

Leptin

All You Can Eat, None of the Obesity?

By Girmay Superfly Zahilay

Obesity



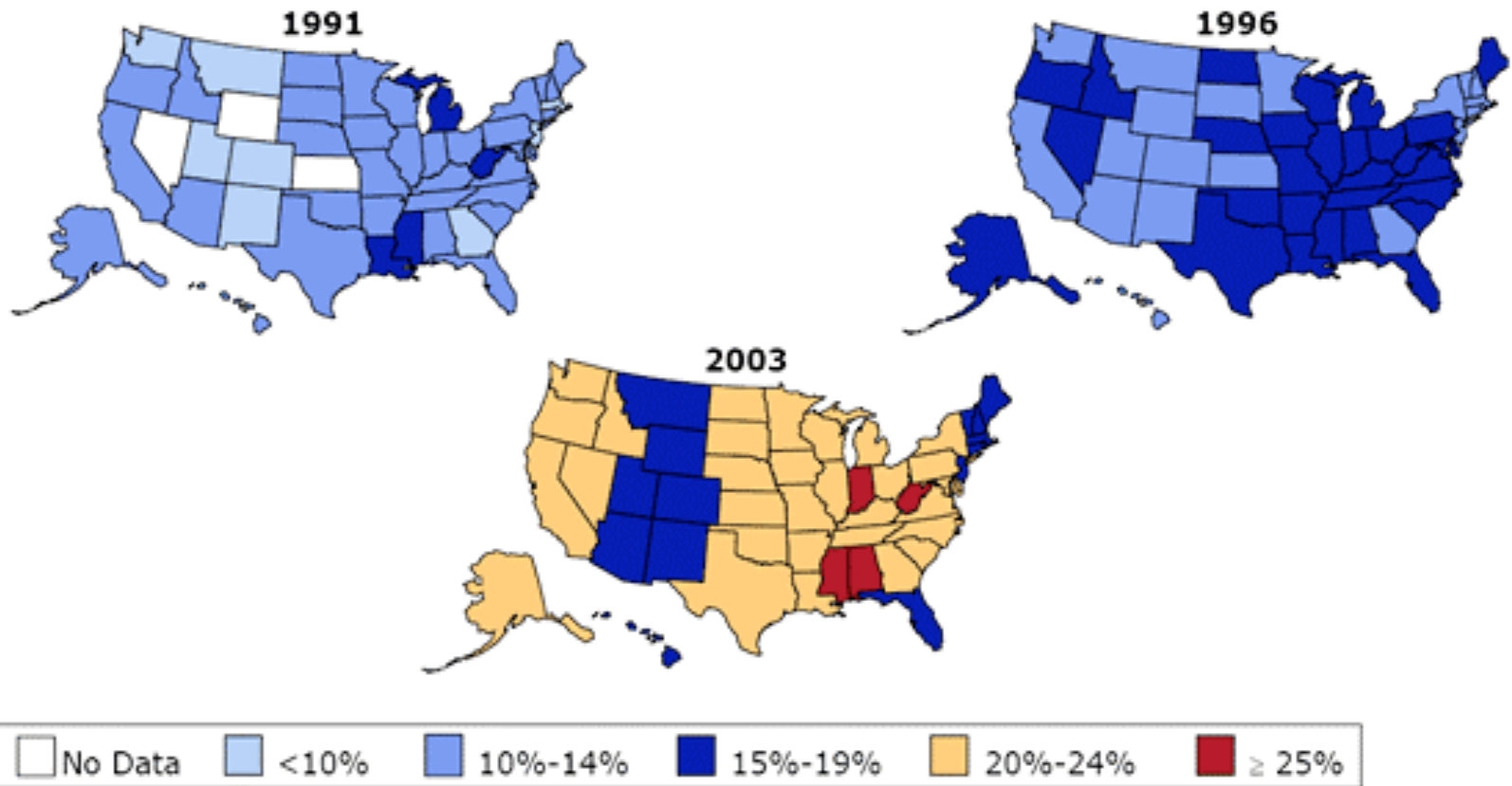
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Health Consequences

Obesity Trends* Among U.S. Adults BRFSS, 1991, 1996, 2003

(*BMI ≥ 30 , or about 30 lbs overweight for 5'4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.



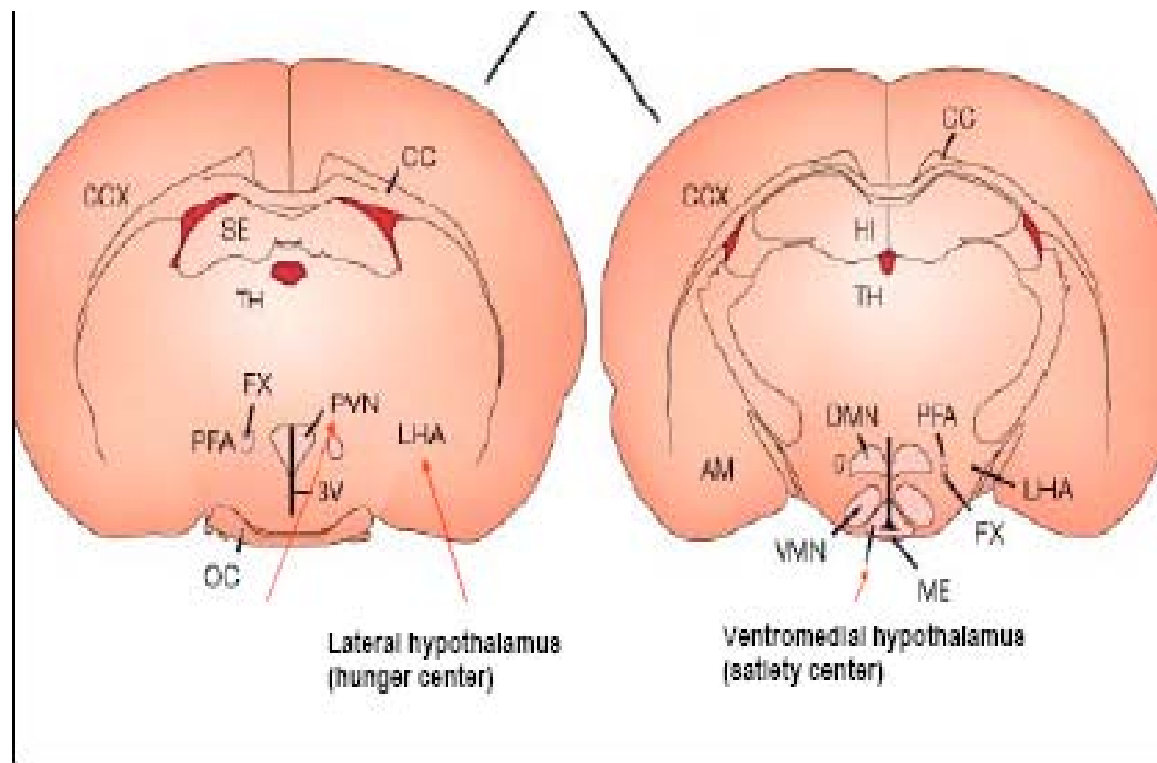
What Causes Obesity

- Gluttony?
- Genes?



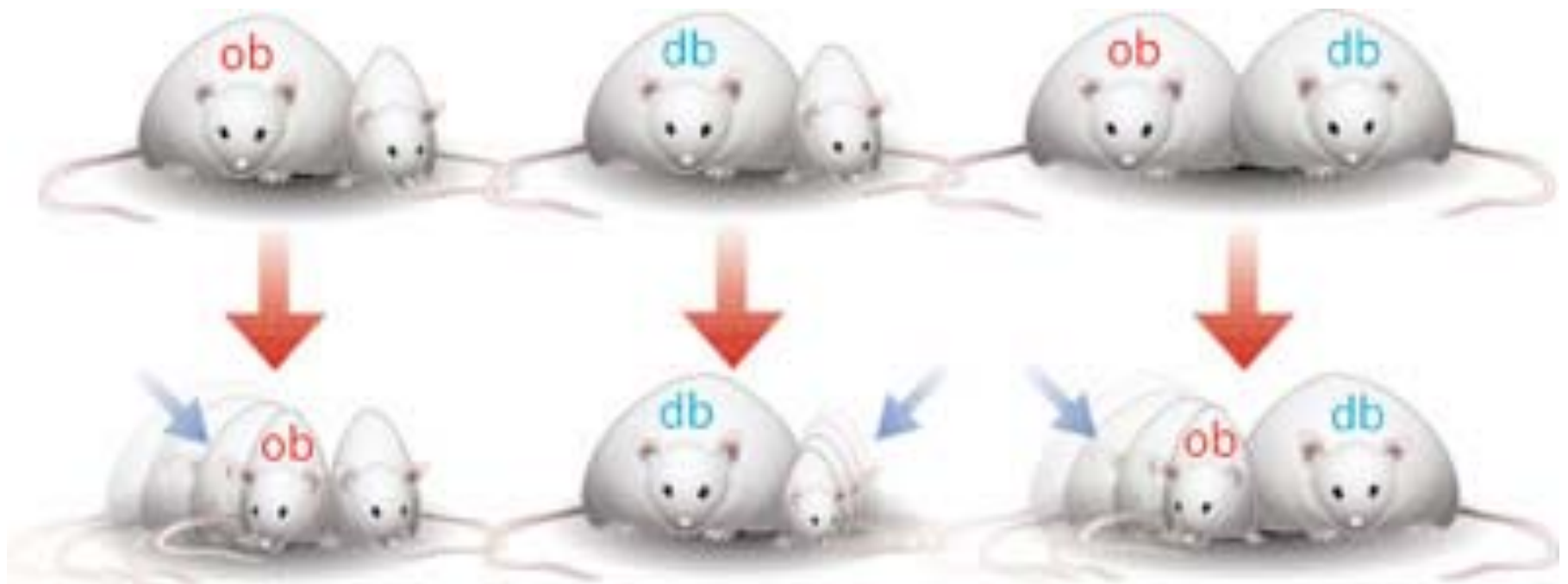
Early Studies

- Hervey Experiment (1959)



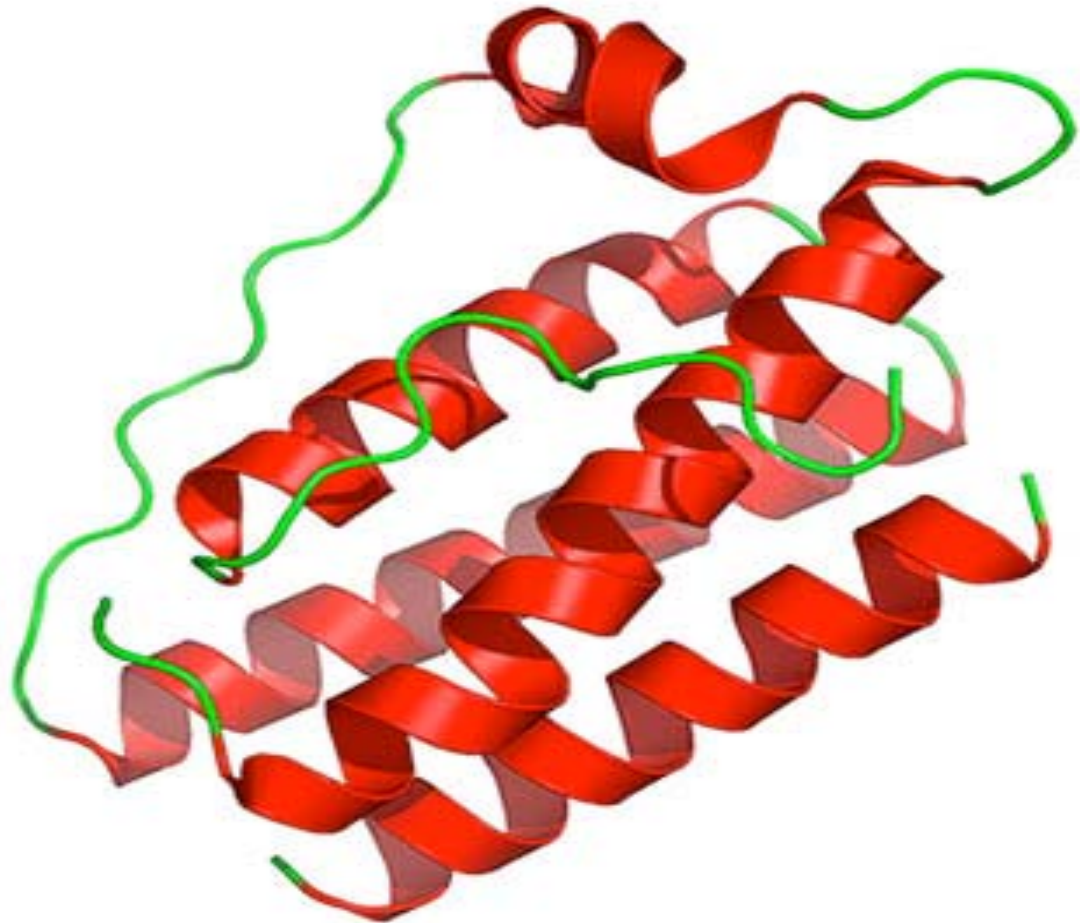
Early Studies

- Parabiosis



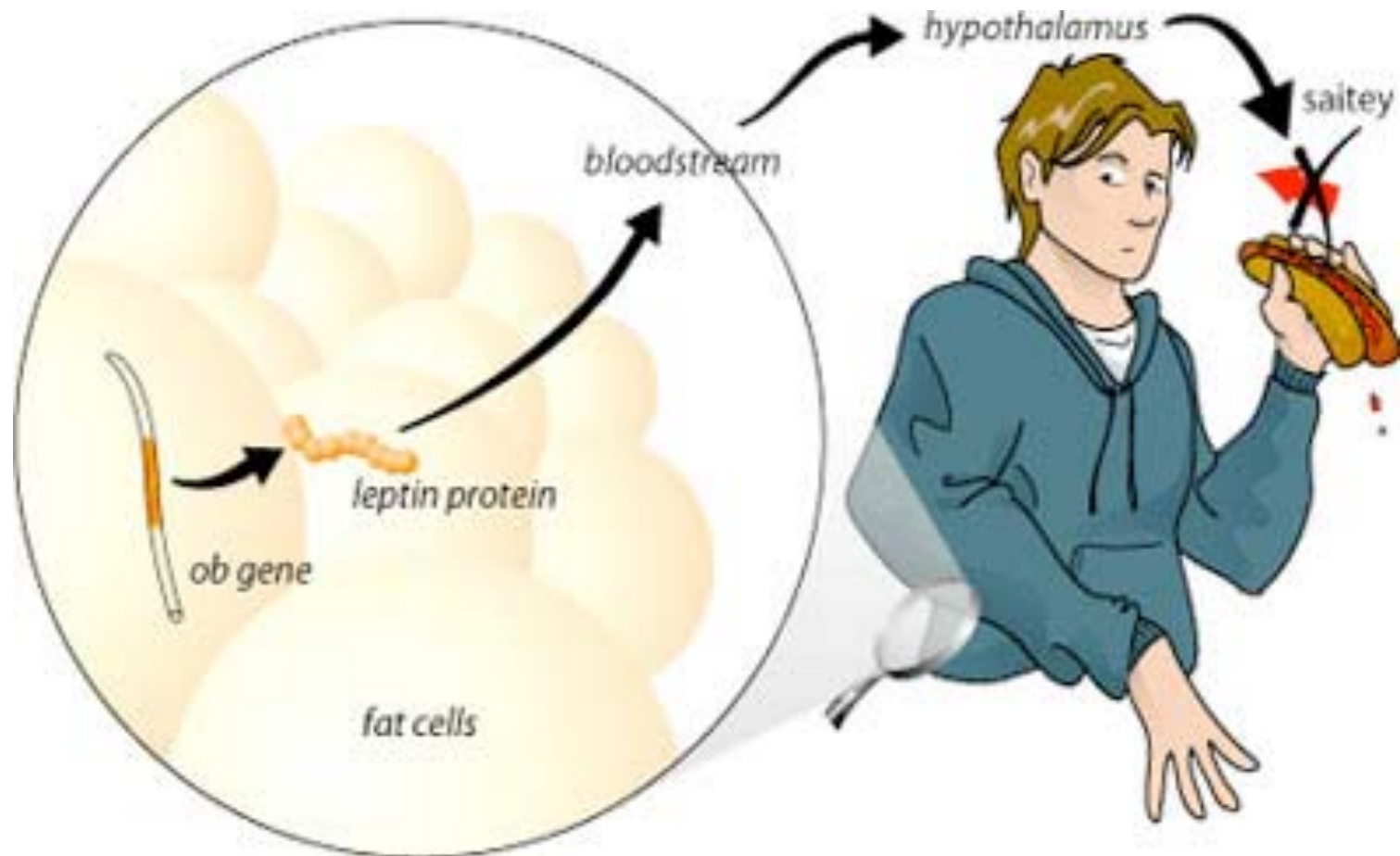
What's the “Circulating Factor”?

- Leptin



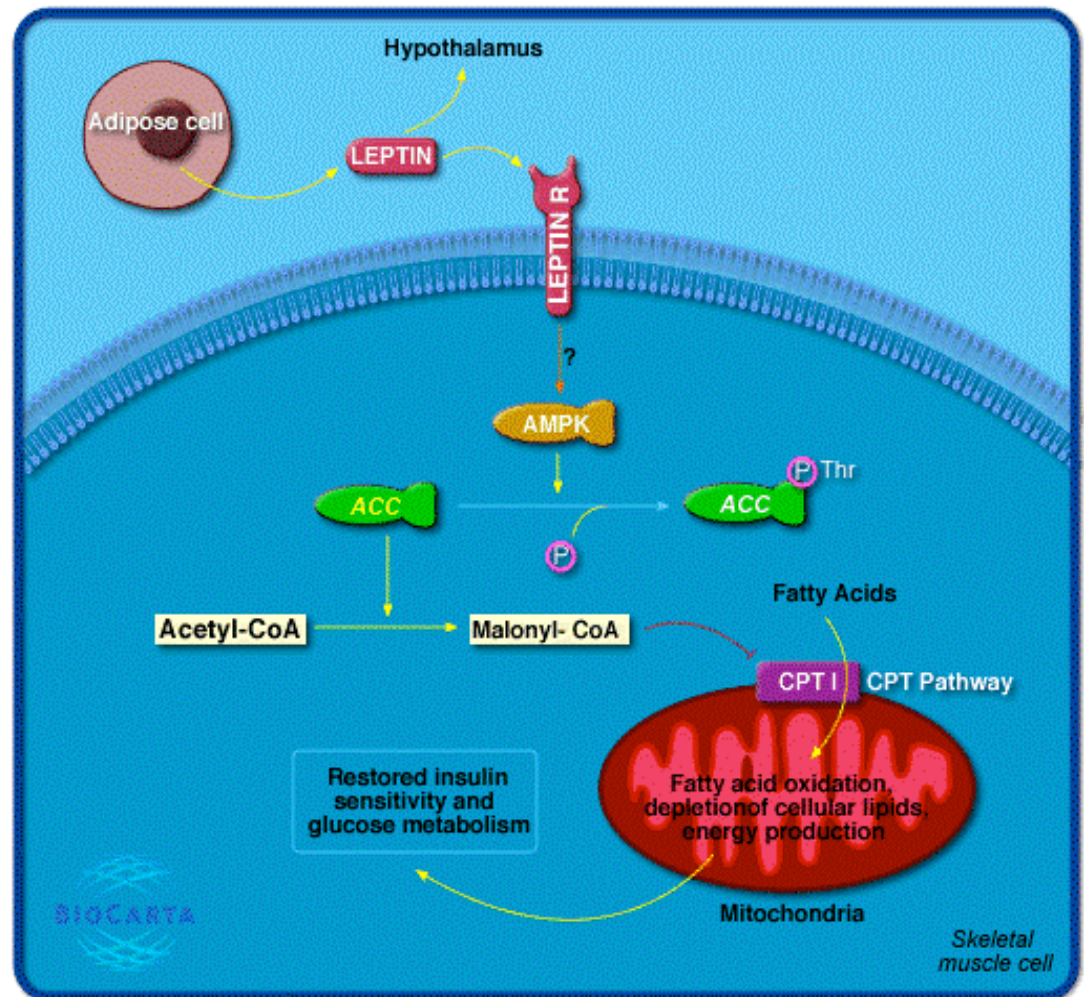
How Does Leptin Work?

- 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!

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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=3ec6442849a056cb740b8e8aa6be2dbe
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- <http://www.hhmi.org/bulletin/mar2003/leptin/leptin2.html>
- Humbio 4A Lecture