

Reducing the iodine content of over-iodized salt in the Democratic Republic of Congo improves iodine nutrition

Théophile Ntambwe Kibambe ICCIDD Sub-regional Coordinator, Francophone West-Central Africa



The Democratic Republic of the Congo (DRC) had historically been a severely iodine deficient area. In October 1993, with publication of an inter-ministerial order regulating production, quality control and trade of iodized salt, the DRC adopted a USI strategy to control IDD. This national regulation has been implemented since 1994, particularly the prohibition of the import of noniodized salt, and the control of salt iodine levels at retail points in the country and in households. It stipulated an iodine content of 100 ppm at point of production. In 2000, a national study showed that 96.7% of household salt was iodized but the median UI was 495 µg/L, in the excessive range according to WHO. Because of this, in 2003, a revision of the national regulation on iodized salt was issued, reducing the stipulated salt iodine content to 40 ppm at point of production.

Table 1: Salt iodine content

Provinces	Number of salt samples	Mean iodine concentration
11	1036	35.8 ppm

Table 2: Urinary iodine concentrations

Provinces	Number of urine samples	Median UI
11	617	249 µg/L

Table 3: Distribution of iodine status

Iodine status	Frequency	Proportion (%)
Severe deficiency (< 20 µg/L)	0	0 %
Moderate deficiency (20-49 µg/L)	1	0.2 %
Mild deficiency (50-99 µg/L)	8	1.3 %
Optimal (100-199 µg/L)	420	68.0 %
More than adequate (200-299 µg/L)	185	30.0 %
Excess (≥ 300 µg/L)	3	0.5 %
Total	617	100 %



In the DRC, careful monitoring and adjustment of salt iodine levels has reduced excess iodine intakes in children



According to the recommendation of the World Health Assembly calling on all Member States to report on progress towards the elimination of IDD, in 2007 the Ministry of Health completed a representative national survey. This was done to evaluate the current IDD situation in the DRC, 13 years after the introduction of iodized salt. This study was conducted from July–August in 2007, in all 11 provinces of the DRC. Details of this study were recently published in the IDD Newsletter (Ntambwe KT. From severe endemic cretinism to iodine sufficiency: an IDD success story in the Democratic Republic of the Congo. IDD Newsletter. Volume 26, n° 4. November 2007).

The results of the surveys of salt iodine content as well as urinary iodine concentrations in school children have recently been made available. As shown in Table 1, the mean salt iodine concentration was 35.8 ppm. As shown in Tables 2–4, the median UI in school children has fallen from 495 $\mu\text{g/L}$ in 2000, to 249 $\mu\text{g/L}$ in 2007. Although the median UI remains in the ‘more than adequate’ range according to WHO guidelines, it is much improved from the clearly excessive level in the 2003 study. Table 5 shows the current situation in the DRC regarding indicators of IDD elimination. Through careful monitoring of urinary iodine concentrations, and a reduction in the iodine content in over-iodized salt, the country is moving close to successful elimination of IDD.

Table 4: Comparison of the distribution of urinary iodine in children in 2000 and 2007

	2000	2007
< 50 $\mu\text{g/L}$	3.8 %	0.2 %
50-99 $\mu\text{g/L}$	6.3 %	1.3 %
100-299 $\mu\text{g/L}$	23.7 %	98.0 %
$\geq 300 \mu\text{g/L}$	66.2 %	0.5 %

Table 5: Indicators of IDD elimination in the DRC

Indicator	Goal	Current results
Iodized salt coverage	> 90 %	97.5 %
Urinary iodine		
Proportion < 50 $\mu\text{g/L}$	< 20 %	0.2 %
Proportion < 100 $\mu\text{g/L}$	< 50 %	1.5 %
Median	100-200 $\mu\text{g/L}$	249 $\mu\text{g/L}$
Prevalence of goiter		
Prevalence in children 6 to 12 yrs old	< 5 %	1.0 %