

Stress, Hormones & Appetite Course Agenda

APPETITE: THE BRAIN-BODY CONNECTION - understanding the signals/hormones that make us want to eat

- Peripheral regulators: gut hormones (Ghrelin, GLP-1, CCK, PYY, etc.), fat cell hormones (leptin, adiponectin), pancreatic hormones (eg. insulin – the “feast” hormone).
- Central regulators: hypothalamic regulators (NPY, Melanocortin system, CART), reward chemicals (opioids, endocannabinoids), dopaminergic and serotonergic systems.
- Other hormonal regulators: amylin, cholecystokinin (CCK) agonist, combination therapy (CCK/amylin/leptin).

HORMONES & DYSREGULATION OF APPETITE – a leading cause of morbidity and mortality worldwide

- Obesity epidemic- is it the cause of, or the result of appetite dysregulation?
 - Role of insulin and leptin resistance in re-wiring neural circuits that control appetite.
 - The pleasure principle – do the obese have weaker reward circuitry?
 - The problem of weight regain. Consequences of appetite dysregulation: diabetes, cardiometabolic disease, fatty liver, certain cancers, cognitive dysfunction, PCOS, infertility.
- Thyroid dysfunction (hypothyroidism) and appetite changes - cause of or result of obesity?
- Age-related changes in appetite and food intake (“anorexia of aging”). The effect on ghrelin and cholecystokinin.
- Psychiatric disorders and Eating disorders – Binge Eating Disorder, addictive behaviors, alcoholism and appetite.
 - The role of dopamine and serotonin in appetite regulation.
- Menopause & Andropause
 - A look at how fluctuations in estrogen and progesterone influence the brain and appetite.
 - Testosterone is a strong correlate of ghrelin levels in men and postmenopausal women.

STRESS & ITS INFLUENCE ON APPETITE

- HPA axis response to stress – heightened cortisol reactivity to stress increases food consumption.
 - Understanding the cortisol reactivity model. Cortisol levels and body fat distribution.
 - How cortisol influences other key hormonal regulators of appetite.
- Sleep & sleep deprivation – role of sleep and sleep loss in hormonal release and metabolism.
 - Endocrine alterations: glucose, insulin, ghrelin, cortisol & appetite.
- The Relationship between chronic stress and obesity - what is the scientific evidence?

INTERVENTIONS TO REGULATE STRESS, HORMONES & APPETITE

- Dietary Intervention
 - Can we switch off our appetites and the regulating hormones by manipulating our diets?
 - Can a healthier diet reset our reward circuitry and reduce cravings?
 - Role of fiber, glycemic load, healthy fats, energy density on appetite and hormonal dysfunction.
 - The way to eat: hunger management techniques.
 - Prevention and management of obesity in children. Preventing hormonal alterations to appetite.
- Exercise Strategies - effect of intensity, duration and timing of exercise on appetite (influence on appetite regulating hormones).
 - Exercise and stress. Exercise and sleep quality.
 - Exercise and cortisol. Exercise strategies for reducing cortisol and improving appetite regulation.
- Pharmaceutical therapy - prescription drug therapies to outsmart hunger signals.
 - Approaches on the horizon (ghrelin antagonists, leptin therapy, endocannabinoids).
- Gastric Bypass Surgery - How the gut hormones are affected after surgery.