Effect of the age on the implicit and explicit emotional response elicited by food textures: a study with children and seniors

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Visual cues

- Colour
- Shape
- Size
- Number
- Portion size

but... what about texture?
Texture in childhood

Children like to be in control of the food placed in their mouths.

Overall rejection of soft, slimy, and mussy textures.
Lower acceptance of foods with heterogeneous or more complex textures.

Innate fear of choking (Szczesniak, 2002)

Individual differences in texture preferences among European children: Development and validation of the Child Food Texture Preference Questionnaire (CFTPQ)


Cross-national differences in child food neophobia: A comparison of five European countries

Texture in ageing

Ageing leads to mental and body changes, including morphological and functional aspects, that influence people's quality of life. Some examples…

Dysphagia
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Difficulty to swallow liquid and/or solid foods.

Globally, it affects >12% people 60+ years old and it is thought that 90% people with dysphagia impairment is never diagnosed (Doan et al., 2022).

1. Decrease in food intake
2. Dehydration and malnutrition
3. Poor health
4. Decrease of quality of life


Food acceptance and preference

Do you like it?

Which product do you prefer?
Beyond food acceptance: **emotions**

Cognitive methods

Physiological methods

Behavioural methods
Objectives

To evaluate the influence of a variety of solid food textures on implicit and explicit emotions in schoolchildren and seniors.

1. Liking
2. Emoji (children) / EsSense25 (Nestrud et al. 2016) (senior)

Skin Conductance Response (SCR)

Automatic facial coding (FaceReader 8.0; basic emotions and action units AUs)
Methods

N = 50 children (46% girls; 5-12 years old)
50 seniors (54% women; 55-75 years old)

Tasks:

1. Observation
2. Olfaction
3. Manipulation
4. Consumption

Final self-reporting of:

Liking: 7-point hedonic scale
Emotions:
- Emoji, RATA with a 3-points scale (children; da Quinta et al. 2023)
- EsSense25, CATA (seniors; Nestrud et al. 2016)
Data analysis

During the sensory evaluation, four different events were marked to provide information about context:

- First look
- Close smell
- First touch
- Food placed in the mouth
Results: liking

Children and seniors equivalently liked the three solid textures evaluated according to the two-way ANOVA conducted with sample and group of population as factors.

Liking scores reported by schoolchildren (N=50) and seniors (N=50) to three texture-modified solid products.
Results: self-reported emotions

a) Children (emoji in RATA layout)

b) Seniors (EsSense25 in CATA layout)

Self-reported emotions given by a) schoolchildren (N=50) with an emoji-based questionnaire (da Quinta et al. 2023) and b) seniors (N=50) with EsSense25 (Nestrud et al. 2016) for three texture-modified solid products. Data is shown through Principal Component Analysis (PCA) for children and Correspondence Analysis (CA) for seniors, p=0.05.
Results: behavioural and physiological response

Ellipses bootstrap (axes F1 and F2: 73.50 %)

Biplot (axes F1 and F2: 73.50 %)

Ellipses bootstrap and biplot obtained in the Principal Component Analysis conducted on SCR and facial coding data measured during the observation of three texture-modified solid samples by schoolchildren (N=50) and seniors (N=50).
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Conclusions

❑ The observation of texture-modified solids can induce different emotional responses in seniors and schoolchildren, measuring at different levels of emotional processing.

❑ Texture is a sensory property that must be considered when designing food products for both groups of population, but specially for seniors whose emotions are more influenceable by textures.
THANK YOU FOR YOUR ATTENTION

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