History of IDD prevention in Slovakia
The history of IDD prophylaxis in Slovakia spans more than six decades. It began with a large national survey in 1949–1953, which found that 3% of the population suffered from endemic cretinism. In the three most affected regions, goiter was diagnosed in 70% of girls, 63% of boys, 80% of adult women, and 46% of men. The urinary excretion of iodine was found to be less than 25 µg in 24 h, consistent with severe iodine deficiency. In the three most affected regions, goiter was diagnosed in 70% of girls, 63% of boys, 80% of adult women, and 46% of men. The urinary excretion of iodine was found to be less than 25 µg in 24 h, consistent with severe iodine deficiency (1).

Prevention of IDD with iodized salt in Slovakia began in 1951. The amount of iodine in salt was gradually increased from 7 mg KI per kg of salt to 12 mg/kg in 1953. Since 1965, common salt contained 25 ppm KI (18 ppm of iodine), and in 2000 the more stable KIO3 was introduced. Since 1966, addition of iodine has been mandatory, which has yielded remarkably good results: iodine intake has increased 2–4 times, and endemic goiter and cretinism have been all but eliminated (2).

As the scientific direction and political situation changed in the 1970s, IDD prevention gradually slipped from the research and government agenda, and systematic surveillance became voluntary. In the decade of 1985–1995, only a few papers were published on the effectiveness of IDD prevention, and their findings were inconsistent: one research group stated that the existing iodine prophylaxis was insufficient (3), and another proclaimed its success (4). In 1994–1995, an international study to evaluate iodine deficiency in Europe confirmed that Slovakian school-children were iodine sufficient. At that time, Slovakia was one of only five countries with sufficient intakes, and the highest in Europe (5). Since 2000, Slovakia has stopped all domestic production of iodized salt and has been entirely dependent on imports, mainly from Austria, where the iodization standard is the same as in Slovakia.

New pilot study confirms optimal iodine nutrition
To determine current iodine status across all age groups in Slovakia, and in vulnerable populations such as pregnant women, a pilot survey was conducted from June 2014 to October 2015. Urine samples were collected from 426 volunteers aged 3–75 years from three regions: Bratislava in the southwest, and Orava and Liptov in the north, to measure urinary iodine. In pregnant women, iodine intake from pre-natal multivitamin preparations (typically containing 150 µg iodine) was also taken into account.

The median 24-h urinary iodine excretion was 218 µg/24 h, and all groups were found to have adequate iodine intakes. Among pregnant women, 60% had iodine intakes slightly below the recommended amount of 250 µg/day, which may put them at risk of mild iodine deficiency. Pregnant women who were taking a multivitamin were found to be iodine-sufficient, with a median UIE of 320 µg/24 h. The study also found a good correlation between 24-h urinary sodium and iodine excretion, indicating that iodized salt is the main source of dietary iodine for all population groups.

Conclusions
Despite the limited support that the IDD program has received since the 1970s and the impact of globalization on changing sodium and iodine consumption habits, iodine nutrition has remained optimal in Slovakia. Annual monitoring of table salt by regional public health officers has shown that more than 95% of imported salt contains adequate amounts of iodine.

WHO recommends that pregnant and lactating women should consume 250 µg of iodine daily. But increasing intake from 150 µg/day (i.e., recommended intake before pregnancy) to 250 µg/day through diet alone may be unrealistic. As shown in this study, pregnant women who took iodine-containing supplements had a better iodine status. Routine prenatal iodine supplementation is recommended by professional bodies in North America and Europe, but it is unlikely that this is systematically adhered to in many European countries. In Slovakia, pre-natal supplements may play an even more important role in the future as table salt consumption is expected to fall in the general population.

References