Taste and food intake in older adults

Taste panel research: implications for clinical practice

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Taste panel research: Implications for clinical practice

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Disclosure for Esmée Doets

- No relevant conflicts of interest to declare
Learning objectives

- Know why to use a taste panel
- Know different methodologies for studying consumer behaviour in older adults and implications for daily (clinical) practice
A healthy diet for older adults
Eating behaviour is affected by perception and liking of foods

Doets & Kremer, Food Qual Pref 2016
- Age, gender
- Appetite, satiety
- Health status, medicine use
- Past experiences
- Habits, culture, beliefs
- Sensory performance

Roberts & Rosenberg, Physiol Rev 2006
Elsner, Eating behaviours 2002
Koster et al. Front Psychol 2014
Liking Perception Intake

PRODUCT

- Odour, taste, appearance, texture
- Packaging, labelling
- Familiarity
- Portion size
- Price
- Preparation

Okamoto & Dan 2013
Koehler & Leonhaeuser 2008
Piqueras-Fiszman & Spence 2015
• Physical environment
• Social environment
• Variation
• Availability
• Time & duration
Strategies to promote adequate food intake by optimizing food perception and food intake

• Clear definition of target population segment
• Targeted product adaptations
• Optimization of meal context

Taste panel research
SenTo (Senioren van de Toekomst (Dutch); Seniors of the Future; Italian: I feel)

- Network of 800 seniors from Wageningen region
  - Age 55-91 y, independently living
  - Computer literate
  - Demographics, dietary & lifestyle habits, health status
  - Nutritional status
  - Taste performance (taste strips)
  - Olfactory performance (sniffin’ sticks)
  - Cognitive test
Different methodologies for studying consumer behaviour

- Sensory lab
- At home
- Real life setting (simulation)

Approaching real behaviour

Level of control
Evaluating products in sensory lab

- Compare (similar) products on:
  - Initial liking
  - Product perception (attributes)
  - Emotional response
  - Effect of information

+: Highly systematic -> random order, unexposed

 -: One sip/bite -> liking of products may change during consumption
Example sensory lab: Protein enriched bread

- **Target population:** Older adults with normal vs reduced olfactory performance
- **Product:** standard vs protein enriched bread
- **Extra condition:** With vs without information on added value
Hyposmic seniors like protein enriched bread better than normal bread.

Providing information on protein enrichment affects liking in normosmic seniors.

Results on protein enriched bread:

- Breads were successfully implemented in rehabilitation centre to increase daily protein intake among older patients.

Results described: Van Til et al. J Nutr Health Ageing 2015.

Kremer et al. Food Qual Pref 2014
Example 2: Multi-sensory enrichment

- Mashed potato: improved taste & appearance
- Gravy: improved taste & texture
- Stew: improved taste

Similar results for potato and gravy

Multi-sensory enrichment seems a promising strategy for improving palatability in both normosmic and hyposmic older adults

Kremer et al. Food Qual Pref 2014
Home-use test

- Compare (similar) products
  - Liking after consumption of full portion
  - As part of usual consumption habits
  - In usual consumption context, i.e. home environment

+: Insight in interactions between intrinsic & extrinsic product properties
+: Prediction on response to products, packaging or services
-
-: Self-reported consumption
-: External influences
Example: consumption of protein enriched drinks

- Daily consumption of 1 product on self-selected time point (fixed)

  **Results:**

  - Clear indications for consumer preferences on taste (sweet, not sour) and texture (thick) of protein enriched drinks
    - Packaging influenced product liking
    - Input for product development
  - Willingness to consume the product again
Real-life studies

- Examples: Out-of-home, supermarket, hospital
- Simulated real-life settings -> e.g. virtual supermarket

+: Realistic insights in product choice and product acceptance
+: Effects of intrinsic (e.g. ingredients, taste) & extrinsic product properties (e.g. product packaging, lighting, positioning) on consumer behaviour

-: External influences
-: Logistic challenge
Example: Ad libitum intake of (protein enriched) drinks in restaurant

<table>
<thead>
<tr>
<th>Intake (ml)</th>
<th>Liking</th>
</tr>
</thead>
<tbody>
<tr>
<td>regular</td>
<td></td>
</tr>
<tr>
<td>protein enriched</td>
<td></td>
</tr>
<tr>
<td>nutrition drink</td>
<td></td>
</tr>
</tbody>
</table>

- n.s.

- one sip
- portion

- regular
- protein enriched
- nutrition drink

- n.s.
- **
- *
Other examples of real life studies

Results:

• What strategies support consumers in following a healthy diet?
  • Evaluation in other more vulnerable target groups

- Personalisation based on muscle health, dietary behaviour & socio-psychological variables
  • Outcome: compliance
Conclusion -> Learning objectives

- Know why to use a taste panel
  - Evaluate strategies for optimizing food perception & food liking in order to promote adequate food intake

- Know different methodologies for studying consumer behaviour in older adults and their implications for daily (clinical) practice
  - Clear definition of target population is needed!
  - Different research questions ask for different methods
  - Output can be used to improve daily (clinical) practice
Thank you!

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