

## COMARE Statement on the publication 'Thyroid cancer incidence in cohorts exposed in childhood to iodine-131 released during the Windscale nuclear reactor accident at Sellafield, England, in 1957'.

The Committee on Medical Aspects of Radiation in the Environment (COMARE) has been considering cancer incidence in the vicinity of Sellafield since the Committee's establishment in 1985 and welcomes the latest publication on thyroid cancer incidence following childhood exposure to radioactive iodine discharged during the Windscale reactor fire of 1957 ([McNally et al 2024](#)).

In 2016 COMARE published its 17<sup>th</sup> Report - [Further consideration of the incidence of cancers around the nuclear installations at Sellafield and Dounreay](#). The report provided a detailed analysis of the incidence of leukaemia and other cancers around the Sellafield (Cumbria) and Dounreay (Caithness) nuclear installations. The studies confirmed the previously reported increase in the incidence of leukaemia and non-Hodgkin lymphoma (NHL) among children (0 – 14 years) and young adults (15 – 24 years) resident in Seascale, the village adjacent to Sellafield, and around Dounreay between 1963 and 1990. However, no significant increases in cancer risk were found for more recent years (1991 – 2006), with no new cases of leukaemia or NHL in children registered close to either site. A likely cause of the earlier increases in cancer risk is population mixing and exposure to unidentified infectious agents, as has been observed elsewhere, with radiation doses being too low to make a material contribution.

The COMARE 17<sup>th</sup> Report also considered thyroid cancer, particularly in relation to releases of iodine-131 during the Windscale reactor fire in 1957. Although the rate of thyroid cancer incidence in Cumbria among those born between 1954 and 1958 was raised, it was not as high as that for children born between 1959 and 1963 who would not have been exposed to <sup>131</sup>I from the accident. A recommendation of the report was that a further study should employ the Cumbrian birth cohort to focus on the incidence of thyroid cancer in those most at risk from intakes of <sup>131</sup>I from the Windscale fire, particularly from the consumption by children of locally sourced milk. In response, the Department of Health and Social Care commissioned the study now reported by McNally et al.

This newly published study compared thyroid cancer incidence rates for people born during 1950 to 1958 (exposed to <sup>131</sup>I) and 1959 to 1980 (unexposed to <sup>131</sup>I) for three areas of Cumbria with different <sup>131</sup>I contamination levels. Cumbrian births were linked to cases of thyroid cancer incident throughout Great Britain to 2020 using the national cancer registries. The clear conclusion was that there was no detectable increased risk of thyroid cancer due to intakes of <sup>131</sup>I by young children in 1957. The publication discusses this finding in the light of predictions based on estimates of collective dose to the population and internationally adopted risk coefficients (risk per mSv thyroid dose) for thyroid cancer which suggested that an excess could be discernible. Overestimation of doses was identified as a possibility, but a more likely contributor was considered to be the limited reliability of risk coefficients used for radiological protection when applied to the sum of low doses to large numbers of people. The study is relevant to the assessment of risks following the accident at the Fukushima Da-ichi nuclear reactor site in Japan in 2011. The findings of this and other studies increase confidence in the

conclusion<sup>1</sup> that increases in thyroid cancer resulting from the Fukushima accident will be small and unlikely to be detectable.

COMARE is grateful to McNally et al for undertaking the study and welcomes the findings. The Committee recognises that this study would not have been possible without access to large databases, both for births and cancer registrations. The authors of the study recommend that continued follow-up of the birth cohorts beyond 2020 would be worthwhile. COMARE wishes to repeat its recommendation from its 17<sup>th</sup> Report that the government and the devolved administrations collaborate to ensure that adequate dataset and research governance (access/analysis) arrangements are shared throughout the UK in respect of cancer registries.

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<sup>1</sup> UNSCEAR. 2022. United Nations Scientific Committee on the Effects of Atomic Radiation 2020/2021 Report. Volume II, Annex B: Levels and effects of radiation exposure due to the accident at the Fukushima Daiichi Nuclear Power Station: Implications of information published since the UNSCEAR 2013 Report. New York: United Nations