Iodized salt coverage improves and Italian children are now iodine sufficient

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In a study performed in 2009, Campanozzi and co-authors (1) reported results of a study of dietary iodine intake in a national sample of Italian schoolchildren and adolescents (aged 6–18 y) using 24-h urine collections [24-h urinary iodine excretion (UIE)]. The study was conducted in the framework of the salt reduction program in the country. In the same period, the first survey conducted by Italian National Observatory for Monitoring Iodine Prophylaxis (OSNAM) (2007–2012) on 7455 schoolchildren (age 11–14 y) residing in 9 Italian regions showed that most of the regions were iodine deficient at that time [median spot urinary iodine concentration (UIC) <100 μg/L]; only the Liguria, Tuscany, and Sicily regions showed iodine sufficiency [median UIC ranging from 100 to 160 μg/L]. In addition, only 43% of salt sold in Italy was iodized at that time, and the prevalence of goiter in schoolchildren (range: 6%–9%) was slightly higher than the threshold value of 5% in all the examined regions (2).

These studies suggested that nutritional iodine intake was still inadequate in the Italian population 4-8 y after the approval of law n.55/2005, which introduced a nationwide program of iodine prophylaxis on a voluntary basis in our country (3). After this time, the General Direction of Food Safety and Nutrition at the Ministry of Health together with the panel of OSNAMI experts at the National Institute of Health decided to intensify nationwide informative campaigns on the use of iodized salt promoting the slogan “less salt but iodized,” in agreement with the nationwide strategy of reducing sodium intake in the population. These efforts appear to have significantly improved iodine intakes in Italy. A second national survey (period 2015–2019) conducted by OSNAMI (4; communication at the 40th National Meeting of the Italian Society of Endocrinology) on 2523 schoolchildren (age 11–13 y) residing in rural (42%) and urban areas (58%) of 7 Italian regions (Liguria, Toscana, Emilia Romagna, Marche, Umbria, Lazio, Sicilia). Analysis of data regarding 3 further regions (Veneto, Lombardia, Calabria) is still ongoing.

These preliminary results showed the use of iodized salt in 75% of the Italian schoolchildren, a median UIC of 118 μg/L (rural areas: 119 μg/L; urban areas: 117 μg/L), and a prevalence of goiter <5% in 6 of the 7 regions (range 1%–4.7%). Only Umbria showed a borderline goiter prevalence value (5.4%) (4). But it is important to underline that the assessment of goiter in schoolchildren by ultrasound is an indicator of long-lasting adequate iodine intake in a population. In fact, it has been demonstrated that iodine prophylaxis is able to prevent the development of goiter in children born after the implementation of iodized salt and to further control thyroid enlargement in older children, although it is less effective in reducing goiter size in children exposed to iodine deficiency in the first years of life (5).

Some investigators in Italy (1) suggest monitoring the iodine intake in the Italian population by using 24-h UIE measured in children. The authors of the recent paper disagree and suggest that the collection of 24-h UIE in a large number of schoolchildren to monitor the iodine nutritional status in the population is not necessary. UIC from spot samples is the recommended indicator for population assessment and monitoring of iodine interventions globally (6).
According to the WHO classification, adequate iodine status is indicated by a population median UIC $\geq 100 \mu g/L$ with no more than 20% of samples <50 $\mu g/L$; where the median value is <100 $\mu g/L$ the iodine intake is considered inadequate. If a large number of samples are collected, variations in hydration among individuals (7) and day-to-day variation in iodine intake (8) generally even out, so that the median UIC in spot samples correlates well with the median from 24-h samples (9).

Considering that spot urine samples are far simpler to obtain than 24-h urine collections, in the future the UIC assessment will allow monitoring of iodine nutritional status in the Italian population more frequently than would be possible if 24-h urine collections were undertaken. Consequently, this higher frequency may provide the advantage of a more accurate evaluation of the sustainability of iodine sufficiency in Italy.

In summary, the current iodine nutritional status of the Italian population (period 2015–2019), as judged by the median UIC of 118 $\mu g/L$ in school aged children, appears adequate.

This remarkable achievement now needs to be sustained. Although iodized salt use has been very slow to increase after the law was passed 14 years ago it now seems that the majority of salt used in Italy is iodized and that this is probably an important factor in the achievement of iodine sufficiency in that country. Clearly there are still advocacy requirements to ensure iodine awareness and the use of iodized salt.

References