

Science, Policy and Consumers - Understanding Infant Feeding Communication Practices

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The Power of Programming 2016
Developmental Origins of Adiposity and Long-term Health
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Policy diversity

Appraising risks and benefits

Table 2 Overview of breastfeeding practices in the WHO European Region* (data from 1998 to 2013)

	Breastfeeding within 1 h after birth (%)	EBF under 4 months (0–3.9 months; %)	EBF under 6 months (0–5.9 months; %)	EBF at 6 months (%)	Continued breastfeeding at 1 year (%)	Year of data collection
Albania	42.9	50.2	38.6	–	60.6	2008–2009
Armenia	35.7	47.9	35.0	–	44.2	2010
Austria	78.1	33.0	32.6	10.0	16.0	2006
Azerbaijan	31.9	16.0	11.8	–	26.4	2006
Belarus	53.0	–	19.0	–	27.9	2012
Belgium	–	–	–	11.8	–	2012
Bosnia and Herzegovina	42.3	23.6	18.5	–	12.4	2006/2011–2012
Bulgaria	4.6	5.7	2.0	–	–	2010
Croatia	–	–	52.4	–	–	2011
Cyprus	–	–	–	12.4	–	2004
Czech Republic	–	–	–	17.8	–	2011
Denmark	–	–	–	17.2	–	2012
Finland	–	–	–	1.0	–	2011
Georgia	66.3	–	54.8	–	36.5	2009
Germany	–	–	22.4	–	–	2003–2006
Greece	–	–	–	0.7	6.4	2009
Hungary	–	–	–	43.9	–	2007
Iceland	–	–	–	13.0	16.0	2011
Ireland	33.5	–	–	–	–	2008
Israel	–	–	–	11.2	11.8	1998–1999
Italy	–	–	–	5.0	12.0	1999
Kazakhstan	67.8	–	31.8	–	50.8	2010–2011
Kyrgyzstan	83.8	66.2	56.1	–	68.3	2012
Latvia	–	–	–	16.4	22.4	2011
Luxembourg	66.5	–	–	6.0	11.8	2008
Malta	–	–	–	35.9	–	2004–2005
Montenegro	25.2	25.8	19.3	–	24.6	2005
Netherlands	–	–	–	18.0	–	2010
Norway	–	–	–	7.0	–	2003
Poland	–	–	3.7	–	40.0	2013
Portugal	–	54.7	–	34.0	–	2003
Republic of Moldova	61.0	–	36.0	–	48.0	2012
Romania	12.0	–	15.8	–	–	2004
Serbia	7.6	23.4	13.7	–	18.4	2005–2006/2010
Slovakia	–	–	–	49.3	–	2010
Spain	–	–	–	28.5	–	2011–2012
Sweden	–	–	–	14.0	–	2011
Switzerland	–	–	14.0	–	–	2003
Tajikistan	49.6	42.1	34.3	–	1.3	2012
The former Yugoslav Republic of Macedonia	21.0	–	23.0	–	33.8	2011
Turkey	39.0	–	41.6	–	66.7	2008
Turkmenistan	–	15.0	11.0	–	72.0	2009
Ukraine	65.7	–	19.7	–	37.9	2012
UK	–	–	–	1.0	–	2010
Uzbekistan	67.1	36.9	26.4	–	78.3	2006

EBF, exclusive breastfeeding; –, no data.

*No data for Andorra, Estonia, France, Lithuania, Monaco, Russian Federation, San Marino and Slovenia.

Table 4 Overview of existing breastfeeding or IYCF policies and BFH in WHO European Member States (data from 1999 to 2012)

Country (year of data collection)	Policies		BFH*		
	National breastfeeding, IYCF or nutrition policy† (yes/no)	National breastfeeding or IYCF committee‡ (yes/no)	Total hospitals with maternity units (n)	Ever designated (n)	%
Albania (2003)	Yes	N/D	N/D	N/D	
Armenia (1999)	Yes	N/D	N/D	N/D	
Austria (2012§)	Yes	Yes	79	17	21.5
Belgium (2012§)	Yes	Yes	107	22	20.6
Bosnia and Herzegovina (2002)	Yes	N/D	N/D	N/D	
Bulgaria (2004)	Yes	Yes	N/D	5	N/D
Croatia (2012§)	Yes	Yes	32	21	65.6
Czech Republic (2007)	No	N/D	105	58	55.2
Denmark (2012§)	N/D	Yes	24	12	50.0
Estonia (2004)	Yes	No	17	1	5.8
Finland (2012§)	Yes	Yes	31	5	16.1
France (2012§)	No	No	533	17	3.2
Germany (2012§)	Yes	Yes	925	70	7.6
Greece (2007)	Yes	N/D	34	0	
Hungary (2004)	No	Yes	100	9	9.0
Iceland (2007)	No	N/D	15	0	
Ireland (2012§)	No	No	20	9	45.0
Italy (2012§)	Yes	Yes	560	24	4.3
Kazakhstan (2010)	Yes	N/D	N/D	N/D	
Latvia (2007)	Yes	N/D	30	14	46.7
Lithuania (2012§)	Yes	Yes	35	8	22.9
Luxembourg (2012§)	Yes	Yes	4	3	75.0
Malta (2012§)	No	No	4	0	
Netherlands (2010)	N/D	No	92	63	68.5
Norway (2012§)	Yes	Yes	47	43	91.5
Poland (2012§)	N/D	N/D	450	89	19.8
Portugal (2007)	No	N/D	60	1	1.7
Romania (2007)	Yes	N/D	204	30	14.7
Russian Federation (2012§)	Yes	Yes	3000	287	9.6
Slovakia (2004)	Yes	N/D	72	21	29.2
Slovenia (2012§)	Yes	Yes	14	13	92.9
Spain (2012§)	No	No	298	17	5.7
Sweden (2012§)	No	Yes	52	33	63.5
Switzerland (2012§)	No	No	300	75	25.0
Turkey (2004)	Yes	N/D	N/D	N/D	
Ukraine (2012§)	Yes	Yes	667	396	59.4
UK (2012§)	No	No	459	N/D	

IYCF, infant and young child feeding; BFH, baby-friendly hospital; N/D, no data.

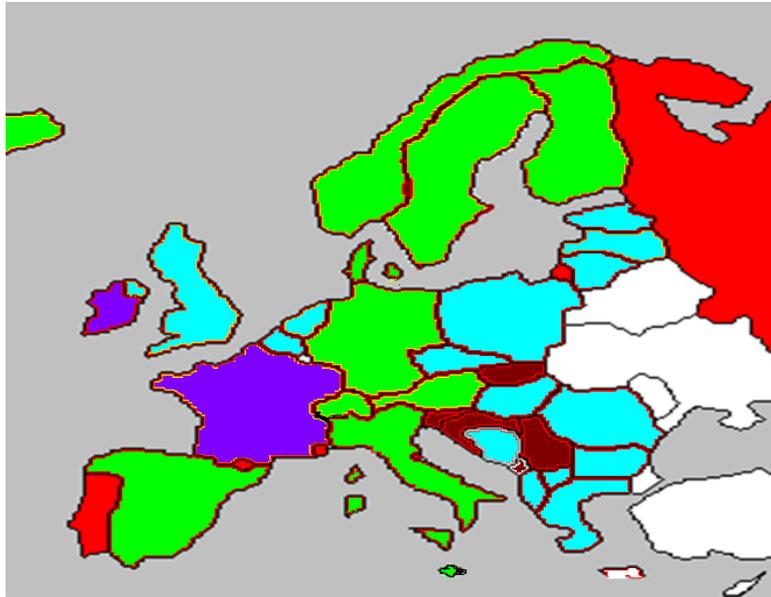
*No data from Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Cyprus, Georgia, Israel, Kazakhstan, Kyrgyzstan, Monaco, Montenegro, Republic of Moldova, San Marino, Serbia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, UK and Uzbekistan.

†No data from Andorra, Azerbaijan, Belarus, Cyprus, Georgia, Israel, Kyrgyzstan, Monaco, Montenegro, Netherlands, Poland, Republic of Moldova, San Marino, Serbia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkmenistan and Uzbekistan.

‡No data from Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Cyprus, Georgia, Greece, Iceland, Israel, Kazakhstan, Kyrgyzstan, Monaco, Montenegro, Poland, Republic of Moldova, Romania, San Marino, Serbia, Slovakia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan and Uzbekistan.

§The year 2012 refers to year of publication. The year of data collection was not available for these countries.

Differing statutory and legal roles across Europe



- Nutrient recommendations typically developed by *Scientific Advisory Bodies*
- Groups through which expert advice enters the political process and can be established institutions, short term commissions, ad hoc and standing committees and informal network of experts
- “Boundary organisation” that feeds technical recommendations into policy development process
- Crucial in the development of public health nutrition policy
- WHO (2008): link between the existence of *Scientific Advisory Bodies* for nutrition and nutrition policy implementation

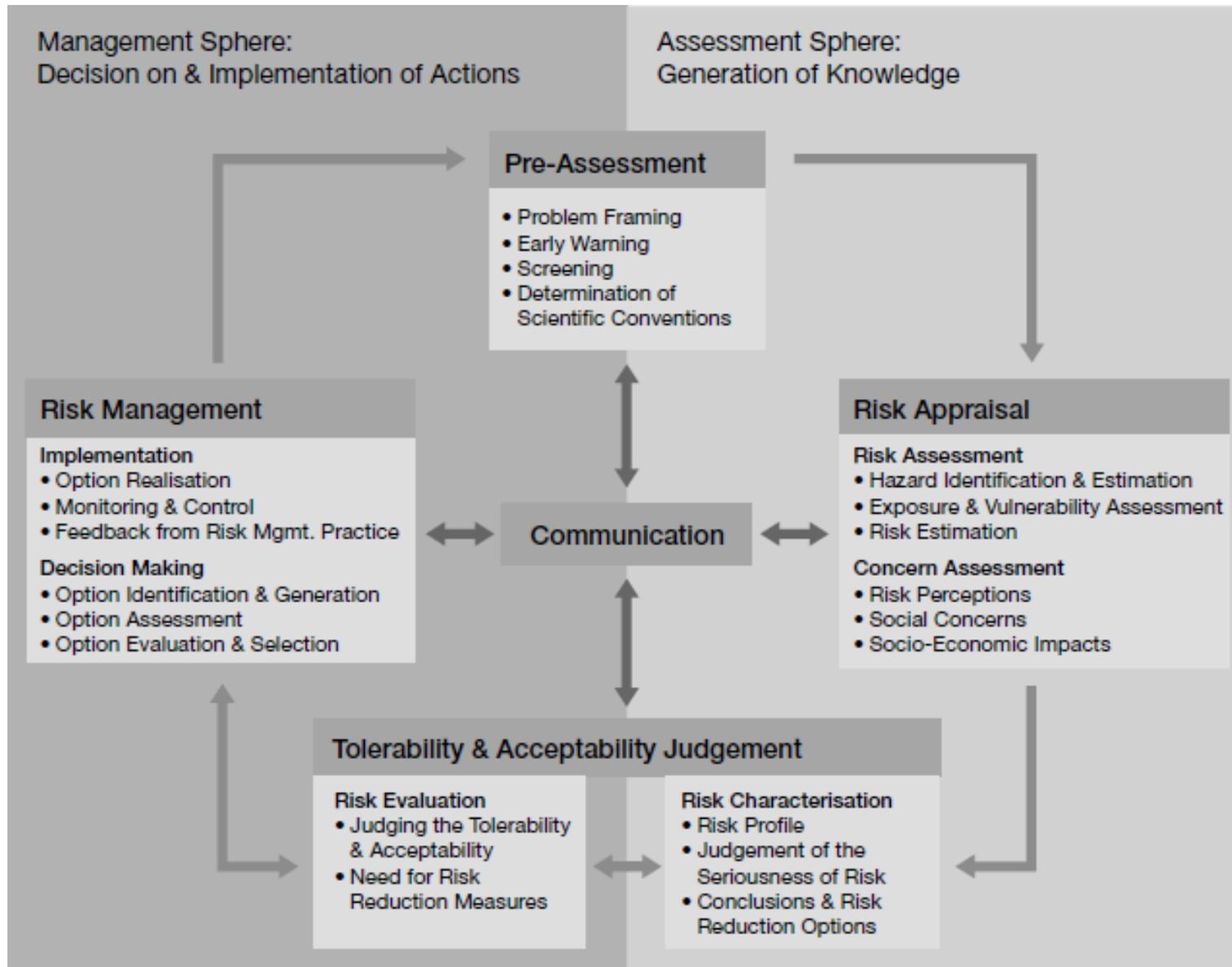
Composition of European Scientific Advisory Bodies

Fields of expertise

		Czech Republic	Italy	Netherlands	Nordic countries	Poland	Spain
Selection criteria	Individual expertise	•	•	•	•	•	•
	Institutional authority		•		•	•	•
	Specific sector	•	•				
Expertise	Nutrition	•	•	•	•	•	•
	Public Health/ Epidemiology		•	•	•		
	Medicine		•	•	•	•	
	Biochemistry	•	•	•	•	•	
	Risk assessment	•					
	Food technology		•				

- Twenty-six documents (varied authorships, dates, length and character) were identified: four from England; two from Finland; nine from Germany; six from Hungary; and five from Spain.
- There was no consistency in the way in which health outcomes were cited as factors in the recommendations for breast- rather than formula- feeding.
- Seven documents contained no reference to the health implications of infant feeding choice.
- Of 203 statements in remaining documents citing health outcomes:
 - 24.1% mentioned general health effects
 - 32.5% mentioned protection against infections
 - 31.5% mentioned long-term conditions (e.g. diabetes, CVD)
 - 11.8% mentioned allergy

International Risk Governance Council's Risk Governance Framework



e.g. systematic reviews, behaviour science, nutrient intake data, attitudes

**Science
(Social &
Natural)**

e.g. governance networks & regulatory frameworks, data on existing policy, policy change theories

**Policy &
Institutions**

**Health
Outcome**

**Policy
Action**

Wider Context

e.g. global trends data, media, broader consumer beliefs, ethics, international nutrient recommendations

Model helps to understand policy diversity

Policies implemented	Folate	Iodine	Vitamin D
General health education	CZ, IS, IT, NL, NO	CZ, ES, IS, IT, NO, PL	CZ, IS, IT, NL, NO
Food-based dietary guidelines	CZ, ES, IS, IT, NL, NO, SE	CZ, ES, IS, IT, NO	CZ, IS, IT, NL, NO, PL
Monitoring & evaluation	IS, IT, PL	CZ, IS, PL	IS, IT, PL, SE
Specific health education	CZ, IT, IS, NL, NO, PL	CZ, ES, IT	CZ, IS, NO
Fortification	NL, PL	DK, ES, IT, NL, NO, PL, SE	NL, NO, PL, SE
Supplementation	DK, ES, FI, IS, IT, NL, NO, PL		DK, IS, IT, NL, NO, PL
Labelling	PL	PL	PL
Inducing voluntary action in industry		DK, IT	FI, NO
Legislation on micronutrient composition in food products		ES, IT	
Setting up a task force	ES, IT, NL, NO, PL, SE	ES, IT, NL, PL	NL, NO

Folate

Iodine

Vitamin D

More frequent:

- Previous dietary policies
- Previous general policies
- Stakeholder interactions

More frequent:

- Previous micronutrient policy
- National regulations
- Evaluation (of policy effectiveness and implementation)
- Cultural factors in devising policy
- Health status
- Status-Intake relationship
- Bioavailability in food/diet

Less frequent:

- Previous micronutrient policies
- Transparency of the science process
- EU laws
- Evaluation of policy implementation and effectiveness
- Health Status
- Status-Intake relationship
- bioavailability in nutrient/food/diet
- Behaviourally defined target group

- historical context shaping the current policies
- relevance of stakeholder networks and implementers for the delivery of this policy, as considerations for policy

- iodine-related policies have been in place in all of the countries since the Second World War
- evidence of intake-status-health link is established for iodine
- clear policy option of salt iodisation is applied across the countries studied here

- less discussion about the transparency of the science process
- target group as defined through behaviour is less commonly mentioned is perhaps linked to the fact that diet and nutrient intake are less decisive in achieving adequate Vit D status.

First-time mothers' views about infant diets and lifelong health

First-time mothers' views about the importance of infant feeding for lifelong health¹

	Country						Significant difference between countries ²
	All (n = 2071)	England (n = 438)	Finland (n = 426)	Germany (n = 414)	Hungary (n = 389)	Spain (n = 404)	
Extent to which each factor influences health in adulthood							
Physical activity as child/adolescent	84.4	86.7	83.0	90.0	81.0	80.9	<0.0005
Physical activity in adulthood	83.2	89.7	88.2	86.4	75.3	75.2	<0.0005
Diet in adulthood	81.4	90.4	87.7	81.5	73.0	73.0	<0.0005
Exposure to cigarette smoke	80.8	83.3	63.4	89.8	81.2	86.9	<0.0005
Diet as a child, as an adolescent	79.3	84.5	76.9	81.6	73.0	80.2	<0.0005
Genetics/inheritance	70.0	75.5	64.5	80.5	71.5	58.2	<0.0005
Diet as an infant	63.7	64.6	44.3	64.2	71.0	75.5	<0.0005
Environmental pollution	62.7	61.8	36.1	60.6	78.7	78.5	<0.0005
Family income	24.2	20.1	7.5	29.9	28.8	35.9	<0.0005
Extent to which infant diet affects lifelong risk of each disease/condition							
Food allergy	50.3	49.3	46.3	73.3	39.6	42.6	<0.0005
Overweight	43.8	52.4	35.2	53.7	18.5	57.9	<0.0005
Eczema, asthma, hay fever	43.5	47.3	33.8	69.0	31.6	35.1	<0.0005
Diabetes	37.4	44.1	34.6	42.7	14.4	50.0	<0.0005
Weak bones, osteoporosis	37.2	47.3	43.4	28.5	22.9	42.3	<0.0005
Unhealthy food preferences	33.1	45.2	27.4	30.7	15.2	46.0	<0.0005
High blood pressure	31.3	37.9	25.9	31.1	11.1	49.8	<0.0005
Heart disease	30.3	42.5	21.8	28.6	12.3	45.3	<0.0005
Cancer	17.6	22.1	8.6	17.7	11.1	28.5	<0.0005

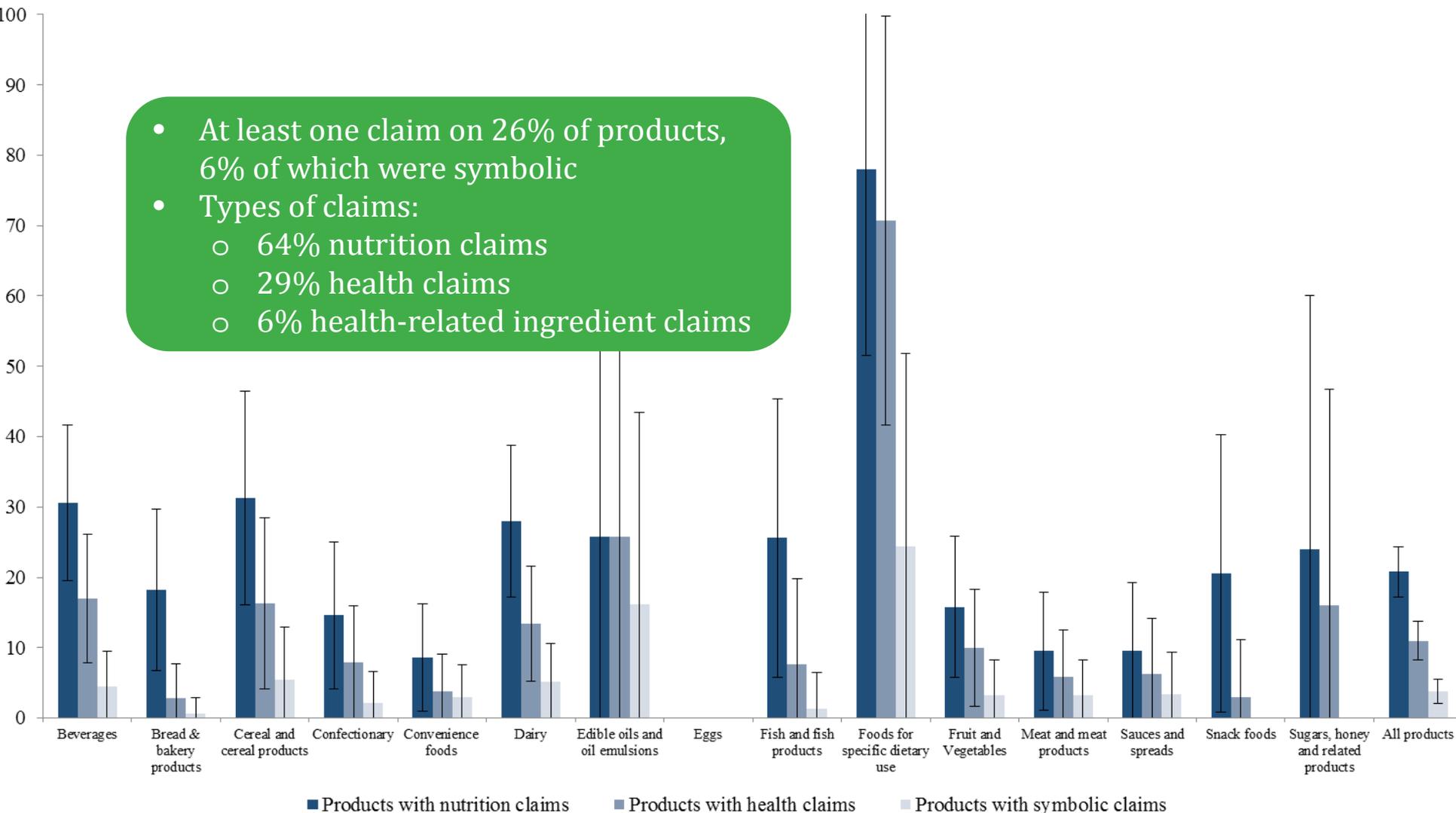
¹ All values are percentages of mothers stating extremely and very much (compared with moderately, slightly, or not at all).

² Kruskal-Wallis test comparing the 5 countries.

The information environment

Prevalence of nutrition and health claims (incl. symbolic) by food category

- At least one claim on 26% of products, 6% of which were symbolic
- Types of claims:
 - 64% nutrition claims
 - 29% health claims
 - 6% health-related ingredient claims



Number of claims per product

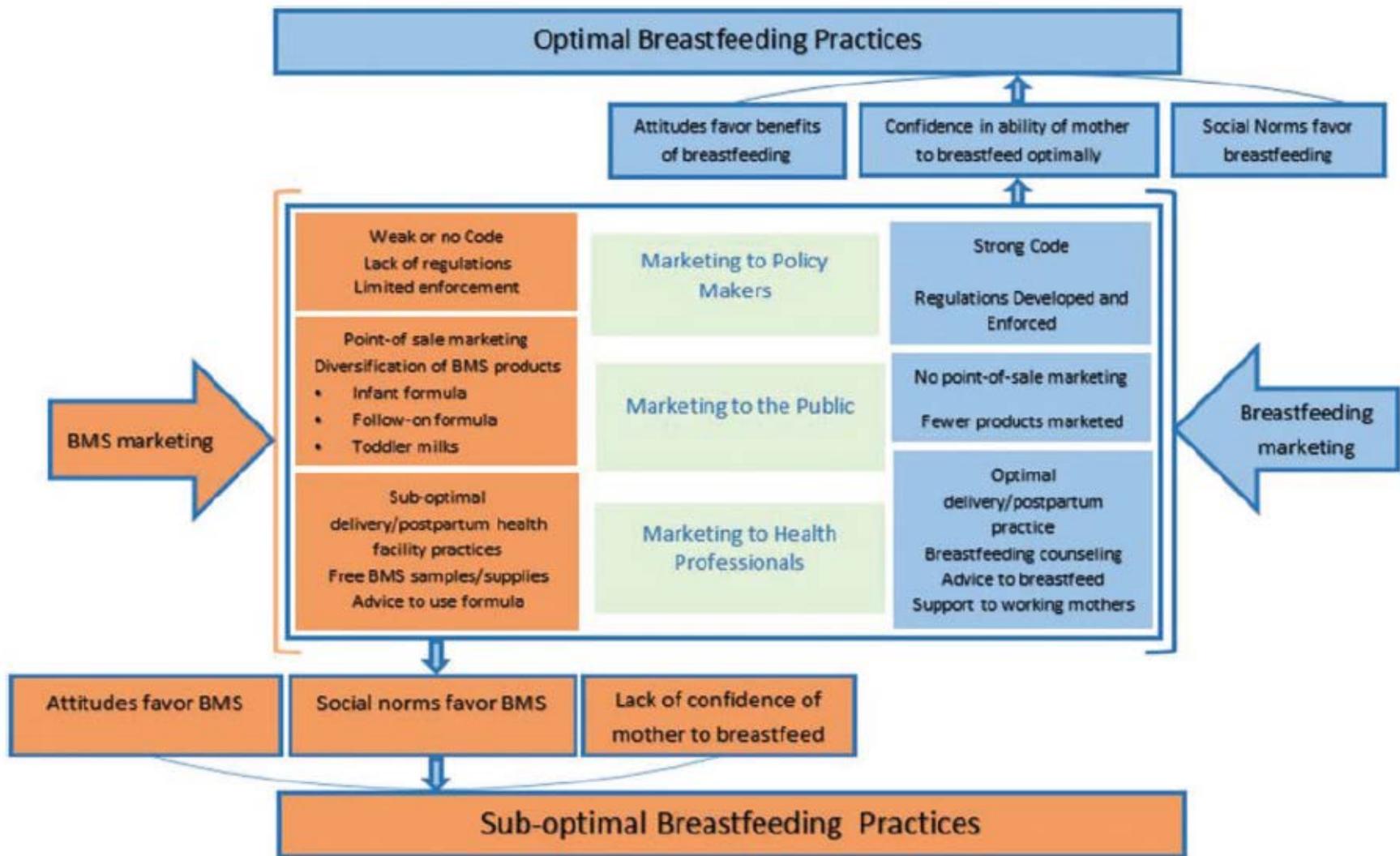
	Mean number of nutrition claims ¹	Highest number of nutrition claims on a single product	Mean number of health claims ¹	Highest number of health claims on a single product	Mean number of any claim ¹	Highest number of any claims on a single product
All countries	2.0	13	1.9	15	2.6	17
UK	2.1	11	1.9	5	2.8	15
Netherlands	2.2	8	1.2	6	2.3	9
Germany	1.9	13	2.2	15	2.7	17
Slovenia	1.8	8	1.7	5	2.3	11
Spain	2.1	12	2.2	11	2.7	17
P value	0.94		<0.01		0.52	

¹per product carrying a claim

Source: Hieke et al (2016) Prevalence of nutrition and health-related claims on pre-packaged foods: a five country study in Europe. Nutrients

The highest number of health claims observed on a single product was 15. This was found on a baby food.

Conceptual framework for the effect of breast milk substitute marketing on breastfeeding practices



Statements in leaflets and magazine articles about the health outcomes for baby of breast vs. formula milk feeding

COUNTRY: (E: England; F: Finland; G: Germany; H: Hungary; S: Spain)	Leaflets					Magazine articles (in 12 issues / country)				
	E	F	G	H	S	E	F	G	H	S
Number of leaflets / articles (with health outcome statement)	20 (17)	4 (3)	13 (11)	35 (23)	33 (27)	21 (18)	3 (3)	11 (6)	4 (4)	17 (13)
No. health outcome statements	86*	9	71	104	125	86	3	14	5	13
Content N (% country total)										
Breast-feeding general benefits										
Better health, less risk disease	17	2	13	7	15	7	0	0	3	0
Nutrients, digestion, colic	2	0	12	1	0	8	0	1	0	1
Growth and development	5	2	9	5	12	0	0	1	0	2
Neurological development, IQ	4	1	2	11	10	5	0	1	0	0
Breast-feeding protection against infections										
Gastrointestinal	8	0	5	6	16	9	0	1	0	1
Respiratory, chest, ear, meningitis	13	0	4	6	17	10	0	1	1	1
Urinary	3	0	0	0	3	4	0	0	0	0
Infections in general	18	2	5	12	13	7	1	1	0	3
Breast-feeding protection against allergy										
Wheeze, asthma	4	0	1	6	4	6	0	0	0	0
Rhinitis	1	0	0	0	0	0	0	0	0	0
Atopic dermatitis, eczema	5	0	0	3	4	3	0	0	0	0
Food allergy	0	0	0	2	0	0	1	0	0	0
Allergy in general	1	0	12	12	8	10	1	4	0	0
Breast-feeding protection against long term conditions										
Immune function	1	0	4	9	0	0	0	0	0	0
Gastrointestinal, e.g. Crohns	0	0	0	2	2	0	0	0	0	0
Obesity	1	0	2	5	8	6	0	4	1	2
Diabetes	2	0	2	7	6	4	0	0	0	0
Cardio Vascular Disease	1	0	0	6	6	3	0	0	0	0
Cancer, including leukemia	0	0	0	4	0	4	0	0	0	1
Bone	0	0	0	0	1	0	0	0	0	2
Statements per leaflet / article	4.30	2.25	5.46	2.97	3.79	4.10	1.00	1.27	1.25	0.76
No mention exclusive breastfeed >=6m	4	0	9	5	1	19	1	1	0	0

* 8 statements on milk feeding were found in the leaflets on complementary feeding.

Statements in leaflets and magazine articles about the health outcomes for baby of introduction of complementary foods

COUNTRY (E: England; F: Finland; G: Germany; H: Hungary; S: Spain)	Leaflets					Magazine articles (in 12 issues /country)					
	E	F	G	H	S	E	F	G	H	S	
Number of leaflets / articles (with health outcome statement)	22 (13)	7 (0)	10 (10)	17 (0)	13 (2)	9 (9)	0 (0)	13 (12)	4 (4)	0 (0)	
No. of health outcome statements	61*	0	51	0	5	42	0	24	10	0	
Content of statements											
Avoid to prevent allergy	Eggs	3	0	3	0	0	2	0	1	1	0
	Nuts, peanuts	6	0	3	0	0	6	0	1	0	0
	Cow's milk	3	0	3	0	0	4	0	1	4	0
	Wheat / gluten	4	0	1	0	0	2	0	1	0	0
	Other: fish, cheese, fruit	5	0	7	0	0	1	0	1	2	0
	Allergy in general	4	0	6	0	0	3	0	3	2	0
Avoid to prevent food poisoning	Eggs (salmonella)	2	0	0	0	0	2	0	0	0	0
	Honey (Botulism)	3	0	0	0	0	3	0	0	1	0
Avoid for other health reasons	Salty (kidney damage)	1	0	0	0	0	3	0	2	0	0
	Tea, coffee (reduces Iron)	2	0	0	0	0	3	0	0	0	0
	Nuts, seeds, hard foods (choking hazard)	8	0	1	0	0	1	0	1	0	0
	Sugar/ sugary drinks (tooth decay)	13	0	4	0	0	3	0	0	0	0
Forming good eating habits	Avoid sugar	1	0	6	0	1	1	0	2	0	0
	Avoid salt	0	0	3	0	1	0	0	1	0	0
	Healthy eating in general	0	0	2	0	0	1	0	1	0	0
Connections between various foods and long term conditions	Immune function	0	0	2	0	0	0	0	1	0	0
	Obesity, weight gain	1	0	1	0	1	4	0	2	0	0
	Diabetes	1	0	0	0	0	0	0	0	0	0
	Cardio Vascular Disease	1	0	1	0	1	0	0	1	0	0
	Cancer	1	0	0	0	1	1	0	2	0	0
	Bone strength	0	0	3	0	0	0	0	3	0	0
	Health in general	2	0	5	0	0	2	0	0	0	0
Statements per leaflet /article		2.77	0	5.10	0	0.38	3.5	0	1.85	0.83	0

* One statement on complementary feeding were found in the leaflets on milk feeding.

Moralization: Breastfeeding often framed in moral terms (harm to mother and child), so shows the hallmark signs of moralization (Rozin, 1999).

Medicalization: Messages are framed in terms of health and psychological benefits/harms; however, affect and personal choice has a large role (Faircloth, 2013). Research on persuasion has found that fear and threat not always useful.

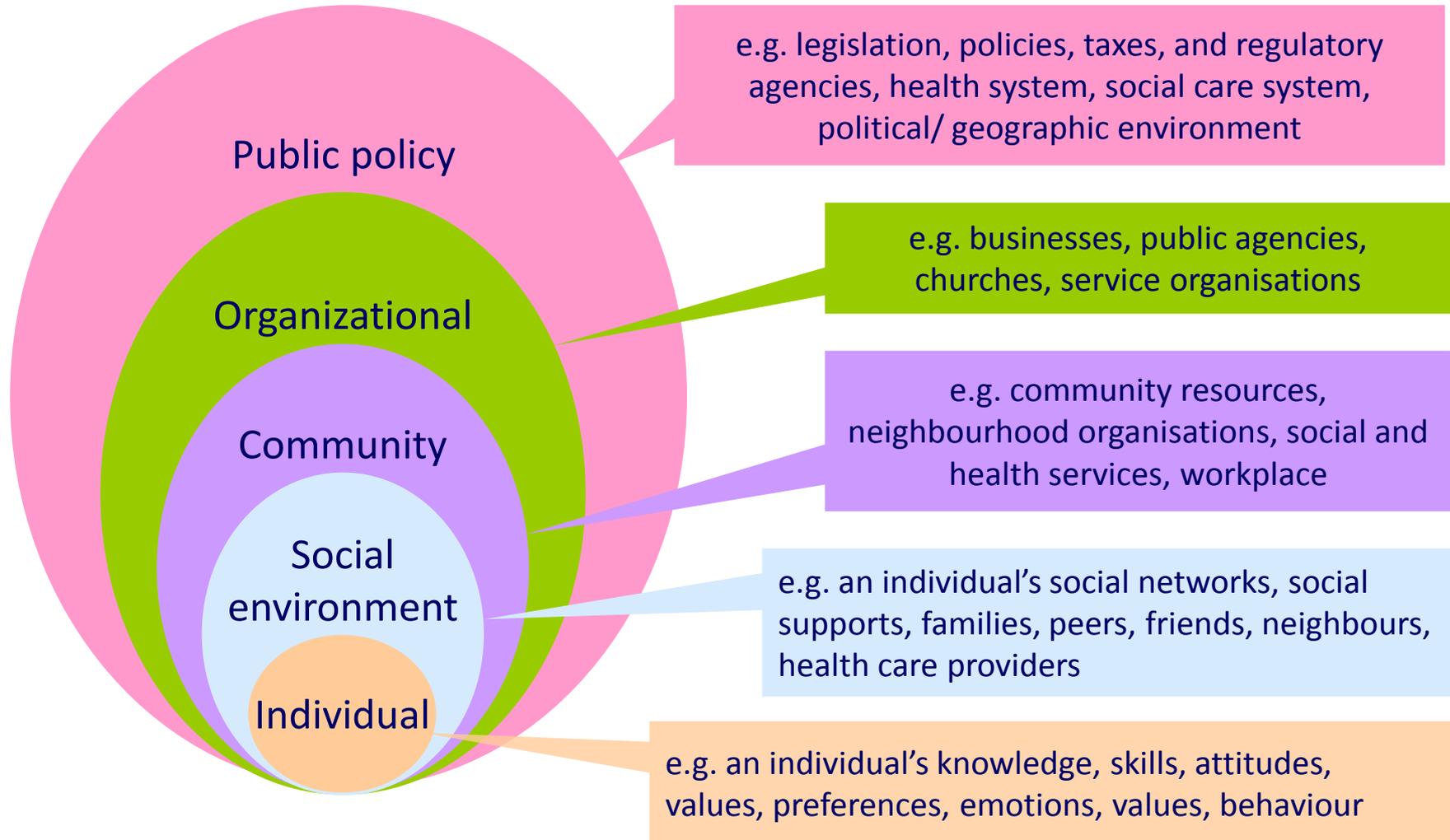
Isolation and lack of social support identified as hurdle to breastfeeding (Lancet, 2016).

Public reactions: Women still experience some degree of marginalization and embarrassment when breastfeeding in public.

Bodily acts are linked with shame and disgust (Nussbaum, 2004) -
Ewww in private please!

Changing behaviour

Drawing on a diversity of mechanisms



Materials: (objects, tools, infrastructures):

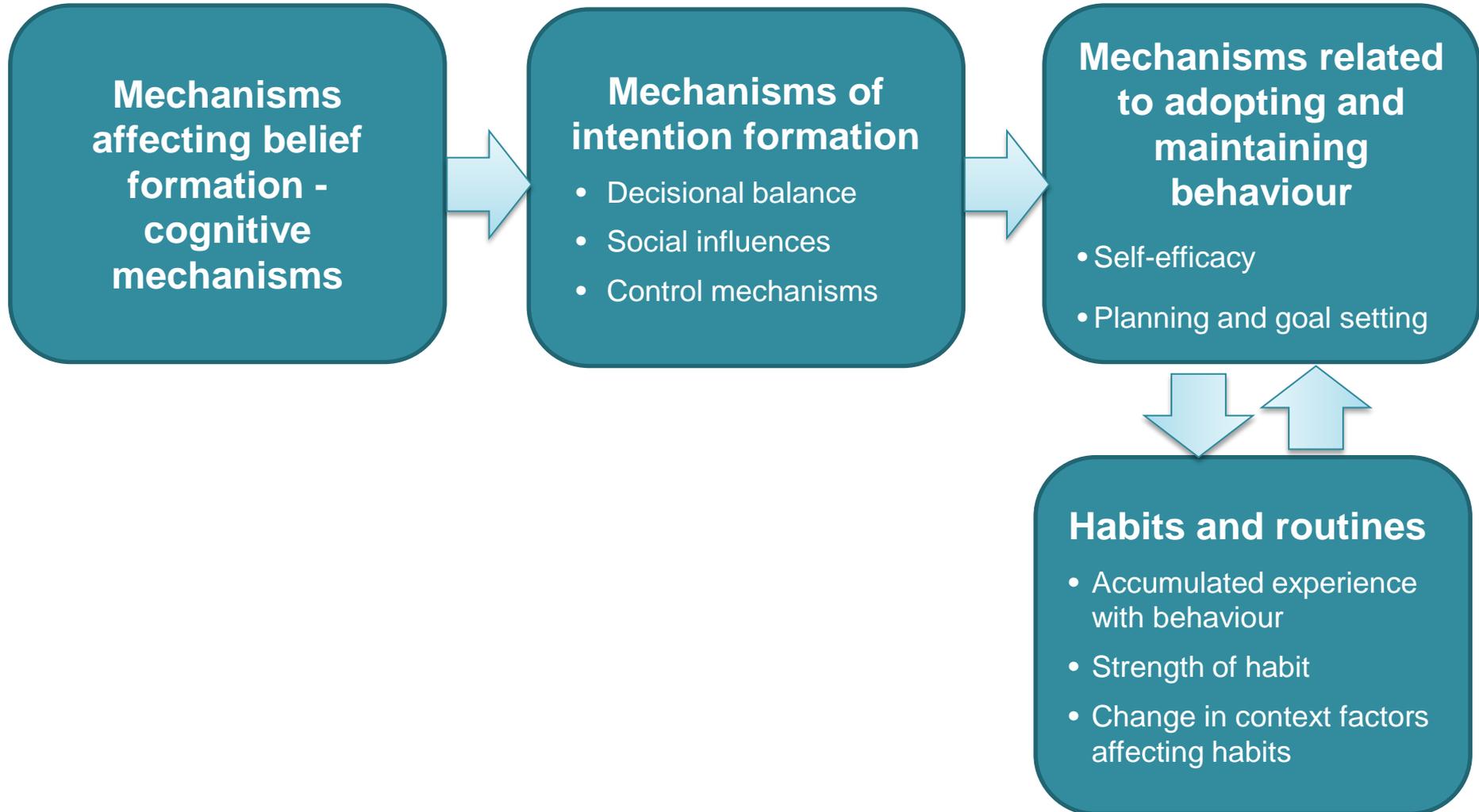
food, beverages, condiments, shops, recipes, appliances, cooking utensils, crockery, tables, seating, rooms

Meanings: (cultural conventions, expectations and socially shared meanings):

what complementary foods are appropriate, when, with whom, where, why

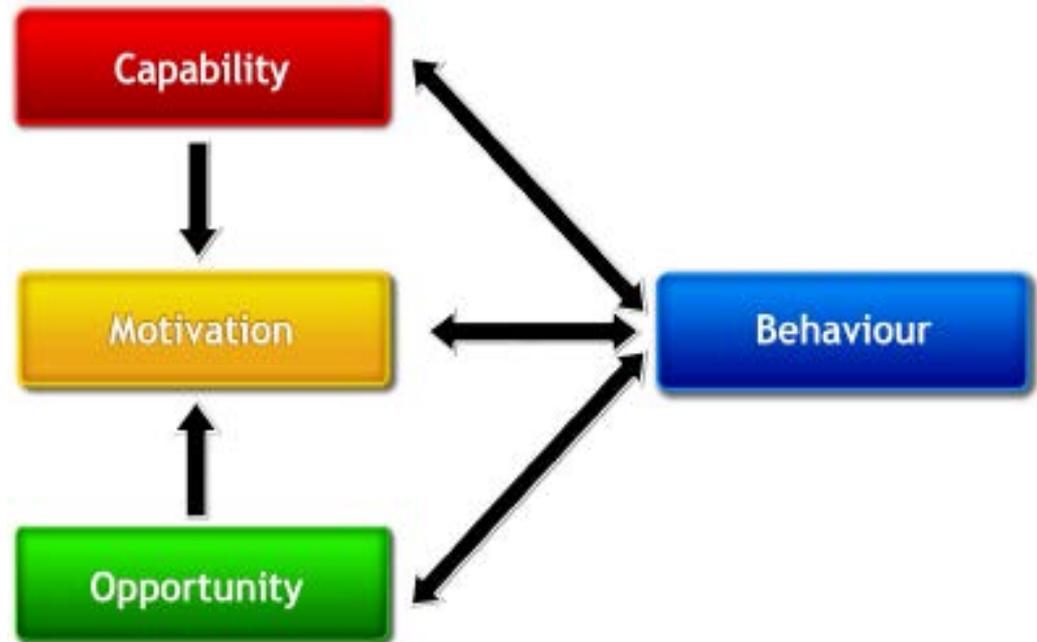
Competences: (knowledge and embodied competences):

how to store, prepare, cook and eat complementary foods; cleaning, disposal



COM-B Behavioural system

- physical
- psychological (the capacity to engage in the necessary thought processes - comprehension, reasoning)
- reflective processes (involving evaluations and plans)
- automatic processes (involving emotions and impulses that arise from associative learning and/or innate dispositions)
- physical (afforded by the environment)
- social (afforded by the cultural milieu that dictates the way that we think about things (e.g., the words and concepts that make up our language))



Source: Michie et al (2011) *The Behaviour Change Wheel: a new method for characterising and designing behaviour change interventions*. *Implementation Science*

Education

Increasing knowledge or understanding

Provide information on the benefits of breastfeeding

- Physical

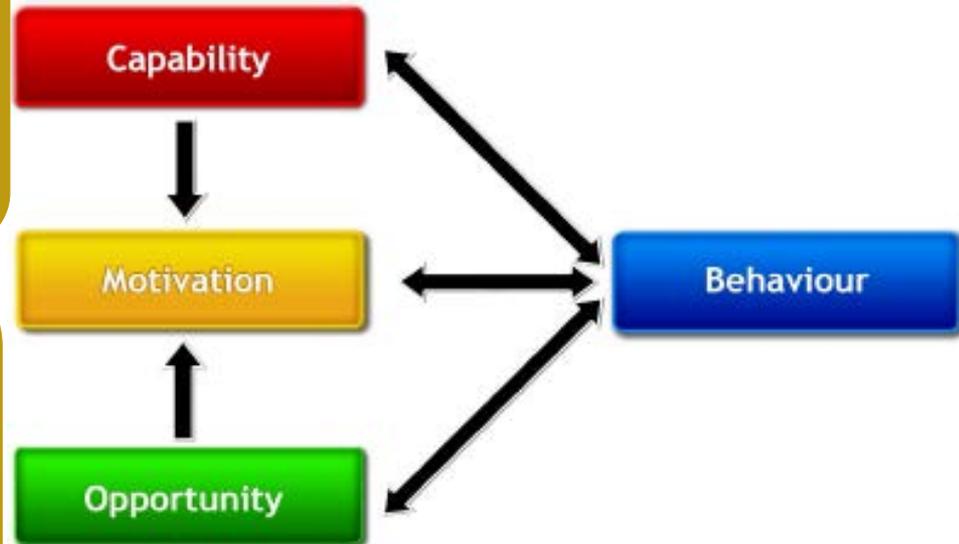
- Psychological
the capacity to engage in the necessary thought processes - comprehension, reasoning

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- Physical
afforded by the environment

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afforded by the cultural milieu that dictates the way that we think about things (e.g., the words and concepts that make up our language)



Environmental restructuring

Changing the physical or social context

e.g. providing space for breastfeeding or making clear it is acceptable to breastfeed in a particular area

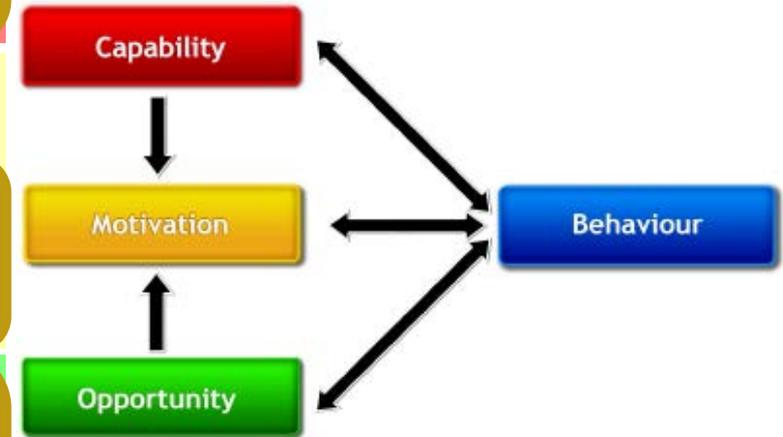
Training

Imparting skills
e.g. training how to breastfeed

- Physical
- Psychological
the capacity to engage in the necessary thought processes - comprehension, reasoning
- Reflective processes
involving evaluations and plans
- Automatic processes
involving emotions and impulses that arise from associative learning and/or innate dispositions
- Physical
afforded by the environment
- Social
afforded by the cultural milieu that dictates the way that we think about things (e.g., the words and concepts that make up our language)

Modelling

Providing an example for people to aspire to or imitate
e.g. using TV drama scenes or in health promotion materials



Restriction

Using rules to to increase the target behaviour by reducing opportunity to engage in competing behaviours
e.g. limiting the availability of products of infant formulas

Persuasion

Using communication to induce positive or negative feelings or stimulate action
e.g. using imagery to encourage breastfeeding

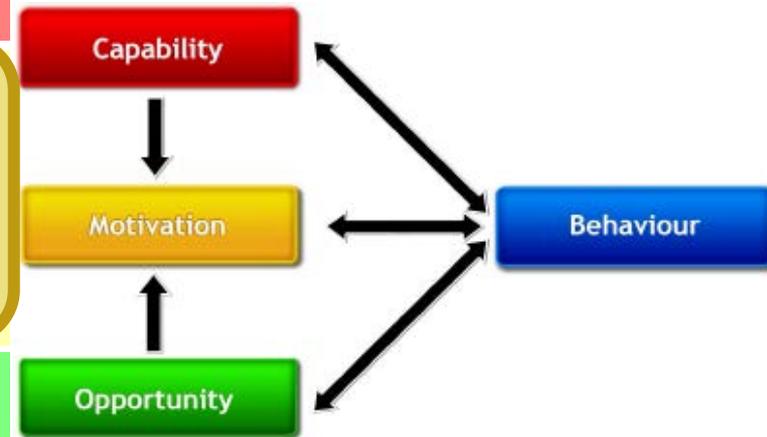
Coercion

Creating expectation of punishment or cost
e.g. highlighting the financial cost of formulas

- Physical
- Psychological
the capacity to engage in the necessary thought processes - comprehension, reasoning

- Reflective processes
involving evaluations and plans
- Automatic processes
involving emotions and impulses that arise from associative learning and/or innate dispositions

- Physical
afforded by the environment
- Social
afforded by the cultural milieu that dictates the way that we think about things (e.g., the words and concepts that make up our language)



Incentivisation

Creating expectation of reward
e.g. providing financial or other rewards for extended breastfeeding duration

Policy alignment and transparency

Drawing on a diversity of mechanisms

- Cultural practices are aligning, e.g. retail formats; working patterns - women at work, work structure/time; media exposure
- Health outcomes are converging, e.g. incidence of obesity
- Commercial forces , e.g. common markets
- Some agreement at a technical level as to what constitutes “policy outcomes” with regard to safety, health and sustainability
- Some evidence of specific convergence along geographical/cultural dimensions, e.g. language, food values, etc.



Need for transparency of governance

e.g. systematic reviews, behaviour science, nutrient intake data, attitudes

**Science
(Social &
Natural)**

**Health
Outcome**

**Policy
Action**

**Policy &
Institutions**

e.g. governance networks & regulatory frameworks, data on existing policy, policy change theories

Wider Context

e.g. global trends data, media, broader consumer beliefs, ethics, international nutrient recommendations

- Which models of governance can be applied? How might these differ from the current risk model?
- How should subsidiarity come into play with regard to food policy?
 - When are policy goals common and when do they diverge?
- There is some evidence of specific convergence along geographical/cultural dimensions, e.g. language, food values, etc.
 - Is it a case of aligning cultural ecologies?
 - Do we want to align these cultural ecologies?
- Aligning diverse goals
 - How do you do it?
 - Is it possible or is it a matter of unworkable compromises?
 - Can the potentially conflicting values of different sectors be reconciled?



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Finland*



Germany



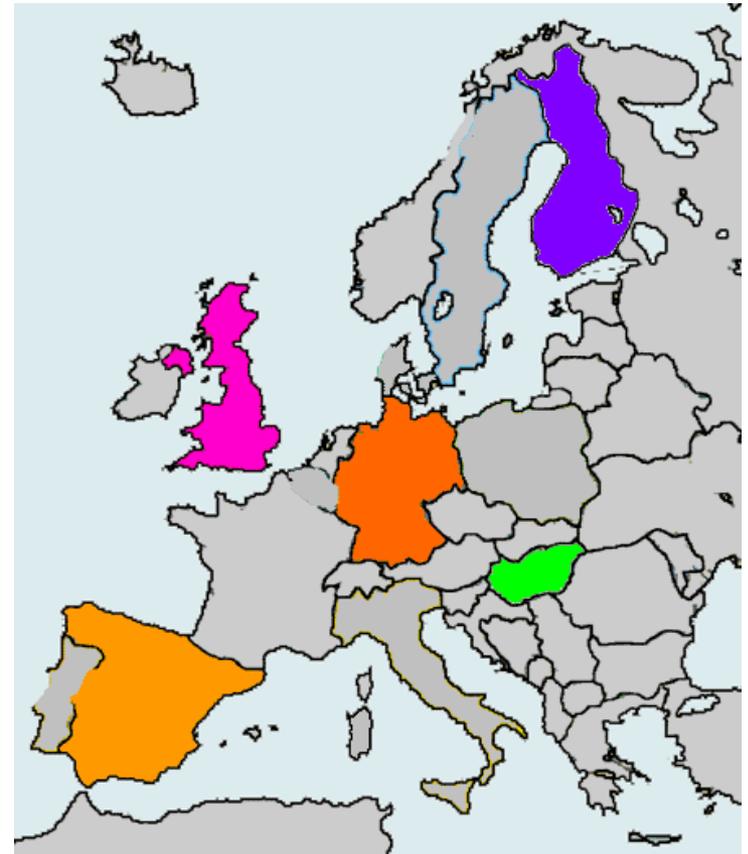
Hungary



Spain



UK



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