Iodine deficiency affects many pregnant women in Europe, and although this is a public health concern, there is a lack of consistency across countries both in the supply of iodine (e.g., iodized salt programs) and the monitoring of iodine status of the population. Harmonization of iodine nutrition in Europe was the subject of a symposium held on September 3, 2016, at the European Thyroid Association meeting (Copenhagen, Denmark), organized by the IGN and the EUthyroid project. EUthyroid is a European Union-funded project with the goal of harmonizing and sustainably improving iodine intake in Europe.

Iodine status varies widely across Europe, and the classification of iodine status in population groups also differs within countries (Figure). For example, many are classified as iodine-sufficient in the general population but with deficiency in pregnant women. Many countries lack data, particularly with respect to the iodine status of pregnant women. Iodine intake varies between countries as a result of both differences in eating habits and variation in the iodine concentration of foods. Furthermore, iodized salt programs are not consistent. There is variation in whether iodized salt policies are mandatory or voluntary, the concentration of iodine in salt, the coverage of, and access to, iodized salt, and the use of iodized salt in processed food. This variation was highlighted at the symposium and examples were given from two countries—Norway and the UK where there is poor availability of iodized salt and the main dietary source of iodine is milk. Data from both countries have shown that individuals, especially children, who consume high quantities of milk might exceed the iodine requirement from milk alone (1-2). These findings emphasize the fact that iodine fortification programs need to be tailored to each country to take into account background exposure from other dietary sources. EUthyroid will collect standardized data on iodine intake in participating countries, and will create a reference database and map.

An important research question is how iodine status can be measured in an individual, particularly during pregnancy. At present there is no such biomarker because urinary iodine concentration can only be used to classify iodine status at the group, or population, level. The thyroid-specific protein thyroglobulin has shown promise as an iodine biomarker in children, but data are sparse in pregnant women. The EUthyroid project will evaluate the usefulness of thyroglobulin (measured from dried blood spots) as a biomarker of iodine status in pregnancy, using data from women across Europe that covers a range of iodine intakes.

The effects of severe iodine deficiency on the developing brain are well known, but the effect of mild-to-moderate iodine deficiency, which is more likely in European countries, is less certain (3). There are no adequately powered, randomized, controlled trials of iodine supplementation in pregnant women, with child cognitive outcomes, in regions of mild-to-moderate iodine deficiency (3). Cohort studies in Europe have provided evidence of an association between low iodine status in pregnancy and poorer neurocognitive development, but these studies are limited because they relied on just one measure of iodine status in pregnancy. The EUthyroid project will extend this work by using repeated measures of iodine status in pregnant women from several European cohort studies based in regions of different iodine status.

Iodine deficiency continues to affect a considerable proportion of the European population and much more research is required. Some of the gaps in knowledge and practice will hopefully be filled by the EUthyroid project; indeed a coordinated approach is necessary to tackle outstanding research questions and to attempt to deal with the current disparity in iodine nutrition across Europe. However, for iodine deficiency to be eliminated in Europe, a sustainable approach is needed. Frameworks and approaches need to be developed that will ensure adequate iodine nutrition across Europe long after the EUthyroid project ends in 2018.