

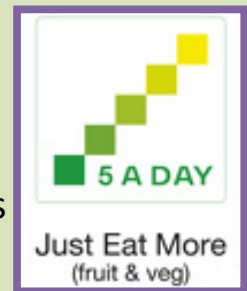
# Learning to like vegetables – learning to live well

Professor Marion M Hetherington



## Learning to like vegetables

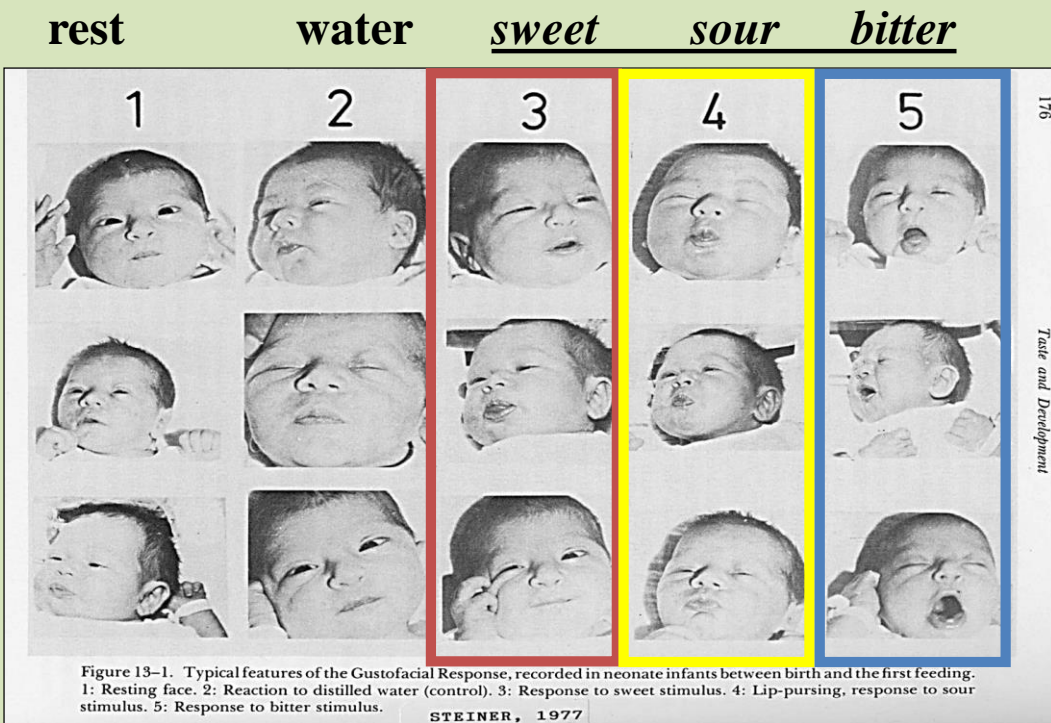
- F&V **protect** against cancer, heart disease, type II diabetes, cognitive decline
- Dietary phytochemicals such as phenolic acids, flavonoids, organosulfur compounds, and carotenoids have **antioxidant** and **tumour suppressant effects**
- Citrus, green leafy,  $\beta$ -carotene- and vitamin C-rich F&V are associated with a **lower CHD risk** (*Bhupathiraju et al 2013*);
- Vegetables **more protective** than fruit and benefits of 7+ portions per day reported (*Oyebode et al 2014, J Epid Comm Health*)



**Quantity** rather than variety of F&V linked to lower risk of CHD (*Bhupathiraju et al 2013*)



# Newborn response to taste



Sweet is **accepted**

Foods which are sweet are easily accepted (liked and eaten)

Bitter is **rejected**

Foods such as vegetables are less easily accepted (disliked and avoided)



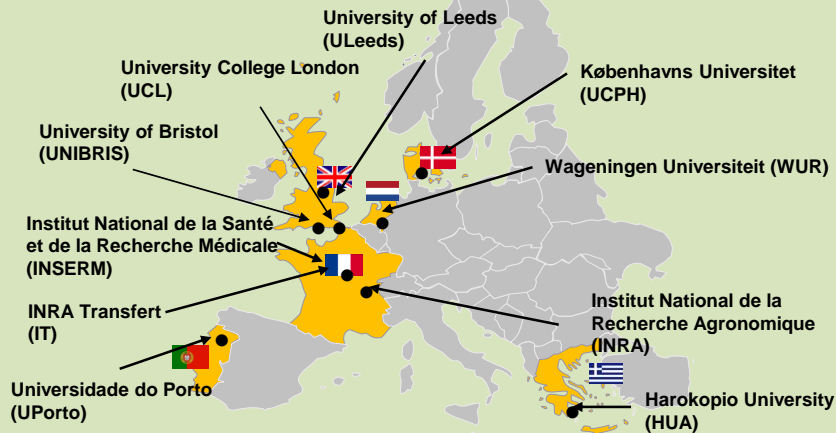
*Universal Hedonic Reaction:  
Tongue Protrusions to Sweet*



*Universal Aversion: Gapes to Bitter*



## Determining factors and critical periods in food Habit formation and breaking in Early childhood: a multidisciplinary approach



To study **learning by experience** in 6 – 36m old children

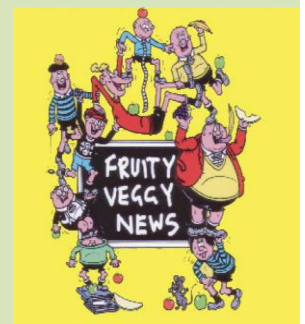


Day 1	Day 2	Day 3	Day 4	Day 5



## Learning to like vegetables – at school Too late to learn?

- **21** studies entered into a **meta-analysis**
- Improvement of **0.25** portions of daily fruit and vegetable intake (excluding fruit juice)
- Intake of fruit increased by **0.24** portions
- Intake of vegetables increased by **0.07** portions
- Interventions **selectively** improve fruit not vegetable intake



Evans et al (2012) AJCN

## TAKE HOME MESSAGES

- Early, repeated exposure using a variety of vegetables is important in early life
- Aim to offer a “**rainbow**” of colourful vegetables often
- Food preferences track into later life, so establish liking early on
- Children need to eat more vegetables to obtain the benefit for health and well-being – fruit is not a problem!

