Ingestive Behaviors: Bulimia Nervosa

- Definition
  - Recurrent episodes of binge eating (2 binge eating episodes/week, for at least 3 months)
  - Feeling of lack of control overeating during binges.
  - Regular use of either: self-induced vomiting, laxative, diuretics, strict dieting/fasting or vigorous exercise.
  - Persistent concern with body shape and weight

- No correlation with net nutrient intake: ‘over-eating’, ‘under’ eating or ‘balanced’ equally likely. Not necessarily associated with obesity.
- Possible mechanisms: neurochemical. Deficiency in satiety mechanisms (CCK), Imbalance of 5HT and NE.
- Treatments: Cognitive behavior therapy, and manipulation of 5HT levels.

Memory: Some Characteristics

- Short-Term Memory
  - Limited
  - Object dependent
  - State dependent
  - Short-lived
  - Immediate forms of memory. Not all memory items are necessarily useful.

Different Kinds of Memory

- Short-Term memory
- Working Memory: Memory for immediate use
- Long-Term Memory
  - Declarative (Explicit) ‘Remembering’
    - Somatic (facts)
    - Episodic (‘when’, order of events)
- Non-Declarative (Implicit) ‘Knowing”
  - Skill Habits
  - Priming
  - Simple Classical Conditioning

- Memory: Overview
  - The Memory Process
    - Stimulus → Encoding ↔ Storage ↔ Retrieval → Responses
  - Learning
    - **Perceptual (sensory) learning**: Recognition, modality specific (visual, auditory…).
    - **Stimulus-Response learning**:
      - Motor-learning: Playing piano, modality specific.
    - **Relational learning**: spatial learning
    - **Meta-learning**: learning to learn

- Perceptual Learning
  - Identity and categorize objects using ‘perception’
  - Learning ‘about’ objects. No associations with actions.
  - Example, Vision: inferior temporal cortex: faces and objects

- Areas involved in perception are also involved in (perceptual) memory
Classical Conditioning of a Reflex
- The Hebb Learning Rule
  - If presynaptic and postsynaptic sites are active at the same time, the synapse is strengthened.

- Classical conditioning
  - Classical conditioning is not just about food...
  - Different kinds of classical conditioning involve different kinds of brain areas.

- After conditioning, memory can be ‘unconditioned’: **Extinction**
  - Repeated presentations of the conditioned stimulus **alone** leads to extinction
  - PTSD: deficit in extinction?

- Instrumental Conditioning
  - Definition: Learning an association between an action and its consequence.
  - How we learn from doing
  - Need a reinforcing or punishing stimulus.
  - Example in rat: Lever pressing.