

Department of Psychology

Victoria Garel

Mentor: Paul J. Currie

The Effects of Dietary-Obesity on the Orexigenic Action of Ghrelin

Ghrelin is a 28-amino acid endogenous peptide that facilitates food intake in rodents and humans. Non-obese rodents and humans maintain normal patterns of ghrelin secretion in which ghrelin increases before meals and during periods of fasting and decreases following meals and satiety. Studies have shown that dietary obese rodents possess lower levels of plasma ghrelin in comparison to non-obese individuals. Despite these decreases in circulating ghrelin, obesity is maintained and in some cases increases, leading to the possibility that an alteration in responsiveness to ghrelin may accompany dietary obesity. The effects of obesity on ghrelin responsiveness were assessed by monitoring food intake following cerebroventricular and peripheral injections of ghrelin. Feeding tests were conducted mid-light cycle and food intake was measured every hour for 4 hours following injections. Dose dependent feeding effects of ghrelin were maintained in both obese and non-obese animals, however, obese animals were less sensitive to ghrelin than non-obese controls. This evidence suggests that while dietary obese animals display some resistance to ghrelin, the peptide continues to play a role in the regulation of food intake in obesity.