

Preventing and managing iodine excess in salt iodization programs



Iodized salt programs need to be carefully monitored to ensure adequate iodine intake while avoiding iodine excess

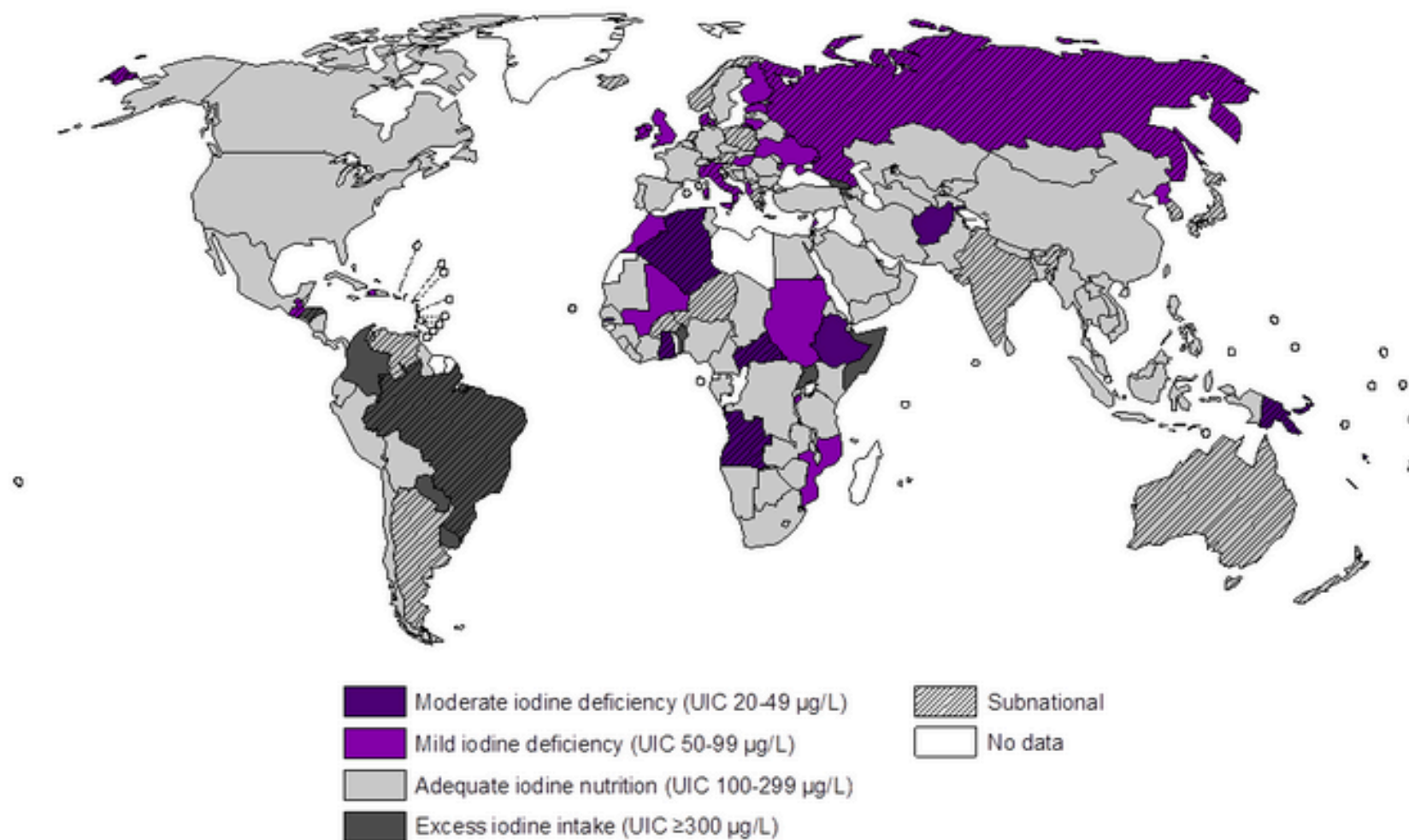
- From 2003-2013, the number of iodine-sufficient countries has increased from 67 to 112, but the number with excess intake has increased from 5 to 10.
- In most countries with excess intake, this is due to salt overiodization and/or poor monitoring of salt iodization.
- It is important that programs not only monitor iodine intakes but also regularly assess the quality of salt iodization and other sources of iodine.

Excessive iodine intake (median UIC >300 µg/L)

Armenia
Benin
Brazil
Colombia
Georgia
Honduras
Paraguay
Somalia
Uganda
Uruguay



National iodine status in 2014



Avoiding iodine excess



BEST
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Iodine excess

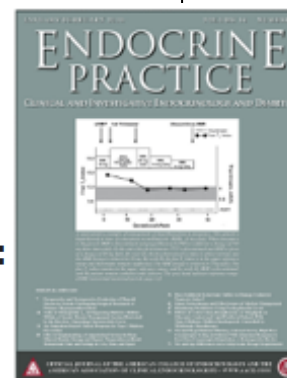
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Review Article

**IODINE DEFICIENCY AND EXCESS IN CHILDREN:
WORLDWIDE STATUS IN 2013**

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China Salt Iodization Program— one of the most successful in the world, led by the ‘grandfather’ of the program **ICCIDD GN NC Prof. Zupei Chen**

- High and sustained level of political commitment
- National system that prohibits sale of non-iodized edible salt
Substantial investment in salt industry
- **Frequent, high-quality monitoring that guides program implementation and enables modification**



Monitoring Salt Iodization in China

China has most sophisticated IDD monitoring system in the world, with three complementary activities:

- National IDD Survey (every 2-3 years since 1995)
 - Assessment of goiter, UIE and iodized salt
- Annual salt monitoring at county level
 - Routine assessment of iodized salt coverage, adequacy of iodized salt at County level, complemented by lab network
- Salt Industry quality control
 - All salt factories implementing internal QC with external verification by Government

China has variation in Iodine status

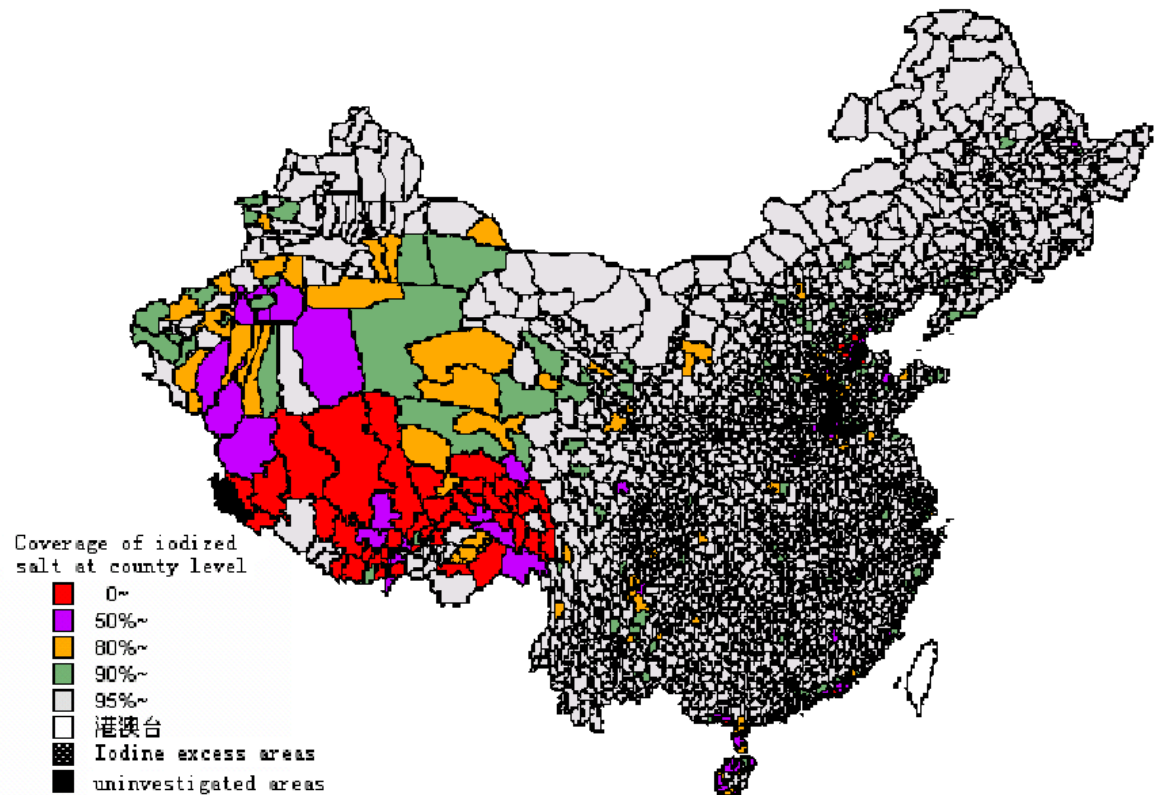
Monitoring data has revealed that China has four sub-groups based on median UIE levels (Provincial data):

Number of Provinces	Status
2	Iodine deficiency (UIE < 100 µg/l)
9	Adequate (UIE 100-199 µg/l)
6	More than adequate (UIE 200-299 µg/l)
5	Excess iodine (UIE > 300 µg/l))

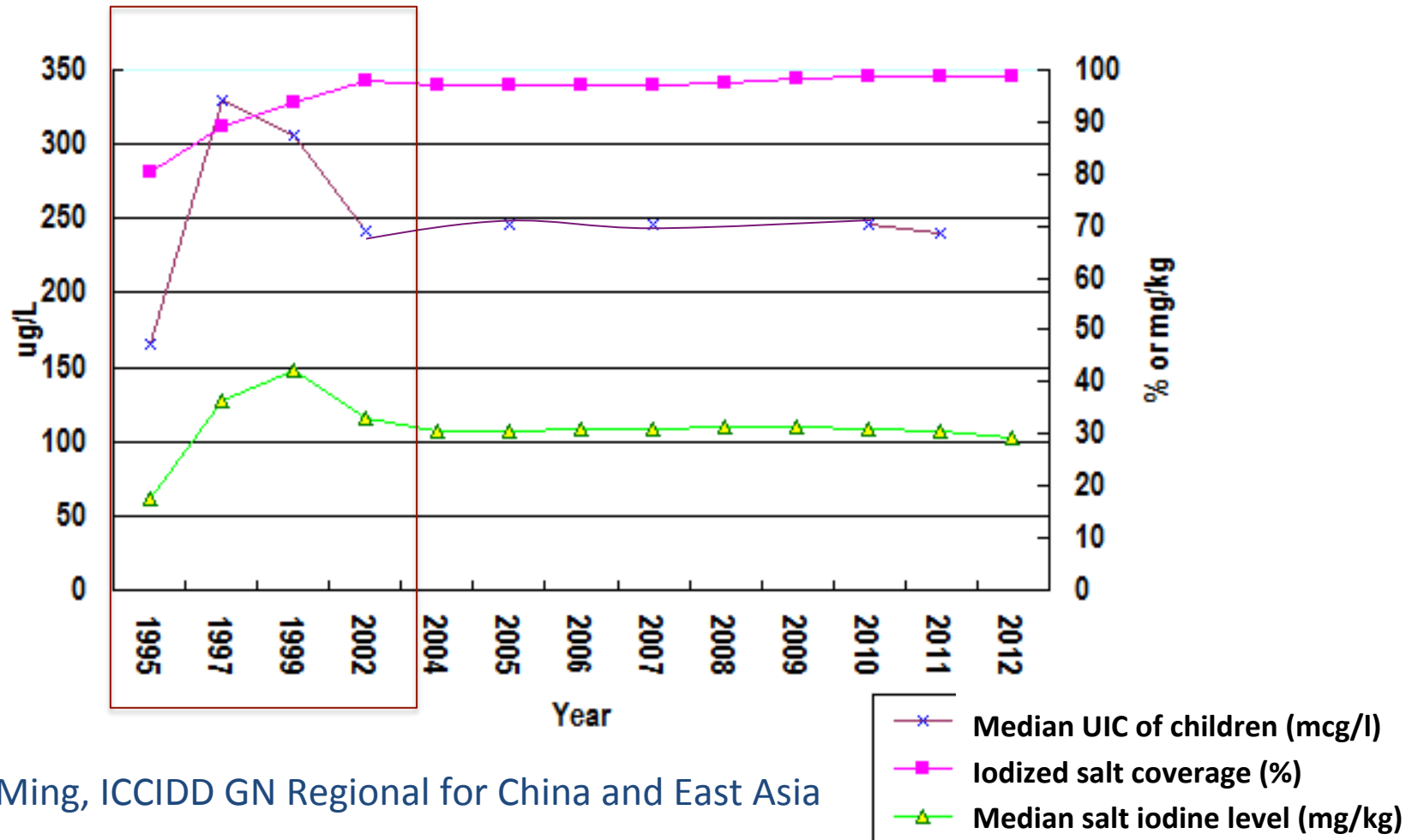
Within Provinces, there is tremendous variation

Iodized Salt Coverage at County Level, 2008 National Iodized Salt Monitoring

Differences in iodized salt coverage at County level and Township level requires good data to drive decision making



Regular monitoring by the IDD coalition and adjustment of salt iodine content reduces high iodine intakes in China



Data: Q Ming, ICCIDD GN Regional for China and East Asia

Reducing high salt iodine content in DR Congo improves iodine nutrition

- In 1994, legislation stipulated salt iodine content of 100 mg/kg
- In 2000, 97% of HH salt was iodized but the median UIC in SAC was 495 mcg/L
- **ICCIDD DRC Theophile Ntwambe** advocates for reduction in salt iodine
- In 2003, revision of the salt regulation to a 40 mg/kg
- In 2007, 97% of HH salt iodized (36 mg/kg) and median UIC at 249 mcg/L



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

	2000	2007
< 50 µg/L	3.8 %	0.2 %
50-99 µg/L	6.3 %	1.3 %
100-299 µg/L	23.7 %	98.0 %
≥ 300 µg/L	66.2 %	0.5 %

Reducing high salt iodine content in Brazil improves iodine nutrition

- In 1994-95, median UIC <100 mcg/L in SAC
- In 1999, regulation set salt iodine content at 60-100 mg/kg
- In 2001, median UIC >400 mcg/L in SAC
- In 2003: 20-60 ppm, in 2010: set at 15-45 ppm
- In 2012, median UIC 154 mcg/L in SAC

Data: E Pretell, ICCIDD GN Regional Coordinator for the Americas

