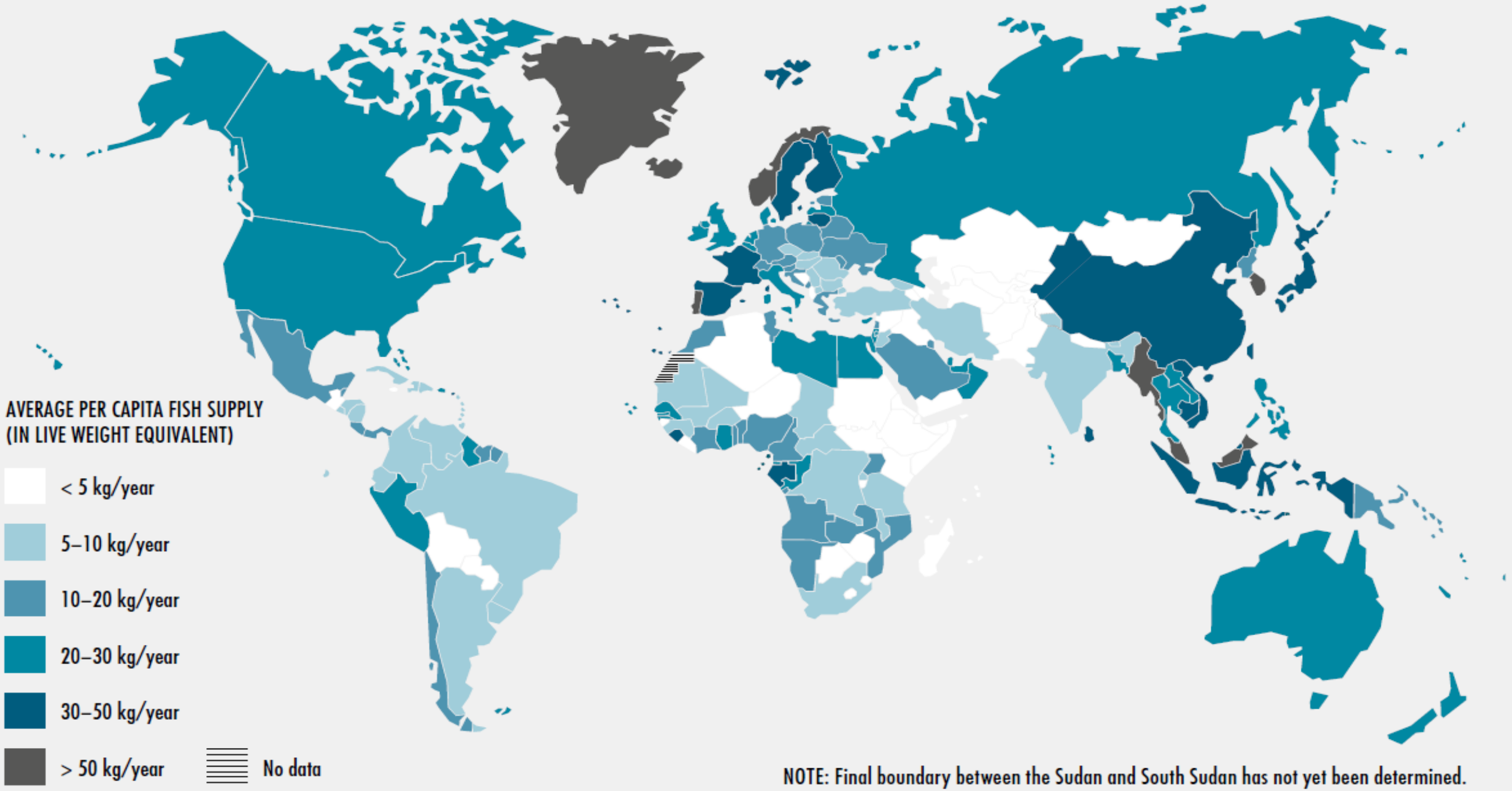
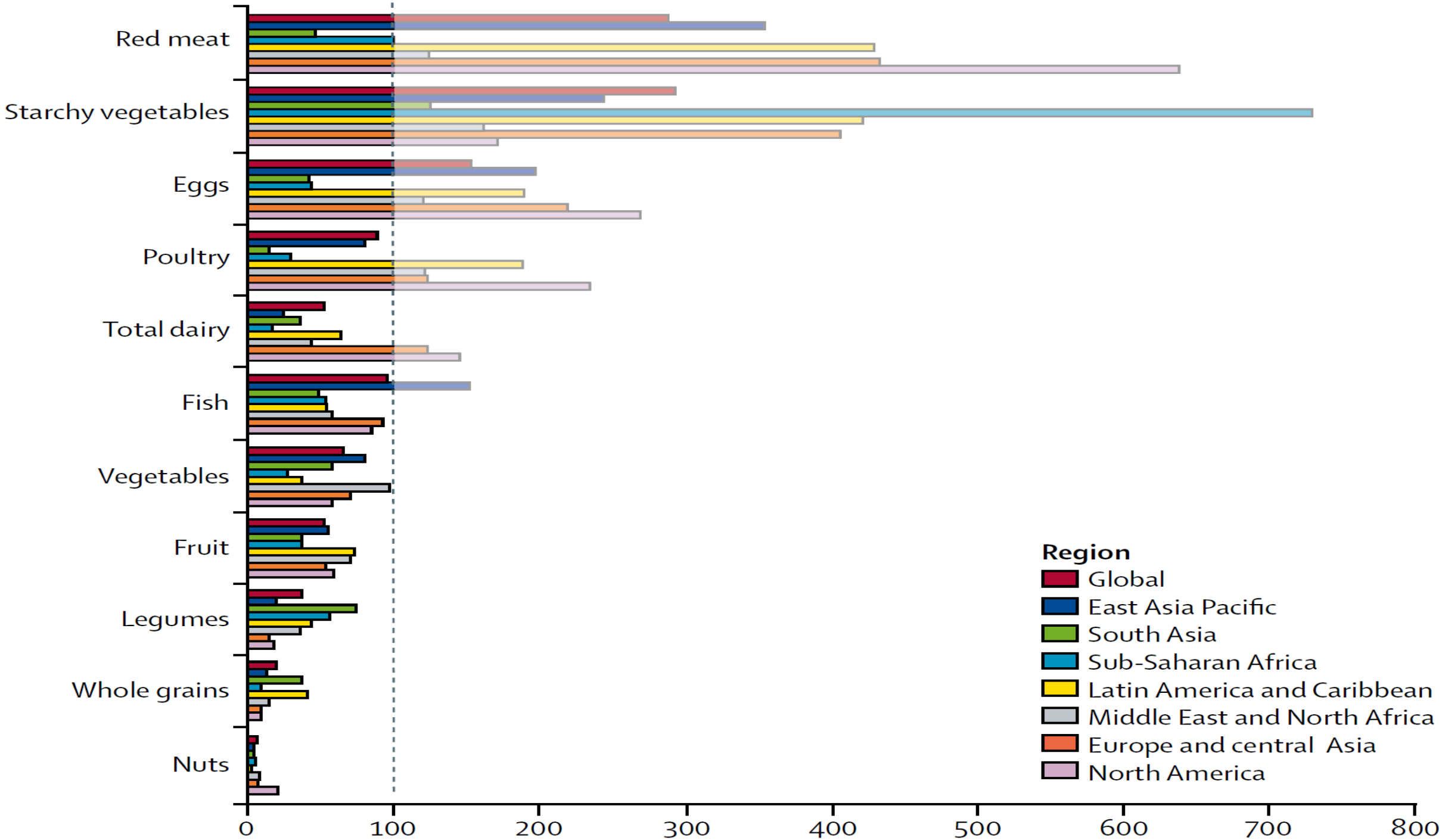
Potencial Nutricional del Atún

Jogeir Toppe (FAO), Manta, 20 junio 2019

Seguridad alimentaria para todos

“asegurar que las personas tengan acceso a alimentos de buena calidad que les permitan llevar una vida activa y saludable”


AVERAGE PER CAPITA FISH SUPPLY
(IN LIVE WEIGHT EQUIVALENT)
< 5 kg/year
5–10 kg/year
10–20 kg/year
20–30 kg/year
30–50 kg/year
> 50 kg/year
No data
NOTE: Final boundary between the Sudan and South Sudan has not yet been determined.


Red meat
Starchy vegetables
Eggs
Poultry
Total dairy
Fish
Vegetables
Fruit
Legumes
Whole grains
Nuts
0
100
200
300
400
500
600
700
800
Region
Global
East Asia Pacific
South Asia
Sub-Saharan Africa
Latin America and Caribbean
Middle East and North Africa
Europe and central Asia
North America

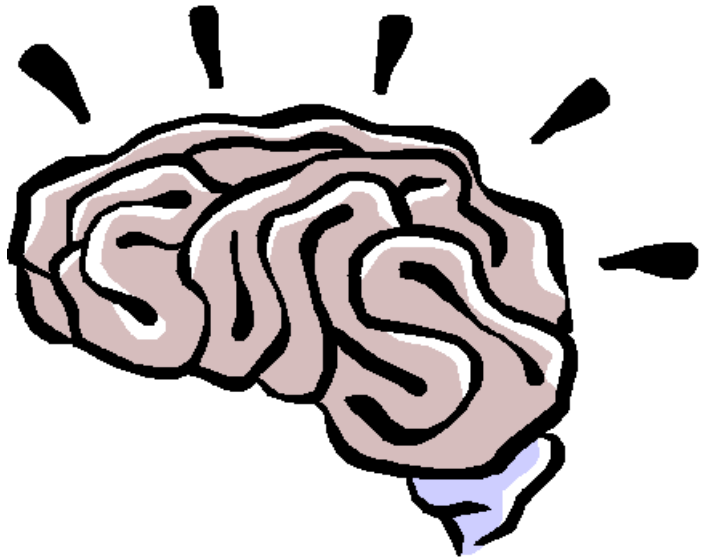
Proteínas

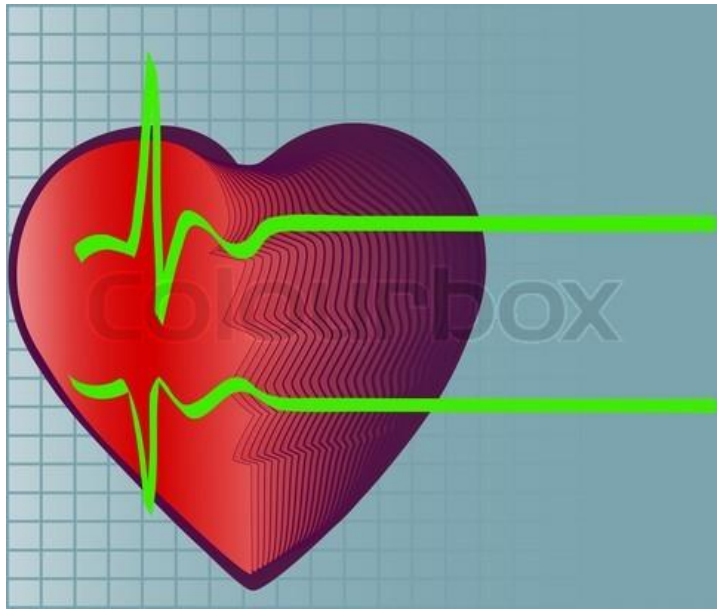
- Productos pesqueros contribuyen 17 % de las proteínas de origen animal
- >50 % en muchos países mas pobres
- El rol de proteínas / péptidos de pescado en prevenir enfermedades no transmisibles más y más reconocido

Consumo de Pescado / DHA+EPA

IQ +6

-36%



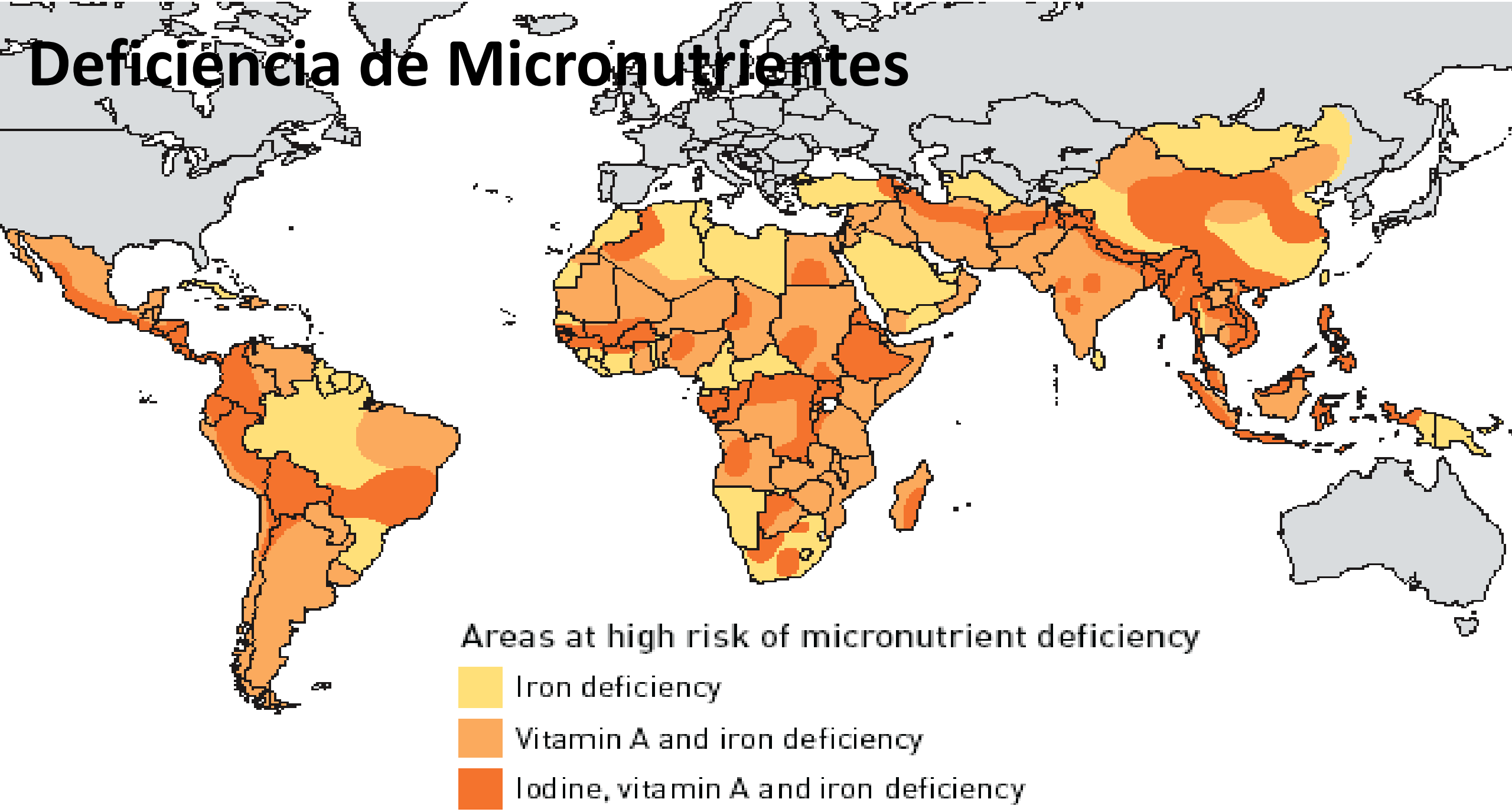


Niveles de Omega-3

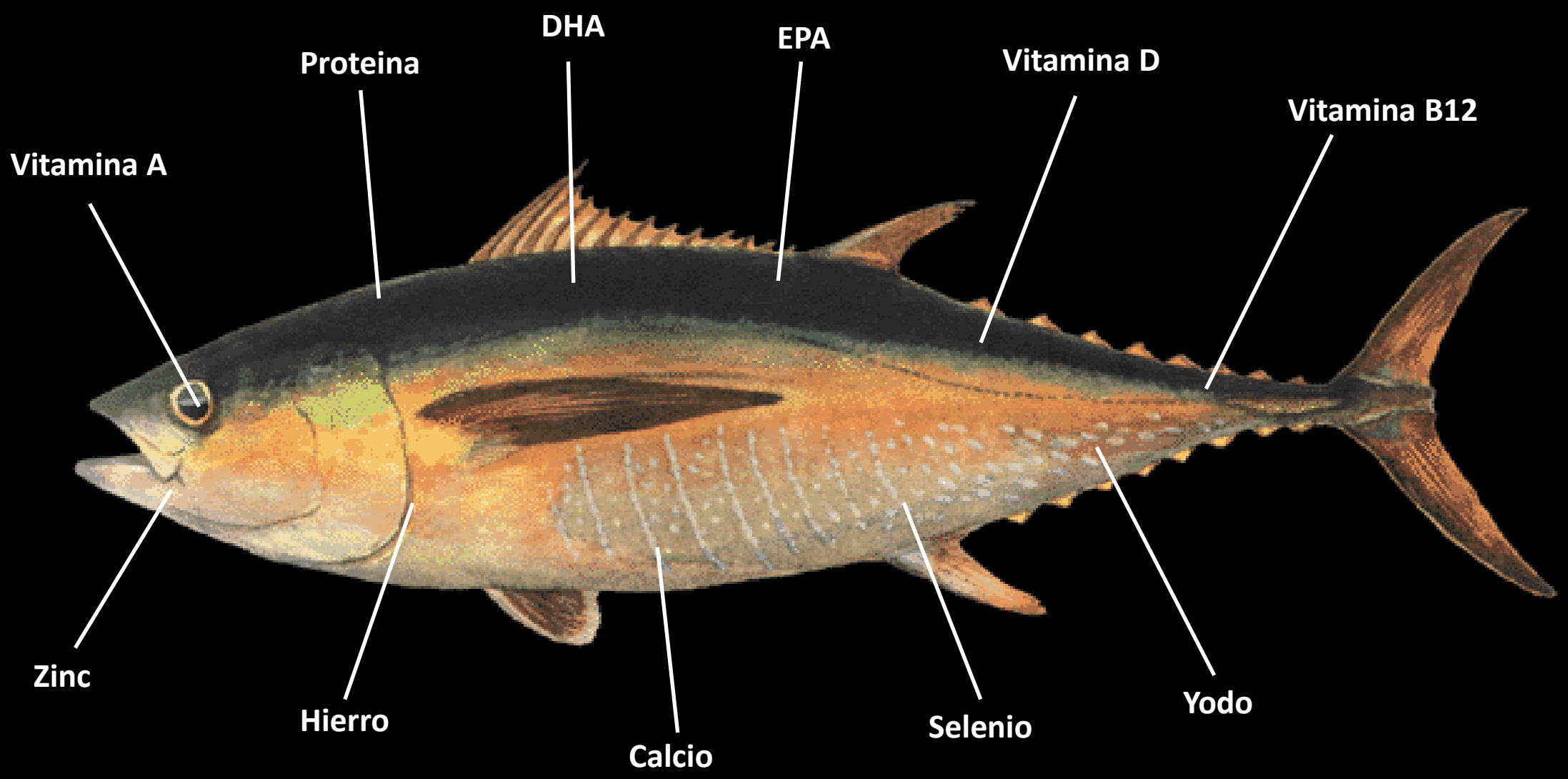
		Arenque	Atún, Bluefin	Atún, Barrilete	Pollo	Res
Proteinas	g/100g	18	23	22	19	19
Lipidos	g/100g	9.0	4.9	1.0	15	13
Humedad	g/100g	72	68	71	66	67
Ceniza	g/100g	1.5	1.2	1.3	0.8	1.7
Selenio	µg/100g	37-100			15.7	14.2
DHA + EPA (ω-3)	mg/100g	**1571**	**1173**	**256**	**40**	**0**

USDA National Nutrient Database (USDA, 2018)

Deficiência de Micronutrientes



Atún, no solo una fuente de proteína…



Bivalvos

Composición Nutricional Bivalvos

		Barrilete	Tilapia	Mejillon	Ostra	Escalope
DHA + EPA (omega 3)	mg/100g	260	91	441	688	103
Calcio	mg/100g	29	10	26	8	6
Hierro	mg/100g	1.25	0.56	3.95	5.11	0.38
Zinc	mg/100g	0.82	0.33	1.60	16.6	0.91
Selenio	µg/100g	36.5	41.8	44.8	77.0	12.8
Vitamina A	µg/100g	16	0	48	81	1
Vitamina B12	µg/100g	1.90	1.58	12.0	16.0	1.41

USDA National Nutrient Database (USDA, 2016)

Selected micronutrients per 100 grams edible portion of Mola (*Amblypharyngodon mola*)

		Tilapia	Barrilete	Mola	RDI*
Calcium, Ca	mg	10	29	800	1000
Iron, Fe	mg	0.56	1.25	5.7	8.9
Zinc, Zn	mg	0.33	0.82	3.2	5.6
Vitamin A	µg RAE	0	1.6	2680	500

*RDI para un niño, biodisponibilidad mediana

Roos et al., 2007

Espinas de pescado, rico en minerales

Mineral composition of fish bones given as g/kg or mg/kg lipid free dry matter

		Cod	Saithe1	Blue whiting	Salmon1	Trout	Herring1 (small)	Herring2 (large)	Mackerel	Horse mackerel
Calcium (Ca)	g/kg	190	199	170	135	147	161	197	143	233
Phosphorous (P)	g/kg	113	108	87	81	87	94	95	86	111
Magnesium (Mg)	g/kg	3.0	3.0	3.2	2.2	2.4	2.6	2.9	2.6	3.6
Iron (Fe)	mg/kg	49	44	135	32	32	61	72	73	56
Zinc (Zn)	mg/kg	98	70	72	233	126	191	124	125	70
Copper (Cu)	mg/kg	1.0	1.2	3.0	0.9	0.9	2.6	0.8	2.2	0.5
Chromium (Cr)	mg/kg	10.8	9.8	16.9	5.5	6.7	3.6	2.4	3.9	5.5
Sodium (Na)	g/kg	7.7	7.1	4.6	5.7	5.8	3.3	7.8	6.5	7.1
Potassium (K)	mg/kg	5.2	4.9	2.6	8.2	7.7	5.0	7.7	6.7	4.4
Selenium (Se)	mg/kg	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.3	n.d.	n.d.
Iodine (I)	mg/kg	3.7	2.6	1.4	2.7	2.5	1.2	3.6	2.2	2.1
Chlorine (Cl)	g/kg	4.8	4.1	1.9	4.4	4.2	1.4	4.5	4.1	4.0
Fluorine (F)	g/kg	0.19	0.17	0.07	0.10	0.09	0.03	n.d.	0.26	n.d.
Arsenic (As)	mg/kg	n.d.	0.3	0.6	1.0	1.2	1.0	3.8	2.4	2.7
Cadmium (Cd)	mg/kg	0.01	0.02	0.13	n.d.	0.02	0.03	0.06	0.06	0.03
Mercury (Hg)	mg/kg	0.01	0.01	0.04	0.02	0.01	0.03	0.02	0.03	0.02
Lead (Pb)	mg/kg	n.d.	0.07	0.12	n.d.	n.d.	0.26	0.09	0.24	0.11

Toppe et al. 2006

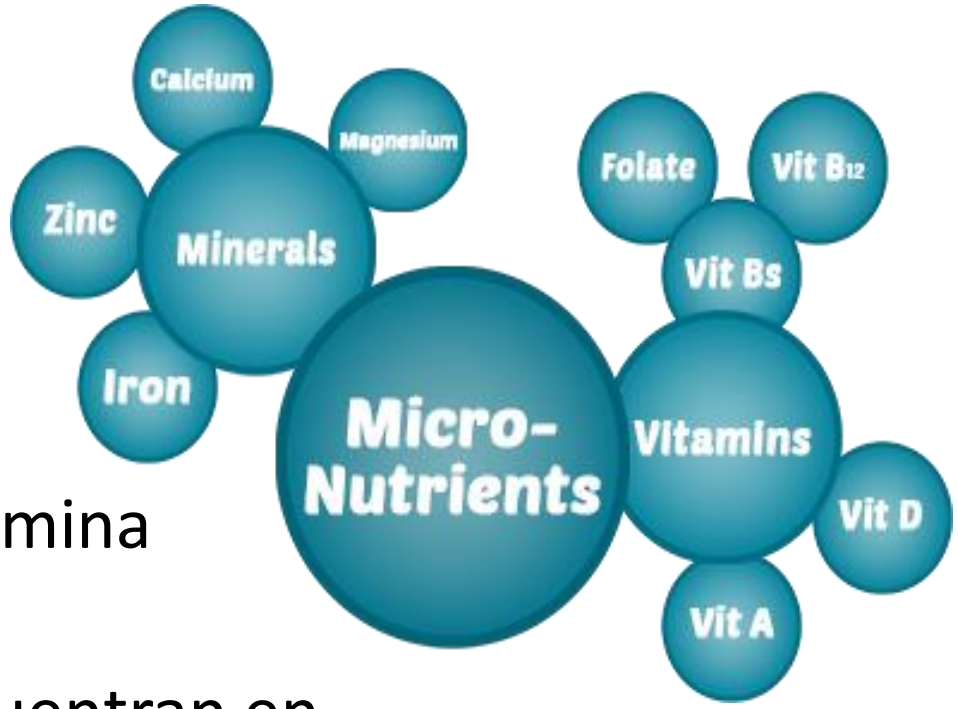
Pescado y micronutrientes

30% de la población mundial deficiente en micronutrientes

30-70% de pescado se elimina durante el procesamiento (sub-producto)

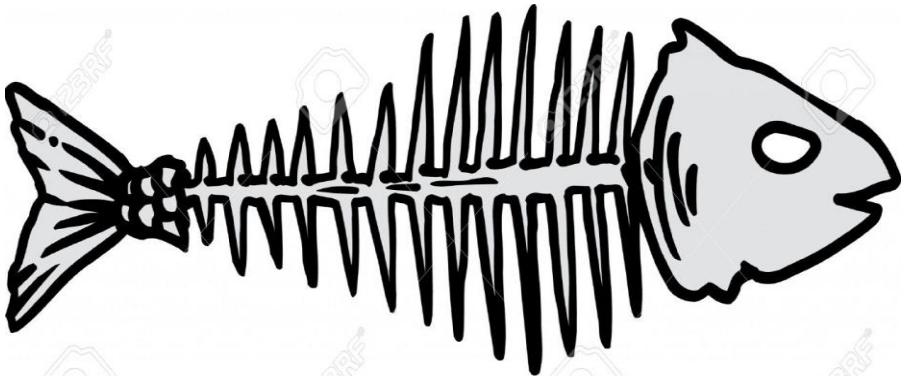
→Procesando atún mas o menos 50% se elimina

→La mayoría de los micronutrientes se encuentran en los sub-productos



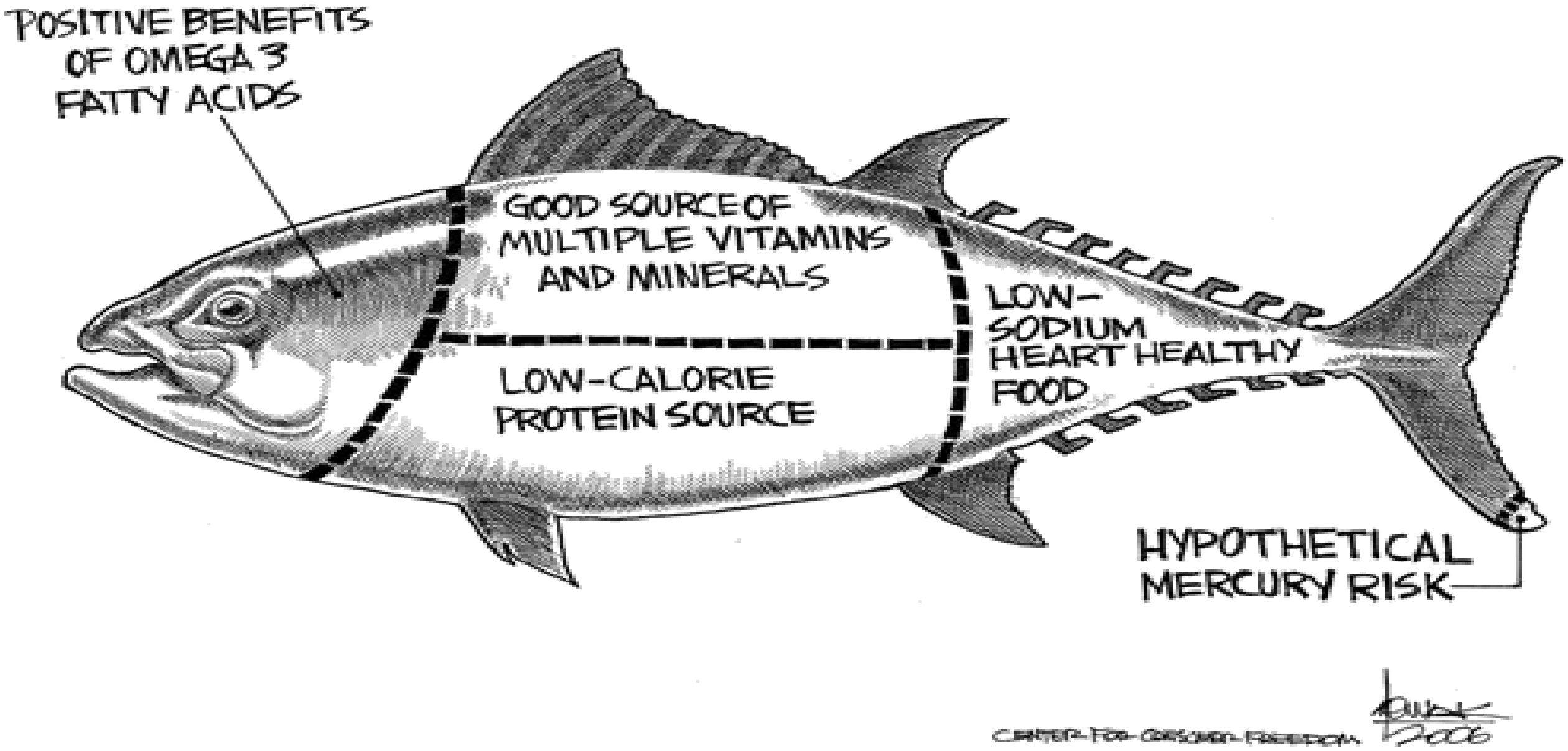
Columnas de Atún

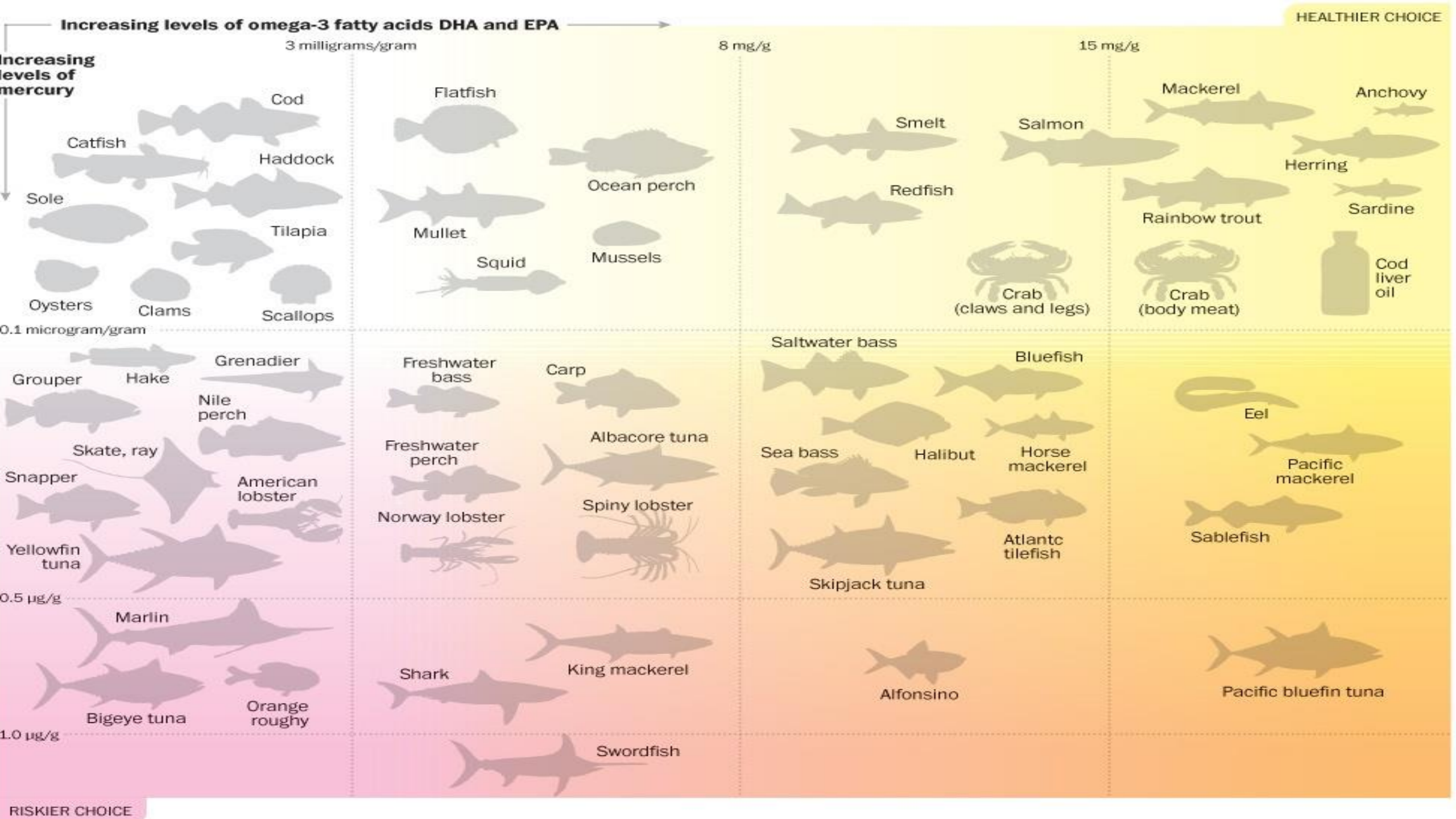
	mg/100g	RDI para niños (mg/día)
Calcio	10,200	700
Zinc	8.6	5.6
Hierro	36	8.9
Selenio	0.03	0.02
EPA + DHA	3,000	150



		Atún	Columnas de atún	Mola	RDI*
Calcio	mg/100g	29	10,000	800	1000
Hierro	mg/100g	1.3	36	5.7	8.9
Zinc	mg/100g	0.8	8.6	3.2	5.6
Vitamina A	µg/100g	16	-	2,700	500
EPA+DHA	mg/100g	260	3,000	300	150

*RDI for a child, moderate bioavailability


POSITIVE BENEFITS OF OMEGA 3 FATTY ACIDS
GOOD SOURCE OF MULTIPLE VITAMINS AND MINERALS
LOW-CALORIE PROTEIN SOURCE
LOW-SODIUM HEART HEALTHY FOOD
HYPOTHETICAL MERCURY RISK
CENTER FOR CONSUMER FREEDOM


Increasing levels of omega-3 fatty acids DHA and EPA
HEALTHIER CHOICE
3 milligrams/gram
8 mg/g
15 mg/g
Increasing levels of mercury
Cod
Catfish
Haddock
Sole
Tilapia
Oysters
Clams
Scallops
Flatfish
Ocean perch
Mullet
Squid
Mussels
Smelt
Salmon
Redfish
Crab (claws and legs)
Mackerel
Anchovy
Herring
Rainbow trout
Sardine
Crab (body meat)
Cod liver oil
0.1 microgram/gram
Grouper
Hake
Grenadier
Nile perch
Skate, ray
Snapper
American lobster
Yellowfin tuna
Freshwater bass
Carp
Freshwater perch
Albacore tuna
Norway lobster
Spiny lobster
Saltwater bass
Bluefish
Sea bass
Halibut
Horse mackerel
Atlantc tilefish
Skipjack tuna
Eel
Pacific mackerel
Sablefish
0.5 µg/g
Marlin
Bigeye tuna
Orange roughy
Shark
King mackerel
Alfonsino
Pacific bluefin tuna
1.0 µg/g
Swordfish
RISKIER CHOICE

GRACIAS

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