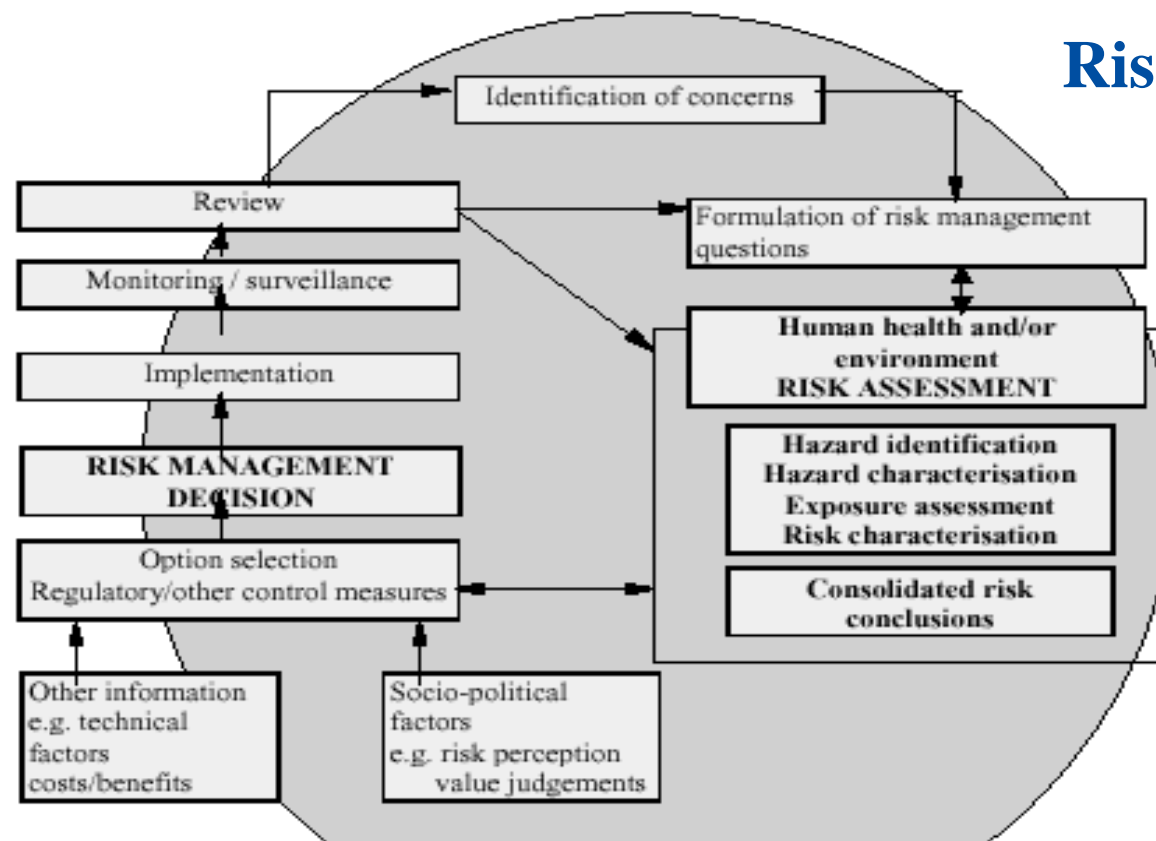


Zur Praxis der Risikobewertung: Fallbeispiel

Burckhard Viell



Quecksilber und Fisch - Chronologie der Risikobewertung

1972	JECFA	PTWI	5,0 µg/kg KG/Woche (total Hg)
		PTWI	3,3 µg/kg KG/Woche
1997	EPA	RfD	0,7 µg/kg KG/Woche
1997	<i>Grandjean</i>		<i>Entwicklungsstörungen (Faroer Inseln)</i>
1998	<i>Davidson</i>		<i>keine nachteiligen Effekte (Seychellen)</i>
1999	BgVV		Stellungnahme und Pressedienst
2000	NRC	RfD	0,7 µg/kg KG/Woche
2000	JECFA	PTWI	3,3 µg/kg KG/Woche
2003	JECFA revid.	PTWI	1,6 µg/kg KG/Woche
2003	EU COM		Anfrage an EFSA
2004	EFSA		CONTAM Panel (24.02.04) Stellungnahme
2004	EFSA		Erläuterung (18.03.2004) der Stellungnahme
2004	BgVV		Stellungnahme im Internet (29.03.2004)

PTWI = provisional tolerable weekly intake / RfD = Reference dose (intake limit per week)/ NRC = reviewed the EPA-RfD (1997)

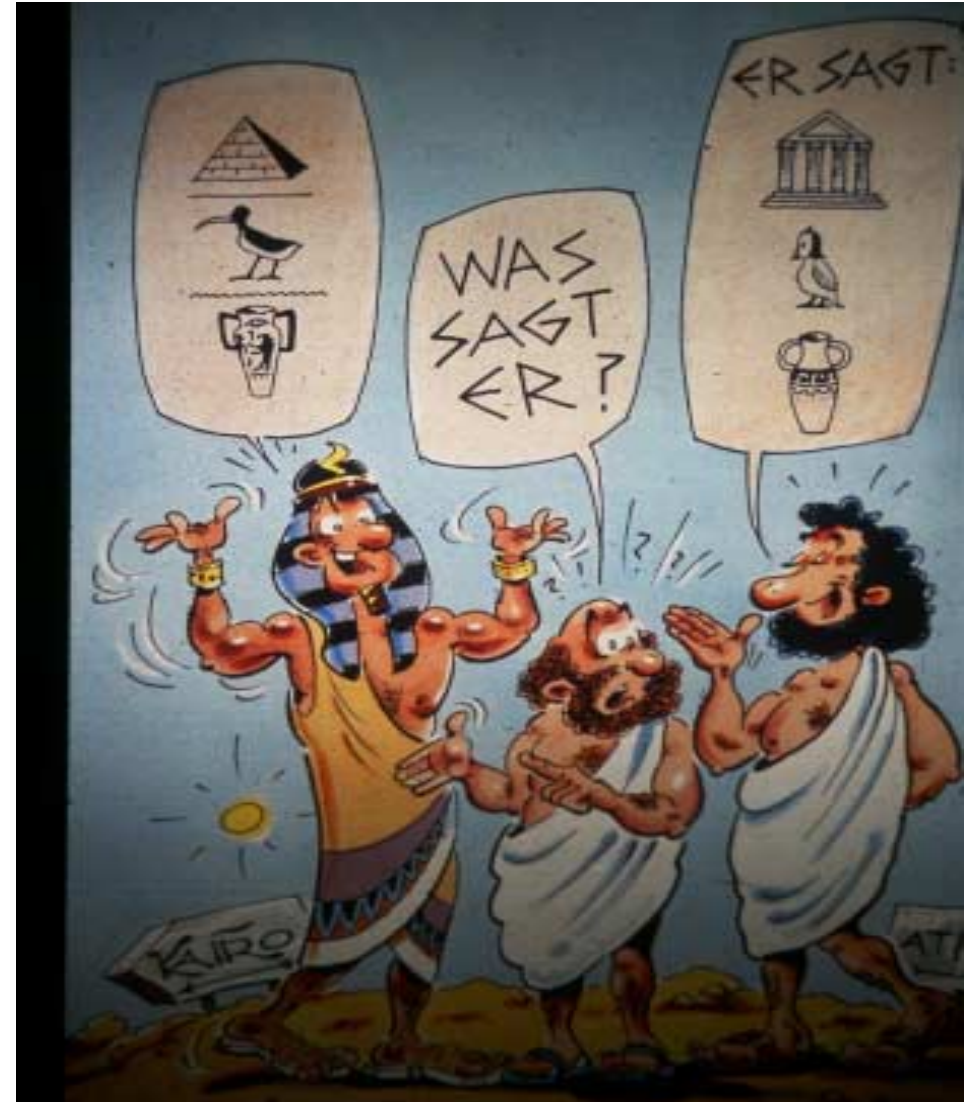
Fish Consumption: Recommendations Versus Advisories, Can They Be Reconciled ?

Kimberly M. Smith and
Nadine R.Sahyoun, PhD, RD *)

... These mixed messages may be a source of confusion to the consumer and to the health professional.

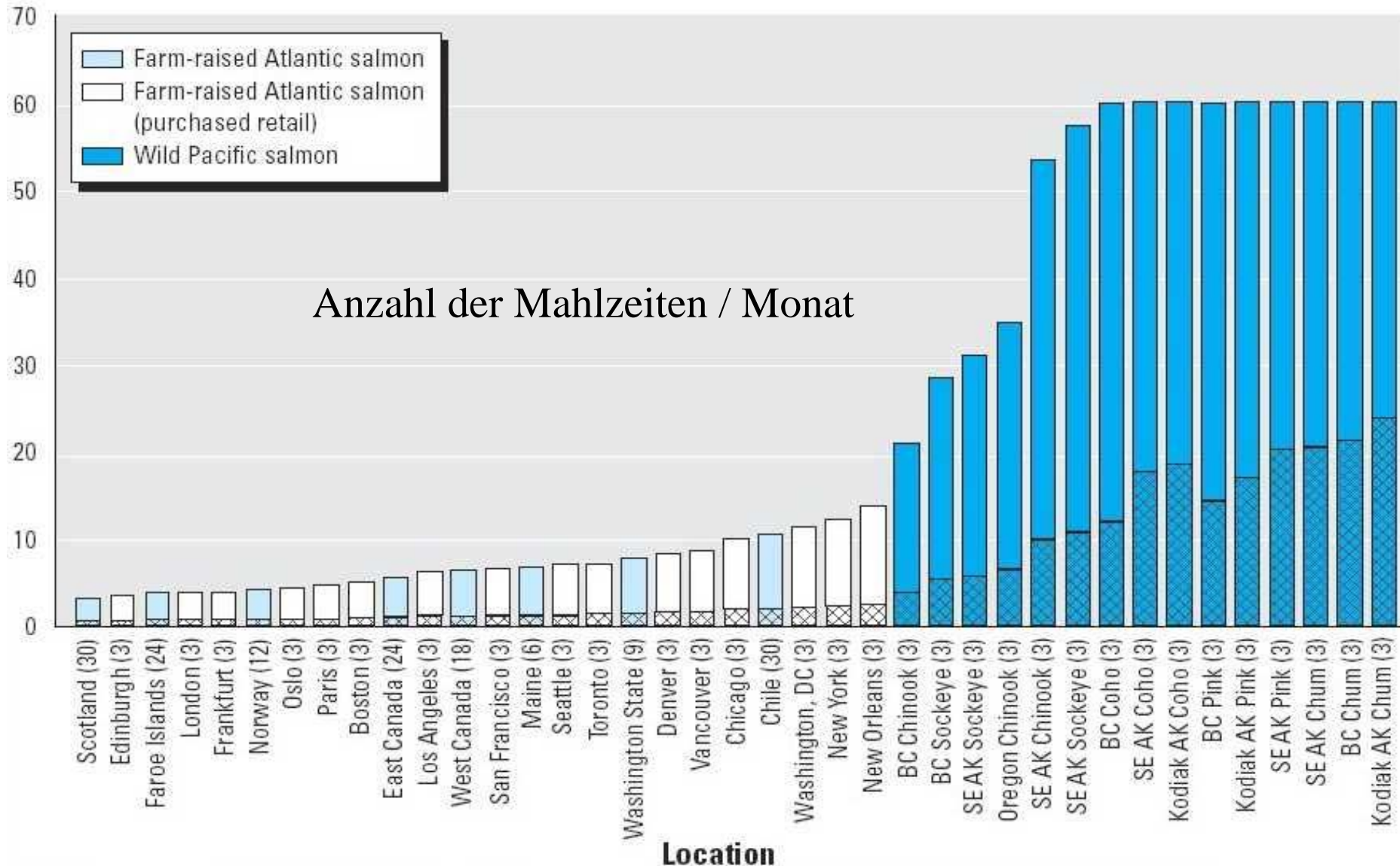
....

*) Nutrition Reviews 63, 39-46 (2005)



Risk-Based Consumption Advice for Farmed Atlantic and Wild Pacific Salmon Contaminated with Dioxins and Dioxin-like Compounds

Jeffery A. Foran,¹ David O. Carpenter,² M. Coreen Hamilton,³ Barbara A. Knuth,⁴ and Steven-J. Schwager⁵



[Press Releases](#) -- View current and archived press releases from the Office of Communications.

Recent releases:

[Study Finds Government Advisories on Fish Consumption and Mercury May Do More Harm Than Good](#)-- press release of Wednesday, October 19, 2005

[Activist Erin Brockovich and Former Institute Director Kenneth Olden Receive Richmond Awards for Their Promotion of Environmental Health](#)--

PRESS RELEASE

Study Finds Government Advisories on Fish Consumption and Mercury May Do More Harm Than Good

Eating one fish meal per week gives significant nutritional benefit

For immediate release: Wednesday, October 19, 2005

Boston, MA – A comparison of the risks and benefits of fish consumption suggests that government advisories warning women of childbearing age about mercury exposure should be issued with caution. The study warns that if

people may inappropriately curtail fish consumption and increase their risk for adverse health outcomes.”

research associate at the Harvard Center for Risk Analysis at HSPH. “If that information gets lost in how the public perceives this issue, then people may inappropriately curtail fish consumption and increase their risk for adverse health

„*Decision-Making*“ bei der Risikobewältigung - verschiedene Verfahren

Risiko-Analyse **Risk assessment**

Comparative risk analysis

Cost effective analysis

Risk Benefit Analysis

Cost benefit analysis

Risk-Benefit in der Kommunikation

EU ML Warnungen zu Fisch *)

	A	P	N	"Children"
LU	all			
AT	1	y		
LV	1	Y		
BE	2	Y		Young people (in growth)
FR	2	Y		Young kids
HU	2	Y	Y	
NL	2	Y	Y	
PT	2	Y		
CZ	4	Y	Y	Children < age of 3
DE	4	Y	Y	Young children
DK	4	Y	Y	Children < age of 14
FI	5	Y	Y	Children
IE	5	Y	Y	Young children
NO	5	Y	Y	Children
SE	5	Y	Y	Girls
UK	10	y	y	- children < 16 years - boys

A = Anzahl der mit Warnungen angesprochenen Bevölkerungsgruppen

P = pregnant women

N = nursing/breastfeeding

*) B. Viell und A. Hembeck
BfR Umfrage 2005
bei den ML der AFRCWG

EU-ML Empfehlungen, bestimmte Fischarten zu meiden

MS	Note	Wild / Big / large/ old predatory fish	Fish from special regions	Shellfish	Fish liver	Raw / uncooked
Examples		tuna, shark, marlin, swordfish, pike, pikeperch etc.	Baltic sea, special rivers and lakes, inland water, fjords and harbour areas			fish / shellfish
AT				+		+
BE	n.a.					
CZ		+				
DE		+				
DK		+				
FI		+	+			
FR		+				
HU		+	+	+		
IE		+		+		+
LV			+		+	
NL		+	+			
NO		+	+	+	+	
PL	n.e.					
PT		+			+	
SE		+	+		+	+
SK	?					
UK		+				

EU ML Besondere, mit Warnungen angesprochene Fischarten

black scabbardfish (sabre noir (fr))	FR, PT
burbots	FI, SE
eel	SE
Halibut (flétan (fr))	DE, FR
halibut, large	SE
herring, large (> 17 cm in length)	FI
Jackfish (brochet (fr))	CZ, FR
Marlin (marlin (fr))	FR, IE, UK
Oilfish (oliefisk (dk), escolier noir (fr))	DK, FR
pike	FI, SE
Pike perches	CZ, FI
perch	SE
Perches, large	FI
salmon, wild-caught	FI
Shark (requins (fr))	CZ, DE; FR, HU, IE, UK ,SE
Silver salmon	CZ
Smooth hound	PT
Swordfish (swaerdfisk (dk), espadon (fr))	CZ, DK, FR, HU, IE, UK, SE
Tuna (tun (dk)), thon (fr))	DE, DK, FR, HU, IE, NL, UK
tuna freh, frozen	SE
zander	SE

EU ML Speziell zum Verzehr empfohlene Fischarten (Auszug)

NO	You can safely eat farmed fish
PL	
PT	Fish with lower levels of mercury (blackbelly rosefish, swordfish, silver scabbardfish and european conger)
SE	<p>As often as you like:</p> <ul style="list-style-type: none"> - Fish from the open sea, e.g. haddock, hake, mackerel, coalfish, cod, whiting - Fish-balls, fish-fingers, pickled herring - Caviar - Salmon³, West Coast, Pacific - Whitefish roe, pre-packed - Farmed fish, e.g. rainbow trout - Char³ - Smoked fish (freshly-smoked)³ - Whitefish - Herring³, West Coast - Shellfish, boiled, e.g. crab, crayfish, lobster, prawns - Plaice - Trout³ <p>³Unless the fish comes from waters named in")</p>
SK	
UK	Up to 2 - 4 portions oily fish/week: Oily fish include salmon, trout, mackerel, sardines, pilchards, herring, kipper, eel and whitebaitThe advice on farmed salmon is the same. (FSA news 2004)

MS	Fish specified	Frequency per week	Amount	Additional advice
AT	"fish"	One to two times		no
BE	[fish] meal	two		yes
CZ	"fish"	twice	total of 340 g	yes
DE	„seafish“ /	One to two times	portions à 150 g	yes
DK	"fish"		200-300 g	yes
FI	[fish] meal	at least twice		yes
FR	"fish"	at least two times		no
HU	[fish] portion	at least once	1 portion = 150 g	yes
IE	[fish] portions	one to two		yes
LV	"fish"	Two times		no
NL	"fish"	One or two times		no
NO	"fish"	Twice		yes
PT	"fish"	Up to four times		yes
SE	"fish"	often, preferably three times		no
SK	„fresh fish“	one or two times		yes
UK	[fish] portions	at least two	1 portion = 140 g	yes

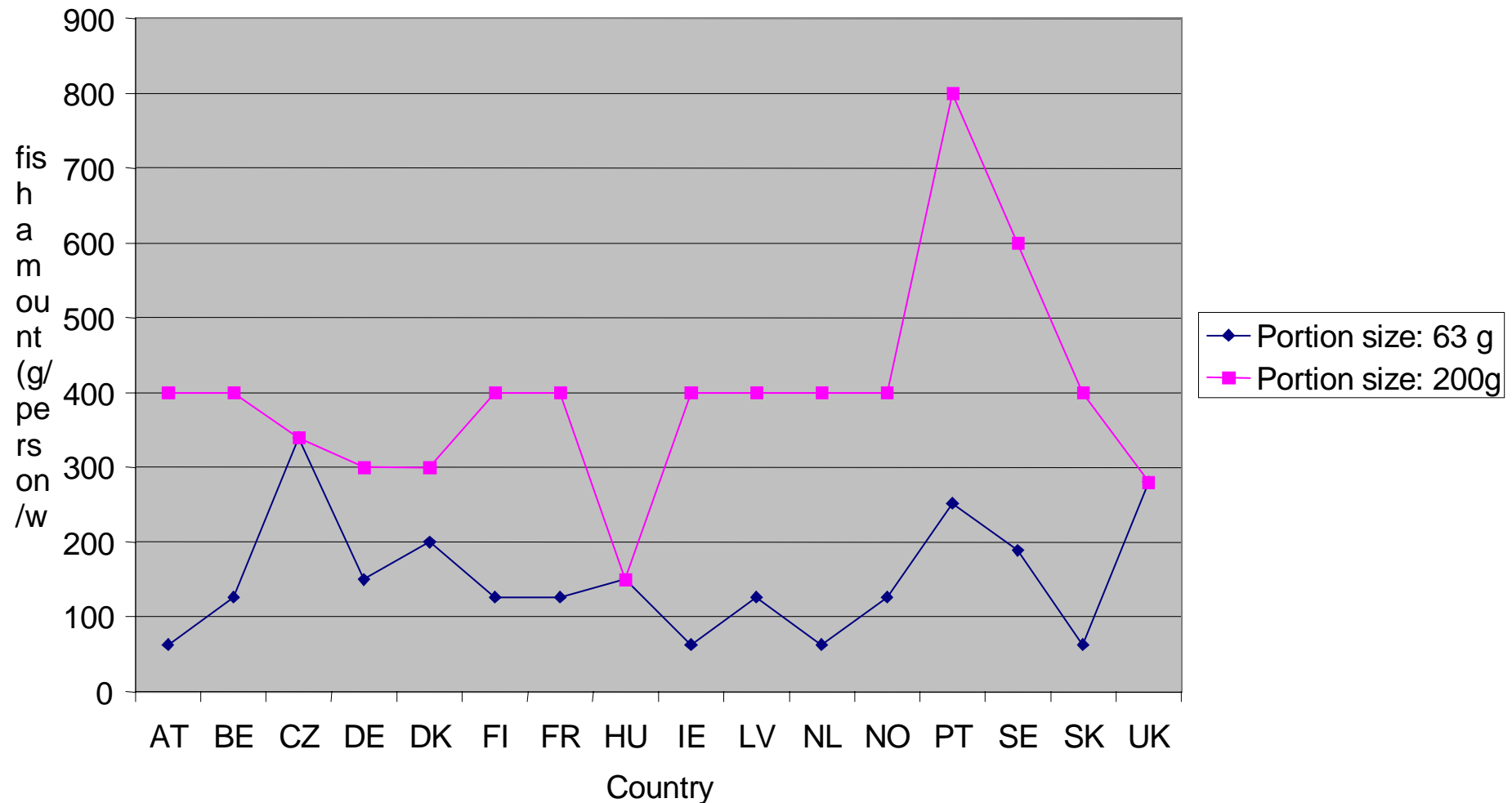
Portionsgrößen für „*Fisch*“

**mögliche quantitative
Bedeutung
in DE**

62,5 bis 200 g

EU ML Menge der empfohlenen Fischzufuhr je nach Bedeutung einer Portionsgröße

Fish recommendations and portion sizes



Risk Benefit beim Fisch - formal

nach Rembold 2004

Benefit Bei 49 KHK Pat mit 21g O-3 FS (1190 g Lachs) / Mon über 3,5 Jahre läßt sich 1 Todesfall vermeiden

Risiko 1190 g Lachs /Mon führt (bei 100 000) zu 22 zusätzlichen Krebsfällen

nach Tuomisto 2004

Risiko Der derzeitige Verzehr (kontaminierten) Lachses führt zu 210 (110 – 340) Krebsfällen pro Jahr (EU, 387 Mill Einwohner)
Reduktion dieses Lachsverzehrs auf 1 Mahlzeit (227g) pro Monat) würde 40 to 110 Krebsfälle vermeiden

Benefit Durch Reduktion des Lachsverzehrs würde der bislang erzielte Gesundheits-Effekt (Absenkung d Todesfälle durch Krebs und Kardiovaskuläre Ursachen) um 5200 (34 to 19,000) Fälle geringer.

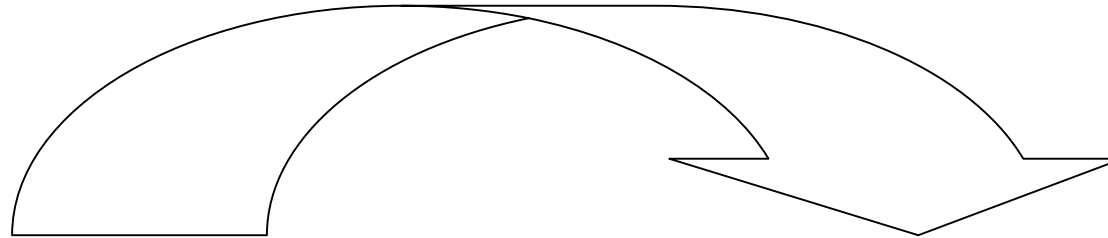
Risk-Benefit Analysis

Richard Wilson
and
Edmund A. C. Crouch



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Risiko Management



Wissenschaftliche Risiko-Bewertung

Wissenschaftliche Nutzen-Bewertung
Nährstoffe (Dosis-Wirkungs-Beziehung)
LM mit unterschiedlichen Stoffen

Rechtliche Faktoren
Technologische Faktoren
Ökonomische Faktoren
Wirtschaftliche Faktoren
Gesellschaftliche Werte
Politische Faktoren

