Food matters live

Improving nutrition & food palatability in older people
Senses and beyond the senses

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The Center for Food and Hospitality Research

The sciences dedicated to the understanding of the pleasure of meals, worldwide

http://recherche.institutpaulbocuse.com/
Elderly living in geriatric institutions

- Elderly in geriatric institutions
  - Average age around 85 years old
  - A majority of women
  - “Frail” elderly

- Prevalence of malnutrition in institutions: 15 to 38%
  - Physiological, psychological and sociological changes
  - Inadequate food intake

→ Promote food intake through meal pleasure
**NUTRIONAL REQUIREMENTS**

- **Nutrients** - Food selection/ enrichment
- **Adequate quantities** - Portion size

**FOOD ACCESSIBILITY**

- **Physical access** – Food/ Packaging adaptation
- **Chewing & Swallowing troubles** - Modified texture

**FOOD ATTRACTIVENESS**

- **Willingness to eat**
- **Food pleasure**

*French guidelines: PNNS, 2006 ; HAS, 2007 ; ANAP, 2011*
The food – sensory
The influence of COLOUR variety

Homogeneity: Finger foods in one vs. two layers

Each participant receives a plate with 2 versions of a same dish. 4 days with a different dish tested for each factor.

Protocol

Participants
114 participants
26 males, 88 females, age: 86 ±6.7 years old)
✓ with Alzheimer’s disease
✓ able to feed themselves
✓ high dependency (GIR≤2)
✓ With and without chewing and swallowing difficulties

Paired comparison test
in a real situation of mealtime (lunch)

Assessment by caregivers:
- 1st choice
- finger foods consumption
At lunch, Alzheimer patients significantly chose more and consumed more 2-layer finger foods (Vs all pureed in 1).
Soft bread toasts with an aubergine purée. Same appearance, same texture

REF : bland purée
F+ : flavour enhanced purée with salt, pepper, lemon juice, garlic

Pouyet V., Cuvelier G., Benattar L., & Giboreau, A., Influence of flavour enhancement on food liking and consumption in older adults with poor, moderate or high cognitive status. Food Quality and Preference, 44, 119–129
Participants
104 elderly subjects, aged m= 89 +/- 5
Clustered in 3 MMS groups
  Low, Medium and High cognitive status (MMS)

Experimental design
tasting sessions before lunch

→ Measure of food intake
  Count of the number of remaining toasts. Comparison to served amount (8)
Results

- Positive effect of flavour enhancement on food consumption
- No significant difference between the different cognitive status
Beyond the food – the context

N= 100 in each group.
How tasty was the lunch meal?

p = 0.000

Not tasty at all | Somehow tasty | Tasty | Very tasty | Delicious

Control | Experimental
Dish dressing accordingly to gastronomy standards increased liking and consumption
What means are available to provide « good food »?
Plate and cutlery

Piqueras-Fiszman B., Giboreau A., Spence C. 2013 Assessing the influence of the color of the plate on the perception of a complex food in a restaurant setting, Flavour, 2:24
The **ATMOSPHERICS**, physical environment, table dressing

- Effect on declarative willingness to eat

The SERVICE

- Social and interactional dimensions at meal service in the institution
- Evaluating training programs for nursing auxiliary staff

→ Space arrangement (tray)
→ Personal interest (staff)
→ Management (institution)

Tomorrow’s question...
Liking is a driver of food intake

Regression of food intake by food liking (R²=0.232)

- **Low MMS group** (low cognitive abilities)
- **Medium MMS group** (medium cognitive abilities)
- **High MMS group** (high cognitive abilities)

<table>
<thead>
<tr>
<th>Food Liking</th>
<th>Low MMS (N=116)</th>
<th>Medium MMS (N=125)</th>
<th>High MMS (N=101)</th>
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</thead>
<tbody>
<tr>
<td>Pearson Coefficient</td>
<td>0.454</td>
<td>0.440</td>
<td>0.469</td>
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*** Pouyet et al. 2015 ***
A universal triad ...

FOOD
The kitchen

CONTEXT
The individual EATER
The dining room and service

... to increase pleasure & well being
Thank you for your listening
Welcome to Lyon, France
2017 Events

*International Multidisciplinary Research Symposia*

- Food choice environments to promote healthy and sustainable eating behaviours  
  2nd 3rd February
- Healthy and Tasty snacking  
  9th March
- The role of proteins within a nutritious, healthy and sustainable diet  
  30th / 31st March
- Cooking as a ritual. Cuisine and culture in the globalized XXIst Century World  
  28th/ 29th June
- Social and cognitive factors influencing food perception and behavior in young children  
  27th/28th September

Information and registration: symposium@institutpaulbocuse.com