Pan-European consumer research on in-store behaviour, understanding and use of nutrition information on food labels, and nutrition knowledge

Prof. Klaus G. Grunert
MAPP – Centre for Research on Customer Relations in the Food Sector
University of Aarhus
Denmark

Dr. Josephine M. Wills
Director General
European Food Information Council
Belgium

Aarhus School of Business
MAPP

EUFIC

The presenters

Dr Josephine Wills
Director General of EUFIC, Belgium

Professor Klaus G. Grunert
Director of MAPP - Centre for Research on Customer Relations in the Food Sector Aarhus School of Business, Denmark

Main research questions

1. How good is consumers' nutrition knowledge?

2. To what extent do consumers use nutrition labels when shopping?

3. To what extent are consumers aware of guideline daily amounts (GDA) and other labelling systems, understand them and are able to use them?

Basic design

Observation at aisle (approx. 3 minutes per shopper)

- Whether respondents looked at label and where
- Time spent choosing
- Number of products handled

In-store Interview (approx. 5-7 minutes per shopper)

- Whether the respondent claims to have looked at nutrition information on the label
- Whether s/he remembers any nutrition information from the label
- Which nutrition information the consumer is looking for
- Time pressure during shopping
- Major determinants of choice (nutrition, taste, convenience)
- Some nutrition knowledge questions

In-home self-complete Questionnaire (approx. 30-40 minutes to complete)

- Nutrition knowledge questions
- Knowledge about energy needs, energy expenditure and energy content of products
- Awareness, knowledge & proficiency in using nutrition labelling system (eg GDA, Health logo, colour-coding, back of pack nutrition table).
- Background variables (to help explain some of the differences observed)
  - Demographics
  - Health
  - Health motivation
  - The role of food in the person's life

Methodology

- Pan-European study; UK, France, Germany, Poland, Sweden, Hungary Fieldwork: TNS for UK; other countries Synovate, GfK, Pentor, Norstat, Corvinus University/Focus Studio
- Pilot studies UK (Nov 07, Jan/Feb 08) and discussions with key stakeholders
- Research in field February - October 2008
- Each country, sample size minimum 1800 in store interviews, target 1080 in home questionnaires. Incentivised. Different retailers and nutrition labelling systems.
- Shoppers observed at 6 product categories:
  - salty snacks
  - breakfast cereals
  - soft drinks
  - ready meals
  - yoghurts
  - confectionery

Retailers & labelling systems

	Retailers	Labelling systems
UK	Tesco Sainsbury's Asda	GDA TL GDA/TL Hybrid
France	Intermarché Auchan	Colour coding and GDA (Nutri-pass, BOP) GDA
Germany	Lidl Real	GDA GDA (energy only FOP)
Hungary	Tesco, Interspar	GDA
Poland	Tesco, Real	GDA
Sweden	ICA, Coop, Axfood	Health logo (keyhole) + GDA

Sample characteristics

- Retail stores had a good geographical spread to represent the shopper population
- Over 11,600 in-store interviews were carried out, and more than 5,700 in-home questionnaires were returned
- In all countries higher proportion of females, reflecting the relative number of female shoppers (76% in UK to 62% in Germany)
- 29% (Germany) to 43% (France) had children <16y in the household
- Good demographic spread across age-groups in UK, France, Sweden and Germany. Hungary and Poland, higher representation of the <34y-old group (47% and 52% respectively)
- Good demographic spread across all social grades

Nutrition knowledge

Nutrition knowledge:
Expert recommendations: foods, ingredients

Q: "Health experts recommend that we should have a lot, some, a little, try to avoid...."

- Most knew we should eat a lot of fruit and veg (> 95%)
- Over 73% answered correctly about eating more wholegrain (except 49% France), and over 65% about fibre.
- Few consumers correctly thought they should eat a lot of starchy foods such as bread, rice, pasta and potatoes
  - Germany 32%, Poland 21%, France 15%, Sweden 8%, <5% UK and Hungary

Nutrition knowledge: Relevant to FOP nutrients

Q: "Health experts recommend to eat more, about the same, less, try to avoid..."

- Consumers tend to exaggerate their response towards foods high in fat, sugar or salt; try to avoid rather than eat less; strongest for UK (over 80%)
- Calories: knowledge of calorie recommendations is good everywhere (~70% knew we should eat less, except 54% Poland).
- Salt/Sodium: Over 75% across all countries answered consume less/try to avoid salt
  - Highest 96% UK, lowest 75% Germany
  - Similar salt and sodium results for France, Poland and UK, but not for Germany, Sweden and Hungary (~25% lower for sodium)
- Sugar: Consumers are aware experts recommend to eat less sugar
  - Highest 80% France, lowest 57% in Poland

Nutrition knowledge: Relevant to FOP nutrients

Q: "Health experts recommend to eat more, about the same, less, try to avoid...."

- Fats: Over 60% of consumers (except 49% in Poland) are aware experts recommend to eat less fat (highest 73% UK)
  - Saturates, trans and omega-3 better understood than MUFA/PUFA
    - Over 67% stated experts recommend to decrease or try to avoid **saturates**
      - Highest 90% UK, lowest 67% Germany
    - Over 60% stated experts recommend to decrease or try to avoid **trans fats**
      - Highest 96% Sweden, lowest 59% France
    - Over 45% of consumers are aware experts recommend to eat more **omega-3**
      - Highest 88% Sweden, lowest 46% Poland
    - Few consumers are aware of the recommendations for intake of **PUFA** and **MUFA**
      - PUFA: Highest 50% Sweden, lowest 8% Poland
      - MUFA: Highest 40% Germany, lowest 20% France

Nutrition knowledge
Levels of nutrients in 18 different foods

Q: For each food or drink type listed, please indicate whether you think it is high or low in each nutrient

- On average, UK, Hungary and Germany respondents got 70% of the responses right, 60% in Sweden and France, and 57% in Poland
- Most (>80%) gave right answers for:
  - high fat in cheese, low sugar in cod, high sugar in chocolate, low saturates in frozen veg
- Most (>70%) got it wrong for:
  - UK, France, Germany, Sweden, Poland – *high* saturated fat in margarine
  - Germany, Sweden – *high* sugar in corn flakes
  - Poland – *low* salt in corn flakes
  - Sweden - *high* sugar in yoghurt

Nutrition knowledge: Salt recommendations

Q: What do you think is the maximum amount of salt an average adult should eat in a day?

- 42% or less of the consumers knew the maximum salt intake should be 4-6g
  - Highest 42% UK, Hungary and Germany
  - Lowest 16% France
  - When they got it wrong they tended to under-estimate (except Germany similar under- and over-estimate)

Nutrition knowledge: Calorie needs

Q: How many calories per day do you think an average active adult needs?

- 46% or less of the consumers answered this correctly in-store
- Women had slightly better knowledge than men
  - when they got it wrong tended to under-estimate
- Highest knowledge UK (38% males, 49% females)
- Lowest France (22% males) and Hungary (29% females).

Nutrition knowledge: Estimations of energy intake

- A majority of respondents correctly answered questions about differences in calorie needs man vs woman, and age differences
  - Man vs woman: highest 91% Sweden, lowest 84% Poland
  - Age differences: highest 95% Germany, lowest 90% Poland
- 68% or less state correctly that children's calorie needs are not higher than adults
  - Highest 68% Sweden, lowest 42% Poland
  - Over a third of respondents (over half in Poland) think incorrectly children need more calories than an adult man
  - ?Link with childhood obesity, children's portion size

Nutrition knowledge:
Calories used while watching TV / brisk walking

Q: How many calories do you burn in 1 hour of watching TV or brisk walking?

- Very few consumers answered correctly
  - TV watching: highest 21% UK, lowest 7% France
  - Brisk walking: highest 28% Sweden, lowest 11% Poland

- Majority of consumers under-estimate energy expenditure
  - TV watching: highest 84% Poland, lowest 77% UK
  - Brisk walking: highest 80% Poland, lowest 53% Sweden

Nutrition knowledge: Calorie content

Q: Which nutrient has the most calories, gram for gram? Choose from fat, sugar, alcohol, protein, starch, fibre

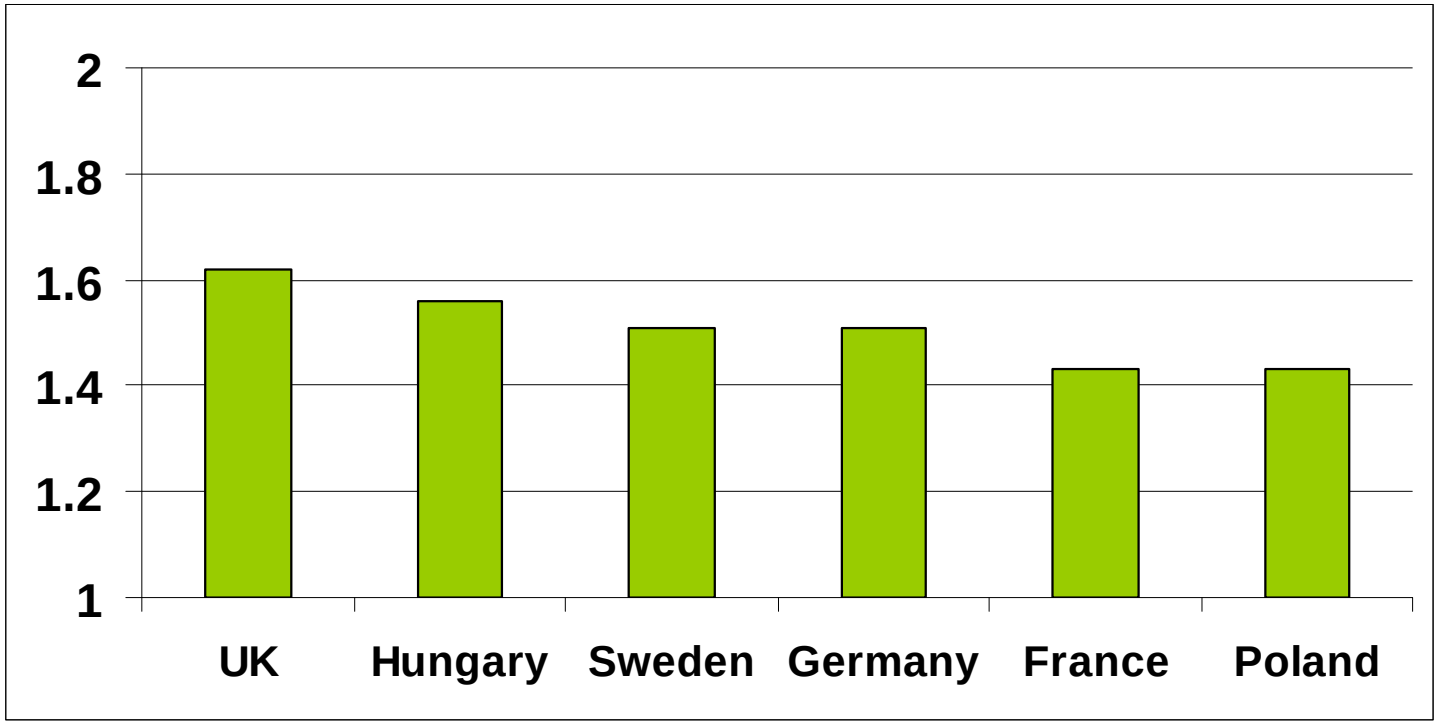
- <45% correctly chose fat as having the most calories
  - Highest 44% Poland, lowest 24% Sweden
- When they got it wrong, alcohol and then sugar stated as the most calorific nutrients (starch also in Hungary)
- Overall, more respondents mentioned sugar and alcohol as the most calorific in comparison to fat

Nutrition knowledge: Calorie content

Q: How many calories are contained in a …?

- UK consumers most knowledgeable about calorie content of foods (50% answers correct). Other countries between 30-40%
  - Knowledge of calories in carrots is best (between 60-75%)
  - When answered incorrectly, majority tended to over-estimate the calorie content in all foods except cornflakes and yoghurt, where they under-estimate the calories
- The calorie content of alcoholic drinks was over-estimated in all 6 countries:
  - Highest France, Germany, UK, Sweden (52-77%)
  - Lowest in Hungary and Poland (~37% for beer)

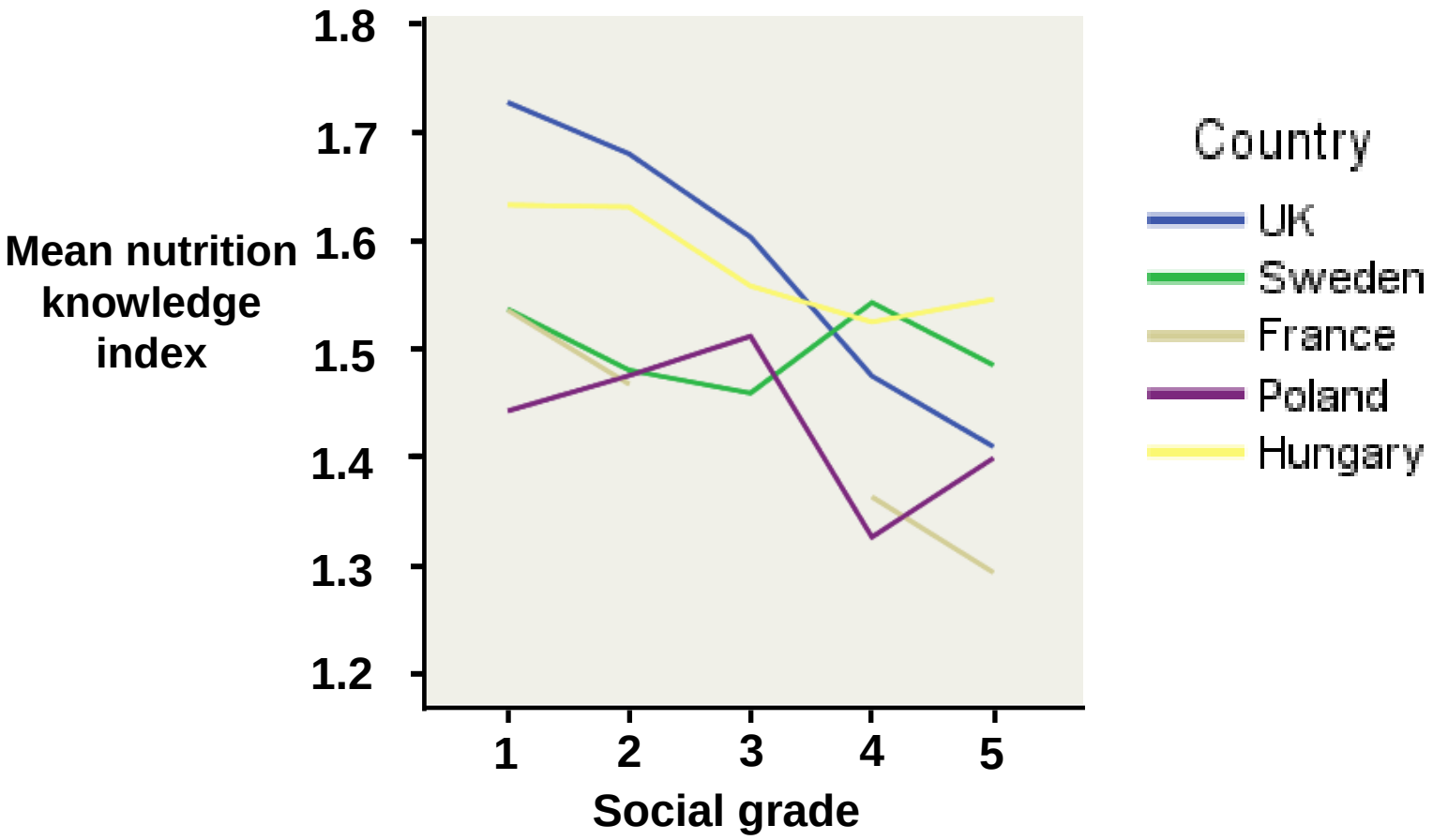
Nutrition knowledge index



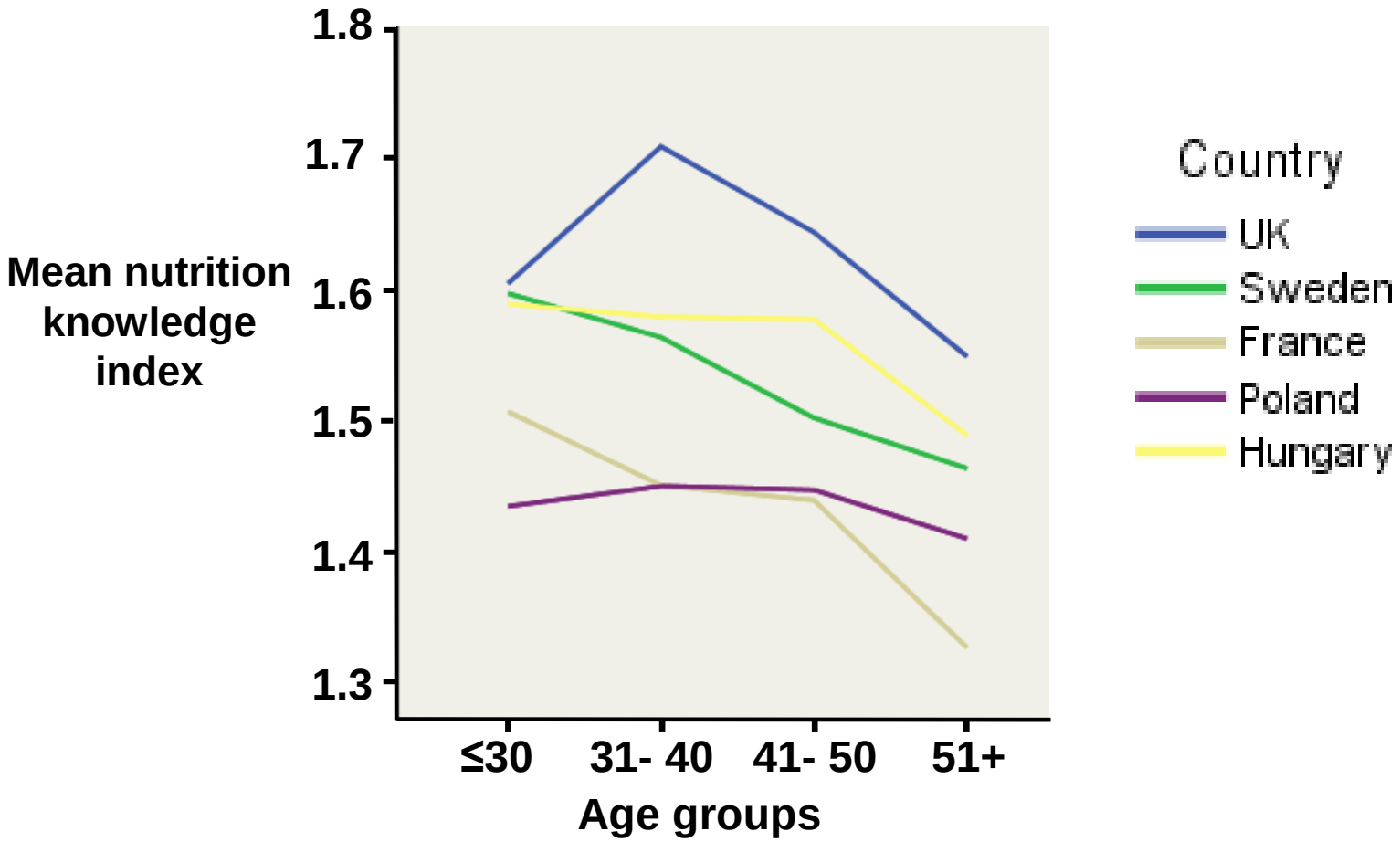
Nutritional knowledge - demographic and attitudinal determinants

- Nutritional knowledge is highest in the UK and lowest in France and Poland
- Higher social grades (except in Sweden) and younger people have better nutritional knowledge (except in Poland)
- There are regional differences (in some cities, nutritional knowledge was higher)
- Gender, having children under 16 y, BMI have no or weak effects

Nutrition knowledge: Influence of social grade



Nutrition knowledge: Influence of age



Nutrition knowledge: Key conclusions

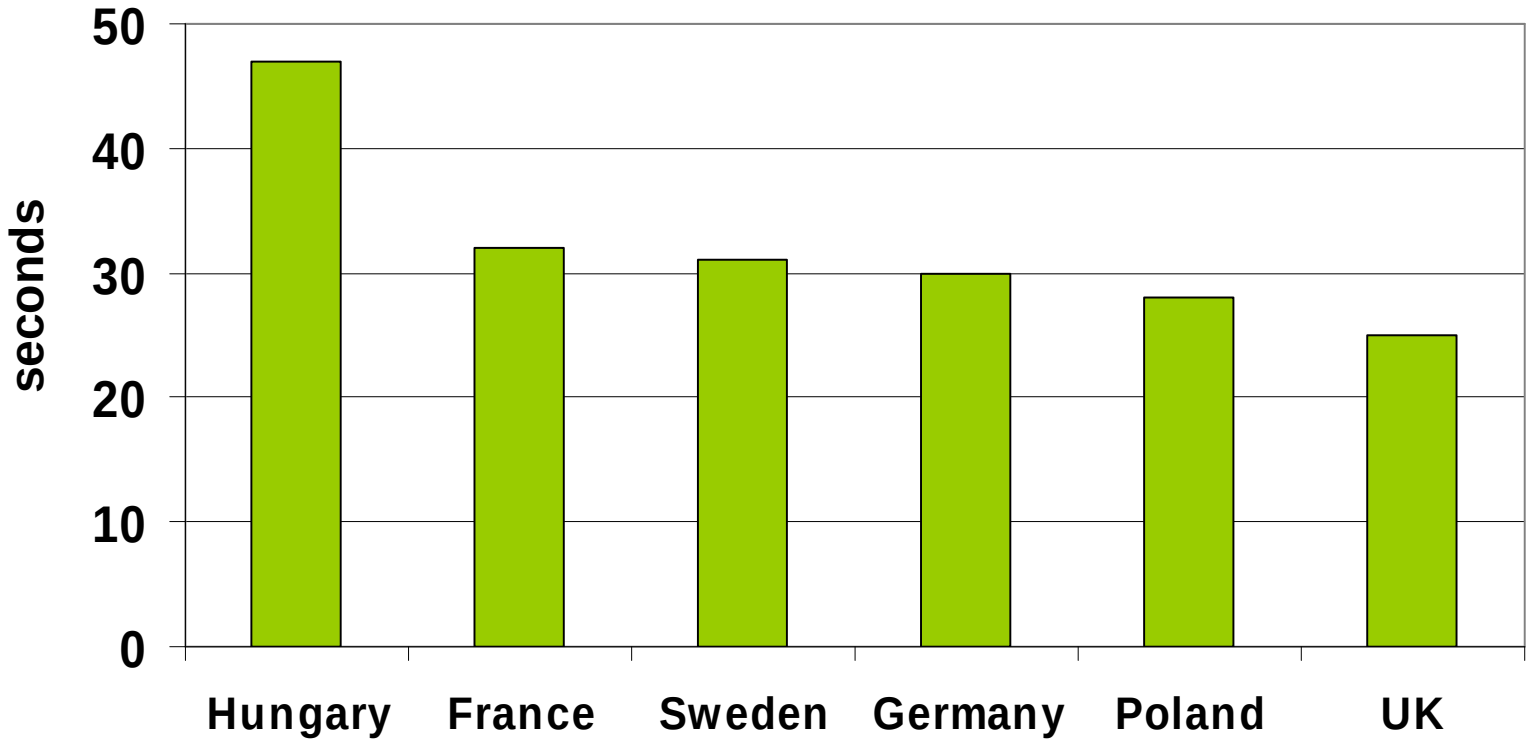
- People have reasonably good knowledge about expert recommendations, but have a tendency to exaggerate with regard to foods to be 'avoided'
- People have a reasonable command of calories, including calorie content of foods but a majority of consumers tend to under-estimate calorie needs and calorie use
  - More than one third of respondents think children need more calories than an adult man
- Saturated fat, trans fat, total fat and omega-3 are better understood than PUFA, MUFA
- Starchy foods such as bread, rice, pasta and potatoes are not well understood, less than 32% of respondents correctly answering that they should eat a lot of these types of foods

To what extent do consumers use nutrition labels when shopping?

Purchasing & handling
Looking for Nutrition Information
Determinants of looking for nutrition information

Purchasing and handling of products

Purchasing and handling of products: Time spent



Purchasing and handling of products: Time spent per product category

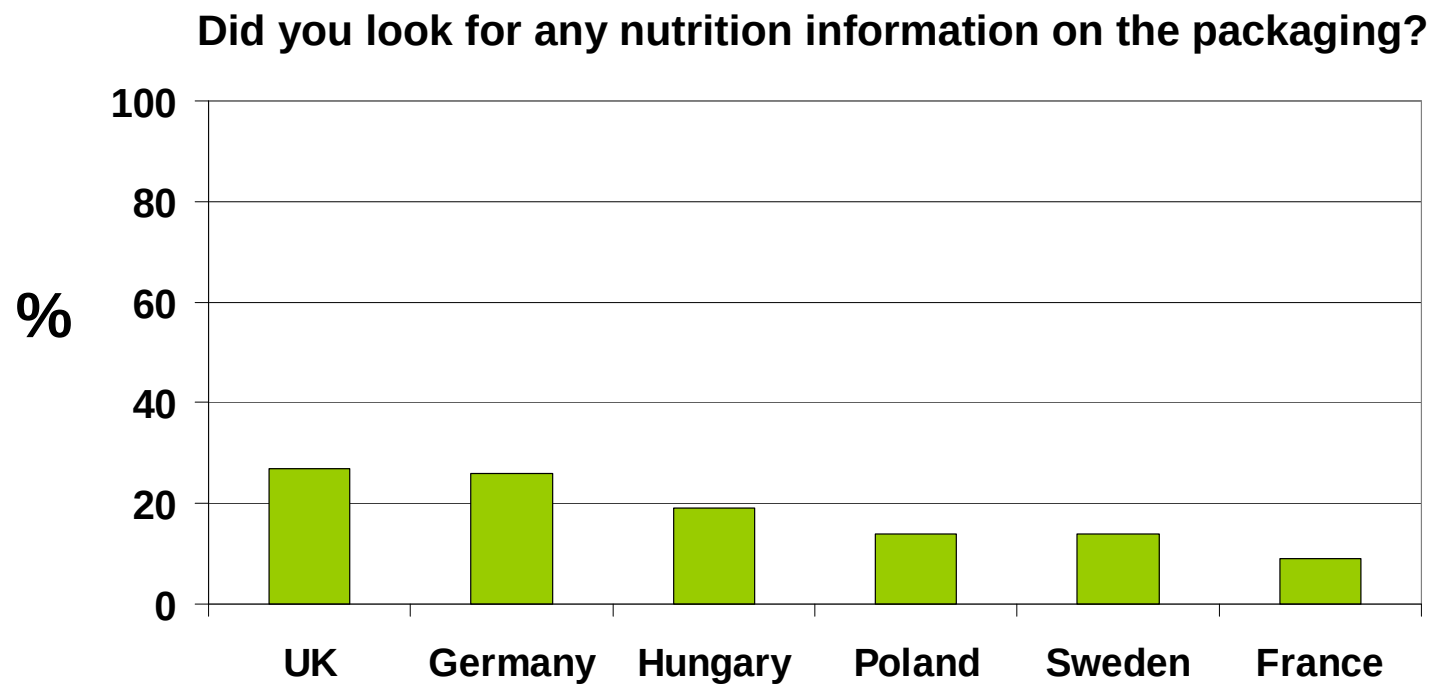
- Most consumers handled ready meals longest
- Least time spent varied between countries
  - UK, Germany: carbonated soft drinks
  - France: breakfast cereals
  - Hungary: confectionery
  - Poland: salty snacks
  - Sweden: yoghurts

Purchasing and handling of products

- Low percentage of shoppers (≤15%) look elsewhere on the pack
  - except for Germany (up to 32%)
- On average, two thirds of shoppers look at the front of pack before making a purchasing decision
  - highest in Sweden (up to 80%)
  - lowest for France (39%)
- More than 60% of French consumers do not look in detail

Looking for Nutrition Information (NI)

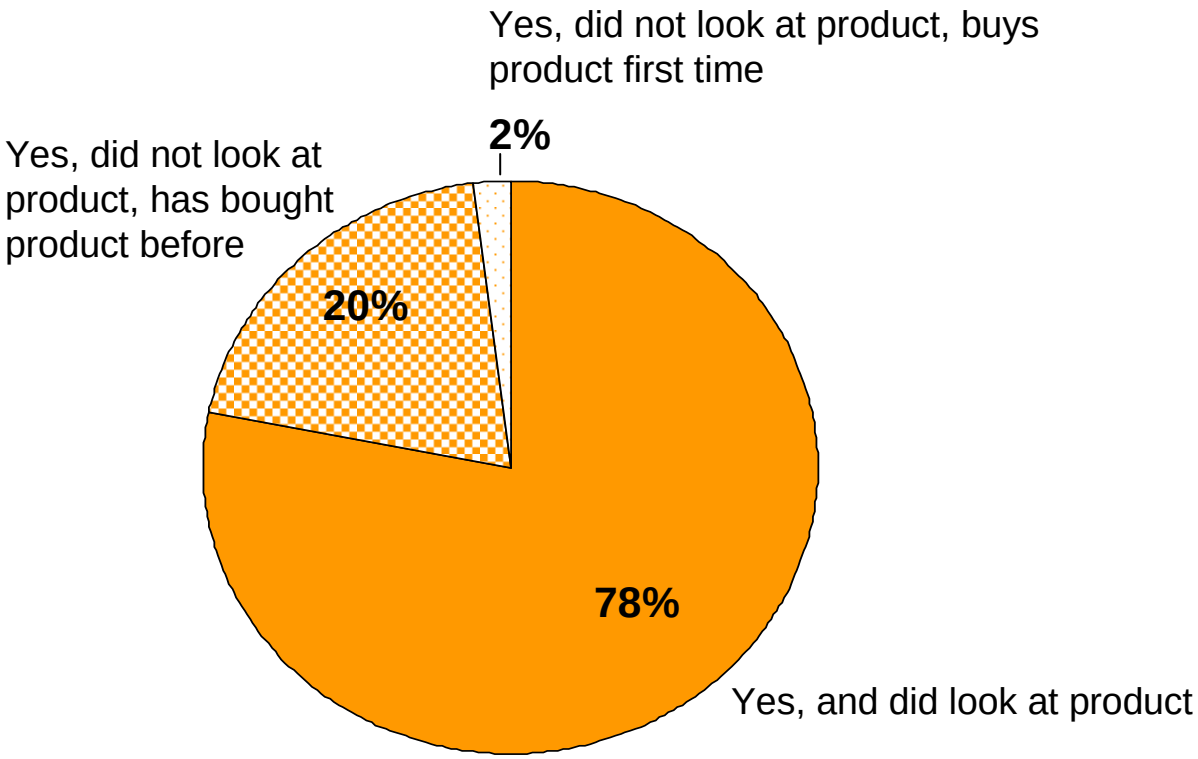
Looking for nutrition information (NI) - in-store



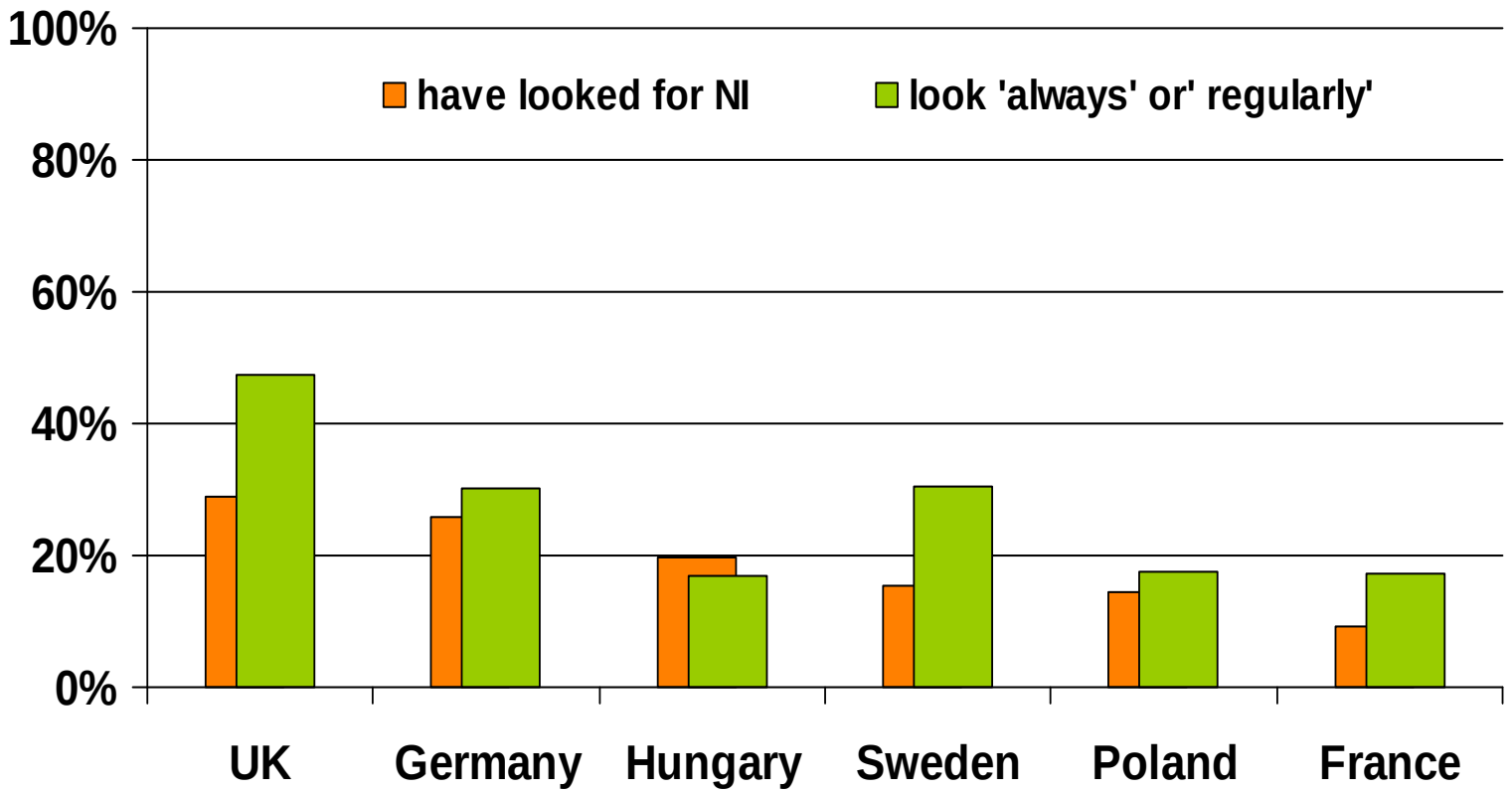
- These figures are supported by respective respondents being able to
  - name at least one nutrient and
  - show where on pack that info is found

Looking for nutrition information: Actual vs. self-reported NI use - UK example

In the UK, of the 27% that said they have looked for nutrition information...



Look 'always' or 'regularly' - compared to having looked at this particular purchase

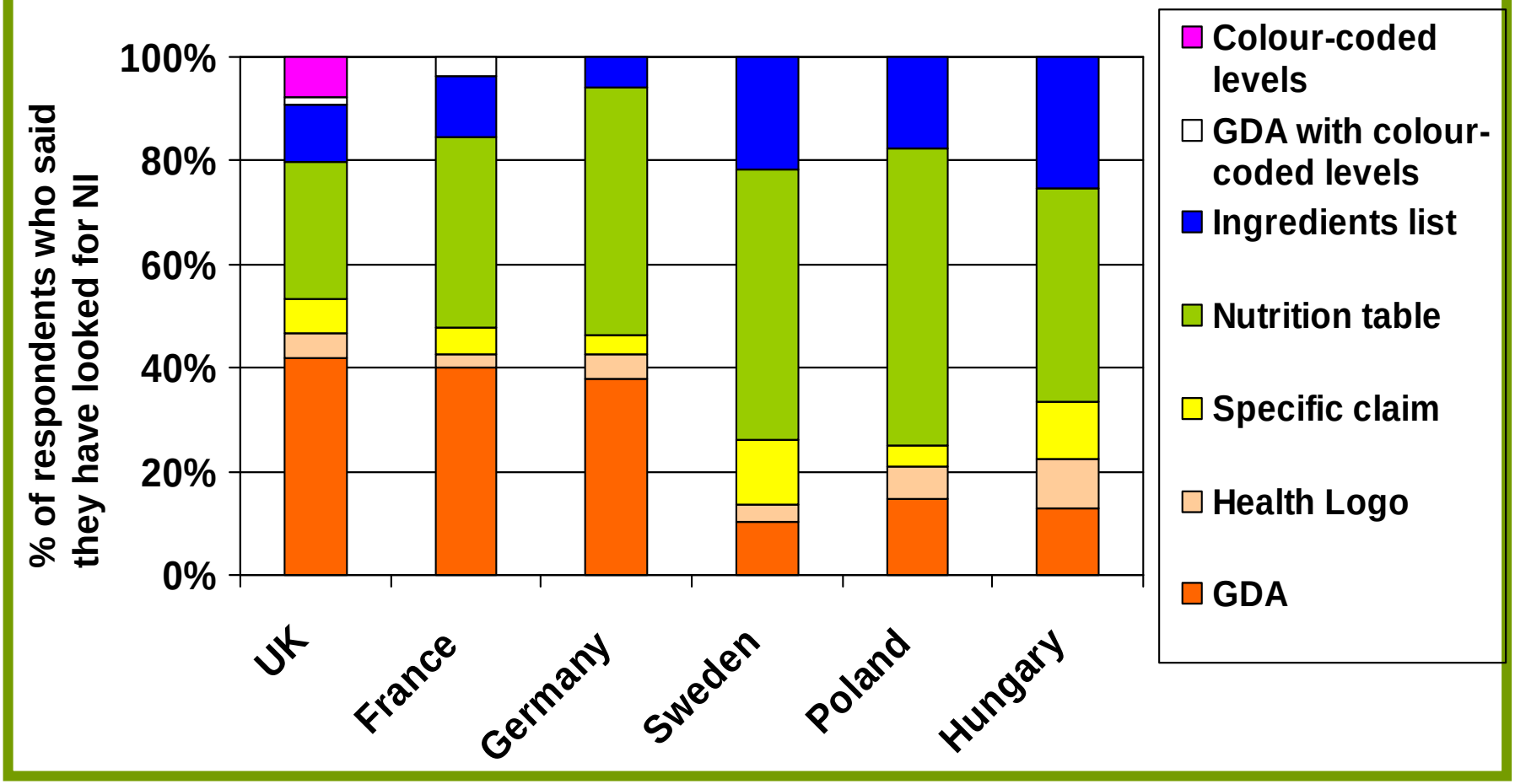


Nutrition information looked for

Nutrition information looked for: Across product categories

- Calories most cited nutrition information looked for in 4 of 6 countries
  - except UK (fat, then calories) and Sweden (sugar, fat)
  - highest in Germany (69%), lowest in Hungary (33%)
- Fat among top 3 in all countries except Hungary
- Saturates not among top 5 in any country except UK
- Sugar among top 5 in all countries
- Carbohydrates among top 5 in all countries except UK and Poland
- Salt among top 5 only in UK and Germany
- Other top 5 mentions: Food additives (Hungary, France, Poland), Fibre (Sweden), Protein (Hungary), Vitamins (Poland)

Nutrition information looked for: Where?



Nutrition information looked for: What and where

WHAT?

- Calories, fat, sugar most frequently looked for

WHERE?

- Germany, Sweden, Hungary, Poland: Nutrition table
  - then GDA (Germany) or ingredients list (Sweden, Hungary, Poland)
- France, UK: GDAs
  - then nutrition table

Determinants of looking for NI

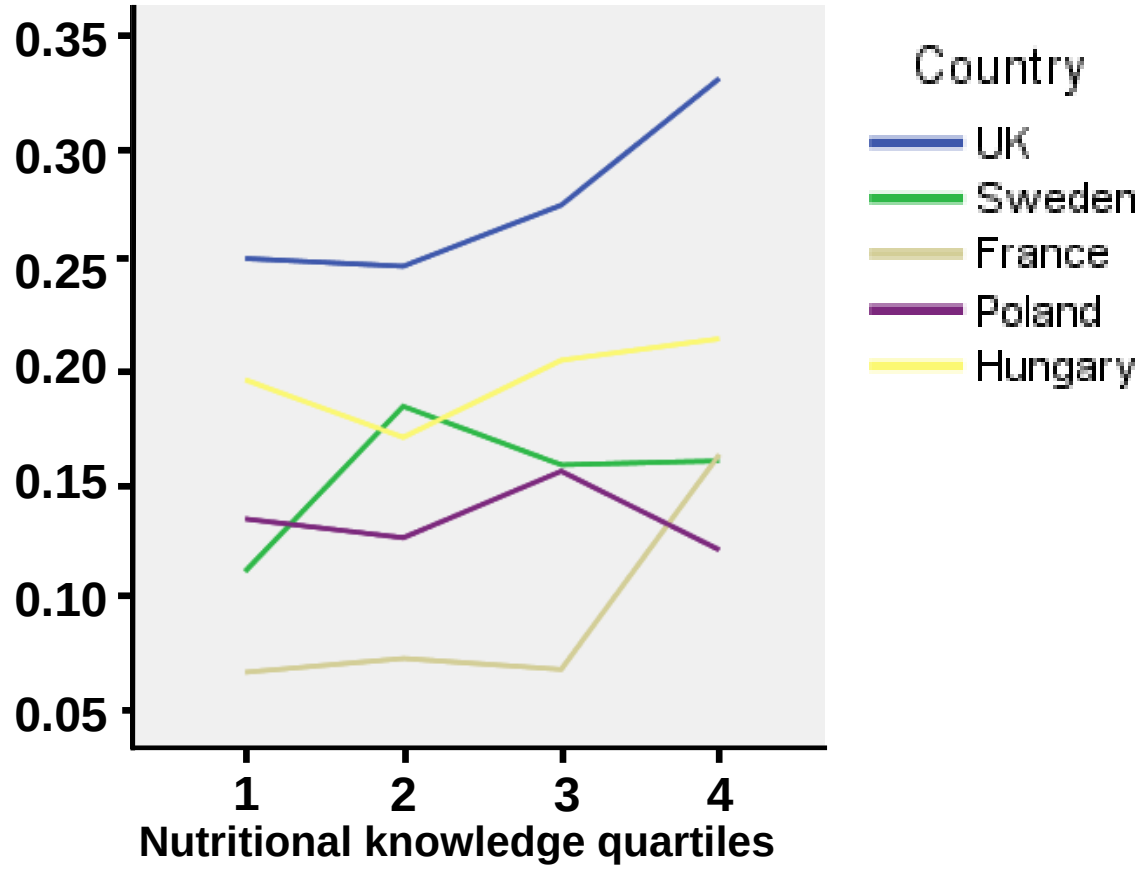
Demographics
Nutritional knowledge
Health problems
Situational
Reason for choice

Determinants of looking for NI: Demographics

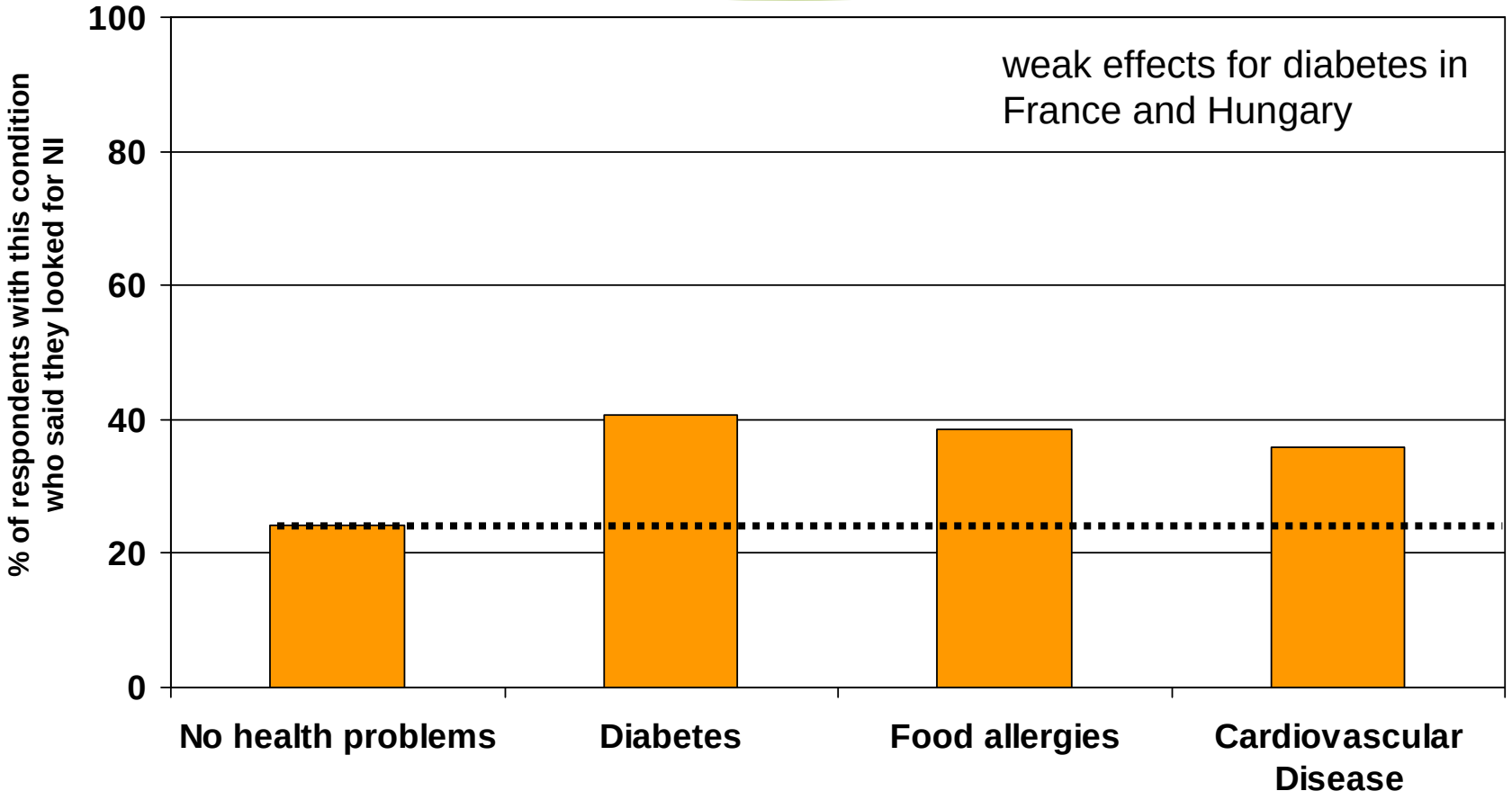
- Country-wise differences – looking for NI was most frequent in the UK and least frequent in France
- Regional differences – in some cities respondents had a higher likelihood of looking for NI than others
- Higher level of nutritional knowledge increases likelihood for looking for NI (except in Poland)
- Older respondents tend to have a slightly higher chance of looking for NI (except in Hungary)
- Higher social grades have a higher chance of looking at NI
- Mixed results for interest in healthy eating, having children
- No significant effects for gender, store, BMI

Nutritional knowledge and looking for nutrition information

Looked for any NI on packaging



Determinants of looking for NI : Diet-related health problems - UK



Main reasons for product category choice

- Taste the main reason for product choice in all product categories in Germany, Sweden, Hungary and Poland
  - In France, 'family wants' equally important for breakfast cereals
  - In UK, convenience most important for ready meals, health/nutrition most important for breakfast cereals and yoghurts, taste for other three categories

Awareness & understanding of FOP labelling systems

Awareness

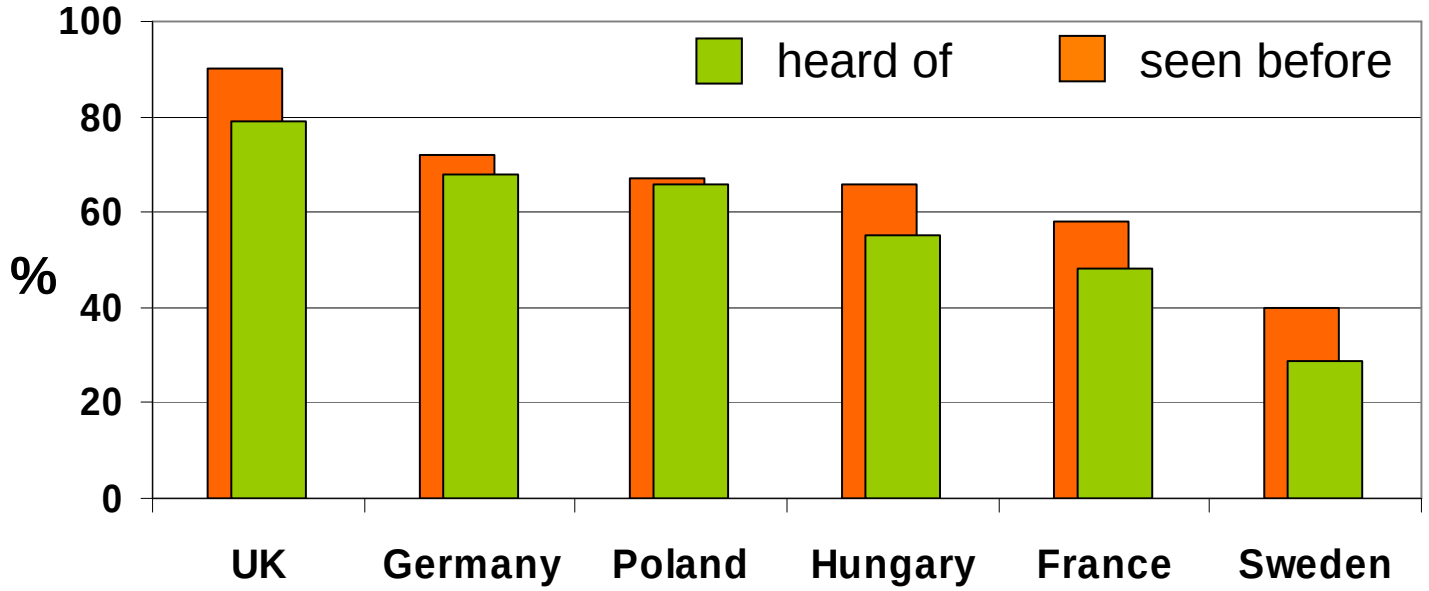
Understanding

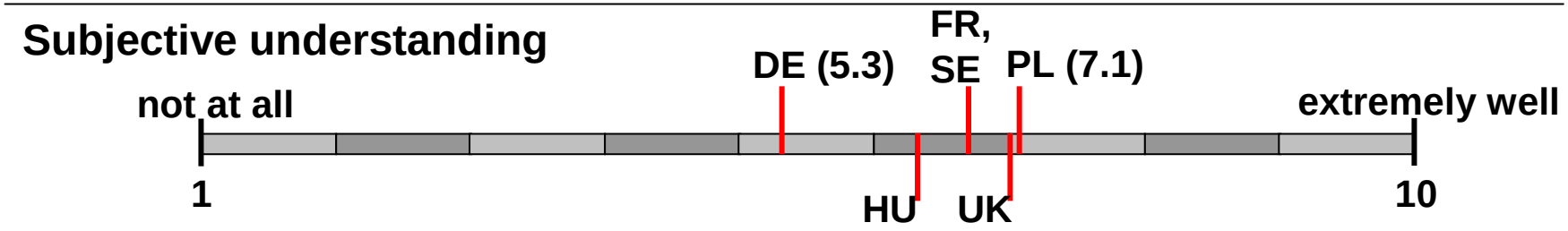
Determinants of understanding

Understanding in context

Health inference

Awareness and subjective understanding - GDA





Awareness of GDAs: Main findings

High awareness of GDA system

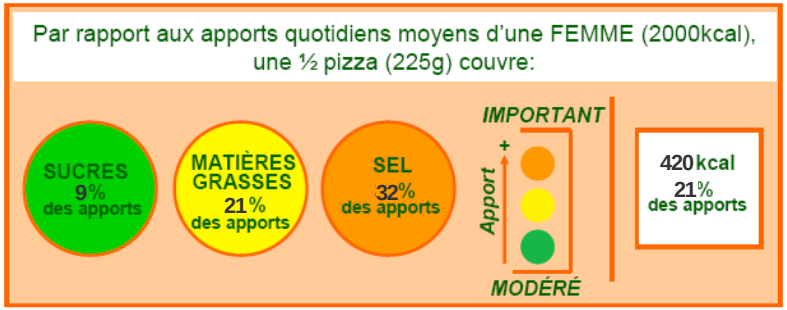
- Between 29 and 79% of shoppers say they have heard of GDA system
  - lowest in Sweden, highest in UK
- Between 40 and 90% say they have seen the GDA system before
  - lowest in Sweden, highest in UK
- Subjective understanding ranged from 5.3 in Germany to 7.1 in Poland

Heard of GDA - determinants

- Awareness of GDAs differs by country (highest in UK, lowest in Sweden)
- Awareness of GDAs is higher for people with good nutritional knowledge and for people with interest in healthy eating
- Awareness of GDAs is higher for younger people in Sweden, France, Poland and the UK
- Awareness of GDAs is not related to gender, social grade and location

Awareness and subjective understanding - systems using colour-coded levels

Nutri-pass, a colour-coded GDA system (Intermarché, France)



Example GDA/TL hybrid system, UK

Each serving contains

of your guideline daily amount

Examples of TL system, UK

Awareness and subjective understanding - colour coding

- UK and France the only countries to have colour-coding TL-like system
- In UK, majority of shoppers say they have heard of (79%) or seen the TL system (81%)
- In France, minority of shoppers have heard of (15%) or seen (23%) the colour coding system (Nutri-pass)
- Irrespective of awareness, subjective understanding is high (6.7 in France, 6.9 in UK)

Swedish keyhole

- Awareness (recall and recognition) of the keyhole symbol in Sweden is over 95%
- Subjective understanding is highest (7.3) for the keyhole compared with other labelling systems in the other countries

Understanding FOP labelling concepts

Understanding of concept: GDAs

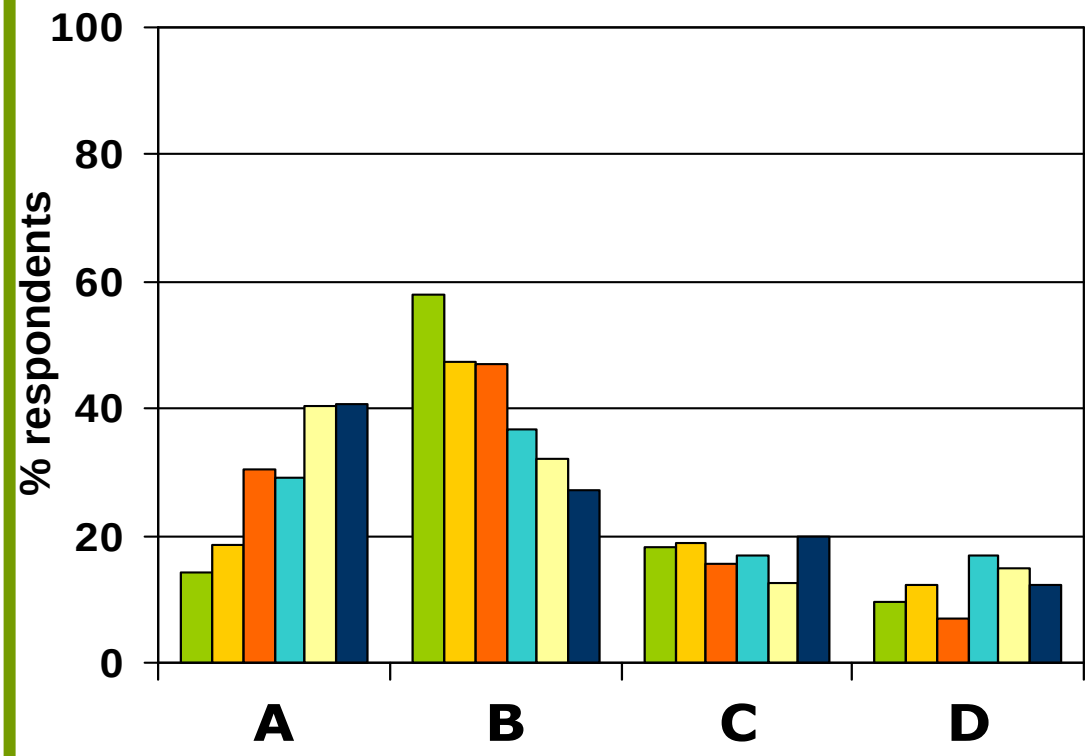
Q: In your opinion, which of the following best describes what "guideline daily amounts" means?

A: Guide to the amount of energy (calories) and maximum amount of some nutrients (e.g. fat, saturated fat / saturates, salt, sugars) a person should be eating in a day

- Between 67% (UK) and 28% (France) correctly defined the GDA system when presented with multiple choice
  - only in France, a majority of people (35%) answered incorrectly

Understanding of concept: GDAs

Complete the sentence: GDA indicates, as a percentage of an adult's daily needs, the level of nutrients ...



A = In 100g of the food

B = In a serving of the food

C = Both of the above answers are correct

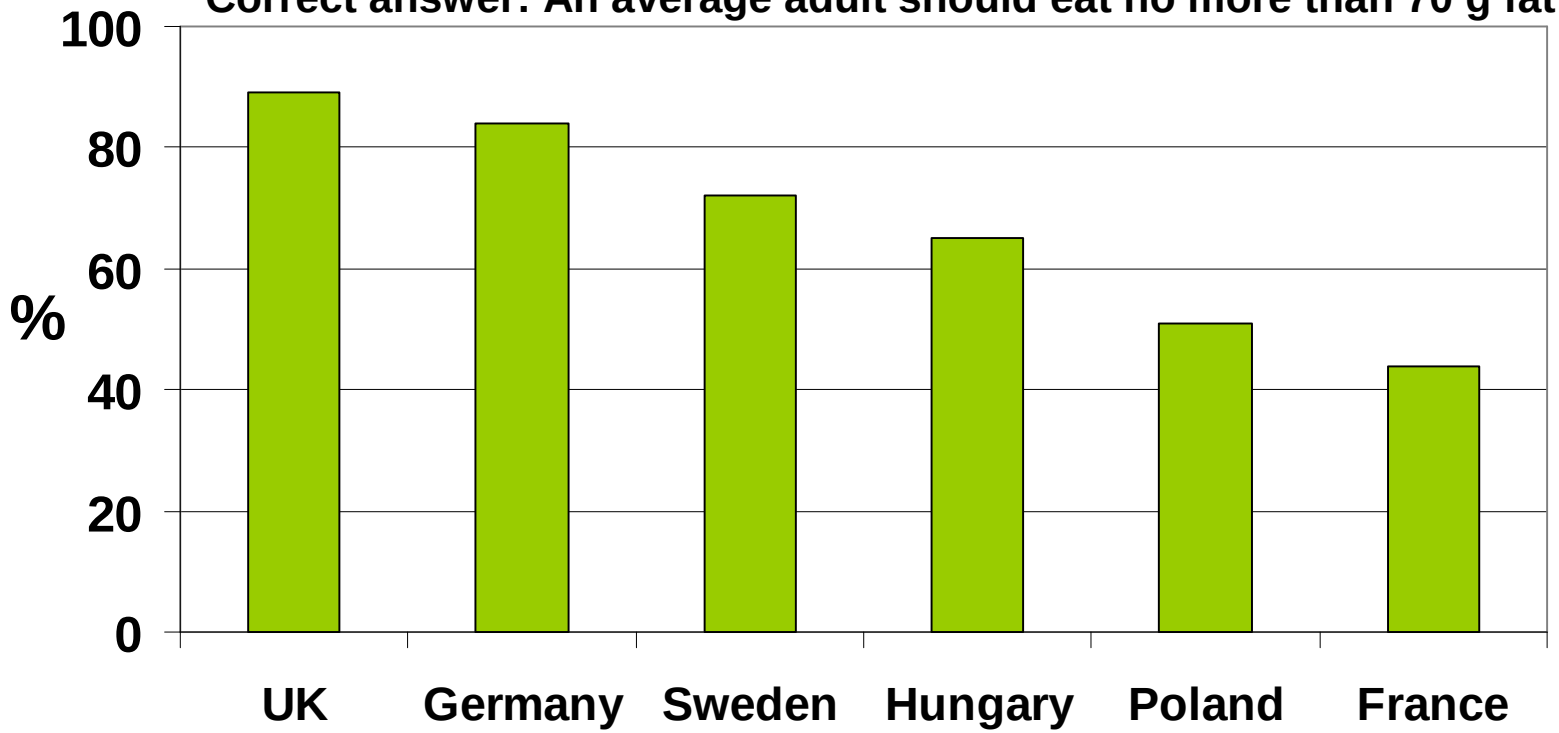
D = None of these answers is correct

- France
- UK
- Germany
- Sweden
- Hungary
- Poland

Understanding of concept: GDAs

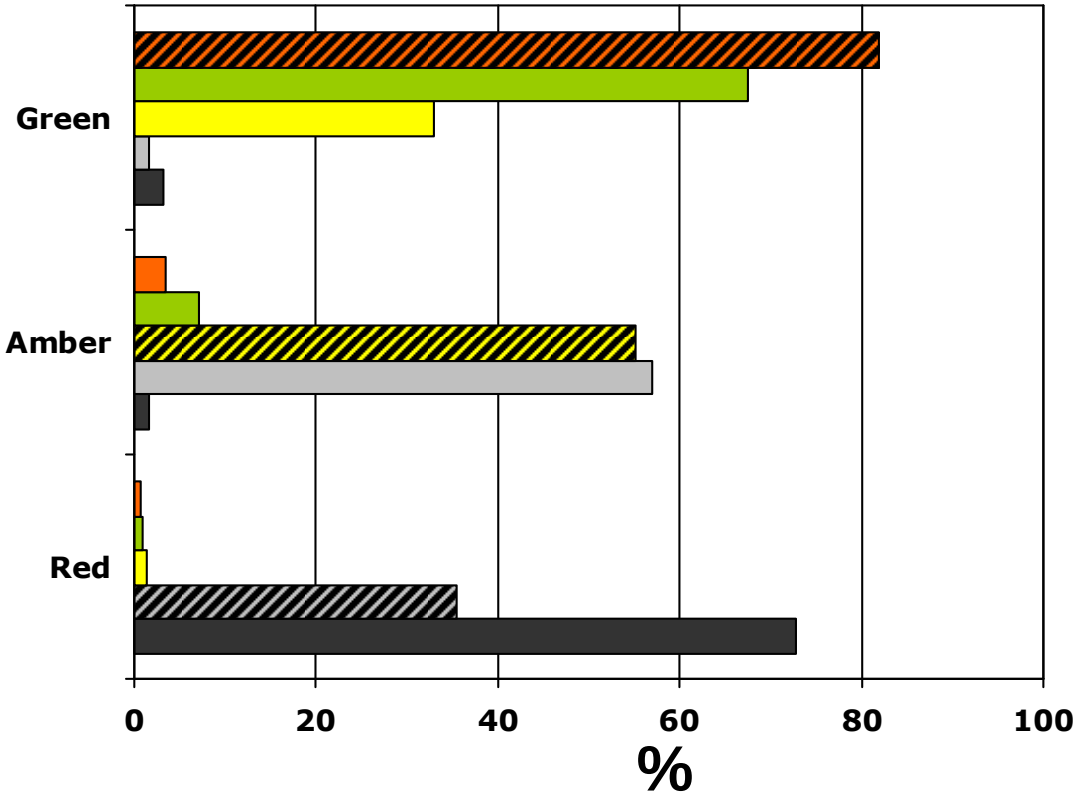
If a food label says the average adult guideline daily amount for fat is 70 g, what do you think this means?

Correct answer: An average adult should eat no more than 70 g fat a day



Understanding of concept:TL in UK

Q: Which of the following statements do you think best describes what each colour means?



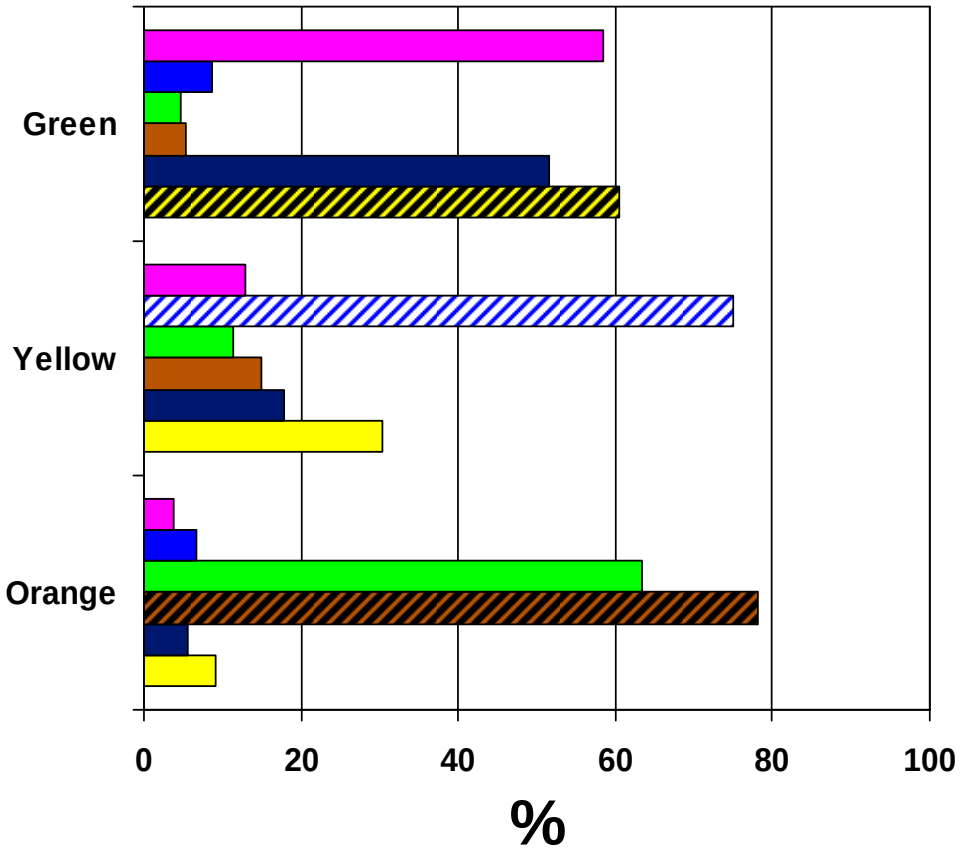
- This is a healthier option
- This is an OK choice all of the time
- This is an OK choice most of the time
- It's fine to have this product occasionally as a treat
- I should try not to eat this product

The correct answer is indicated by the pattern

Note – multiple answers marked, even though instruction was to mark only one answer per colour

Understanding of concept:Nutri-pass in France

Q: Which of the following statements do you think best describes what each colour means?



- This is a healthier option
- A portion of the product provides more than a moderate amount of some nutrients
- I should try not to eat this product
- The product provides an important amount of some nutrients
- This is an Ok choice all of the time
- The product provides moderate amounts of some nutrients

The correct answer is indicated by the pattern

Note – multiple answers marked, even though instruction was to mark only one answer per colour

Understanding of concept: colour-coding/TL in UK

- The majority of UK consumers understand the meaning of the colour green
- Consumers tend to over-interpret and exaggerate the meaning of the other colours
- 73% of respondents thought red indicated « try not to eat this product »
- Less than half of this number (35%) correctly defined the red TL as « It's fine to have this product occasionally as a treat »

Understanding of concept: colour-coding/TL in France

- 60% of Intermarché respondents correctly answered the Nutri-pass system refers to a serving
- 78% understood that “orange” colour means the food provides an important amount of some nutrients
- 63% chose option “should try not to eat this product” for “orange” colour

Understanding of Concept: Keyhole symbol in Sweden

- 55% correct answers for definition of keyhole symbol i.e. food and drinks that contain less fat, less sugar and less salt, and more fibre than food products of the same type

- 71% knew the symbol helps to identify healthier foods of the same category or type (compared with 21% that said it was across all categories)

Understanding actual product labels and Health Inferences

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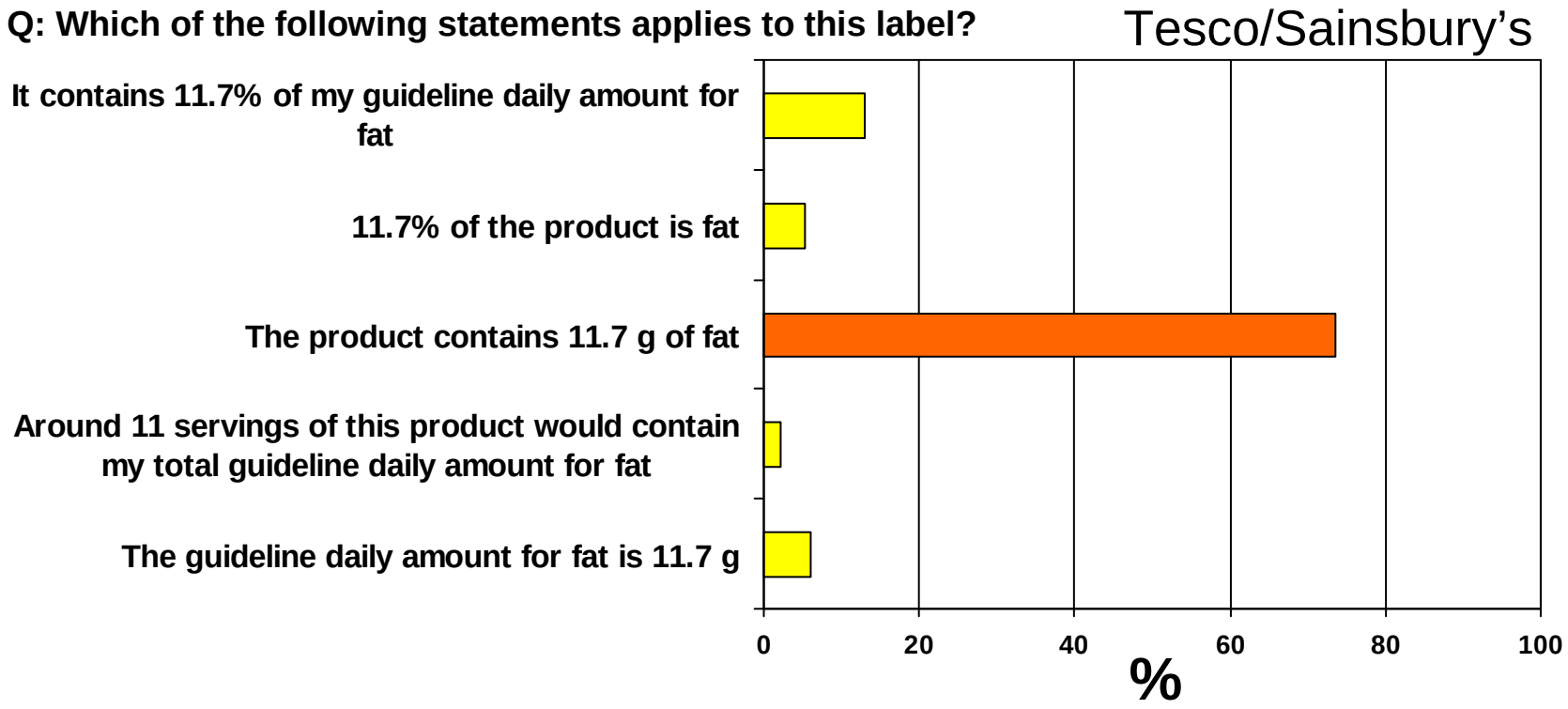
Understanding of GDA label FOP, on one product UK example



- Overall, 50-74% of shoppers were able to correctly interpret GDA labels in this way, except for Poland (34%)

Understanding of GDAs, on multiple products

Q: If you ate one serving of each of these products on the same day, your total intake of sugar will be more/equal to/less than the guideline daily amount of sugar a person should be eating in a day

Understanding GDAs FOP, on three separate products

Q: Please look at the guideline daily amount information on these 3 products. If you ate *one recommended serving of each* of these products on the same day, your total intake of *sugars* will be more, equal to or less than the guideline daily amount of sugars a person should be eating in a day

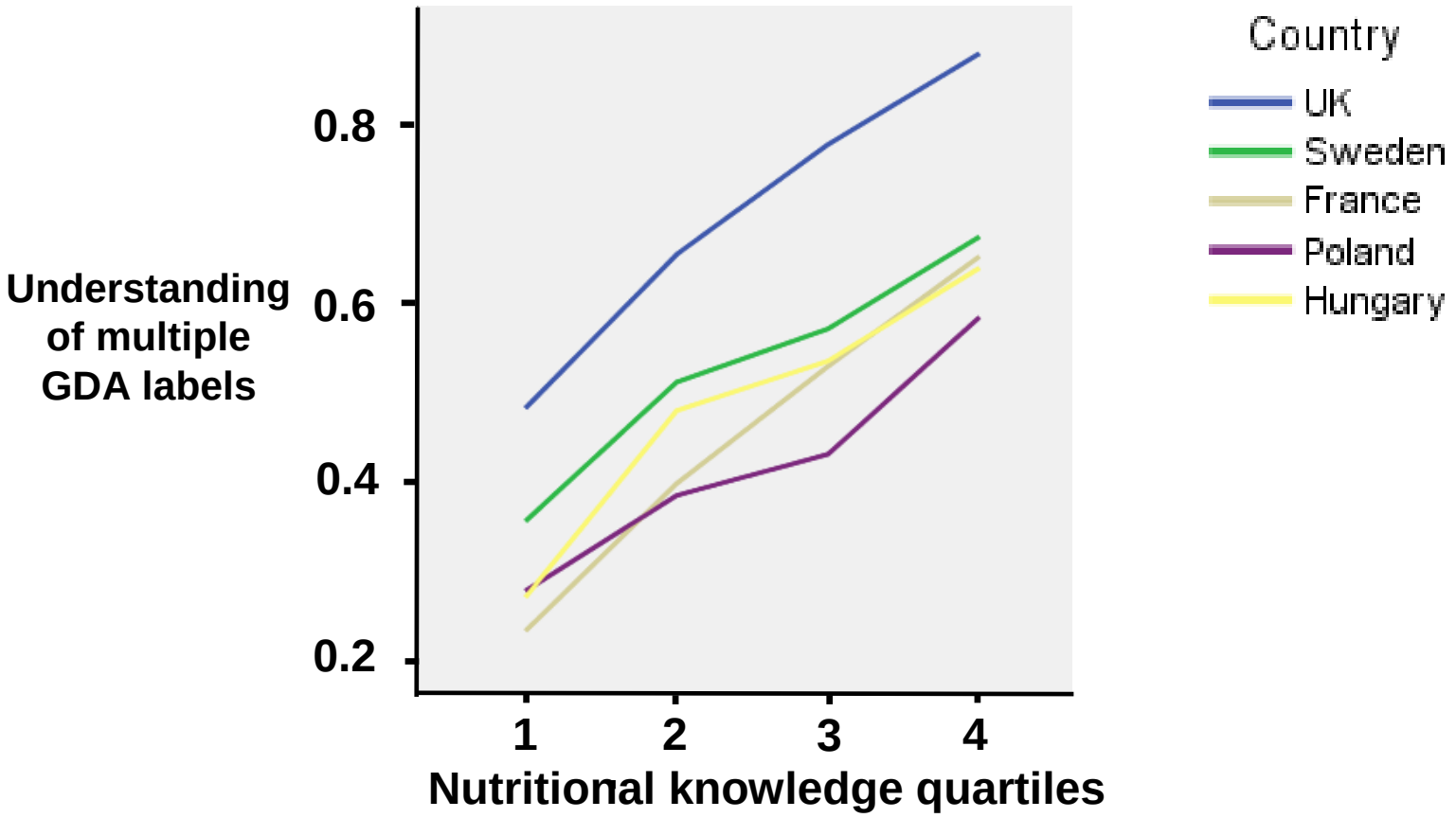
A: Less than GDA of sugars a person should be eating in a day

- Correct answers ranged from 75% (UK) to 39% (Poland)
  - Germany (65%), Sweden (54%), Hungary (51%), France (46%)

Understanding of GDAs on multiple labels - determinants

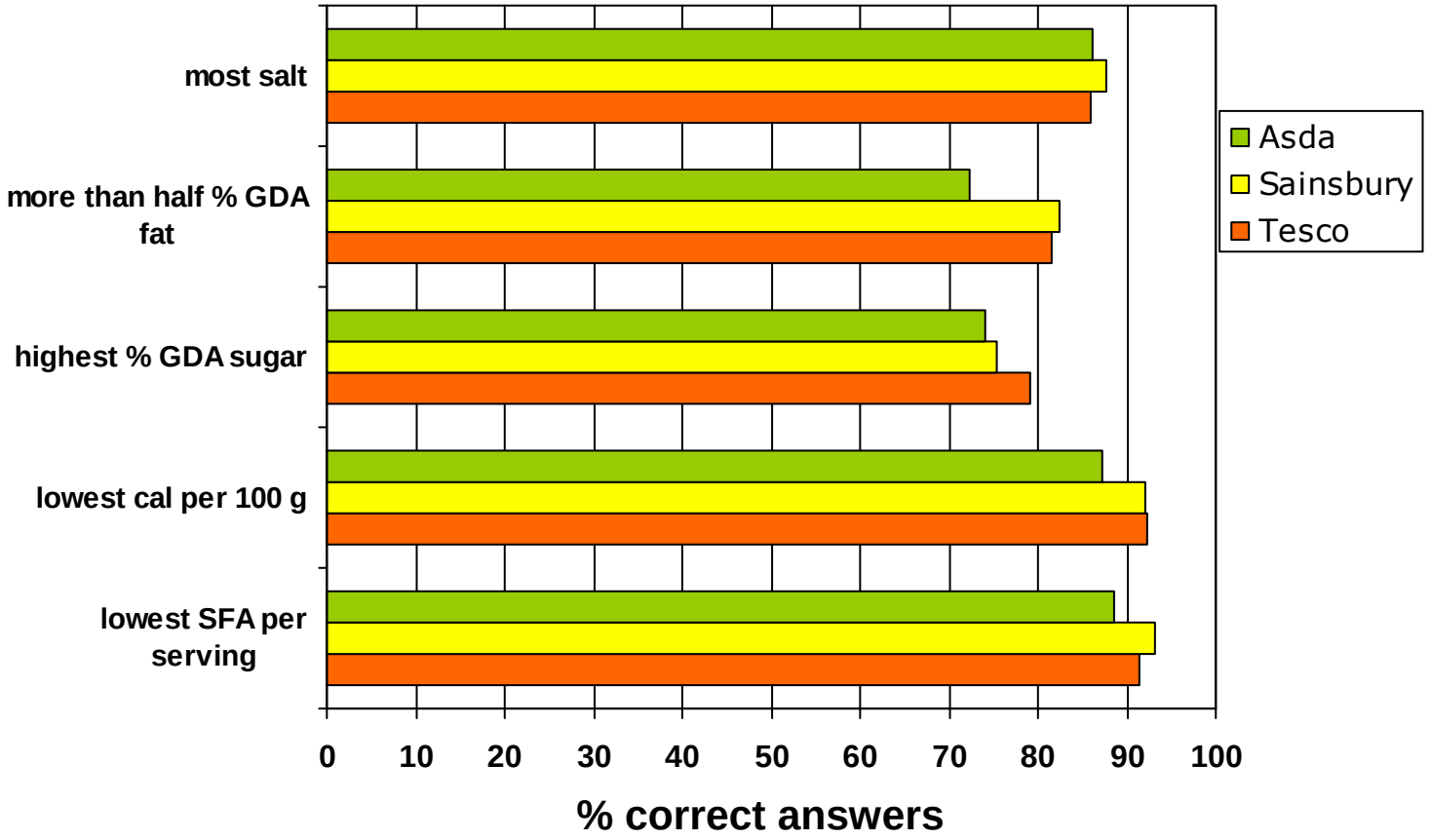
- Understanding of GDAs on multiple labels is highest in UK, lowest in Poland
- Understanding is more likely for people with higher nutritional knowledge
- In France, Sweden, UK, understanding is more likely for people with higher social grade
- In most countries, understanding is better for younger people
- Results for gender are mixed
- Understanding is not related to store, BMI, interest in healthy eating

Understanding multiple GDA labels: effect of nutritional knowledge



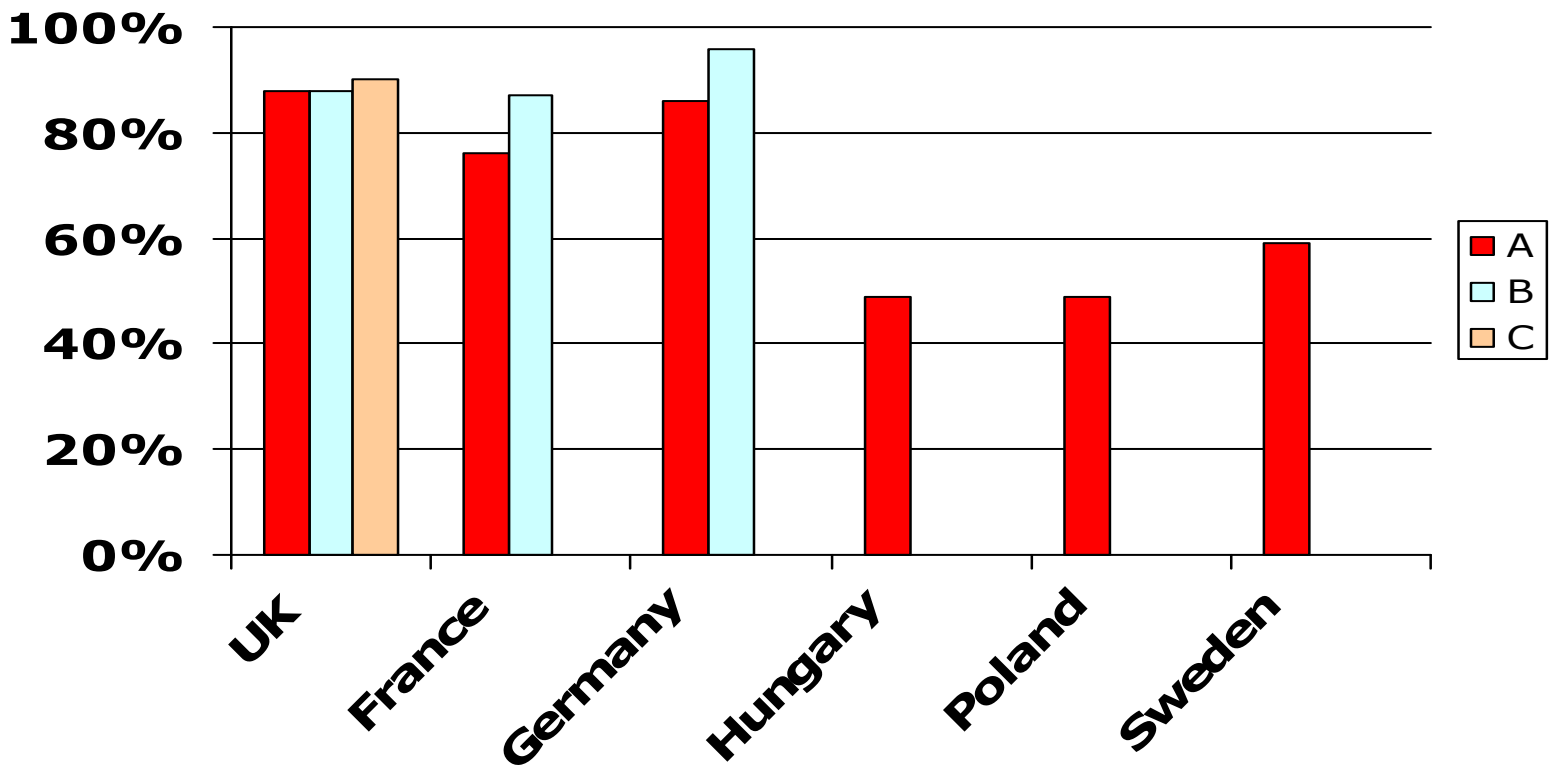
Understanding:
Actual product labels - UK example

Q: Which of these three products contains …?



Health inferences:
Actual product labels

Q: Which of three actual products is the healthiest? Percentage correct answers



Health inferences:
Actual product labels (pizzas/ready meals)

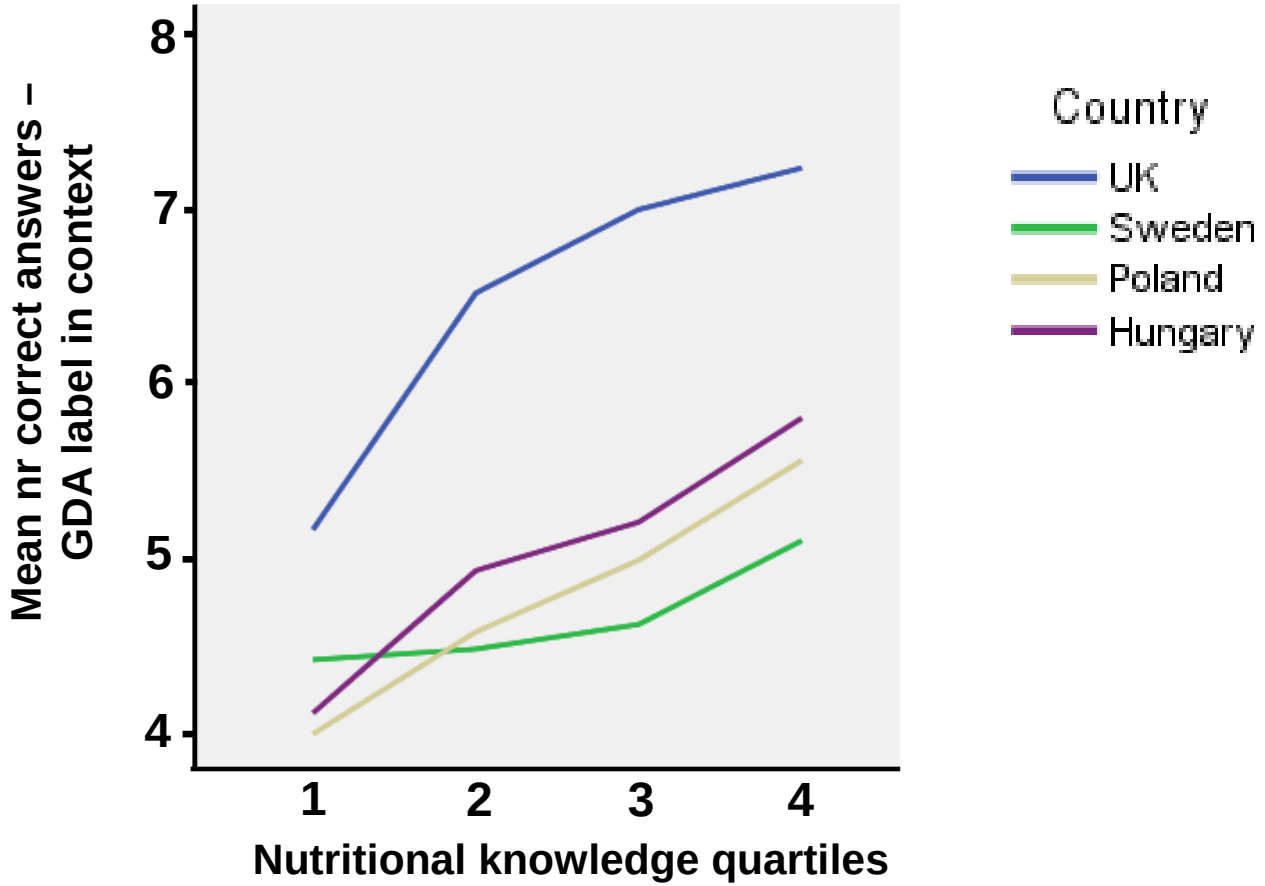
Q: What type of information did you use to decide which is the healthiest product (3 elements)?

	1st mention	2nd mention	3rd mention
Germany			
Lidl	Fat	Calories	Vegetable content
Real	Fat	Calories	Appearance
Sweden	Fat	Sugar/Carbs	Fibre
Poland	Fat	Calories	Saturated fat
UK	Fat	Calories	Salt
France			
Intermarché	Fat	Salt	Sugar
Auchan	Calories	Fat	Salt
Hungary	Calories	Fat	Ingredients

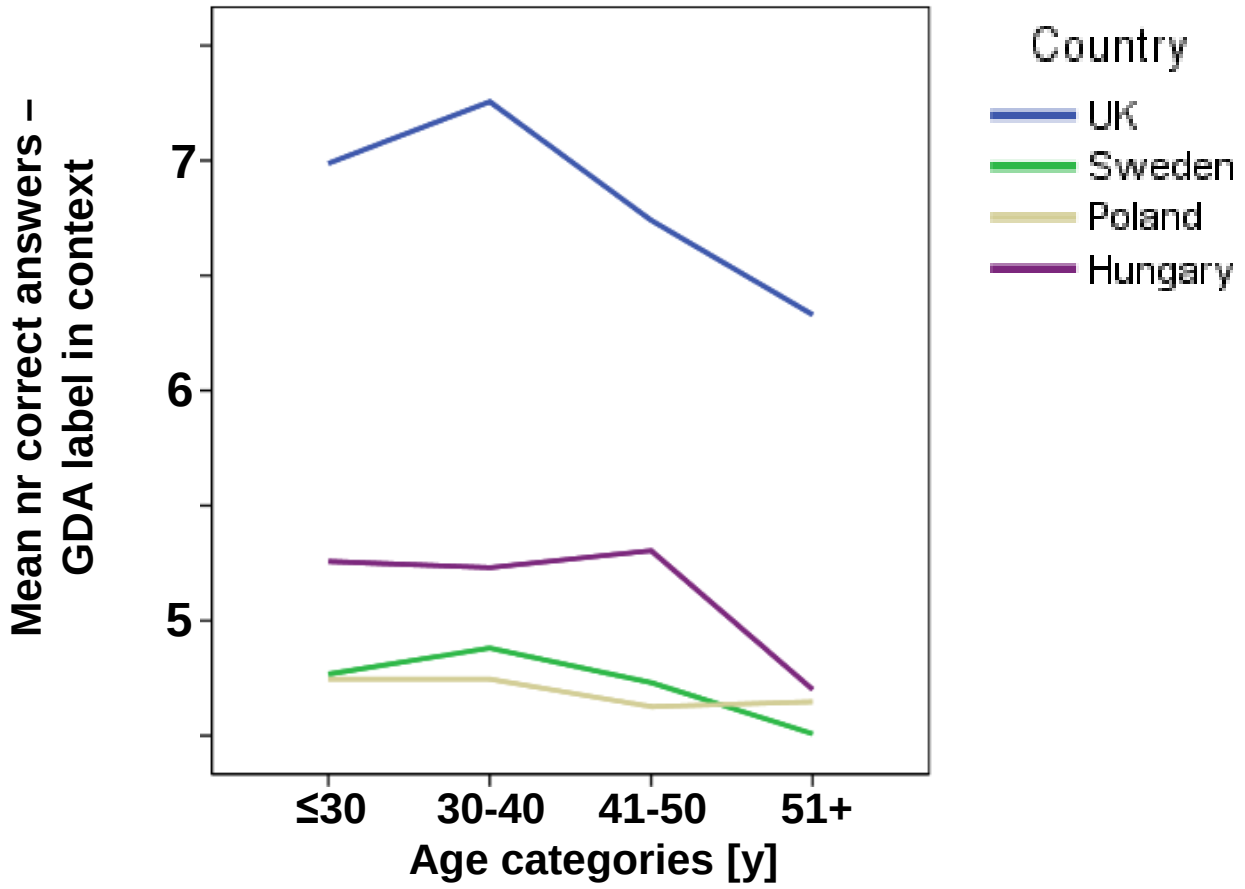
Determinants of health inferences & understanding: Actual product comparisons

- Number of correct answers highest in the UK, at same level for other countries
- Number of correct answers higher for people with better nutritional knowledge, and for younger people, and to some extent for those with an interest in healthy eating
- Mixed results for having children under 16 y
- Not related to gender, social grade

Determinants of health inferences & understanding: Actual product comparisons

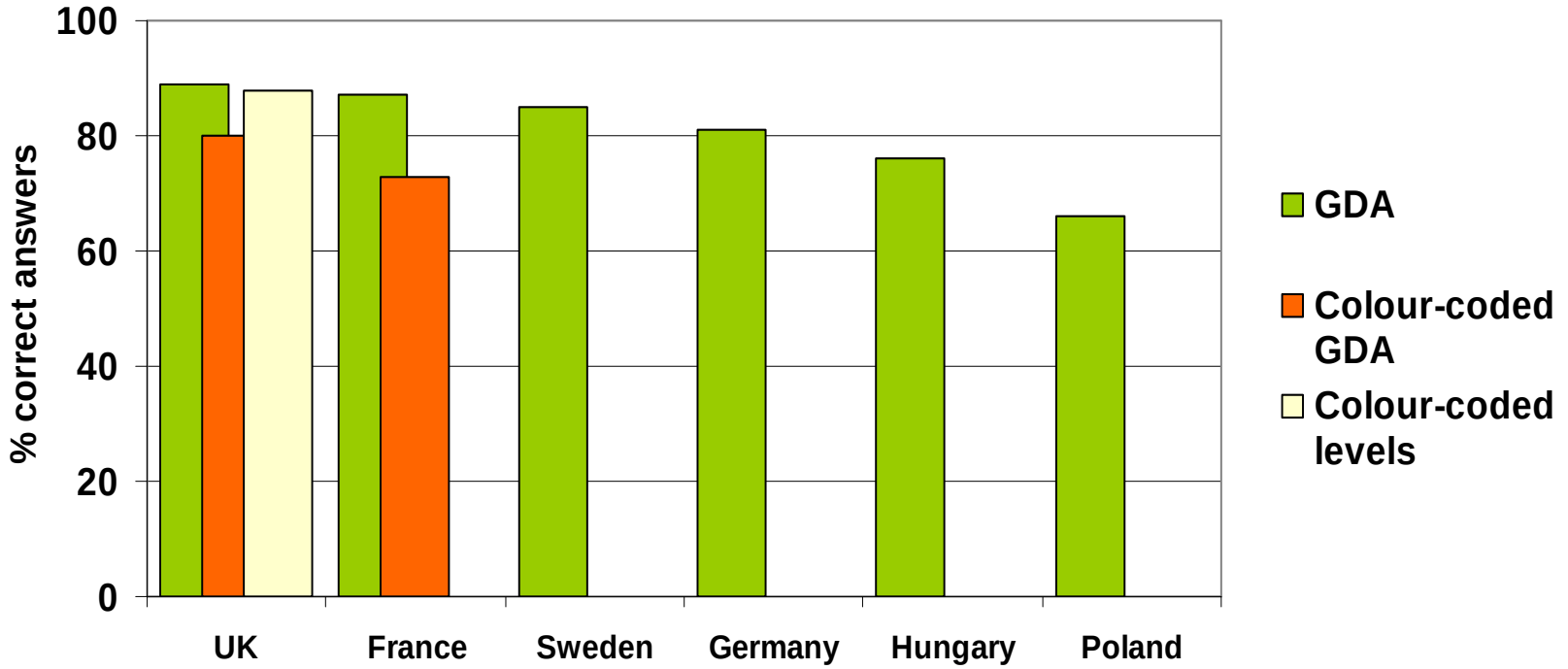


Determinants of health inferences & understanding: Actual product comparisons

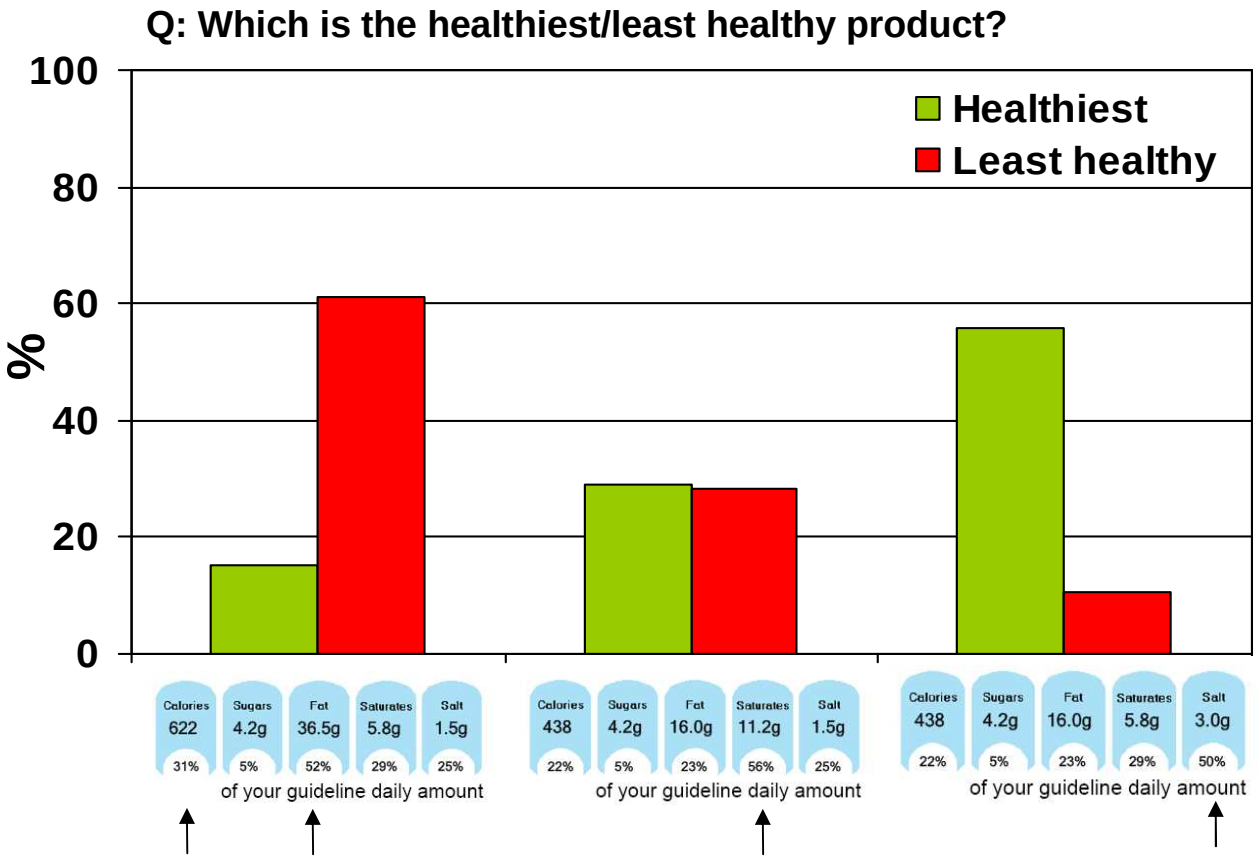


Health inference - choosing the healthier option: Comparison of 2 labels

Q: Which is the healthier product?



Health inference - choosing the healthier option: Comparison of 3 GDA labels - UK example



- All systems in all countries yield similar results
- Choice of unhealthier product driven by high calories, high fat
- High saturated fat less of an issue in other countries
- Very few identified high salt products as least healthy (<22%)

Health inferences:
Importance of elements for indicating healthiness

Q: How important do you think the following elements are for indicating the healthiness of a product? (5-point scale from “totally unimportant” to ”very important”; 9 options)

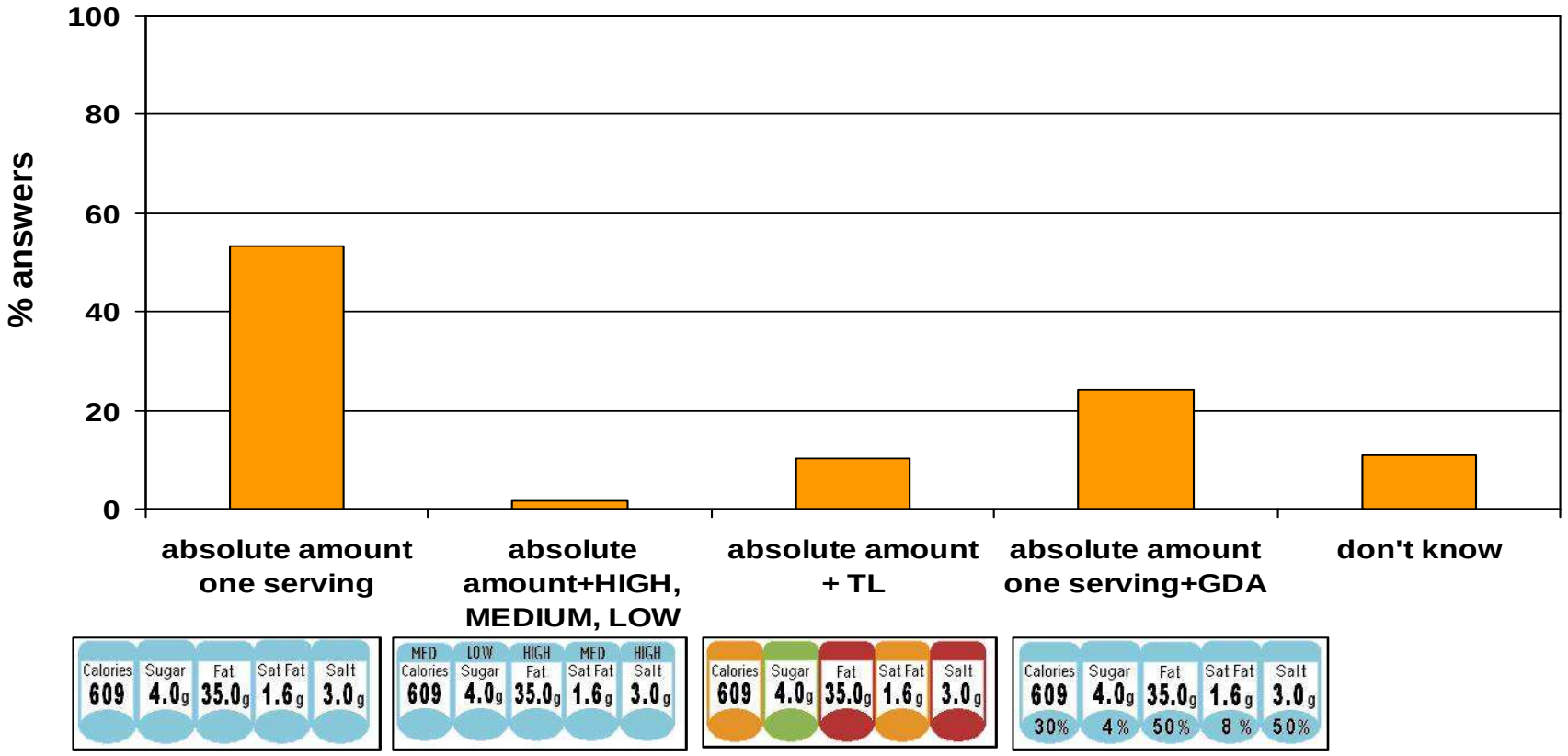
	Highest	Lowest
Germany	Nutrients good for you	Healthy food logo
Sweden	Nutrients good for you	No preservatives, artificial flavours or colours
France	Fresh (not processed)	Organic
Hungary	Fresh (not processed)	Organic
Poland	Fresh (not processed)	Organic
UK	Fresh (not processed)	Endorsed by health group

Health inferences:
Sources of nutrition information

Q: Which of the following are you most likely to use as a source of nutrition information? (5-point scale ranging from "extremely likely" to "extremely unlikely"; 11 options)

	1st mention	2nd mention	Last mention
Germany	Labels	Magazines, newspapers, books	Dietician
Sweden	Labels	Magazines, newspapers, books	Fitness/weight loss programme
Hungary	Labels	Health associations' materials	Company materials/ advertisements
UK	Labels	Health associations' materials	Government materials
Poland	Friends, relatives, colleagues	Magazines, newspapers, books	Government materials
France	Doctor/health professional	Dietician	Company materials/ advertisements

Which element of the ASDA hybrid label is most helpful for indicating healthiness of a product?



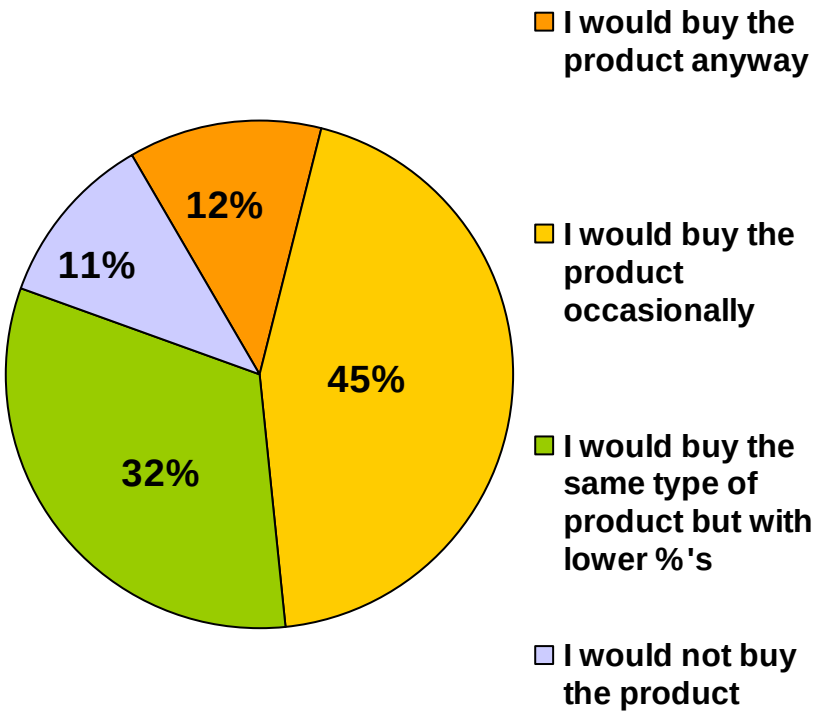
Understanding and Health inferences: Main findings

- More than 70% in Germany, France and UK can identify the healthiest product between three actual products, and about 50% in Hungary, Poland and Sweden
- Awareness, understanding and ability to make correct health inferences are to some extent linked to nutritional knowledge, age, and social grade
- Fat and calorie levels drive healthier or least healthy choice, despite levels of salt or saturated fats
- Less than 15% of respondents stated that the colour-coding / interpretative elements of a hybrid system were helpful for indicating healthiness of a product

Behavioural response

Behavioural response - UK example

If a product you usually buy has high GDAs for one or more nutrients, what would you do?



- **Share buying product anyway is highest in Germany, Hungary and Poland (up to 23%)**
- **Share not buying the product highest in Sweden, France and the UK (up to 12%)**

Behavioural reactions: Swedish keyhole

Awareness and understanding of the keyhole is excellent. However:

- If a product does not carry the keyhole, most respondents (44%, and the highest number) would buy it anyway
- And 61% will always or occasionally look for other nutrition information on label even if the keyhole is present, compared with 27% who don't look for other information on label if the keyhole is present

Main conclusions

Nutrition knowledge: Key conclusions

- People have reasonably good knowledge about expert recommendations, but have a tendency to exaggerate with regard to foods to be 'avoided'
- People have a reasonable command of calories, including calorie content of foods but a majority of consumers tend to under-estimate calorie needs and calorie use
  - More than one third of respondents think children need more calories than an adult man
- Saturated fat, trans fat, total fat and omega-3 are better understood than PUFA, MUFA
- Starchy foods such as bread, rice, pasta and potatoes are not well understood, less than 32% of respondents correctly answering that they should eat a lot of these types of foods

Purchasing and handling of products: Key conclusions

- Respondents spend on average 30 seconds per product bought
  - UK lowest (25 s), Hungary highest (47 s)
- Only few respondents (≤ 15 %) look elsewhere on pack
  - except for Germany (up to 32 %)
- More than 60 % of respondents look at front of pack
  - except for France (31 %)
- Majority spend most time looking at ready meal category
- Product category looked at most briefly varies widely across countries

Use of nutrition information: Key conclusions

- Up to 27% of respondents looked for nutrition information when shopping
  - national differences – UK highest, France lowest
- They looked mostly for fat, calories, sugar, and salt
- They look for this information mostly in the nutrition table and the GDA label
- Respondents with higher levels of nutritional knowledge, higher social grades, older respondents were more likely to look for nutrition information

Awareness, understanding & health inferences: Key conclusions

- More than 70% in Germany, France and UK can identify the healthiest product between three actual products, and about 50% in Hungary, Poland and Sweden
- Awareness, understanding and ability to make correct health inferences are linked to nutritional knowledge, and age, and to some extent to social grade, and interest in healthy eating
- Fat and calorie levels drive healthier or least healthy choice, despite levels of salt or saturated fats