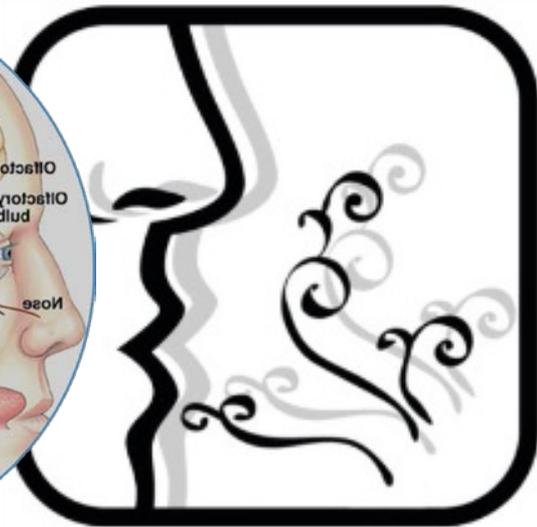
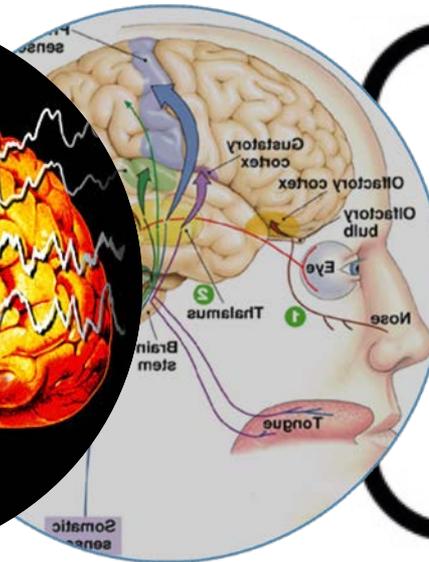
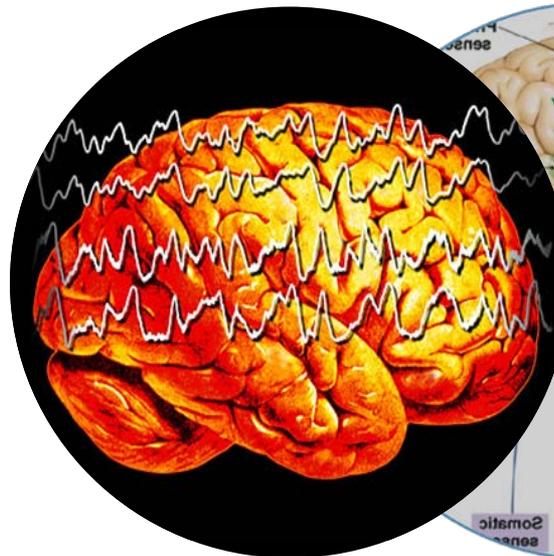
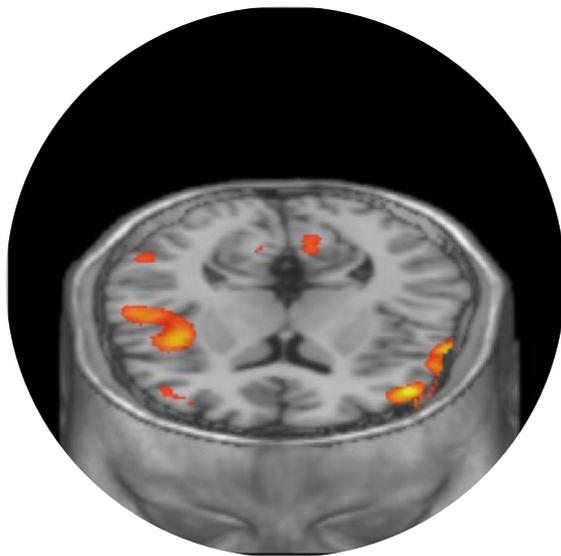
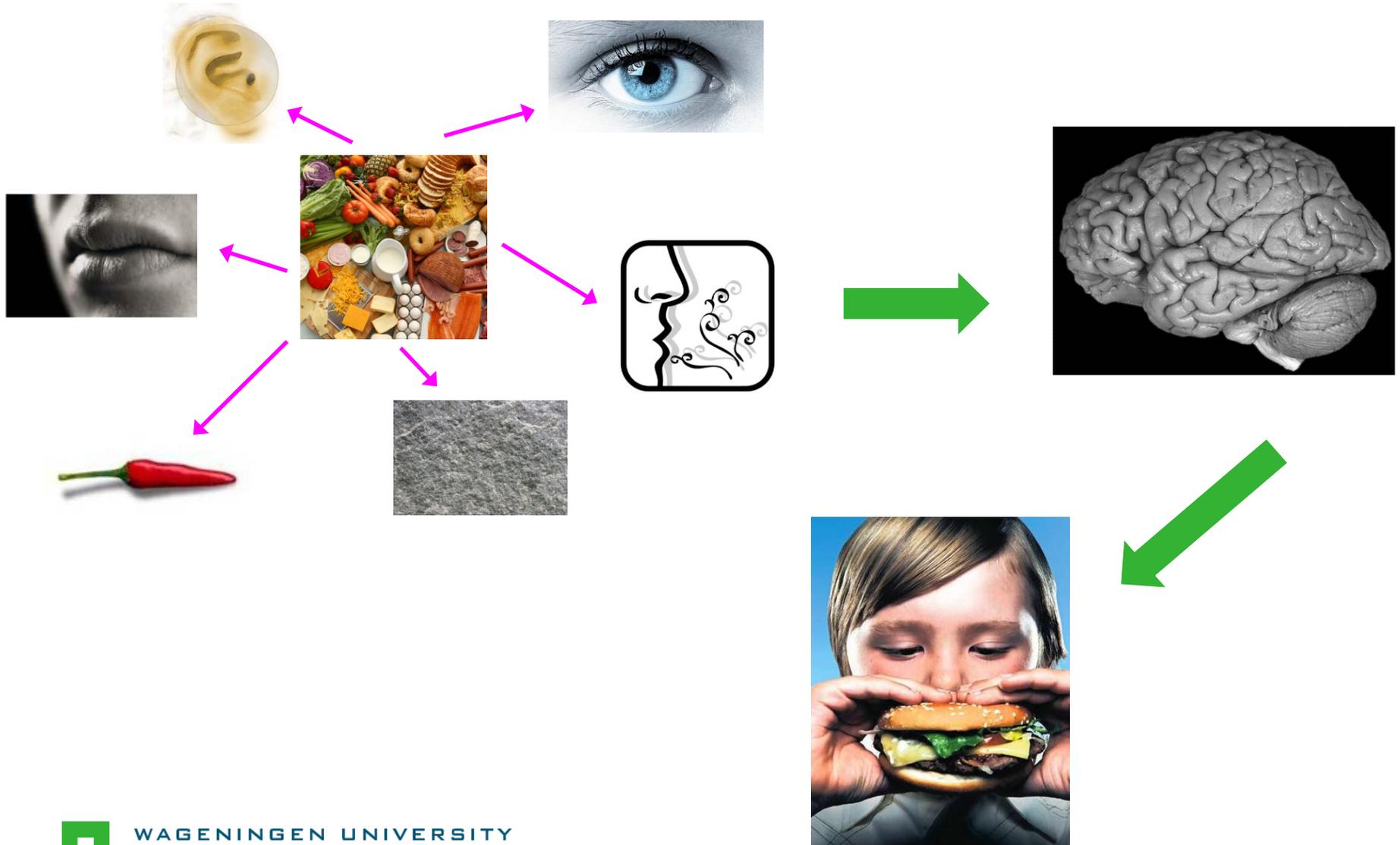


Stimulate your nose in the MRI: brain responses to odors in anticipation of food

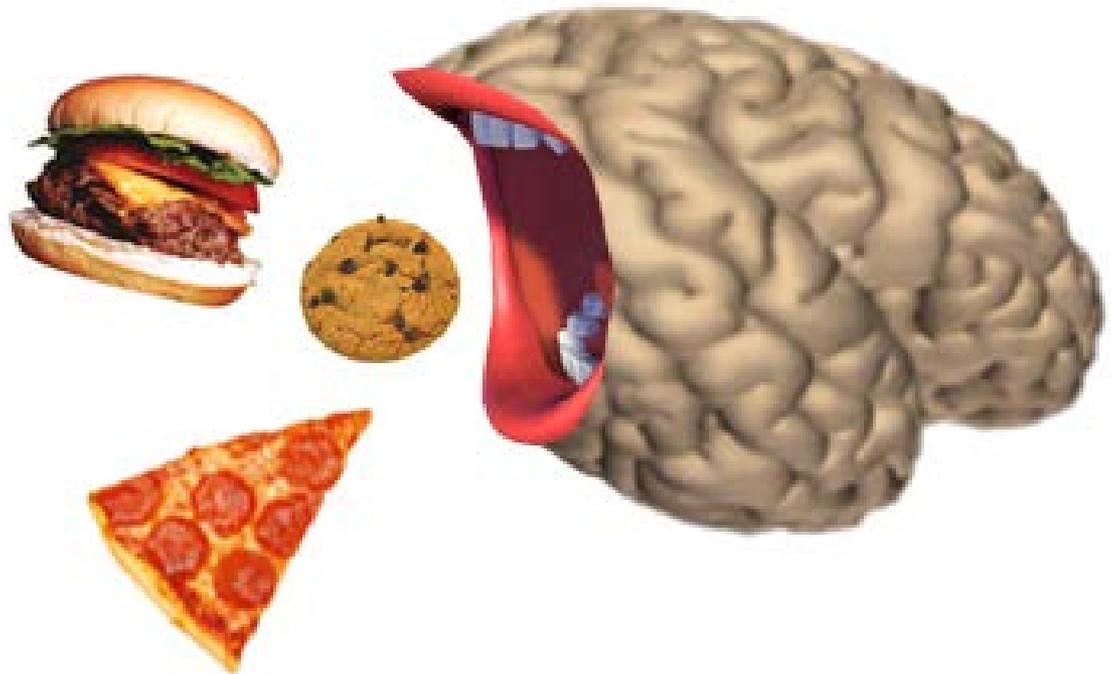
Sanne Boesveldt. 3T MRI seminar, Nov 2016



Food perception



Food anticipation: sense of smell



Food anticipation in the scanner



Odor administration:
olfactometer

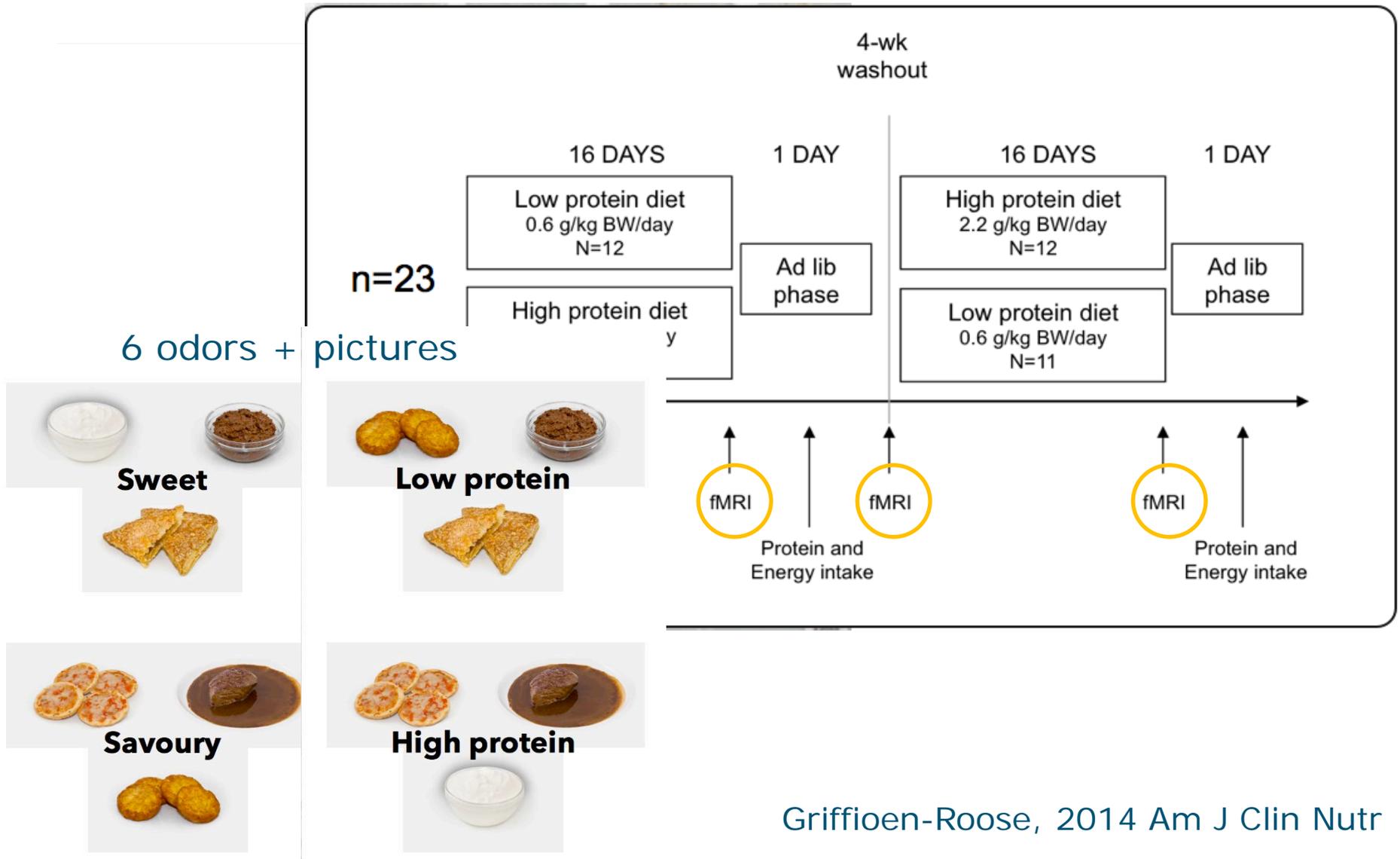


Brain responses to odors in anticipation of food

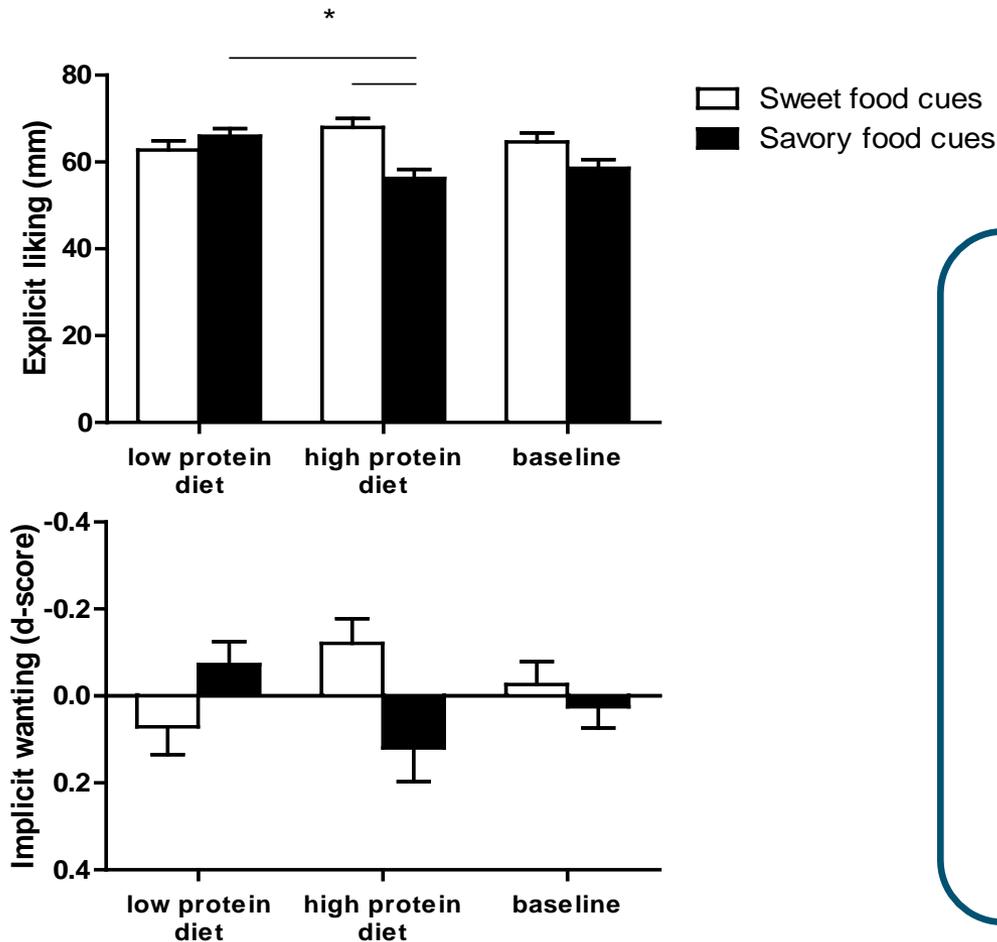
- Dietary intervention study: how diet can alter brain and behavior
- RYGB surgery: explain altered food preferences by brain responses
- Smell and Taste Center: clinical care



Influences of protein depletion on food cue reactivity?

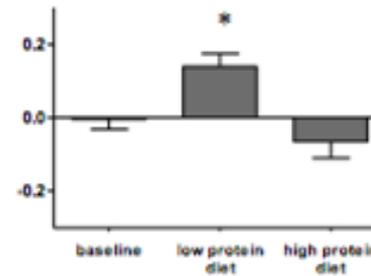


Protein status modulates behavior and brain reward response to savory food cues

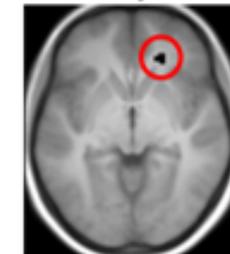
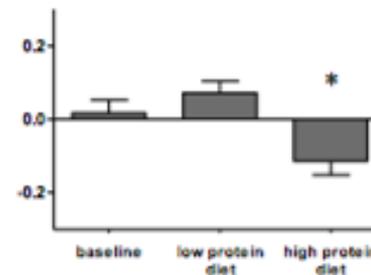


brain activation to savory food cues

Inferior frontal gyrus, orbital part



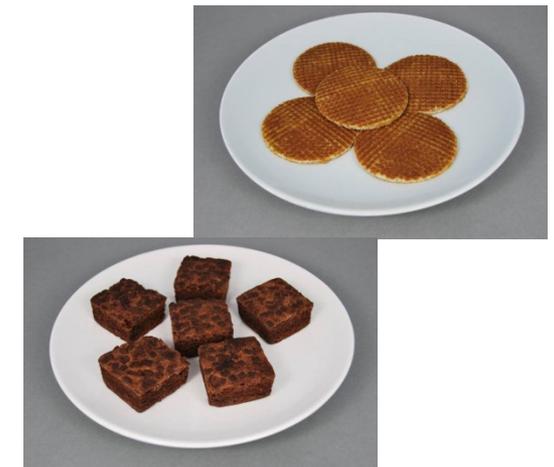
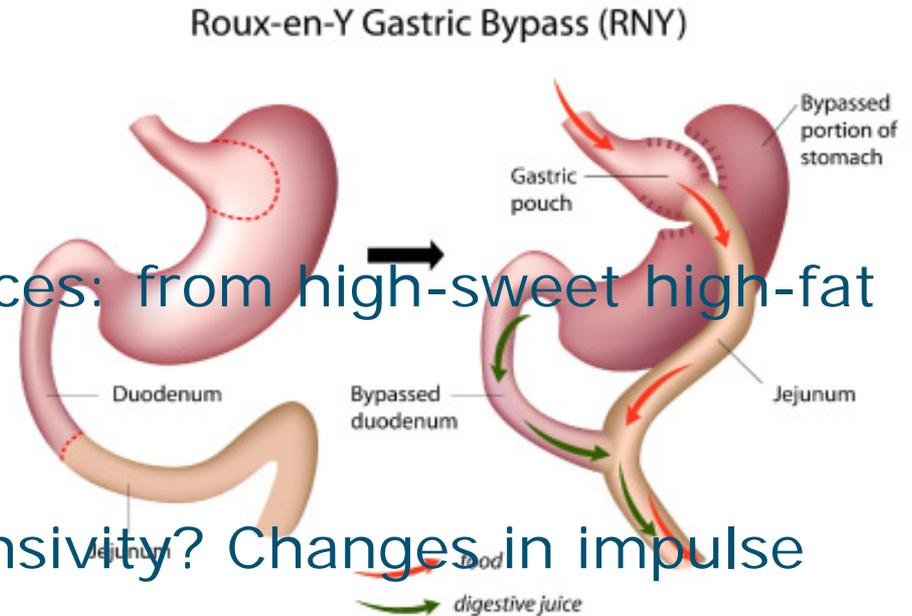
x-21 y26 z-8



x21 y35 z-5

Patients undergoing gastric bypass (RYGB)

- Morbidly obese patients
- RYGB surgery
- Changes in food preferences: from high-sweet high-fat to low-energy
- Why?? How??
- Changes in reward responsivity? Changes in impulse control?



(f)MRI in Smell and Taste Center (ZGV)

- Patients with (unexplained) smell or taste complaints
- 5-20% of population



- Open since July 2015
- ~150 patients so far; 150 on waiting list
- Extensive clinical protocol, including (f)MRI
 - Structural MRI: e.g. size of olfactory bulb
 - Functional MRI: brain responses to odors, link with clinical parameters



Thank you!

Acknowledgments:
CAT-Agrofood

Sanne Griffioen-Roose

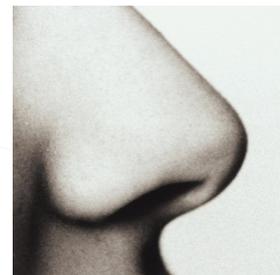
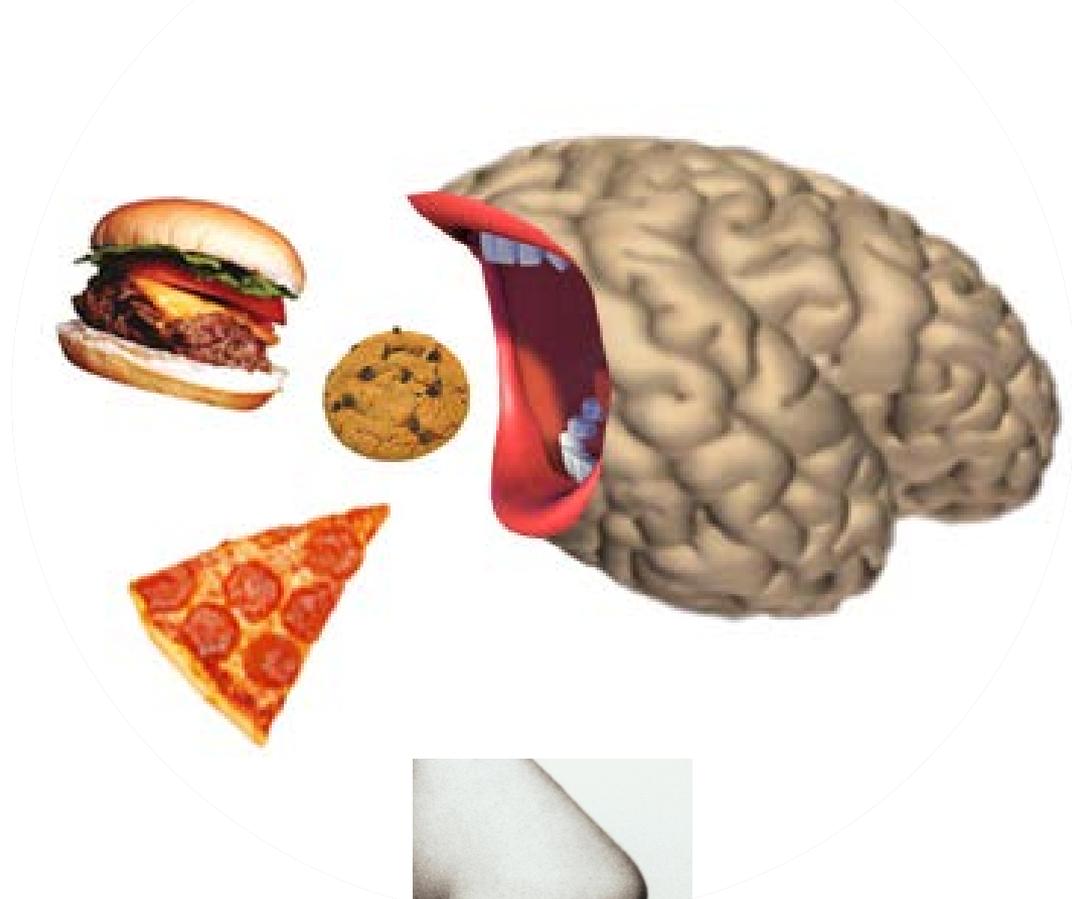
Jet Zoon

Elbrich Postma

Wilbert Boek

Paul Smeets

e.a.



Rijnstate



Alliantie Voeding
Gelderse Vallei



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