



Children's Food Choices What Neuroscience Tells Us

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- on behalf of the I.Family consortium -



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- Food is all around...
- The sight of food has an immediate effect on the appetitive network in our brain



- The brains of people who are overweight or obese react differently to the sight of food than those of normal weight individuals
- The way that the brain reacts to food can predict:
 - Weight gain
 - Snacking behavior
 - Success in a weight-loss program



- Areas in the brain that are important for reward and cognitive control (ability to say no) are not fully matured yet in children



- How do children's brains react to the sight of healthy and unhealthy food and food choice?
 - How does this differ from adults?
 - How does this differ between normal weight and overweight children?



In the I.Family study we have shown that:

- Children have a greater brain response to unhealthy foods than adults in an area important for physical actions



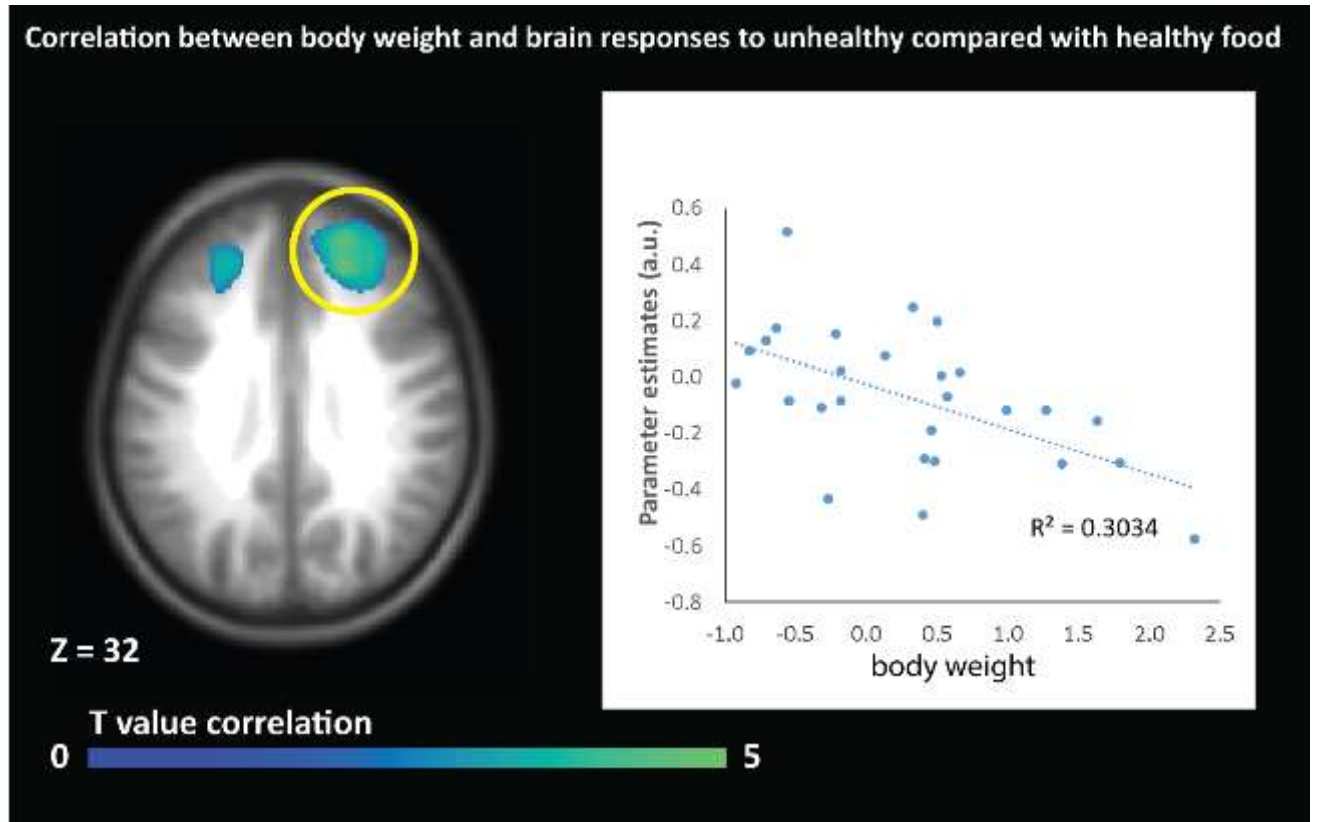
In the I.Family study we have shown that:

- Children base their food choices mostly on the tastiness of foods.
 - Their brain activation reflects the tastiness of foods during food choice
- Healthiness only comes into play when children are asked to consider the healthiness of foods during food choice
 - Children then choose healthier and their brain activation reflects healthiness
 - Unfortunately, they still choose less healthily than adults, and the brain system that underlies healthy choices in adults does not work the same in children



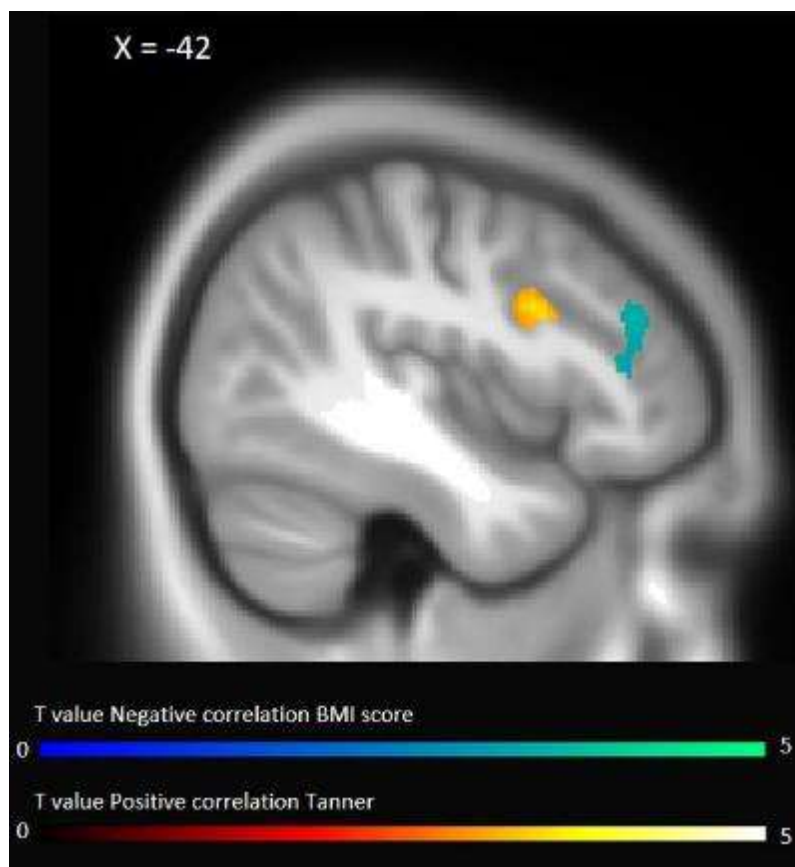
In the I.Family study we have shown that:

- Children with a higher body weight have less cognitive control activation in response to unhealthy foods



In the I.Family study we have shown that:

- Children with a higher body weight and younger children have less cognitive control activation during food choice



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Implications

- Children are more sensitive to unhealthy foods
 - Overweight children are especially vulnerable, since they have less cognitive control
- This has important implications for marketing regulation



Implications

- Tastiness of food predicts behavior and brain activation for children, even more so than for adults
- Develop strategies to train children's preferences toward healthier foods

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Future work

- Unraveling the role of hereditary factors and behavioral traits on food-related brain activation using genetic data and neuropsychological tests