

# Mindset during meal planning changes food choices and brain responses to food

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A simple instruction to change your thinking as mealtime approaches can help cut calories, according to new research from the University of Tübingen, Germany. By encouraging study participants to concentrate on different types of information when planning their meal, the experimenters saw portion sizes shift. Adopting a health-focused mindset produced better outcomes than focusing on pleasure or the desire to fill up. These new findings were presented this week at the annual meeting of the Society for the Study of Ingestive Behavior, an international conference of experts on eating research.

"Daily food intake is highly dependent on the [portion sizes](#) we select," explained Stephanie Kullmann, lead investigator on the project. "The rise in obesity since the 1950s has directly paralleled increasing portion sizes. We are finding that switching an individual's [mindset](#) during pre-meal planning has the potential to improve portion control."

In recent experiment, the researchers learned that lean individuals can be encouraged to make healthier food choices by adopting a 'health-focused mindset'. Brain scans showed how this approach can trigger activity in the prefrontal cortex, which is linked to self-control and future meal planning. Their latest study demonstrates how a shift in mindset might assist individuals who are overweight or obese.

Study participants ranged from normal weight to obese. They were told to focus their mindset on either the health effects of food, expected pleasure, or their intention to stay full until dinner time, while choosing

their portion size for lunch. Additionally, in a control condition they chose their actual portion size for lunch without any mindset instruction. Compared to the control condition (no mindset instruction), participants in all weight categories selected smaller portions when prompted to think about health. By contrast, those who adopted the fullness mindset took larger portions. In pleasure mindset condition, obese participants selected larger [portions](#) than normal-weight participants. This tendency correlated with a heightened response in a taste-processing region of the brain. In the fullness mindset, obese persons showed blunted brain responses in regions for reward and physiological regulation.

"This influence of pre-meal mindset on food choices may contribute to the vicious cycle we observe in obesity," said Kullmann. "Focusing on food for pleasure leads to bigger servings and increased brain responses to food reward, whilst the sensation of fullness is perceived as less satisfying."

The encouraging message from this study is people of all weights responded positively to a healthy mindset instruction, suggesting that this approach should be considered in strategies for healthy weight management. The findings also suggest that advertising healthy [food](#) options as "tasty" might be counterproductive because this has the potential to induce a pleasure mindset, which leads to the selection of larger serving sizes in individuals who are struggling with their weight.

**More information:** Mindsets influence brain response and behavior during pre-meal planning in overweight and obese adults, 26th Annual Meeting of the Society for the Study of Ingestive Behavior.

Provided by Society for the Study of Ingestive Behavior

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