

# The magic brain number is 549

In the battle of weight, 549 calories makes a difference in success over failure.

In trying to understand the underlying issues of obesity, researches have discovered an interesting relationship whereby people who get less sleep tend to carry more weight.

# 549

If your sleep deprived,  
you could be eating this many  
extra calories everyday.

Early studies indicated that sleep deprivation acted as a stressor which increased **ghrelin, a hunger hormone** and decreased **leptin, a satiety hormone**. Two studies used functional MRI's to track how the brain was activated in response to images of food under conditions of sleep deprivation. When subjects experienced either one night of sleep deprivation or six nights of four-hour sleep, their **brain activity indicated a high, overdrive response when presented with food images.**

The brain area most activated was the **motivation circuit** including the striatum and anterior cingulate cortex. This is the same area activated when images of abuse substances are shown to those who abuse those substances.

While the process is not fully understood, it appears that **lack of sleep activates the brain's motivation circuit to seek calories.** Columbia University's Marie-Pierre St-Onge, the primary researcher on the four-hour sleep study, suggests the brain is seeking out calories for energy due to loss of sleep. She compares this to the same brain behavior of anyone caving

into the first snack at hand after coming off of a highly restrictive diet.

**Wight Loss Tip:**

Lack of adequate sleep is driving the brain to seek out calories sources to provide the energy loss during deep and recuperative sleep. Unfortunately, on average the brain is seeking an extra 549 calories. It's easier to get more sleep than trying to fend off the urge to stay awake from calories that want to continue to hand around.

Source: Tired? Watch What You Eat, Scientific American Mind, July/August 2012 p. 7.