

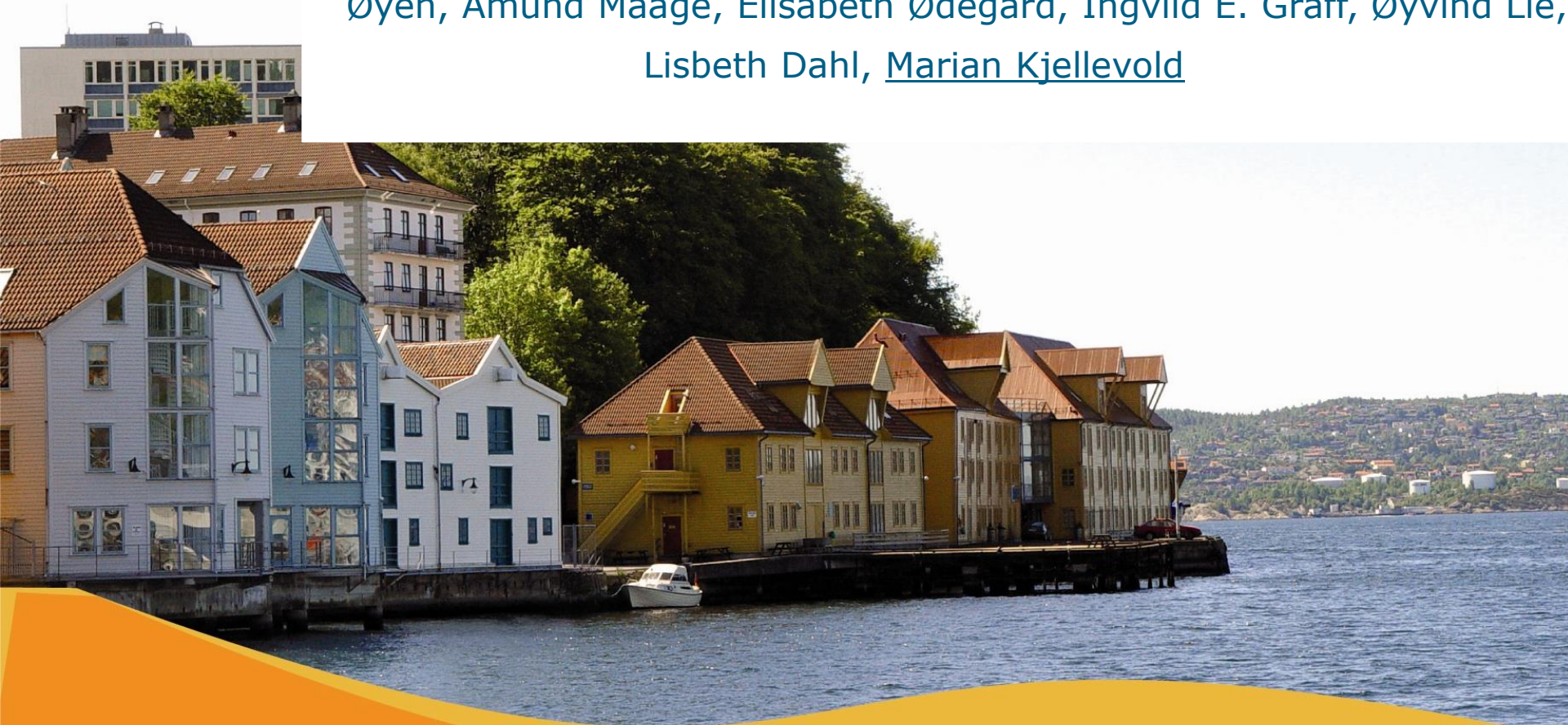
N I F E S

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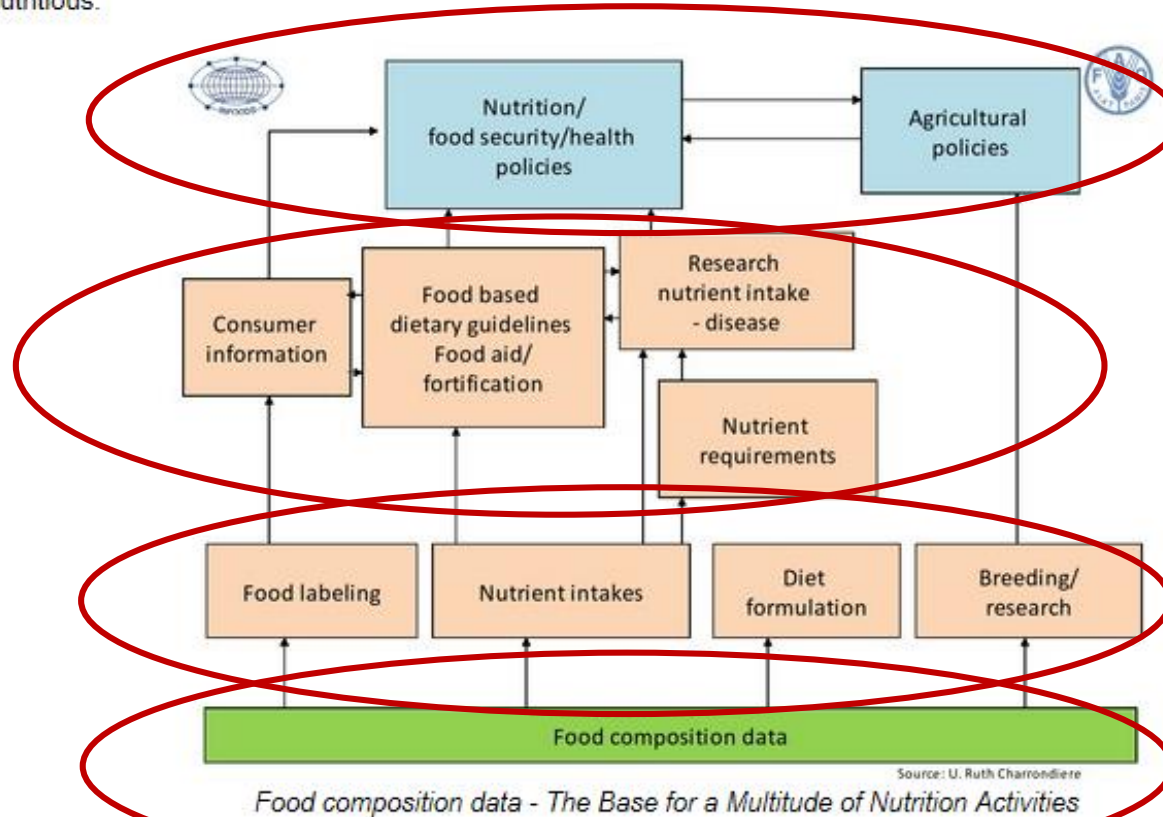
Large intraspecies variation in iodine content in fish

Ive Nerhus, Maria W. Markhus, Bente M. Nilsen, Lisa K. Midtbø, Jannik
Øyen, Amund Maage, Elisabeth Ødegård, Ingvild E. Graff, Øyvind Lie,

Lisbeth Dahl, [Marian Kjellevoll](#)



Food composition data are the basis for almost everything in nutrition, and should receive more attention in agriculture to render our food supply more nutritious.



“Relevant, reliable and up-to-date food composition data are of fundamental importance in nutrition, dietetics and health, but also for other disciplines such as food science, biodiversity, plant breeding, food industry, trade, and food regulation” Barbara Burlingame (FAO official)

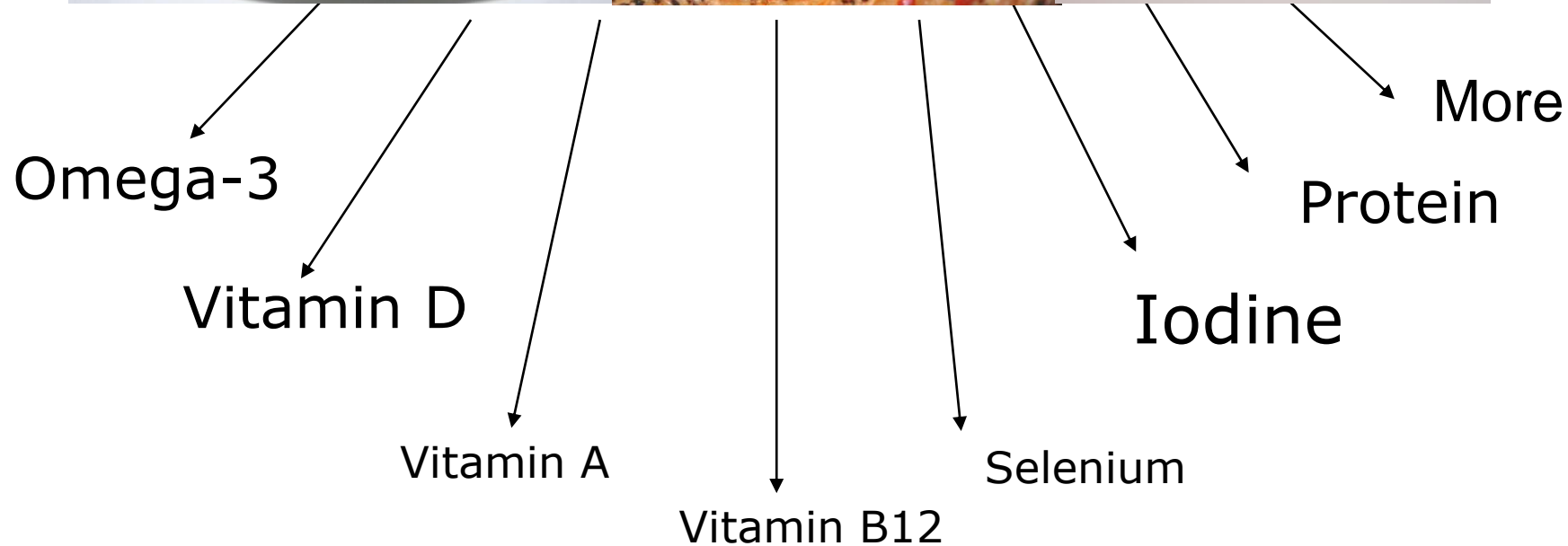
Dietary advise no. 5

Eat fish for dinner two to three times a week. Fish is also a great filling in sandwiches.

- Representing 300-450 grams fish per week for adults
- At least 200 grams should be oily fish such as salmon, trout, mackerel or herring



Fish is essential for food- and nutrition security

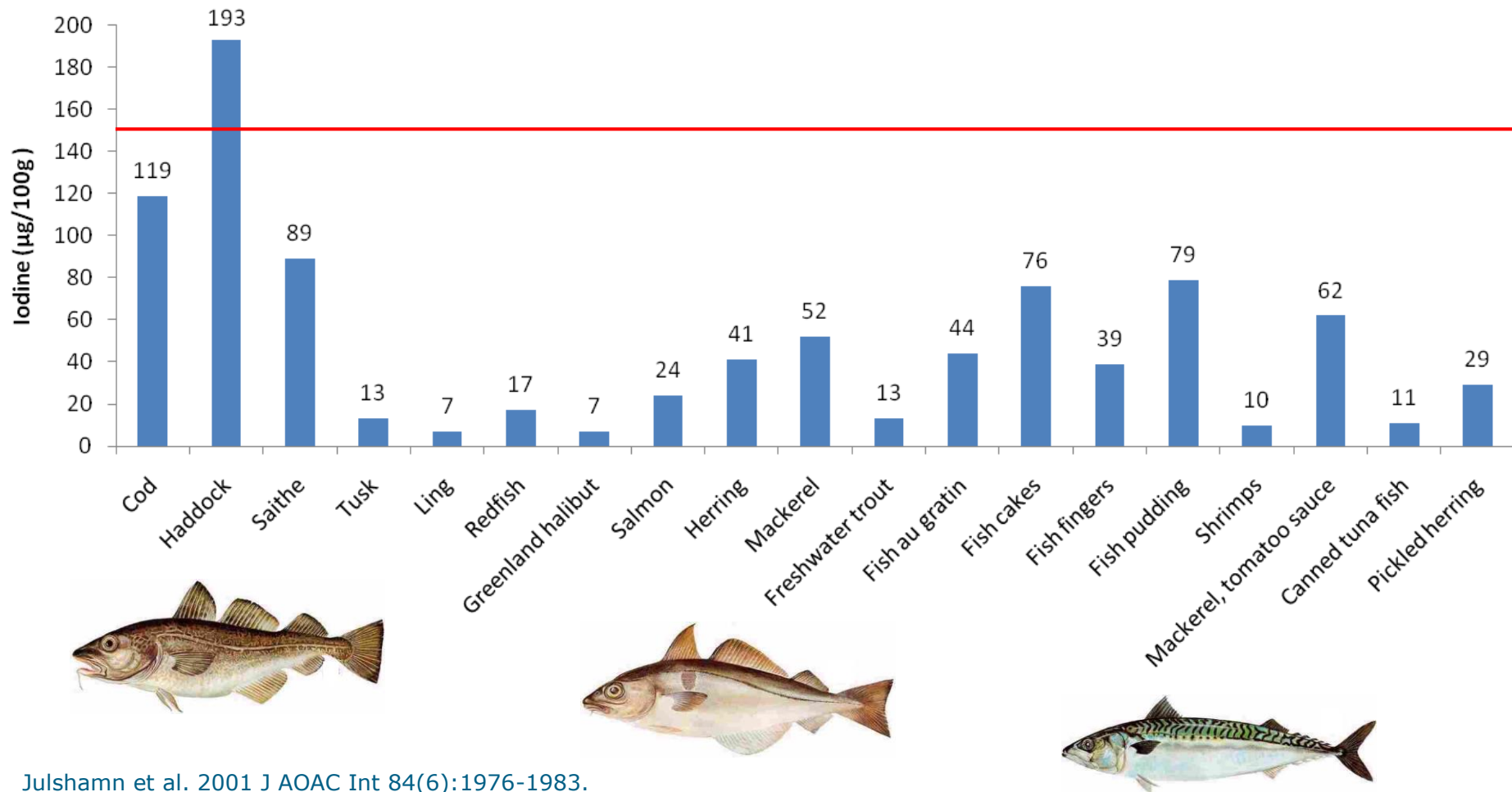


The Norwegian Food Composition Table (FCT)

- www.matvaretabellen.no (english version, annual updates)
- provides information concerning the nutrient- and energy content of the most commonly consumed foods in Norway
- **1600** food items and values for 38 nutrients are included in the FCT
- The FCT's nutritional values are compiled from:
 - Chemical analyses performed in Norwegian quality-assured laboratories (NIFES)
 - Values that are provided by the industry or borrowed from foreign food composition tables
 - Values that are estimated based on similar food items and dishes

Cod product	Iodine (µg/100g)	Reference
Cod, cured, simmed	-	Missing value
Cod, filed, pre-fried, frozen	-	Missing value
Cod, filled, pan-fried	198,6	Calculated value from in-house recipe
Cod, fillet, roasted	198,6	Calculated value from in-house recipe
Cod, fillet, simmered	185,7	Calculated value from in-house recipe
Cod, lightly salted, sliced, raw	-	Missing value
Cod, slices, raw	143	Calculated from similiar food item
Cod, unspecified, raw	119	NIFES
Cod, wild, raw	119	NIFES

Iodine content in fish and fish products ($\mu\text{g}/100\text{ g}$)



Julshamn et al. 2001 J AOAC Int 84(6):1976-1983.
 Dahl et al. 2004 Publ Health Nutr 7(4):569-576



- <https://sjomatdata.nifes.no>
- nutrients and contaminants in fish, shellfish and seafood products.
- data from 2006 until 2017
- data from about 30 fish species, 15 different shellfish and almost 40 seafood products
- More than 70 nutrients

Atlantic cod fillet

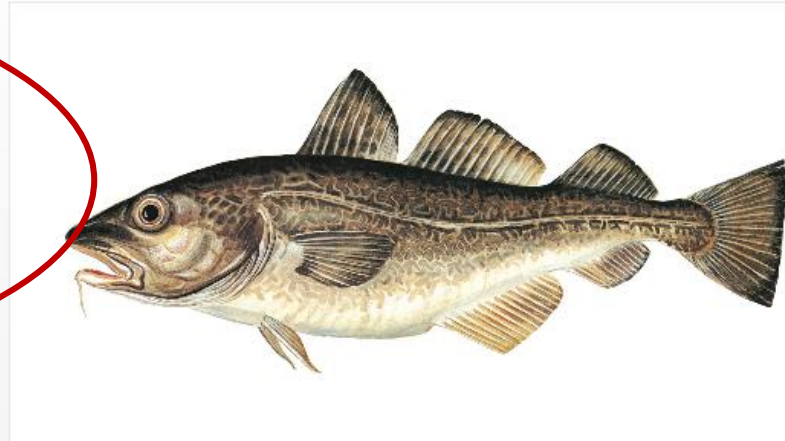
Gadus morhua

Wild fish

From 2009 to 2011, NIFES took 2,200 samples of cod from 80 positions during a thorough an extensive baseline study. Cod is monitored annually and samples are taken from four positions in the Barents Sea, two in the Norwegian Sea and four in the North Sea.

[Read more on nifes.no](#) [Download page \(pdf\)](#)

[Add to comparison](#)



Selected undesirable substances for this species

Content per kilos



Mercury (Hg)
(measured 2016)
Threshold: 0.50



Dioxins and dl-PCBs
(measured 2010)
Threshold: 8.00



Endosulfan
(measured 2009)

Selected nutrients for this species

Content per 100 grams



Vitamin D (D3)
(measured 2010)



Iodine (I)
(measured 2010)



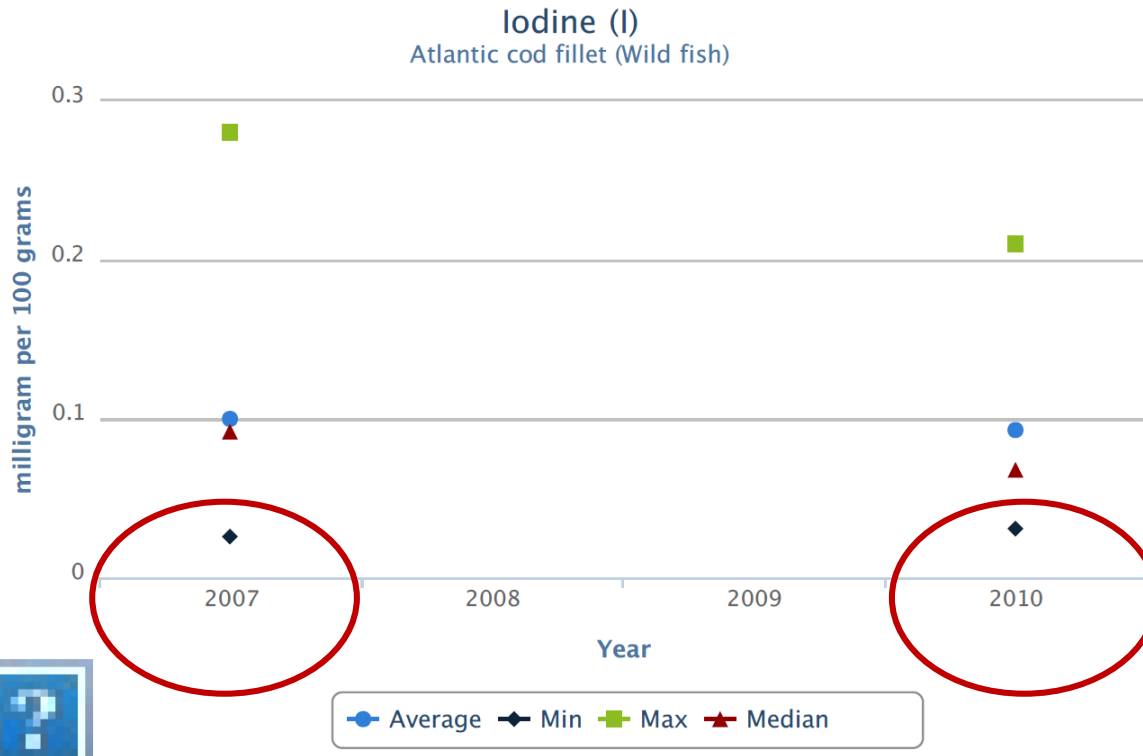
Sum EPA + DHA
(measured 2010)

All substances
Current

Contaminants
Historical

Nutrients
Historical

Iodine in cod fillet

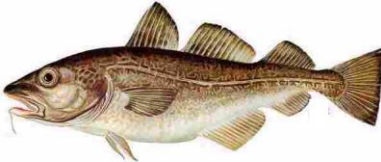



Samples

milligram per 100 grams

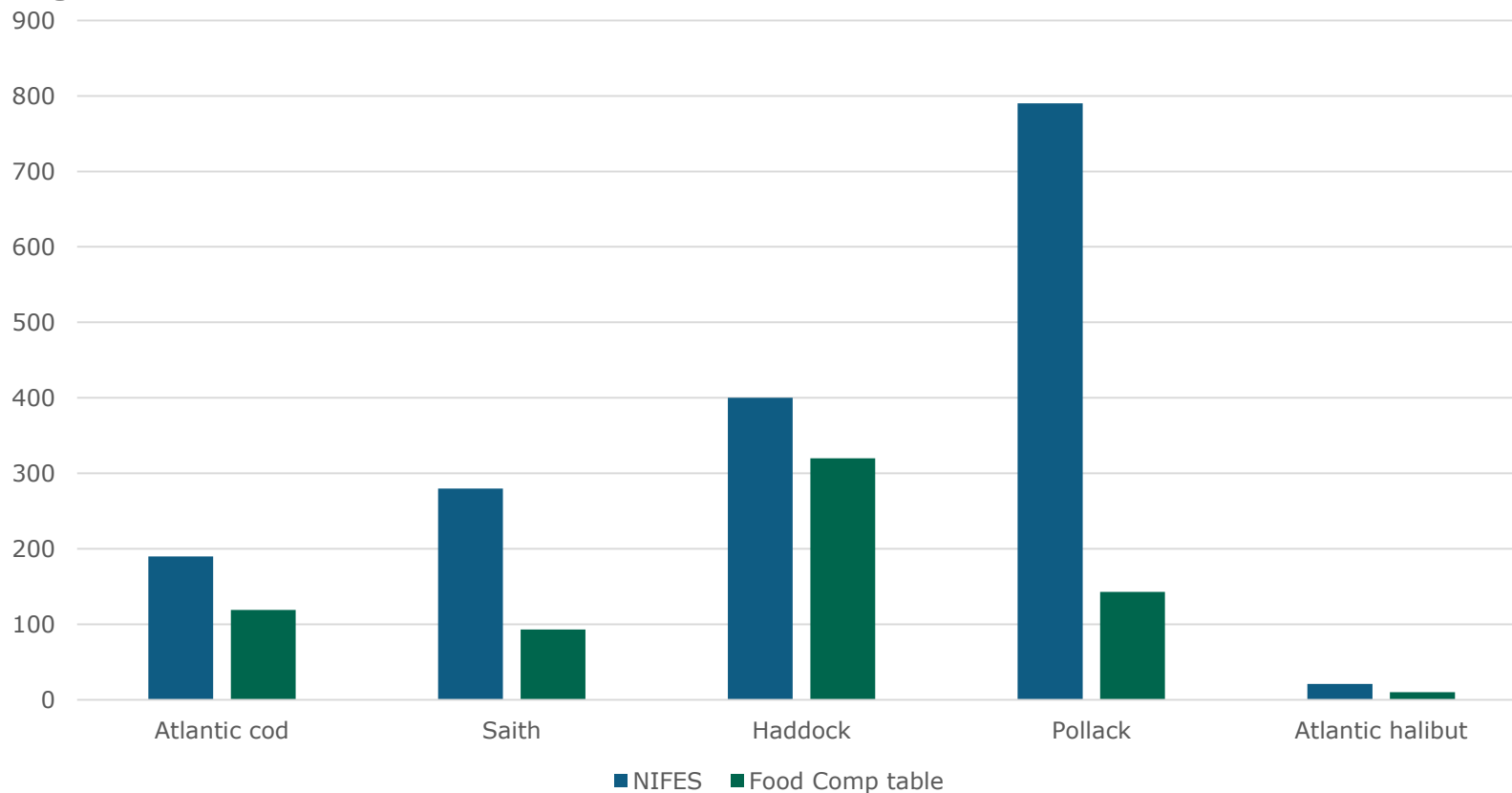
Year	Mean	Min	Max	Median	Analyses
2010	0.093	0.031	0.21	0.068	10
2007	0.100	0.026	0.28	0.092	10

Large intraspecies variation in iodine content

Fish species	Catch area	n	Mean \pm SD $\mu\text{g}/100\text{g}$	Min. – max. $\mu\text{g}/100\text{g}$
 Atlantic cod	All areas	121	190 \pm 160	22 - 720
	Barents Sea	55	250 \pm 140	47 - 720
	Norwegian Sea	11	400 \pm 190	100 - 700
	North Sea	55	96 \pm 100	22 - 680
 Saithe	All areas	61	280 \pm 190	35 - 820
	Barents Sea	20	410 \pm 200	92 - 820
	Norwegian Sea	20	210 \pm 150	35 - 620
	North Sea and Skagerrak	21	220 \pm 170	46 - 560

New data compared to Food Comp table

$\mu\text{g}/100\text{g}$



Conclusion

- Large intraspecies variation
- Large variation between species
- No clear association between iodine and station or size of fish
- Analytical uncertainties should be visualized in the food composition table
- Need more data (chemical analysis) on food composition