 27.5 per cent suffered a [taste](#) dysfunction, almost three times the rate found in a 2011 study of healthy Australian children.

"Long-term dysfunction has been documented in the adult oncology population, but this is the first study to assess this in a cohort of survivors of childhood cancer," Professor Richard Cohn says.

"The prevalence of [taste loss](#) of childhood [cancer](#)

[survivors](#) is higher than the general population and is a potential undesirable outcome of the cancer itself or the treatment received.

"While the mechanism for taste loss in the present group of cancer patients is unknown, it could be a reduction in the number of taste and [smell receptors](#) due to the cytotoxic effects of treatment.

"Alternately, dysfunction could be due to changes in the structure of receptor cells affecting the delivery of taste and smell molecules to receptors, or abnormalities in the reestablishment of synaptic connections at the end of cancer treatments."

A series of Spearman's correlation tests found no significant relationships between taste scores and the age at diagnosis or years since treatment. The same held true for smell.

The researchers say understanding the prevalence of taste and smell dysfunction is important in understanding how treatments affect long-term eating habits, noting that childhood cancer survivors have been shown to have poor dietary habits, including a preference for high fat foods.

Taste function was assessed by asking participants to sample a small amount of flavoured solution and choose one of three photos which best matched the taste, encompassing sweet, sour, salty, bitter or water.

Those who could identify less than 80 per cent were considered to have an impairment of taste.

Smell function was assessed by determining participants' ability to identify 16 common odorants, including Dettol, sour, baby powder, fishy, grassy, paint, flowers, strawberry, cheesy, petrol, spicy, onion, minty, orange and chocolate.

While the percentage of [childhood cancer survivors](#) suffering taste dysfunction was high, a 94-item

questionnaire and QoL tool found no relationship between taste function and food likes, and taste function and quality of life.

More information: Jennifer Cohen, David G Laing, Fiona J Wilkes, Ada Chan, Melissa Gabriel, Richard J Cohn. "Taste and smell dysfunction in childhood cancer survivors." *Appetite* 2014 Apr 8;75:135-40. Epub 2014 Jan 8.
[www.pubfacts.com/detail/244126 ... ood-cancer-survivors](http://www.pubfacts.com/detail/244126...ood-cancer-survivors).

Provided by Science Network WA

APA citation: Taste and smell dysfunction in childhood cancer survivors (2014, May 2) retrieved 13 November 2019 from <https://medicalxpress.com/news/2014-05-dysfunction-childhood-cancer-survivors.html>

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