Obesity
Health Consequences

Obesity Trends* Among U.S. Adults
(*BMI ≥30, or about 30 lbs overweight for 5’4” person)

1991

1996

2003

No Data  <10%  10%-14%  15%-19%  20%-24%  ≥25%

Source: Behavioral Risk Factor Surveillance System, CDC.
What Causes Obesity

- Gluttony?
- Genes?
Early Studies

- Hervey Experiment (1959)
Early Studies

- Parabiosis
What’s the “Circulating Factor”?  

- Leptin
How Does Leptin Work?

- In the brain?
How Does Leptin Work?

- In the periphery?
Leptin Genes and Obesity

- Mutation in ob/ob gene → No leptin
- Mutation in db/db gene → No leptin receptor
The Cure for Obesity!

- Leptin is the answer!
Unfortunately, No…

- Most obese people have too much leptin
  - No receptor (Db gene mutation)
Is Leptin Medicine Useful AT ALL?

- Leptin works on:
  - Defected Leptin Gene
    - “Congenital Leptin Deficiency”
  - Lipodystrophy
    - No Fat Cells
“A Window of Opportunity”
Sources

- [http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WSN-4C56FTV-1&_user=145269&_coverDate=04%2F16%2F2004&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000012078&_version=1&_urlVersion=0&_userid=145269&md5=3ec6442849a056cb740b8ee8aa6be2dbe](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WSN-4C56FTV-1&_user=145269&_coverDate=04%2F16%2F2004&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000012078&_version=1&_urlVersion=0&_userid=145269&md5=3ec6442849a056cb740b8ee8aa6be2dbe)
- [www.scq.ubc.ca/leptin-a-piece-of-the-obesity-pie/](http://www.scq.ubc.ca/leptin-a-piece-of-the-obesity-pie/)
- Humbio 4A Lecture