Cancer and Obesity
The Challenge of Prevention and Treatment

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Disclosures

• Professional fees
  – Novo Nordisk
  – Nutrisystem

• Personal biases that favor:
  – Evidence-based interventions, both prevention and treatment
  – Respect for people living with obesity
  – Critical thinking about all evidence
Presentation Objectives

- Definition, physiology, and impact
- Bias and misconceptions
- Progress to date (lack thereof)
- Opportunities for better progress

Source: OAC Image Gallery
The Goal for the PA Cancer Control Plan

• Sounds great
• How hard can this be?

**ADULT OBESITY PREVENTION**

Objective

*Decrease the rate of adult obesity by 2 percentage points*

- Baseline, 32.0%
- Target, 30.0%

Source: Behavioral Risk Factor Surveillance System
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Definition, Physiology, and Impact
What Is Obesity?

- A state of being grossly fat or overweight?
- A behavioral problem?
- The result of bad choices?
- A disease of poor nutrition?
- Evidence of sloth and gluttony?
- A bogus diagnosis?
- A disease of excess adipose tissue?

Source: OAC Image Gallery
What Is Obesity?

A complex, chronic disease
- Defined by excess adipose (fat) tissue
- > 100 potential causes
- Many subtypes
- Not fully understood
- Badly misunderstood by the public

Source: OAC Image Gallery
Untreated Obesity
Harms Nearly Every Organ System

• Pulmonary
• Nonalcoholic fatty liver
• Gall bladder disease
• Gynecologic
• Osteoarthritis
• Dermatologic
• Gout

• Intracranial hypertension
• Stroke
• Cataracts
• Cardiovascular
• Diabetes
• Pancreatitis
• Cancer
• Phlebitis
Obesity Contributes to Cancer Risk

Cancers Associated with Excess Weight and Obesity

Source: cancer.gov/obesity-fact-sheet
Obesity Has a Big Effect on Health and Wealth in Pennsylvania
Obesity Prevalence Began to Grow in the 1980s

Source: NHANES estimates
Despite All Our Best Efforts, Obesity Trends Haven’t Budged

Figure 5. Trends in obesity prevalence among adults aged 20 and over (age adjusted) and youth aged 2–19 years: United States, 1999–2000 through 2015–2016


NOTES: All estimates for adults are age-adjusted by the direct method to the 2000 U.S. census population using the age groups 20–39, 40–59, and 60 and over. Access data table for Figure 5 at: https://www.cdc.gov/nchs/data/databriefs/db288_table.pdf#S5.

Not Even in Children 2-5

Obesity in U.S. Children Aged 2-5 Years

Prevalence

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%


Sources: CDC/NCHS and Skinner et al, Obesity 2014.04
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Why Has Progress Been So Elusive?
Two Kinds of Bias Corrupt Our Response to Obesity

• Intellectual bias favoring personal convictions
• Weight bias directed at people with obesity

God Judging Adam, Etching by William Blake / WikiArt
Bias is an inclination or outlook to present or hold a partial perspective, often accompanied by a refusal to consider the possible merits of alternative points of view. Biases are learned implicitly within cultural contexts. People may develop biases toward or against an individual, an ethnic group, a nation, a religion, a social class, a political party, theoretical paradigms and ideologies within academic domains, or a species.

– Adapted from *Psychology: Contemporary Perspectives*  
  Paul Okami
People Typically View Obesity as the Result of Poor Choices

- 70% Environment
- 20% Choices
- 10% Genes
Long Viewed as a Matter of Choice

Which phrase comes closest to describing the type of problem that you think obesity is? (Feb 2013)

- Bad personal choices was the dominant explanation in 2013
- Data from ongoing tracking
- Respondents asked to pick one

Source: ConscienHealth research 2013.02
The Truth Is That
Obesity Is a Highly Heritable Chronic Disease

- Heredity plays a dominant role in obesity risk
- But environmental factors serve to activate it
- Then, people can choose what to do about it

Source: Musani, Erickson, and Allison, 2008, AJCN
The Obesity Pandemic Comes from a Perfect Storm of Environmental Triggers

- Simplistic explanations are invariably wrong
- The more accurate view is a perfect storm of multiple factors

References:
Obesity Grows from Complex, Adaptive Systems

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Weight Bias Directed at People with Obesity
Weight Bias Flows from Common Assumptions About People with Obesity

Untitled, photograph by Boohoomian / flickr

Photograph courtesy of the UCONN Rudd Center
Assumptions Can Be Wildly Misleading
Demeaning Stereotypes About People with Obesity

- Lazy
- Stupid
- Undisciplined
- Sloppy
- Awkward
- Losers
- Dishonest
- Won't follow directions
- Uniformly unhealthy
- Ignorant about nutrition
- Lives spent gorging on junk food

In the Kitchen, photograph © Obesity Action Coalition / OAC Image Gallery
Bias Compromises Quality of Care

• Less empathetic care
• Less preventive care
• Patients feel berated and disrespected
• Obesity blamed for every symptom

“You could walk in with an ax sticking out of your head and they would tell you your head hurt because you are fat.”
Living with Discrimination Makes People Sicker

Pathways from stress to obesity

Source: Tomiyama, 2019, *Ann Rev Psych*
Bias Gets in the Way of Progress

- Stigma leads to denial and inaction
  - Blame directed at people with obesity
  - Assumptions of
    - Laziness
    - Poor discipline
  - Social rejection

- People seek less care, get poor care, so health suffers

- Leads to ineffective policies
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Where Are We Making Progress?
In 2013 AMA Declared Obesity Is a Complex, Chronic Disease

Milestones in Regarding Obesity as a Disease

- 1977
- 1998
- 2002
- 2004
- 2006
- 2008
- 2012
- 2013

Source: Kyle, Dhurandhar, and Allison, Endocrinol Metab Clin North Am, 2016.09
Public Views Began a Slow Shift

• Fewer people think of obesity as a problem of bad personal choices
• People are shifting toward more diverse views of obesity

“Obesity is a personal problem of bad choices”

Source: ConscienHealth/OAC weight bias tracking research, 2017.05
Obesity Science
Is Bringing Better Insights and Solutions

- Hypothalamus controls fat mass and blood sugar
- More therapies to manage obesity
- Bariatric surgery extends life and puts diabetes in remission
Summary of Opportunities

Better progress will require:

• **Objectivity** to replace bias
• **Curiosity** about obesity and the people it affects
• **Care** for these people
More Information

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