



## How to Get Adequate Iodine?

TJONG Yung Man, Amanda  
Dietitian, Family Health Service,  
Department of Health



## Content

- Daily requirement for iodine
- Food sources of iodine
- Use of iodised salt
- Advice for pregnant and lactating women



“Can iodine requirement be met by eating fish alone?”

“有食魚就夠碘質?”



5



### Iodine content of different kinds of fish

- Fish is a source of iodine, but iodine content varies
- **Marine fish** contains more iodine than **freshwater fish**

Fish	Iodine (µg/100g)	Fish	Iodine (µg/100g)
Golden thread 紅衫	31-42	Bombay-duck 九肚魚	8.4-15
Horsehead 馬頭	29-43	Hairtail 牙帶	9.4-14
Cod 鱈魚	12-60	Filefish 沙魴	9.1-13
Mackerel 鯵魚	24-29	Canned tuna 罐頭吞拿魚	7.4-12
Capelin 多春魚	17-28	Pomfret 鱧魚	7.7-11
Canned sardines 罐頭沙甸魚	10-34	Mangrove snapper 紅魴	8.6-10
Bigeye 大眼雞	15-20	Yellowfin seabream 黃腳魴	5-12
Sole 撻沙	12-22	Salmon (sashimi) 三文魚刺身	2.8 - 8.7
Yellow croaker 黃花魚	13	Freshwater grouper 桂花魚	1.6-3
Rabbit fish 泥魴	13	Big head 大頭魚	0.5-0.9
Pompano 黃魴鯧	10-16	Grass carp 鯪魚	0.4-0.5

Source: Centre for Food Safety, Department of Food & Environmental Hygiene, HKSARG. 2011. Risk Assessment Studies, Report No 45, Dietary Iodine Intake in Hong Kong Adults.

4



## Iodine content of different kinds of fish

- Fish is a source of iodine, but iodine content varies
- **Marine fish** contains more iodine than **freshwater fish**

Fish	Iodine (µg/100g)	Fish	Iodine (µg/100g)
------	------------------	------	------------------

### Can iodine requirement be met by eating fish alone?

- A **usual** amount of fish consumed is not sufficient to meet the daily requirement of 150 µg (e.g. Consume 1 portion (~3 tael) of golden thread fish obtains ~43 µg of iodine)

Yellow croaker 黃花魚	13	Freshwater grouper 桂花魚	1.6-3
Rabbit fish 泥鯔	13	Big head 大頭魚	0.5-0.9
Pompano 黃魷鯧	10-16	Grass carp 鯪魚	0.4-0.5

Source: Centre for Food Safety, Department of Food & Environmental Hygiene, HKSARG. 2011. Risk Assessment Studies, Report No 45, Dietary Iodine Intake in Hong Kong Adults.

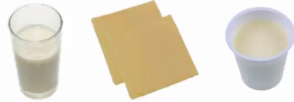


## FOOD SOURCES OF IODINE



## Examples of foods with more iodine

### Milk & milk products



### Egg



### Marine fish



### Seafood



### Seaweed & kelp



## Iodine content of egg, milk products and seafoods

Food	Serving size	Iodine content ( $\mu\text{g}$ )
Chicken egg	1 whole (~63g)	18
Cow milk (skimmed)	250ml	20
Yoghurt	1 tub (150g)	44
Cheese (Cheddar)	2 slices (40g)	10
Prawn	100g	44
Mussel	100g	140
Clam	100g	110
Oyster	100g	83

Source: Centre for Food Safety, Department of Food & Environmental Hygiene, HKSARG. 2011. Risk Assessment Studies, Report No 45, Dietary Iodine Intake in Hong Kong Adults. The figures are calculated based on the usual serving size and the average iodine content of the foods in the report.



## Cooking tips to reduce iodine loss

- Iodine may dissolve in water during cooking
- Steam or stir-fry foods with little oil to retain iodine in foods
- Cook crustaceans (e.g. prawns, crabs) intact to prevent iodine loss



11



## Iodine content in different kinds of seaweed

- There are many types of seaweed and products

Food group / Food item	n	Iodine level ( $\mu\text{g}/\text{kg}$ ) <sup>†</sup>	
		Mean [Range]	Median
Seaweeds 藻類	18	460,000 [840-2,900,000]	38,000
Kelp 海帶	3	2,600,000 [2,000,000-2,900,000]	
Other seaweeds 其他藻類	3	94,000 [8,900-220,000]	
Laver 紫菜	3	73,000 [44,000-99,000]	
Seaweed (prepackaged) 零食紫菜	3	34,000 [26,000-38,000]	
Nori sheet (for sushi) 紫菜(做壽司用) <sup>‡</sup>	3	16,000 [6,400-28,000]	
Agar agar 大菜	3	1,100 [840-1,600]	

Source: Centre for Food Safety, Department of Food & Environmental Hygiene, HKSARG. 2011. Risk Assessment Studies, Report No 45, Dietary Iodine Intake in Hong Kong Adults.

Laver or nori, seaweed snack, agar agar could be consumed in moderation

- 1 small pack (~1g) of seaweed snack provides ~34  $\mu\text{g}$  iodine;
- 1 nori sheet (~2.5g) provides ~40  $\mu\text{g}$  iodine

Some seaweeds e.g. kelp, kombu (昆布), wakame (裙帶菜) contain very high levels of iodine → **take precaution**

12





## Consumption of seaweed (kelp) - precaution

- Kelp, kombu, wakame contain very high levels of iodine. Avoid taking too much.
- Consume in moderation, such as no more than once a week and small amount



1 g (ard half tablespoon) of dried kelp  
contains 2000 to 2900  $\mu\text{g}$  iodine

Reference: Risk Assessment Study on Dietary Iodine Intake in Hong Kong Adults  
Frequently Asked Questions and Answers for the Public Available at:

[https://www.cfs.gov.hk/english/programme/programme\\_rafs/files/RA\\_Iodine\\_QnA\\_Public.pdf](https://www.cfs.gov.hk/english/programme/programme_rafs/files/RA_Iodine_QnA_Public.pdf)

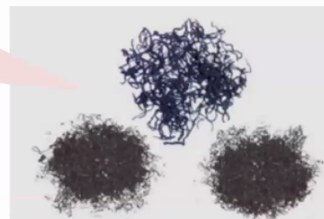


## Consumption of seaweed --precaution

- Avoid hijiki seaweed (羊棲菜(海草莖)) as it naturally contains very high level of inorganic arsenic (無基礎) which is harmful.

羊棲菜

Hijiki is commonly used as starter or appetizer in Japanese and Korean cuisines. It can also be used as an ingredient in salad, soup and vegetarian dishes



CFS, 2011. Risk in Brief – Hijiki and Arsenic:

[https://www.cfs.gov.hk/english/programme/programme\\_rafs/programme\\_rafs\\_fc\\_02\\_08.html](https://www.cfs.gov.hk/english/programme/programme_rafs/programme_rafs_fc_02_08.html)

Photo credit from CFS



### Meal example 1

		Iodine intake ( $\mu\text{g}$ )
<b>Breakfast</b>	Oatmeal 1 hard-boiled <b>egg</b> 1 cup <b>skimmed milk</b>	38
<b>Tea</b>	1 banana	<0.5
<b>Lunch (Out)</b>	Rice noodle in soup with lean meat Chinese lettuce	<0.5
<b>Tea</b>	1 tub <b>yoghurt</b> + 1 apple	44
<b>Dinner (Home)</b>	Steamed <b>golden thread fish 120g</b> Stir-fried <b>choi sum</b> Brown rice	~43 (assume minimal loss of iodine)
		<b>~125</b>

15



### Meal example 2

		Iodine intake ( $\mu\text{g}$ )
<b>Breakfast</b>	<b>Egg</b> sandwich	18
<b>Tea</b>	1 orange + 1 tub <b>yoghurt</b>	44
<b>Lunch (Out)</b>	Rice noodle in soup with <b>prawn</b> wonton (5 prawns) Chinese lettuce	~22 (assume minimal iodine loss)
<b>Tea</b>	1 banana 1 cup calcium-fortified soymilk	<0.5
<b>Dinner (Home)</b>	Steamed chicken Stir-fried <b>choi sum</b> Brown rice	<0.5
		<b>~ 85</b>

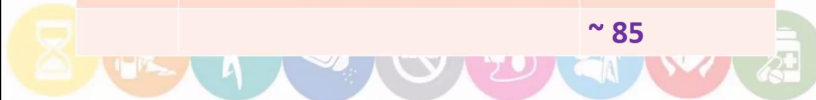
16



### Meal example 2

		Iodine intake ( $\mu\text{g}$ )
Breakfast	Egg sandwich	18
Tea	1 orange + 1 tub yoghurt	44
Lunch (Out)	Rice noodle in soup with prawn wonton (5 prawns)	~22 (assume minimal)
	1 cup calcium-fortified soy milk	
Dinner (Home)	Steamed chicken Stir-fried choi sum Brown rice	<0.5
		~ 85

Use iodised salt to **replace** ordinary table salt for cooking



## USE OF IODISED SALT





## Iodised salt (加碘食鹽)

- Use iodised salt to **replace** ordinary table salt (keeping total salt intake below 5 g (1 teaspoon) per day to lower the risk of raised blood pressure.)
  - 5g of iodised salt provides an average of 150 µg of iodine



Source: Centre for Food Safety, Department of Food & Environmental Hygiene, HKSARG. 2011. Risk Assessment Studies, Report No 45, Dietary Iodine Intake in Hong Kong Adults.

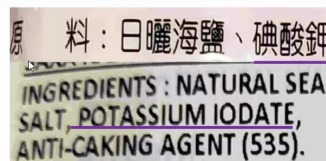


## Iodised salt

A few brands are available in local supermarkets

How to check if the product contains iodine?

Check ingredients list on the package for words 'iodide' or 'iodate'



CFS, Programme Areas -- Iodine in Food  
[https://www.cfs.gov.hk/english/programme/programme\\_fii/programme\\_fii.html](https://www.cfs.gov.hk/english/programme/programme_fii/programme_fii.html)



## Iodised salt

- Iodine contained in iodised salt is generally unstable and may be lost due to humidity and exposure to heat and sunlight.
- Tips for using to minimize the loss of iodine:
  - ✓ Store in a tight and coloured container at a cool, dry place
  - ✓ Add the salt just before serving

Reference: CFS, Food Safety Focus (61st Issue, August 2011) – Incident in Focus: Have You Taken Enough Iodine?  
[https://www.cfs.gov.hk/english/multimedia/multimedia\\_pub/multimedia\\_pub\\_fsf\\_61\\_01.html](https://www.cfs.gov.hk/english/multimedia/multimedia_pub/multimedia_pub_fsf_61_01.html)



Persons with thyroid problems should seek medical advice regarding use of iodised salt.



## Precaution for persons with thyroid problem

Patients with underlying thyroid diseases and those who are used to very low intakes of iodine for a prolonged period should consult their doctors and are not suggested to increase iodine intake suddenly.

Food Safety Focus (61st Issue, August 2011) – Incident in Focus: Have You Taken Enough Iodine?  
[https://www.cfs.gov.hk/english/multimedia/multimedia\\_pub/multimedia\\_pub\\_fsf\\_61\\_01.html](https://www.cfs.gov.hk/english/multimedia/multimedia_pub/multimedia_pub_fsf_61_01.html)





## Increased iodine requirement for pregnant and lactating women

- Requirement of iodine during pregnancy and lactating: **250 µg/day**
- Balanced diet alone is not sufficient to meet the increased demand of iodine during these periods

Pregnant and lactating women are recommended to take an iodine-containing supplement of at least 150 µg iodine every day



## Iodine status of local pregnant and lactating women

- Finding from the Iodine Survey (2019):
  - Iodine intake of pregnant women who **did not** take an iodine supplement was **insufficient**
  - Iodine intake of pregnant women with iodine supplement at **an average daily intake of equal to or above 150 µg /day of iodine** is classified as **'adequate'**
  - Iodine intake of lactating mothers was **insufficient**



Source:

Department of Health, HKSARG. Iodine Survey Report (2021). Available at:  
[https://www.chp.gov.hk/files/pdf/iodine\\_survey\\_report\\_en.pdf](https://www.chp.gov.hk/files/pdf/iodine_survey_report_en.pdf)





## Joint recommendation on iodine intake for pregnant and lactating women (2021)

- Take an iodine-containing supplement of at least 150 µg iodine every day
- Consume foods with more iodine as part of a healthy balanced diet
- Use iodised salt instead of ordinary table salt

Women with existing medical conditions or thyroid problems should consult healthcare professionals and take supplements as advised.

Source:

Department of Health, HKSARG. Iodine Survey Report (2021). Available at:

[https://www.chp.gov.hk/files/pdf/iodine\\_survey\\_report\\_en.pdf](https://www.chp.gov.hk/files/pdf/iodine_survey_report_en.pdf)



## Health education resources



Chinese version: <http://s.fhs.gov.hk/7j1at>

English version: <https://s.fhs.gov.hk/vjn0a>

“Do you have adequate iodine?” pamphlet

星級有營食肆--有營食譜: 含豐富碘質的食材

EatSmart Restaurant Star+ -- Recipes with Iodine-rich Ingredients

Chinese version:

[https://restaurant.eatsmart.gov.hk/b5/recipes.aspx?recipesCat2=7&three\\_less2=1&fruit\\_and\\_veg2=1&threeless\\_and\\_veg2=1](https://restaurant.eatsmart.gov.hk/b5/recipes.aspx?recipesCat2=7&three_less2=1&fruit_and_veg2=1&threeless_and_veg2=1)

English version:

[https://restaurant.eatsmart.gov.hk/eng/recipes.aspx?recipesCat2=7&three\\_less2=1&fruit\\_and\\_veg2=1&threeless\\_and\\_veg2=1](https://restaurant.eatsmart.gov.hk/eng/recipes.aspx?recipesCat2=7&three_less2=1&fruit_and_veg2=1&threeless_and_veg2=1)

