

## Widespread lack of iodine threatens brain development in children, scientists warn

**Scientists fear up to 50% of all new-borns in Europe do not reach their full cognitive potential due to iodine deficiency. Iodine is a micronutrient critical for children's brain development. Today with the Krakow Declaration on Iodine presented at the Jagiellonian University, scientists from the EU-funded project EUthyroid, supported by several stakeholder organisations, call on European policy-makers to support measures to eliminate iodine deficiency.**

Iodine is an essential micronutrient obtained from the water we drink and the food we eat. It is required for the production of thyroid hormones, which are important regulators of metabolism, growth and development. During pregnancy women have a sharply increased need for iodine, which is frequently insufficient in their regular diets. Even mild iodine deficiency puts their children at risk of impaired neurocognitive function and reduced IQ.

However, most mothers are unaware of the consequences of low iodine intake on their children. Experts now claim that in many European countries with voluntary iodine fortification programmes, up to 50% of all newborns are exposed to mild iodine deficiency and consequently are at risk of restrictions to their cognitive potential. While moderate decreases in IQ negatively affect individuals, who might experience learning problems and fail to realise their full potential, lower IQ levels on a population level may affect the economic performance of entire nations.

The adverse effects of iodine deficiency are diverse and impose a significant burden on public healthcare systems. Although this fact is well established, in Europe prevention programmes for iodine deficiency disorders (IDD) receive surprisingly little attention from policy makers, opinion leaders and citizens.

Importantly, iodine deficiency can be prevented cost-effectively by the provision of fortified foodstuffs. For years the WHO has called for regular monitoring as an important step towards eliminating iodine deficiency in Europe, yet only eight countries in the EU comply with this minimal step towards tackling iodine deficiency. On 17 April, 2018 European researchers from 27 countries presented their research on IDD researched under the umbrella of the Horizon2020 research and innovation action EUthyroid (Project ID: 634453) at a meeting at the Jagiellonian University. They are increasingly concerned about the deteriorating commitment of policymakers to addressing iodine deficiency in Europe. The consortium has therefore initiated a multi-stakeholder approach to call on policymakers, public health officials and scientists to ensure that effective strategies to prevent IDD are implemented across Europe. Today, with the Krakow Declaration on Iodine experts join forces towards eradicating iodine deficiency. They demand:

- **Methods of IDD Prevention:** Regulators and policymakers should harmonize obligatory Universal Salt Iodization to ensure free trade of fortified foodstuffs in Europe. Similarly, iodized animal feed requires regulatory approval to ensure free trade within the EU.
- **Control of IDD Prevention:** National governments and public health authorities have to perform harmonized monitoring and evaluation of fortification programmes at regular intervals to ensure optimal iodine supply to the population.
- **Support for IDD Prevention:** Scientists, together with public-health care workers, patient organizations, industry and the public, should support measures necessary to ensure that IDD prevention programmes are sustainable, as appropriate within a rapidly changing environment and further social awareness of the issue.

The signatories of the Krakow Declaration on Iodine ask for support from all stakeholders across Europe and beyond to pool resources and expertise to ensure iodine deficiency is eradicated. Sign the declaration today at [www.iodinedeclaration.eu](http://www.iodinedeclaration.eu) to ensure future generations will receive an iodine sufficient start into a healthy life and realise their full potential.

#### Endorsements:

##### **Henry Völzke (Coordinator Euthyroid, University Medicine Greifswald)**

*“Within the EU funded project Euthyroid, researchers received important funds to build up capacities for cost effective IDD prevention programs. Researchers now require the commitment by stake holders to utilise these for harmonised iodine monitoring. Therefore, the Krakow Declaration on Iodine demands national governments and public health officials to be aware of their responsibility to take care of the sufficient iodine status of their populations instead of relying on scientists and other stakeholder to take action. This is the only way to eradicate iodine deficiency disorders in Europe”.*

##### **John Lazarus (IGN)**

*“The Iodine Global Network has been privileged to be part of Euthyroid. The aim of IGN is to achieve optimal iodine nutrition in the world and this includes Europe. The work of Euthyroid has clearly demonstrated deficiencies in several countries but also a lack of consistent monitoring of iodine status. IGN endorses the findings of Euthyroid and urges governments and health care delivery officials to respond by not only advocating for adequate iodine nutrition but to initiate programs to achieve this”.*

##### **Alicja Hubalewska-Dydejczyk (Jagiellonian University Medical College)**

*“The introduction of obligatory iodine prophylaxis mainly based on household salt iodisation (1997) significantly improved iodine nutrition in Poland with a measurable impact on health. The continuous and rapid changes in environmental conditions and nutritional behaviours force the urgent need to implement the long-term iodine monitoring program and to adjust the tools of iodine prophylaxis to the needs. The pilot monitoring study undertaken in the second half of 2017 in Poland showed that sensitive populations such as pregnant women and children require the special attention of endocrinologists and national health care decision-makers to ensure sufficient iodine intake”.*

##### **Attilio Caligiani (World Iodine Association)**

*“The Krakow Declaration on Iodine represents the cornerstone of a multi-stakeholder approach to implement a harmonized and coordinated strategy to prevent and tackle IDD at a global level. The World Iodine Association (WIA) recognizes and supports the valuable work done by Euthyroid. It provides the basis to develop effective measures for improving and optimizing iodine intake in Europe in close cooperation with European and national authorities, while creating societal awareness via patient organizations, the medical community and the industry”.*

##### **Ashok Bhaseen (President of Thyroid Federation International)**

*“The Krakow Declaration on Iodine developed by Euthyroid represents an important step towards the prevention of IDD, through a multi-stakeholder approach. The Thyroid Federation International (TFI), as a Patient Organization, endorses the valuable work done by Euthyroid. The TFI believes that it is important to increase awareness to the public through promotions and campaigns. Together with the*

*Medical Community and Industry, joint actions will certainly strengthen this cause and bring to the EU a wider sensitivity on this topic. Together, a nice step forward”.*

**Greg S. Garrett (GAIN)**

*“The Global Alliance for Improved Nutrition (GAIN) has been honoured to work with national actors in approximately 20 countries to improve iodine nutrition. Today, due to the efforts of so many across the globe, iodine deficiency disorders are quickly becoming a feature of the past. However, even in Europe, low iodine intakes persist. We stand by the Krakow Declaration with the hope that it catalyses more action among policymakers throughout Europe and beyond to implement evidence-based policy and actions to prevent all cases of iodine deficiency, including through universal salt iodization”.*

**Attached Material**

Figure 1: Thyroid hormones are vital signaling molecules. They play an important role in energy metabolism and the growth of the organism, specifically organs such as the brain. Iodine (violet) is required to form these hormones.

Figure 2: Thyroid hormones are bound by the receptor directly on the cell surface, before the complex formed migrates into the cell nucleus, where it binds to specific recognition sites on DNA to control genes.

Figure 3: The main sources of iodine besides iodized salt are seafood, dairy products and eggs. However, iodine content in many foods varies widely according to season, origin and feed.

**Background**

**About EUthyroid**

EUthyroid comprises 31 partners from 27 countries and with a budget of € 3 million will make a significant contribution to analysing the status quo of iodine deficiency prevention measures in Europe. The research consortium ‘EUthyroid - Towards a EUthyroid Europe’ (# 634453) was one of only 67 successfully funded research proposals, out of nearly 2,200 submitted, in the first call of the new Framework Programme of the European Commission: Horizon2020. [www.euthyroid.eu](http://www.euthyroid.eu)

**About Iodine Global Network**

The Iodine Global Network (IGN) comprises of more than 100 regional and national coordinators and partner agencies worldwide who are engaged in overcoming iodine deficiency. The IGN works closely with WHO and UNICEF and supports public, private, academic and civil sectors in the development and implementation of global and national programs for the prevention of thyroid disease. <http://ign.org>

**About Jagiellonian University Krakow**

The Jagiellonian University is the oldest higher education institution in Poland and one of the oldest in Europe. It was founded on 12 May 1364 by the Polish king Casimir the Great. Today, the Jagiellonian University comprises 16 Faculties, where nearly 4 thousand academic staff conduct research and provide education to over 40 thousand students, within the framework of more than 80 different fields of study. The eminent researchers and state-of-the-art infrastructure make the JU one of the leading Polish scientific institutions, collaborating with major academic centres from all over the world. [www.en.uj.edu.pl/](http://www.en.uj.edu.pl/)

More photos: <http://euthyroid.eu/press-photos/>

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