

## New IARC study on global expansion in overdiagnosis of thyroid cancer

**Lyon, France, 25 May 2020** – A new study highlights the rapid expansion of the epidemic of thyroid cancer overdiagnosis in a wide range of countries worldwide, including several diverse and densely populated middle- to high-income countries undergoing rapid socioeconomic transition. Overdiagnosis is the diagnosis of a tumour that would not progress to cause symptoms or death in an individual's lifetime.

The study, published in *The Lancet Diabetes & Endocrinology*,<sup>1</sup> was led by scientists from the International Agency for Research on Cancer (IARC) in collaboration with the Aviano National Cancer Institute in Italy. To estimate the impact of overdiagnosis on thyroid cancer incidence trends, they used data from the IARC *Cancer Incidence in Five Continents* database. The scientists analysed the most up-to-date, high-quality data from population-based cancer registries in 26 countries on four continents. They found that the incidence of thyroid cancer continued to increase from 1998–2002 to 2008–2012 in all of the countries analysed, including several middle-income countries undergoing rapid socioeconomic transition, and that the increase in incidence was more marked among middle-aged people.

“The results of our study strongly imply that the large majority of thyroid cancer diagnoses worldwide are due to overdiagnosis,” says Dr Salvatore Vaccarella, the IARC scientist who led the study.

Overdiagnosis of thyroid cancer affects predominantly middle-aged women. The authors estimated the proportion of thyroid cancer cases attributable to overdiagnosis in 2008–2012. In women, this proportion ranged from approximately 40% in Thailand to more than 90% in the Republic of Korea. In men, the patterns were similar but less pronounced. Overall, more than 1 million people (830 000 women and 220 000 men) might have been overdiagnosed with thyroid cancer in 2008–2012 in the 26 countries analysed.

“The amplitude of the phenomenon is already large and is increasing rapidly over time. These figures are likely to be higher for periods subsequent to that assessed in the study,” says Dr MengMeng Li, the IARC postdoctoral scientist who is the first author of the study.

Overdiagnosis of thyroid cancer is the direct consequence of increased surveillance of the thyroid gland and the introduction of new diagnostic techniques, such as neck ultrasonography, computed tomography (CT) scanning, and magnetic resonance imaging (MRI), which may lead to the detection of a large number of indolent, non-lethal tumours in the thyroid gland of otherwise healthy individuals of any age.

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<sup>1</sup> Li M, Dal Maso L, Vaccarella S (2020). Global trends in thyroid cancer incidence and the impact of overdiagnosis. *Lancet Diabetes Endocrinol*. Published online 20 May 2020. [https://doi.org/10.1016/S2213-8587\(20\)30115-7](https://doi.org/10.1016/S2213-8587(20)30115-7)

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This problem is exacerbated in settings where health-care services are largely non-regulated, predominantly private, and hence market-based, which is currently the case in many middle-income countries undergoing socioeconomic transition.

Overdiagnosis can turn healthy people into patients and expose them to unnecessary harms. Most people diagnosed with thyroid cancer undergo a total thyroidectomy and other lifelong treatments, even though there is no evidence that these interventions are beneficial in terms of reduced mortality. Some people may experience complications after surgery. In addition to the physical and psychological consequences for the individual of being diagnosed with cancer, overdiagnosis leads to substantial financial costs for health-care systems, diverting resources that could otherwise be used to provide effective and equitable medical services for all citizens.

“The large extent of the increase in thyroid cancer overdiagnosis globally, including in middle- to high-income countries, indicates an urgent need to closely monitor its evolution worldwide and the impact of recent guidelines, which now explicitly recommend against screening for thyroid cancer in asymptomatic individuals,” says Dr Vaccarella.

### **For more information, please contact**

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