The Latest Skinny FAT

This is a guilt-free zone!

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Disclosures

- None
- Zip
- Nada
- Keiner
- Ingen
- Никто
- Aucun
- Nessuno

TACKLING A BIG PROBLEM
Case Studies in Obesity

- Just look around
  - At work
  - At the mall
  - At Disneyworld
  - ....etc

Where Are We Now in The Fat Attack?

Size of the Problem

- CDC reports obesity has doubled in adults and nearly tripled in our youth since 1980!!
- Increasing the risk of:
  - Hypertension
  - Dyslipidemia
  - Type 2 diabetes
  - Coronary heart disease
  - Stroke
  - Gallbladder disease/ fatty liver disease/ pancreatitis
  - Sleep apnea & respiratory issues
  - Cancers (endometrial, breast & colon)
  - Dementia
Obesity or Overweight?

- BMI over 30% = obesity
- BMI over 25 to 29% = overweight
- BMI controversy
- Progression the issue?
- Waist or weight?

And we keep growing
Globesity

Obesity in the Young
- Approximately 17% (or 12.5 million) of children and adolescents aged 2–19 years are obese (up from 5% in 1980)

What Excessive Adiposity Does

- Among children ages 2–19, ~ 1 in 3 are overweight & obese (BMI for age at or above the 85th percentile) -
  - 32.1% of all boys
  - 31.3% of all girls
- Overweight adolescents have a 70% chance of becoming overweight adults.

“Children will be entering adulthood heavier than they’ve ever been at any time in human history. Even without further increases in prevalence, the impact of the epidemic will continue to mount for many years to come.”

- Dr. David Ludwig, director of the childhood obesity program at Children’s Hospital in Boston

Data derived from Health, United States, 2010: With Special Feature on Death and Dying, NCHS, 2011
SO WHY THE BODY EXPLOSION????

SO WHY THE BODY EXPLOSION?

- Food...quantity or quality?
- Sedentary lifestyle?
- Genes?
- Bugs
  - Adenoviruses?
  - Intestinal microbiota?

ALL OF THE ABOVE
Quality of our bread?
Inherited predisposition

Nutrigenetics & Nutrigenomics

It is illogical to assume all individuals are equally responsive to drugs, foods or food components!!

At first I didn't like the taste of this new lettuce, but now I'm eating eight salads a day.

Quietly, efficiently, and without warning, the tobacco companies switch to Plan B.
Obesity is a disease

Waist more a problem than weight

Visceral Adiposity:
The Critical Adipose Depot

Location...location...location
FATTY LIVER DISEASE

Brown fat
White fat

The FATTY HEART
Most abundant in babies:
Generates non-shivering heat (via TGs)
Counters pro-obesity white fat?
Same precursors as skeletal muscle

Adipose Tissue as an Endocrine Organ

Notable Adipokines

- Leptin
  - Pro-satiety...but

- Adiponectin
  - Anti-inflammatory...but
Satiety!

What About the Gut?
Gut Peptides That Regulate Appetite

The gut-fat-brain connection

Brain Appetite-Center


Satiety = reward

So What Can We Do?
This Doesn’t Work


Which diet works best….?

P<0.001 for both comparisons with the low-fat diet

It Is Illogical to Assume All Individuals are Equally Responsive to Drugs, Foods or Food Components!!
STOP mindless eating

Portion control!!

WHAT YOU CAN DO?
- Stop mindless overeating
- Consume foods that are low in calories but high in fiber and water
- Use smaller plates and serving utensils to control portion sizes.
- Beware of the "clean plate" mentality: visualize how much you're going to eat before you start eating.
- Avoid all-you-can-eat restaurants and buffets
- Eat slowly; it takes the brain 20 minutes to sense that you're full.
- Don't do other activities while you eat, such as watching TV.
More on Food Fixes
- Timing and sequencing food and drink
- Fiber (water insoluble/ insoluble)
- Nuts (fat/protein)—pre meal
- Probiotics/yogurt?
- Anti-inflammatory diet (yes, no, maybe)

More Eating Tips…
1. Eat “around the plate”: protein, fat first…delay carbs
2. Fiber, fiber, fiber
3. Drink before or after…not during
4. Slooowww it down
5. Don’t eat 3 hours before bed
6. Others…..
Mixed messages

So Exercise!!!

Why?
When?
What type?
How much?
CDC 2008 Age-Adjusted Estimates of the Percentage of Adults (>18 yrs) Who Are Physically Inactive

Medical Treatment for Obesity

Global Market for Treatment of Obesity, 2009-2019

Selected Pharmacological Aids

- Nutrient blockers
  - Orlistat (Xenical, Alli)
  - Starch blockers
- Central satiety agents
  - SSRIs
    - Sibutramin (Meridia) now GONE!
  - Direct satiety drugs
    - Phentermine ...more later
- Herbal
  - Stimulants
  - Hoodia
  - Others: vitamin D, chromium picolinate, ETHO?

Selected Pharmacological Aids

- Herbal
  - Stimulants
  - Hoodia
  - Sensa
  - vitamin D
  - Niacin-chromium combo
  - ETHO
  - Magnesium, calcium

Biotherapies

- Incretins
  - GLP-1 (liraglutide, exenatide)
  - Amylin
- E-cannabinoid receptor blockers (no FDA approval)
  - Rimonabant (Acomplia)
  - Taranabant
The New Anti-obesity Drugs

- Lorcaserin (Belviq)
  - Serotonin 2c receptor agonist
  - 5-10% weight loss

Anti-obesity Drugs in Research

- Pheneramine & topiramate (Q-nexa)
- Leptin sensitizers
- New metreleptin and pramlintide combo
- Ghrelin blockers
- Empatic (zonisamide and bupropion combo)
- Sirtuins (obesity gene manipulators)
- Most focused on CNS!!! We want to lose weight and feel good about it!


Fat Apps
The benefits of bariatric surgery may outweigh the risks for some severely obese people, says the AHA (American Heart Association).

"Specifically, bariatric surgery can lead to improvements in weight-related health problems such as diabetes, high cholesterol, high blood pressure, cancer, obstructive sleep apnea and cardiovascular dysfunction."

And there are APPS

A Few References