The Exam is M/C & T/F, worth 100 pts.

**Methodology**
- Types of research designs: Anecdotal/case studies; Observational/Epidemiological/Associational; Experimental
- Appropriate and inappropriate uses of each type of study
- Specific studies discussed in class: Coffee Mortality Studies; red meat studies: methods; claims, problems with studies

**Obesity Statistics & Definitions**
- BMI: Definition; cut-offs for underweight, normal, overweight, obese; problems with using BMI as measure; other ways to estimate body fat; TOFI
- Regional Differences: States/Regions with lowest and highest % obese
- Ethnic Differences: ethnic groups with highest and lowest % obese
- Obesity as a Function of Education, Gender, and Income
- Changes since 1985

**Why Diets Don’t Work**
- Proietto Study: Hormonal alterations after starvation diet; changes in ghrelin, leptin, peptide YY; implications
- Keys Starvation Study
- Vermont Prison Overfeeding study
- Bouchard Twin studies: genetic factors in weight gain, fat composition
- Specific genes and obesity: FTO gene and correlations with weight, insulin regulation, triglycerides; is it the “fat” gene?
- Keeping weight off: common traits in those who maintain weight loss
- Changes in brain activity after dieting
- Nasogastric tube diet: why does it work?

**Are all calories equal?**
- Assessment of “calories is a calorie” claim: is it true?
- Evidence discussed in class: Ludwig Weight Loss maintenance study; Carmody Rat Thermogenesis study (meat vs. sweet potatoes); processed vs. whole foods; types of diets; individual differences

**Why We Get Fat, and What to do about it.**
- “Conventional” wisdom about causes of weight gain
  - Recommendations for how to lose weight
  - Calories in/calories out “energy balance model”
  - Problems with conventional wisdom
- Taubes: Evidence against “conventional wisdom”
  - Examples against overeating hypothesis, or “obesogenic” environments as cause of obesity
- disconnect between facts and expert recommendations; popular vs. scientific press
  - exercise and weight: correlations between body weight and exercise level; is there a causal effect?? Mayer rat study on exercise and weight/eating behavior; rats bred to like exercise vs dislike exercise
  - impact of 1984 food pyramid: effect of decreasing fat in diet, increasing carbs
  - Taubes claims about how to lose weight
  - Fat and effect on cholesterol levels: LDL vs. HDL cholesterol; impacts of saturated, unsaturated, and transfats on each type of cholesterol
  - Impacts of high fats vs. High carb diets on LDL, HDL, & triglycerides

**Primer on regulation of fat**
- role of insulin: impact on glucose utilization by cells; storage of glucose as fat
- relationship between insulin levels and utilization of fat as energy
- fatty acids vs. triglycerides: which is stored, which used as fuel, why?
- results of high carb diet on insulin secretion, hunger, weight

**Why I get fat and you don’t**
- genetic differences on insulin metabolism: release, receptor sensitivity, response of muscle vs. fat cells
- prenatal factors: effect of mother’s weight and glucose level on fetus’s insulin regulation
- What we can do: what foods to avoid
- effects of fructose vs. sucrose: Hoebel study comparing fructose vs. sucrose
- Sugar and addiction: Hoebel rat study
- Individual differences in reward system activation and weight gain (Heatherton imaging expt)
- effects of fructose vs. glucose on brain activity; satiety; fat metabolism

**Obesity & Stigma**
- Health consequences of perceived discrimination- studies looking at Obese subjects
- Psychological Consequences of Weight Stigma study
- Doctor Interactions with Overweight vs. Normal Weight patients

**Articles covered in class and posted on Syllabus**
- Psychological Weight of Weight Stigma study
- Carmody Rat Thermogenesis Study
- Doctor’s interaction with Obese Patients
- Taubes argument: What if Fat Doesn’t Make us Fat?