Progress against IDD in Europe

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Overview

Although West Central Europe is an industrialized and wealthy part of the world, there still remain areas of iodine deficiency in several countries. Legislation also differs widely among European countries. There are those who have established effective legislation while others continue to battle with the authorities to get IDD on the official agenda. Within the region of West Central Europe unfortunately not all countries have been able to successfully establish official governmental iodine deficiency control programs. Slovenia, Hungary, Greece, Portugal, France and Ireland have yet to move in this direction.

Selected Country Update

**France**

Household salt has been iodised in France since the early sixties. This is done on a voluntary basis and iodized salt for industrial use has been officially barred. Unfortunately the health authorities are not interested in the matter of IDD; a recent application to the National Drug Agency for an iodine supplement to pregnant women was turned down or, rather, accepted in such a limited way that implementation is not feasible. The latest national evaluation was carried out in 1999 with results showing mild iodine deficiency but there has been no update of this data. Although there is no current concern by specialists of the iodine status of pregnant women, with no specific national programme being considered, future activities will focus on evaluation and management of the iodine status during pregnancy.

**Finland**

The National Institute for Health and Welfare is involved in iodine deficiency control programs together with the National Nutrition Council which provides contact with WHO. Iodine deficiency goitre was eradicated in the 1960s and since then sporadic iodine intake studies have been carried out, the latest assessment of urinary excretion being done in 2002. Finland has had voluntary iodization of table salt since 1949 and legislation since 1972. The food industry uses mainly non iodized salt. An ad hoc working group was appointed in 2008 to propose an iodine/thyroid status monitoring program at the National Institute for Health and Welfare. In 2009 a systematic iodine monitoring program was initiated which will involve measurement of urinary iodine excretion, iodine intake and thyroid function, twice every ten years in random population samples of healthy subjects aged 24-75. The next complete study is planned for 2011.

European children increasingly benefit from salt iodization
Poland

Poland has a multi-center program for the elimination of IDD working with all university centers in Poland and financed by the Ministry of Health. The program is supported by the Ministry of Health, the National Institute for Food and Nutrition in Warsaw, the National Institute of Zootechnics in Krakow and the salt mines in Kłodawa. The program began in 1994 and in 1992-93 an epidemiological program for the evaluation of endemic goiter was financed by a special government grant. Household salt has been iodized in Poland since 1935 and mandatory since 1996. In 1991 the Polish Council for the Control of Iodine Deficiency Disorders was established. In 2009 the iodine prophylaxis model was modified with the introduction of new iodine carriers: mineral water, as well as milk, after introducing iodized salt licks for milking cows in cooperation with the Institute of Zootechnics in Krakow. Future activities involve introducing a reduction of salt intake in basic hospital diets and continuing the IDD control program.

Bulgaria

In 1994 a decree was established which introduced: a) obligatory use of iodized salt with 28-55 mg/kg potassium iodate content by the whole population of the country; b) periodic IDD surveys; c) creation of an Interagency Commission with the Council of the Ministers under the leadership of the Minister of Health to coordinate IDD prevention; and d) prohibition of the sale of noniodized salt. In the last 10 years Bulgaria has successfully introduced USI, and goiter prevalence has been reduced from 23.3% in 1989 to 2.6% in schoolchildren and 2.7% in pregnant and nonpregnant women in 2008. Prevalences of urinary iodine concentrations (UIC) <50 μg/l were 0.8% in school children, 4.1% in young women and 7.3% in pregnant women in 2008. A household salt survey in 2008 showed 84.5% iodized salt consumption. Bulgaria was officially recognized in 1997 to have successfully eliminated IDD using USI by the Network for Sustained Elimination of Iodine Deficiency, ICCIDD, UNICEF and WHO. In 2009, a national study confirmed sustainability of the IDD policy. Future activities involve: 1) continuation of the monitoring of iodized food grade salt; 2) a free registered national iodized salt logo for importers/producers/retailers whose supply in the market and/or food production facilities is more than 85% iodized; and 3) a representative study among pregnant women.

Italy

Since 2003, Italy’s IDD representatives have had constant monthly contact with the Ministry of Health and the Superior Institute of Health. A group of experts meet regularly to evaluate actions being carried out in relation to the law on salt iodization passed in 2005. Following the introduction of the law, the Italian government established a national institution for monitoring iodine prophylaxis to further ensure the effectiveness of the program. The ICCIDD Regional Coordinator, Aldo Pinchera, is part of the Coordinating Activity Group and is responsible for coordinating work on the effectiveness of iodine prophylaxis, including variations in thyroid diseases. The National Centre for the Prevention and Control of Illnesses has financed a 2 year project for the monitoring and prevention of thyroid diseases in Italy, for developing activities of the National Registry of Congenital Hypothyroidism and for establishing an IDD monitoring program. The National Observatory for Monitoring Iodine Prophylaxis (OSNAMI), established by the government following legislation in 2005, operates in tight contact with the National Committee for the Prevention of Goiter. For many years, this Committee has dealt with the consequences of nutritional iodine deficiency in the population with the Ministry of Health and will further be in contact with Italian salt producers.

Slovakia

Iodine prophylaxis has been compulsory in Slovakia since 1965 and there is a government control program for the iodine content of salt, with 350 samples of salt being examined annually. In 2000 a national monitoring commission was established. Between 1995 and 2005 sufficient iodine intake was proved in several surveys, but there has been no progress since.
Netherlands
Compulsory use of iodised salt by bakeries came into force in 1968 and iodized table salt has been available for households for many years. In 1984, use of iodized salt by bakeries was no longer compulsory but since then the iodine content of Jbrozo salt has increased to 100mg/kg. The last survey carried out on Dutch school children was in the 1990s, which concluded the absence of iodine deficiency. A study on the iodine status of pregnant women is currently being considered at the Wageningen University.

Sweden
Sweden has had a recommendation by the Ministry of Health on iodization since 1936 and this is well adhered to with at least 90% of the population purchasing iodised salt. The Swedish Food Board has the overall responsibility to ensure that optimally iodized salt is available and this is widely supported, including by the mass media, who periodically highlight the importance of consuming iodized salt. Researchers working on IDD are involved in supporting a range of low-income countries in their struggle to control IDD; support has mostly come from the Swedish International Development Cooperation Agency, and has been given to China, Tanzania, Zimbabwe, Sudan and Democratic Republic of Congo. In Sweden in the last 10 years there has been stable consumption of optimally iodized salt, adequate iodine content in the Swedish “food basket” and good iodine status of the population. A closer look at iodine status in pregnancy is being considered although the purpose of this is more for refining assessment methods rather than as a concern for iodine status.

Romania
Several Ministry of Health programs have been established which have involved the monitoring of urinary iodine concentration in children and pregnant women and the iodine level in iodized salt. UNICEF sponsored a population study in 2005 which was carried out by the Institute of Mother and Child Health regarding the nutritional status of pregnant women and children aged 6-7. A national commission for the control of iodine deficiency was established through the Ministry of Health and was supported financially and logistically by UNICEF. Unfortunately this commission has not been sponsored by UNICEF for two years and is no longer functional, but there are plans to reestablish this monitoring program. The Institute of Mother and Child and SC Smedis Consult SRL has a research project proposal for the Ministry of Research which aims to evaluate the iodine intake and thyroid status in infants in correlation to diet. There has been resistance by some doctors and the mass media against USI, and the Ministry of Health has in the last 3 years requested material providing arguments for USI. In 2008, a temporary Parliamentary Commission was established which debated USI. Supporting materials were sent to this Commission and USI remains in place.

Turkey
Prevention of IDD and a salt iodization program in collaboration with UNICEF began in 1994-98 and has been strictly adhered to since 2000, with mandatory iodization of table salt. It is supported by the Ministry of Health, Ankara University, the Ministry of Agriculture and the Turkish Society for Endocrinology and Metabolism. UNICEF supports monitoring programs which take place every 5 years, e.g. 2002-2007.

Macedonia
In December 1997, a national program was established based on USI and early recognition of IDD. The program is being implemented by the National Committee for IDD, fully and permanently supported by the Ministry of Health and the Government. They are supported by UNICEF for monitoring the effects of iodine deficiency in school children, iodine deficiency and thyroid status in pregnant women and breastfeeding women, educational and information activities, equipment for the determination of iodine in urine, as well as expenses for rapid test kits. In 2009, iodine supplementation in pregnant and lactating women was introduced when new research found that despite adding 20-30 mg iodine to 1 kg of salt (applied since October 1999) the iodine requirements of pregnant and lactating women were not being met. Strategically, the National IDD Committee shifted their goal from achieving elimination of IDD to its sustainability through comprehensive action at the policy, institutional, community and family levels.
Croatia

Since 1992 a program for the eradication of goiter and IDD has been in force. It includes the control of iodine in salt at all levels, as well as the control of iodine-caused hyperthyroidism as a possible consequence of an increased level of iodine in salt. The program is supported by the Ministry of Health, the Public Health Institute, the Veterinary Faculty and Croatian salt plants. In 1992 the National Committee for Eradication of Goiter and Control of Iodine Prophylaxis was founded. The structure of the Committee ensures a multidisciplinary approach to the problem. After the introduction of new obligatory regulation requiring 25 mg KI/kg salt in 1996, Croatia reached iodine sufficiency in 2002. In 2009, a survey found an overall median of UI (UIC) of 248 µg/L. Thyroid volumes in schoolchildren from Zagreb and the village of Rade were within the normal range. Median of UI in pregnant women from Zagreb was 139 µg/L, and in non-pregnant women from Zagreb was 136 µg/L.

Switzerland

Since 1922 Switzerland has had an official iodine deficiency control program with all cantons being covered since 1950. Salt for human consumption is enriched on a voluntary basis with 20–30 ppm iodine (as KI). Domestic (household) use of salt is 92% and salt for food industry is approximately 50%. The Swiss Academy of Medical Sciences (a body that is independent from the government) appoints 8 to 10 members of the Swiss Fluoride-Iodine Commission (fluoride is included, because prevention of caries also rests on salt as a carrier). The Commission is an advisory body to the Swiss Federal Office of Health, to which it may propose changes in legislation, e.g. on the level of iodine in salt, or on the wording of governmental statements. Iodine sufficiency was demonstrated in schoolchildren in 1999 (first nationwide survey) and confirmed in 2004 (2nd nationwide survey). The 3rd nationwide survey in school children in 2009 has established continuing iodine sufficiency with median urinary iodine of 121 µg/L for boys and girls, and 165 µg/L in pregnant women.

Germany

Germany does not have any legally established or official iodine deficiency control programs, but surveys on iodine intake, urinary excretion and goitre incidence supported by the Federal Ministry for Research and Technology (BMFT) and Federal Ministry of Health. The first nation-wide epidemiological survey on iodine status was performed in 1996, supported by BMFT. Mean iodine excretion was 94 µg/L in adults, 83 µg/L in conscripts and 56 µg/L in breast-fed newborns. The second nation-wide survey was carried out on children and adolescents (6–17 y) in 2006 (KIGGS Study), performed by Robert-Koch-Institute supported by Federal Ministry of Health and BMFT. The mean UI (UIC) was 117 µg/L. In 1984 the German Task Group on ID (“Arbeitskreis Jodmangel” = AKJ) was established, consisting of scientists and clinicians interested in ID (endocrinologists, pharmacologist, gynecologists, pediatrics and nutrition researchers). The aim is to promote the use of iodized salt in households, restaurants and industry, to convince the government to perform surveys on ID, control ID, and to legalize universal iodized salt. The use of iodized salt in households increased from 70 to 80%, the use in bakeries, slaughter houses and food industry however decreased from 35% in 1998 to 28% in 2008. The mean urinary iodine excretion in children and adolescents is now 117 µg/L, in adults it is around 120 µg/L (in 1996: 93 µg/L). In 2009 the Ministry of Health and BMFT approved the sponsoring of further surveys on iodine intake in Germany and discussions on Health Claims with the Ministry of Health and EU representatives took place. An important goal for the future is to legalize salt fortified with iodide as well as iodate in the EU, and to allow the trading of industrial iodized food products within the EU.

United Kingdom

The United Kingdom’s official IDD control program is coordinated by the Ministry of Agriculture Fisheries and Food (MAFF). The last survey of the iodine content of cow’s milk was carried out in 1998/89. Further monitoring has been recommended but unfortunately very little progress has been made in the last 10 years. A study of 15 yr-old school girls is currently in progress and is supported by the Clinical Endocrinology Trust and Society of Endocrinology. The preliminary results of this survey (n = 478) show a median UI of 62–83 µg/L from 6 cities; overall median was 76µg/L. In 2009 a salt survey in supermarkets was carried out. The last MAFF survey (1999) showed adequate iodine concentration in 220 milk samples and even suggested that young children could exceed the recommended iodine intake, especially in winter. This is not borne out by the recent school girl UI data.

Czech Republic

The country’s programme for the control of iodine deficiency, which began in 1994-95, is not governmental but is supported by the National Institute of Health. Financial support is received from the Ministry of Health, the Public Health Service and grants from pharmaceutical companies. A national commission was established in 1994 and still monitors the programme including the monitoring of salt iodization, ioduria in selected samples of population and educational activities. Since 2004 the Czech Republic has corrected iodine deficiency according to the criteria of WHO/ ICCIDD (parameters of ioduria, prevalence of goiter). In the future, interest will be focused on pregnant women and seniors, in relation to iodine saturation, autoimmune thyroid disease and validation of thyroglobulin and ioduria levels. Regular conferences for experts are also planned.
Belgium

Belgium does not have an official iodine deficiency control program but there is a working group of experts on micronutrients, which began in 2007, at the Ministry of Health. Among other tasks, this group is responsible for iodine nutrition and monitoring iodine status. In the last 10 years, the main progress has been the official recognition of iodine deficiency as a health problem. In 2005 the Ministry of Health elaborated a National Nutrition and Health Plan (NNHP-B) and requested a strategy to optimise iodine intake. Within the framework of the NNHP-B for 2005-2010, the working group on micronutrients proposed a strategy to increase iodine intake. This strategy has been officially adopted by the Ministry of Health and was implemented in 2009. The main elements of the strategy are that bread will be fortified with iodized salt. In addition to the fortification of bread with iodine, the visibility of iodized salt in the markets will be increased and the utilization of vitamin supplements containing iodine for pregnant and lactating women will be promoted. An agreement between the bakery industry and the ministry of health was signed to implement the fortification of bread with iodized salt but this measure is not currently compulsory. Monitoring will be based on the determination of urinary iodine concentrations in schoolchildren and pregnant women, as well as on the thyroid stimulating hormone (TSH) concentrations in newborns. In 2010 the first national iodine nutrition survey in children and pregnant women will take place. In addition the central database on neonatal TSH will become operational.

Slovenia

Slovenia does not have an official iodine deficiency control program but there is a national commission for the implementation of iodine prophylaxis albeit with sporadic monitoring. The last surveys clearly confirmed that iodine intake is sufficient. In 2009 problems arose with excessive iodine intake due to the iodine content in multivitamin tablets. A further study is planned for 2011.

Hungary

Hungary does not have an official iodine deficiency control program. Related activities have included “Iodine nutrition in schoolchildren according to the results of repeated ThyroMobil studies (1994-2005)”. The original ThyroMobil study (carried out in Hungary in 1994) was repeated in the same areas, with the same methods, by the same people in 2005. The low iodine excretion detected in 1994 disappeared in these areas by 2005; the goiter rate decreased significantly according to the previously employed reference values. Explanation for this was the definite increase in the use of iodized salt in households. A country-wide study showed that 42% of infants who are breast feeding have low iodine intake, but the level of iodine in the breast-milk increased compared to the previous results. In the last 10 years use of iodized salt in households has increased substantially to over 50%. Future activities will focus on the use of iodized salt and promoting it though the media.

Greece

Greece does not have a legally established official iodine deficiency control program. In the last 10 years the status of normal iodine intake has been established and in 2009 studies on iodine intake in pregnant women began.

Portugal

Portugal does not have an official iodine deficiency control program but a study on iodine intake in pregnant women and school children was carried out by the Portuguese Endocrine Society, The Portuguese Cancer Institute and the General Direction of Health from the Ministry of Health and the Ministry of Education gave their scientific support to the study. It is not clear what progress has been made in the last 10 years. However, comparing the present data in school children with data obtained 20 years ago in specific regions, there was a huge progress on iodine intake, due to silent prophylaxis. The near future holds the conclusion of the study on pregnant women from the Azores and a study of school children in the Azores and Madeira. Discussions are also envisaged with the Health Authorities on the results of the study in order to implement iodine supplementation in pregnant and lactating women and eventually a universal salt iodization program. It has not been easy to enroll the health authorities in making decisions as IDD is not considered as a priority in Public Health.