

Supplementary Table S1. Dietary components and iodine contribution from the I-FFQ in Gansu

Food items	Iodine content, $\mu\text{g}/100\text{ g}$	Contribution rate^a, %
Steamed buns	1.77	2.38
Noodles	12.15	64.93
Vegetables	3.03	4.42
Poultry and livestock meat	2.43	0.79
fish & Shrimp	11.98	0.17
Eggs	27.49	7.53
Fruits	1.98	1.63
Seaweed	2760.30	11.35
Laver	3541.48	0.57
Seasoning	92.50	3.86
Pepper	31.44	0.75
Iodine salt	2981.49	0.07
Drinking water ($\mu\text{g}/\text{L}$)	2.45	1.54

Note. a: consumption rate means the total consumption ratio of the food in all survey subjects.

Supplementary Table S2. Diagnostic criteria for thyroid diseases

Number	Thyroid diseases	Diagnostic criteria
1	over hypothyroidism	TSH > 5.50 mIU/L and FT4 < 11.50 pmol/L
2	subclinical hypothyroidism	TSH > 5.50 mIU/L and 11.50 pmol/L < FT4 < 23.20 pmol/L
3	hyperthyroidism	TSH < 0.35 mIU/L and FT4 > 23.20 pmol/L
4	subclinical hyperthyroidism	TSH < 0.35 mIU/L and 11.50 pmol/L < FT4 < 23.20 pmol/L
5	antibody positivity	thyroid peroxidase antibody >60 IU/mL or thyroglobulin antibody >4.50 IU/mL
6	goiter	male: Tvol > 25.0 mL; female: Tvol > 18.0 mL
7	thyroid dysfunction	thyroid dysfunction is diagnosed if any criterion from 1 to 5 is met

Note. TSH, thyroid stimulating hormone.

Supplementary Table S3. Baseline characteristics of the college students in Gansu

Variables	Total (100)	Males (49)	Females (51)	P
Age, y	25 (23, 26)	25 (23, 26)	24 (23, 26)	0.25
Thyroid dysfunction, <i>n</i> , %	0	0	0	-
Iodine intake, µg/d				
I-FFQ1	194.11 (113.31, 270.13)	242.72 (151.68, 321.94)	171.44 (97.96, 231.05)	0.002
I-FFQ2	197.67 (123.57, 241.64)	220.47 (142.86, 283.11)	165.38 (96.07, 226.07)	0.002

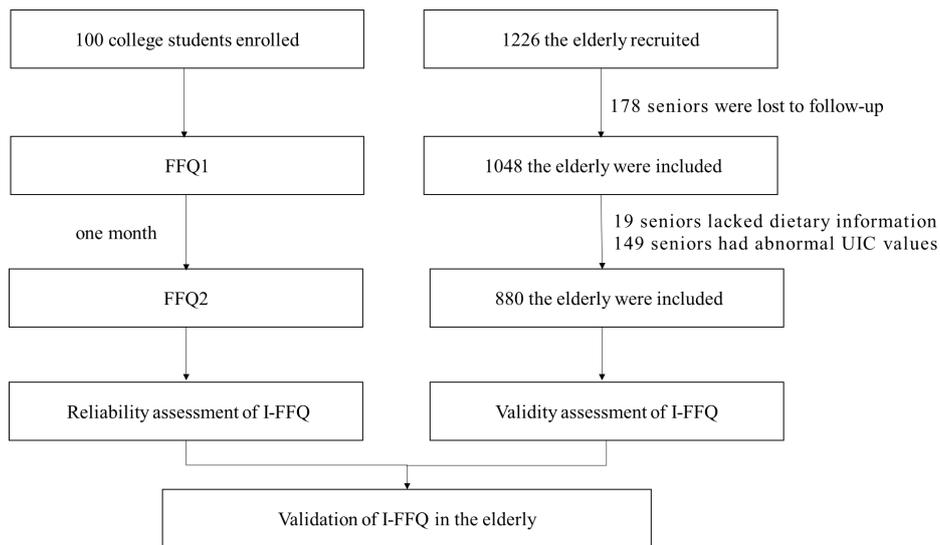
Note. I-FFQ1, iodine-specific food frequency questionnaire 1 month ago; I-FFQ2, iodine-specific food frequency questionnaire 1 month later. Values presented as medians (IQR), or *n* (%).

Supplementary Table S4. Baseline characteristics of the elderly in Gansu

Variables	Total (880)	Males (411)	Females (469)	P
Age, y	71 (68, 74)	71 (68, 75)	71 (68, 74)	0.97
Height, cm	159 (154, 165)	160 (154, 166)	159 (154, 165)	0.16
Weight, kg	63.0 (56.0, 70.0)	64.0 (57.8, 71.0)	62.7 (55.3, 70.0)	0.03
BMI, kg/m ²	24.69 (22.85, 27.01)	24.98 (23.12, 27.05)	24.54 (22.53, 26.91)	0.08
Tvol, mL	9.80 (7.28, 13.36)	10.12 (7.76, 13.63)	9.44 (6.88, 12.88)	0.02
TSH, mIU/L	2.78 (1.58, 4.87)	2.67 (1.52, 4.62)	2.88 (1.62, 4.99)	0.20
UIC, µg/L	304.12 (225.99, 430.77)	312.84 (231.66, 430.19)	299.17 (214.31, 432.28)	0.26
Iodine intake, µg/d	183.56 (133.89, 250.01)	184.60 (134.51, 257.36)	182.01 (131.81, 246.81)	0.73
Goiter, <i>n</i> , %	59 (6.7)	4 (1.0)	55 (11.7)	< 0.001
Thyroid nodule, <i>n</i> , %	478 (54.3)	191 (46.5)	287 (61.2)	< 0.001
Thyroid dysfunction, <i>n</i> , %	604 (68.6)	277 (67.4)	327 (69.7)	0.46
UIC < 100 µg/L, <i>n</i> , %	33 (3.8)	9 (2.2)	24 (5.1)	0.56
100 ≤ UIC < 200 µg/L, <i>n</i> , %	129 (14.7)	55 (13.4)	74 (15.8)	0.21
200 ≤ UIC < 300 µg/L, <i>n</i> , %	267 (30.3)	128 (31.1)	139 (29.6)	0.12
UIC ≥ 300 µg/L, <i>n</i> , %	451 (51.2)	219 (53.3)	232 (49.5)	0.32

Note. Tvol, thyroid volume; TSH, thyroid stimulating hormone; UIC, urinary iodine concentration.

Values presented as medians (IQR), or *n* (%). Continuous variables were compared between males and females with the use of Mann-Whitney test. Rates were compared between males and females with the use of χ^2 test.



Supplementary Figure S1. Screening flow chart. I-FFQ, iodine-specific food frequency questionnaire; I-FFQ1, iodine-specific food frequency questionnaire 1 month ago; I-FFQ2, iodine-specific food frequency questionnaire 1 month later.