Food habit formation and breaking in early childhood

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Background

• Studies on growth development and risk of overweight have permitted to identify critical periods:
  – first 6 months
  – after 3 years
  – ‘silent’ period between 6 mo and 3 yrs

• Need to consider child eating behaviours and parental feeding practices during the first 3 years
Background

• Diets of young children in many European countries are not ideal, in particular because they contain not enough fruit and vegetables.

• Some food habits and eating patterns develop early in infancy.

• Food habits may have an impact on health in later life (diabetes, obesity, heart problems..)
Overview

• Habit can be defined as a behavioural pattern or routine which is repeated on a regular basis

• Core concepts of food habits:
  – The ‘WHAT’ i.e. the qualitative dimension
  – The ‘HOW MUCH’ i.e. the quantitative dimension
  – The ‘WHEN’ i.e. the temporal dimension
  – The ‘HOW’ i.e. the contextual dimension

• Factors important in the formation and breaking
  – Characteristics of the child (food temperament)
  – Characteristics of the parent/caregiver (parenting style)
Aims

- Understand better
  - how food habits are formed
  - how food habits can also be changed

in infants and young children (< 5 years)

- Identify critical periods
- Identify critical factors
- Exploring of key learning mechanisms
- Exploring new strategies for breaking habits
Approach

• The epidemiological work will exploit existing data from several cohorts
  – ALSPAC in the United-Kingdom (Dr Pauline Emmett, University of Bristol)
  – Eden in France (Dr Marie-Aline Charles, INSERM)
  – Europrevall in Greece (Dr Yannis Manios, Harokopio University)
  – Generation XXI in Portugal (Dr Carla Lopes & Dr Pedro Moreira, Faculdade de Medicina da Universidade do Porto)

• The experimental work will contain two sections
  – key mechanisms of learning: children from the age of 6 months and up to 3 years
  – new strategies for breaking habits: children beyond 3 years and up to 5 years
Focus

• On the qualitative dimension of food habits
• Acceptance and Consumption of Fruits and Vegetables
  – Play a crucial role in our diets because of their health-related properties
  – Most young infants are willing to taste and eat fruits & vegetables but this willingness decreases as the child ages
  – Children quite often do not like to eat vegetables due to flavour or texture
Investigations

- WP 1 (Dr Marie-Aline Charles, INSERM)
  - Relate food habits, especially fruit and vegetable intake later in childhood by
    - infant eating behaviour (e.g. to be always hungry, to refuse most new foods)
    - Maternal feeding practices towards child's eating (e.g. to breastfeed during a long period, to propose foods other than milk early in life, to be worried that the child do no eat too much some foods and too little other foods)
  - Examine the link between weight and height of the children at various ages and different food habits
Investigations

• WP 2.1 (Dr Lucy Cooke, University College London)
  – determine whether exposure to a wide variety of vegetables and fruits early in life will prevent the observed decline in liking and intake at a later age

• WP 2.2 (Pr Marion Hetherington, University of Leeds)
  – examining specific learning mechanisms involved in the development of vegetable liking and acceptance in infants and young children aged 6m to 36m
Investigations

• **WP 3.2 (Dr Per Møller, Københavns Universitet)**
  – how variation in sensory characteristics such as texture and flavour and repeated exposure can induce acceptance of originally disliked foods

• **WP 3.3 (Dr Jos Mojet and Dr Valesca Kooijman, Wageningen UR Food & Biobased Research)**
  – Exploration of social learning techniques such as
    • imitation of a teacher or an idol
    • freedom of choice of vegetables
    • experiencing food preparation and eating self-prepared food
Investigations

• WP 3.1 (Dr Sophie Nicklaus, INRA Dijon)
  – Focus on the quantitative dimension
  – Determine among 2-5 years old children the proportion who have difficulties to self-regulate their food intake
  – What are the factors influencing the ability to self-regulate food intake
    • age, gender, BMI, parenting style
  – Intervention to teach children to focus on their internal cues of hunger and fullness
Structure of the HabEat project
Key outputs of HabEat (WP4)

• Recommendations in parental practices for promoting healthier food habits in infants and children

• Guidelines
  – for policy makers and stakeholders (paediatricians, maternity clinics, child care centres, food industry…)
  – on the most effective advice to communicate to different target populations aimed at
    • the formation of healthy food habits for infants and children,
    • the best way to change poor habits to healthy habits
Future

• Perinatal determinants of obesity
  – Nutritional and metabolic maternal factors during pregnancy
  – Mother’s food intake during breastfeeding
  – Silent period for growth: really ‘silent’?
    • development of adipose tissue
    • why genetic factors would have an effect at 3 months and not at 2 years?
  – Possible influence of food contaminants (xeno-hormones, pesticides) on factors related to growth and food behaviour:
    • adipogenesis and BMI
    • the development of organs related to the taste perception (taste buds, salivary glands)
    • taste preference and food choice modulation
Future

• Preference for sweet/fatty and salty/fatty foods
  – When are these preferences formed?
  – Which factors impact on the development of such preferences?
Future

• Obesity is multi-factorial
• Need to develop further multidisciplinary research
• Need to combine different types of approaches
  – Work on humans
    • Cohort studies
    • Experimental studies with follow-up
    • In both cases, need to include individuals from different social backgrounds
  – Experimental work on animal models and cell cultures
Many thanks for your attention

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Questions???