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Chernobyl radiation could be linked to rising number of thyroid cancers in Belgian children

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Exposure to radioactive fallout from the April 1986 Chernobyl nuclear accident in Belgium may have increased the incidence of thyroid cancer in those exposed as children, according to new research published in the journal *Acta Chirurgica Belgica*.

Thyroid cancer is usually rare among children, with less than one new case per million diagnosed each year. However, after the Chernobyl accident a striking increase in the disease was reported in children and teenagers in the most contaminated areas of Belarus and Ukraine. Now, this new research from Belgium suggests countries further afield were also affected.

Prior to April 1986, surgeons at Mont-Godinne University Hospital, Yvoir, Belgium had seen no cases of thyroid cancer in children. But in 1995, surgeon Luc Michel and colleagues treated four cases of papillary thyroid cancer in patients who were younger than 9 years old at the time of Chernobyl and operated on a further five patients between 2000 and 2002 aged under 12 at the time of the accident.

To examine whether this disturbing trend could be due to exposure to radioactive fallout from Chernobyl, the surgical team collected information on the number of new cases of papillary thyroid cancer in all patients born before April 1986 who were operated on at the hospital for any type of thyroid lesion between April 1986 and April 2015. They

also obtained data from a classified Belgian Royal Institute of Meteorology (BRIM) report which revealed that in early May 1986 the average level of atmospheric radioactivity in Belgium rose to twenty times higher than normal, from 3.2 $Bq.m^{-3}$ to over 70 $Bq.m^{-3}$.

36 new cases (19.5%) of papillary thyroid cancer were found among 185 Belgian children aged under 15 at the time of the accident, compared with just 175 cases (8.1%) in 2164 patients aged older than 15 years.

Numerous studies have shown that exposure to certain types of radiation increase the incidence of thyroid cancer in children and adolescents. The authors conclude that it is likely that radiation exposure from Chernobyl has affected residents of countries much further afield than Belarus and Ukraine including Belgium, potentially increasing the incidence of thyroid cancer in those exposed as children over the last 30 years. However, they caution that it is not clear whether these cases reflect an increased incidence in the Belgian population as a whole.

More information: Luc A. Michel et al. Post-Chernobyl incidence of papillary thyroid cancer among Belgian children less than 15 years of age in April 1986: a 30-year surgical experience, *Acta Chirurgica Belgica* (2016). DOI: 10.1080/00015458.2016.1165528

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