**Outline Idea**

BROAD to NARROW

-? Obesity or Eds (1.1) ~half a page

-stress (1.2) ~one page (sex difference can be here)

-cortisol/corticosterone and appetite (1.2.1) ~two pages

-the hypothalamus (1.3) ~paragraph

-the DMH (1.4) ~half page

-DMH and food intake (1.4.1) ~one page

-DMH and stress (1.4.2) ~paragraph

-CRH receptors and glucocorticoid

-Synapses (1.5) ~one page

-glutamate (1.5.1) ~one page

-stress on synaptic transmission (1.5.2) ~half page

-Current Study (1.6) ~one page

-females under researched (1.6.1)

Measure weight of animal before left alone for 24 hours, weight of 12 pieces of food then again before brain removal

**Stress, eating and the reward system (Tanja C. Adam, Elissa S. Epel)**

**doi: 10.1016/j.physbeh.2007.04.011.**

-weight loss as a marker of stress in rats BUT when they have HPF stress increases intake of that HPF

-humans: bidirectional, 30% decrease intake during or after stress, the rest increase

-sympathetic adrenomedullary system (SAM) originates in the locus ceruleus and with the HPA build the effector limbs of the stress response

-predictors of eating more during stress in humans: female, overweight, scoring high on dietary restraint

-humans: greater basal cortisol or greater cortisol reactively in people with AN, BED, BN.

-naloxone suppressed intake of HPF.

-stress as a type of negative reinforcement for food intake

**Effect of restraint stress on feeding behaviours of rats (Ely et al., 1997)**

[**https://doi.org/10.1016/S0031-9384(96)00450-7**](https://doi.org/10.1016/S0031-9384(96)00450-7)

-neural events guide and trigger behavior but there is peripheral physiological input

-products of digestion act on chemoreceptors

-adult male rats (60-90 days)

-1 hr/day

-“control animals were manipulated but not submitted to restraint”

-acute restraint stress did not increase the intake of fruit loops

-chronic model of moderate intensity increase food intake of fruit loops

**The hypothalamic-pituitary-adrenal axis in the regulation of energy balance (Nieuwenhuizen and Rutters, 2008)**

**Doi:**

-cortisol binds to transporter in the blood

-binds to glucocorticoid and mineralocorticoid receptors

-GR: initiates or represses transcription, negative feedback of HPA axis

-MR: regulates basal HPA activity

-anorectic effects of adrenalectomy can be reversed by glucocortoid replacement

-CRH neruons in the PVN