Models of motivation:
- biological more basic motivation?

Hunger and Satiety: Model for motivation?
- involves all levels: molecular to social
- Important health problem world-wide: obesity, other eating disorders, poor nutrition, consequences of famine

Why do you start eating? stop eating?
Simplest H: amount in gut
- test H: blowfly; human; rat

Stomach's role in hunger
- hunger pangs?
- time between meals
- content: calories

Signals that start and stop eating come from
  - Physiological processes:
    - food in gut → gut hormones, neural signals
    - blood sugar level → insulin, neural signals
    - fat level → leptin

  - Learning:
    - internal signals predicting return toward homeostasis
    - external signals predicting food
    - social cues
      - what, when, where, to eat

Signals get to Hypothalamus to control eating
  - from the body
    - ANS: vagus nerve
    - hormonal signals: insulin, leptin
  
  - from other brain areas
    - memory systems
    - body monitoring systems

  - from environment through sensory systems
    - incentive cues
      - food cues, learned predictive signals
    - social cues

Brain systems:
Lateral hypothalamus (LH).
Ventromedial hypothalamus (VMH)

LH = “hunger center”?
VMH = “satiety center”?

Problems:

Modern view: Arcuate, other nuclei in hypothalamus
- key link in a complex system

Many interacting factors contribute

How leptin and Insulin control food intake

Leptin mech.
- filled fat cells ➔ leptin release ➔ stop eating
- empty fat cells ➔ leptin off ➔ start eating

Learning
- what to eat
- when to eat
- how much to eat

Social stimuli facilitate eating

Obesity: multiply determined --> 1 final common path
# fat cells & how full they are
- food supply: amount, quality
- activity
- habit
- metabolism: genetic, adaptive factors
- development

Eating disorders: anorexia, bulimia, binge eating

Specific hungers
- salt: special receptor; taste attractive
- protein: special taste receptor
- vitamins, minerals: learn to prefer associated flavor?

Sensory specific satiety