



# e-quilibrium

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## Gremlin

The term "gremlin" was used in World War II with reference to a mythical gnome-like creature to which aircraft malfunctions were attributed. More broadly, the term can be used to refer to "a maker of mischief."

For individuals trying to manage weight, a hormone produced in the gastrointestinal tract, ghrelin, might be thought of as a gremlin in the body. Ghrelin functions as an appetite increaser. Ghrelin's impact on the brain affects how food is perceived, essentially making food more appealing. Levels of ghrelin increase prior to eating, and decrease after eating.

Fortunately, another hormone, leptin, is produced by fat cells and functions as an appetite suppressor. Essentially, leptin alerts the brain that one has sufficient fat stores, helping to decrease appetite. Simplistically, one might conceive of leptin functioning as appetite brakes, and ghrelin as an appetite accelerator.

Obviously, appetite and eating involve a very complex set of processes that cannot be reduced to the roles of two hormones. However, ghrelin and leptin are important factors in understanding how certain behaviors impact appetite and weight management. One example is the relationship between sleep and weight. Getting inadequate amounts of sleep is associated with greater problems with overweight and obesity. Ghrelin levels are known to increase with inadequate sleep, while leptin levels decrease with sleep deprivation, effectively increasing appetite.

The types of food we eat can also affect these hormones. Diets rich in complex carbohydrates and protein suppress ghrelin more effectively than do high fat diets. Furthermore, obesity seems to be associated with leptin resistance, so that the appetite suppressor leptin doesn't work as effectively in persons that are overweight.

I owe an apology to ghrelin for suggesting that it is a gremlin, when in fact it is just a hormone doing its job. The real gremlin responsible for appetite malfunction is us --- or more precisely some of our unhealthy sleep and eating patterns which confuse our hormonal allies. Getting adequate sleep and having healthy diets help ghrelin and leptin do their jobs effectively.

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