

Investigating Iodine Nutrition in Armenia

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Thyroid Hormones

- Required for growth and development
- Metabolism, cognitive ability, and memory
- Thyroid disease
 - Can cause goiter
 - Excess = hyperthyroidism (rare)
 - Deficiency = hypothyroidism (common)

Hypothyroidism

- Relatively common worldwide
- Due to interference...
 - medications, goitrogens, prior surgeries, etc
- ...or disease...
 - thyroiditis, autoimmune, hypothalamic, etc
- ...or nutrient deficiency.
 - iodine

Iodine

- Natural element, incorporated into hormone
- Plentiful in ocean seafood
- In soil in naturally iodine-sufficient regions
 - Contained in crops, livestock, & freshwater fish
- Absent in naturally iodine-deficient regions
 - Not in the crops, livestock, or fish

Salt Iodization

- Address iodine deficiency in entire community
- Salt is universal, seasonally consistent, and easily distributed.
- Cost is tiny – 50₺ per person per year.
- Each dram spent yields 28₺ in productivity gain.

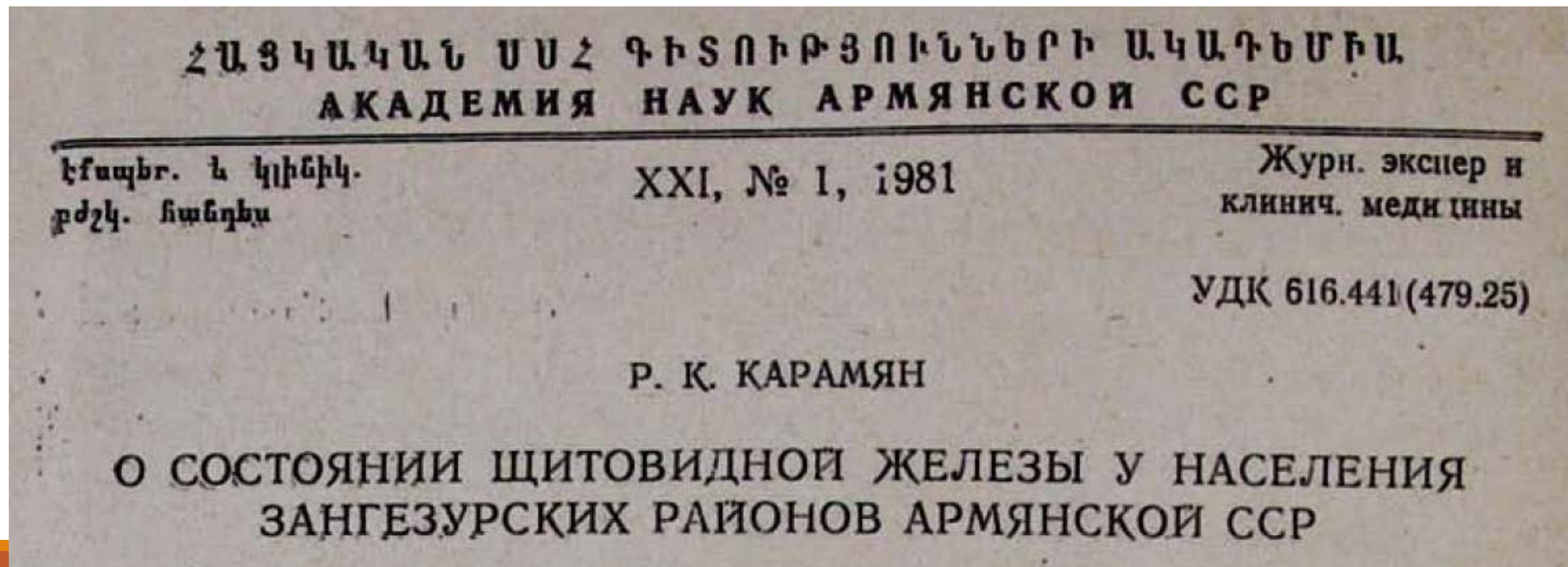


Progress to date

- Salt iodization a priority of WHO and UNICEF
- 70% of world has iodized salt
- 120 countries have salt iodization programs
- 34 countries now reached salt iodization goal
- Greatest health achievement of the 20th century

Armenia – History

- Early research identified high rates of goiter
- Especially in Syunik



Armenia – Universal Salt Iodization



- UNICEF program
- 2004 Government Decree
- Iodized at 50 mg/kg
(WHO recommends 20-40mg/kg)

Armenia – Early success

- 2005: 97% with iodized salt
- Urine iodine nationwide
- 2006: UNICEF declares Armenia IDD-free



Current Monitoring of Salt Iodization

Year of study	Number of samples tested	Samples not meeting standards
2009	8073	10
2010	6154	4
2011	6107	2
2012	12025	3
2013	20777	3
2014	14816	0

Current Status of IDD in Armenia

Year	Overall prevalence	New diagnoses
2010	4667	967
2011	4893	903
2012	5404	1051
2013	5695	1190
2014	6073	1148

- This is a total of 201.5 cases of IDD per 100.000 people!

Project background

- No iodine assessment in Armenia for 11 years
 - Access to iodized salt
 - Sufficient but not excessive iodine intake
- Persistently high rates of goiter & thyrotoxicosis
- A recurrence of iodine deficiency?
 - Easy to test for, known solution

Investigating Iodine Nutrition in Armenia

- Countrywide survey of iodine nutrition
- Education and public awareness
- Salt samples provides data on access
- Urinary iodine provides population-level data

Urinary Iodine

- Body does not store iodine
- Very small amounts in urine – 100-300 mcg/L
 - Special laboratory
- Highly variable
 - Intake that day, and over past 60 days
 - Need 600-1000 separate samples for estimate
 - Same person 750 times, or 750 people once

Investigating Iodine Nutrition in Armenia

- 10 sites in Armenia
 - Study team from Yerevan, local site coordinators
 - Classroom presentation & hospital mini-seminar
 - Questionnaire, and collection of samples of urine and table salt
- 750 participants total
 - School children, pregnant women, adults

Investigating Iodine Nutrition in Armenia

- Samples will be sent to Boston for analysis
- Data from samples and questionnaire will be analysed and presented in Armenia
- Project will run August 2016 – July 2017

Investigating Iodine Nutrition in Armenia

- Collaborative project
 - YSMU
 - Columbia
 - Boston University
 - Iodine Global Network
 - *In coordination with the RA Ministry of Health*
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 - Iodine Global Network
 - Columbia University College of Physicians & Surgeons
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Iodine Survey in Armenia

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