OBESITY MANAGEMENT THROUGH HEALTH BEHAVIOR CHANGE

Stephanie L. Fitzpatrick, PhD
APA Center for Learning and Career Development Health Behavior Series

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Feinstein Institutes for Medical Research
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1

NO DISCLOSURES

2

OVERVIEW

1. Prevalence of Obesity
2. Obesity Metrics
3. Obesity Treatment Guidelines
4. Behavioral Treatment for Obesity
5. Weight Stigma
6. Obesity through a Health Equity Lens
7. Research Future Directions

3

POLL QUESTION #1

Do you currently provide clinical services for weight management?

1. Yes
2. No

4

POLL QUESTION #2

Do you currently conduct research in obesity or related conditions?

1. Yes
2. No

OBESITY PREVALENCE IN THE UNITED STATES

- ❑ 100.1 million (~42%) adults have obesity

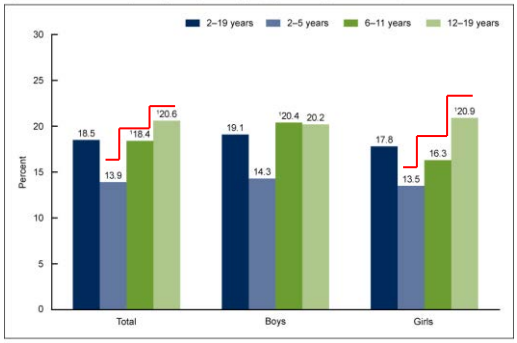
Figure 1. Prevalence of obesity among adults aged 20 and over, by sex and age: United States, 2017–2018



NOTES: Estimates for adults aged 20 and over were 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. Crude estimates are 42.5% for total, 43.0% for men, and 42.1% for women. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/da-tabriefs/db360_tables-508.pdf#1.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

- ❑ 14.7 million (~20%) youth (age 2-19) have obesity

Figure 3. Prevalence of obesity among youth aged 2–19 years, by sex and age: United States, 2015–2016

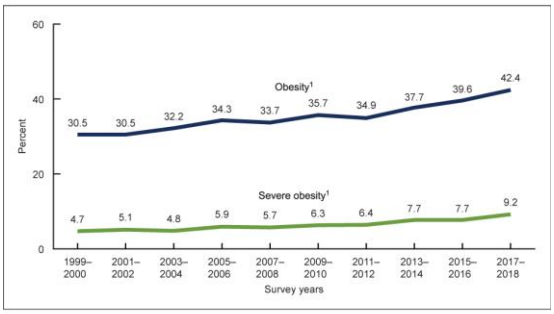


†Significantly different from those aged 2–5 years.
NOTE: Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db288_table.pdf#3.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2016.

OBESITY TRENDS IN THE U.S.

ADULTS (OBESITY AND SEVERE OBESITY)

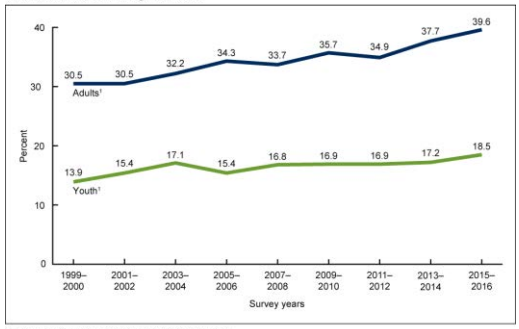
Figure 4. Trends in age-adjusted obesity and severe obesity prevalence among adults aged 20 and over: United States, 1999–2000 through 2017–2018



[1]Significant linear trend.
NOTES: Estimates were 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 4 at: https://www.cdc.gov/nchs/data/databriefs/db360_tables-508.pdf#4.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 1999–2018.

ADULTS AND YOUTH

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

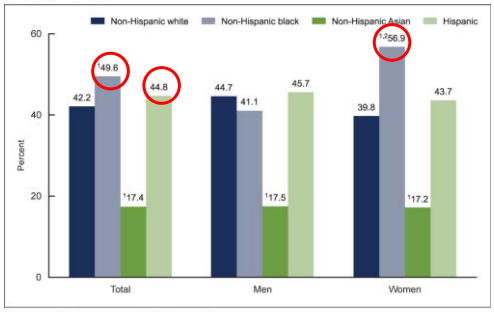


[1]Significant increasing linear trend from 1999–2000 through 2015–2016.
NOTES: All estimates for adults are age adjusted by the direct method to the 2000 U.S. census population using the age groups 20–39, 40–59, and 60 and over. Access data table for Figure 5 at: https://www.cdc.gov/nchs/data/databriefs/db288_table.pdf#5.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 1999–2016.

OBESITY PREVALENCE IN THE U.S. BY RACE AND ETHNICITY

ADULTS

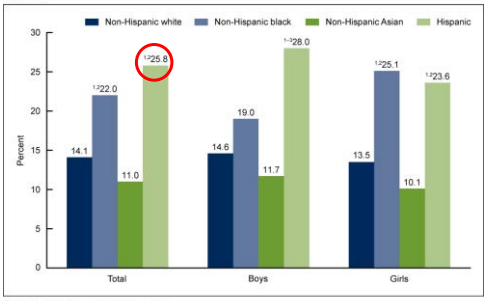
Figure 2. Age-adjusted prevalence of obesity among adults aged 20 and over, by sex and race and Hispanic origin: United States, 2017–2018



[1]Significantly different from all other race and Hispanic-origin groups.
[2]Significantly different from men for same race and Hispanic-origin group.
NOTES: Estimates were 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 2 at: https://www.cdc.gov/nchs/data/databriefs/db360_tables-508.pdf#2.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

YOUTH

Figure 4. Prevalence of obesity among youth aged 2–19 years, by sex and race and Hispanic origin: United States, 2015–2016



[1]Significantly different from non-Hispanic Asian persons.
[2]Significantly different from non-Hispanic white persons.
[3]Significantly different from non-Hispanic black persons.
NOTE: Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db288_table.pdf#4.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2016.

OBESITY PREVALENCE AND SOCIOECONOMIC STATUS (SES)

- The association between obesity and SES is complex and differs based on sex and race/ethnicity.
  - Prevalence of obesity decreases with increasing income among women
  - There is no difference in obesity prevalence for differing incomes among men
  - Obesity prevalence is lower among college graduates than people with less education among non-Hispanic white (men and women), non-Hispanic Black women, and Hispanic/Latino women
    - But not for non-Hispanic Asian men and women, non-Hispanic Black, or Hispanic/Latino men

Ogden CL, Fakhouri TH, Carroll MD, et al. Prevalence of Obesity Among Adults, by Household Income and Education — United States, 2011–2014. MMWR Morb Mortal Wkly Rep 2017;66:1369–1373. DOI: http://dx.doi.org/10.15585/mmwr.mm6650a1

9

OBESITY-RELATED COMORBIDITIES

- Type 2 diabetes
- Cardiovascular disease
- Sleep apnea
- Dyslipidemia
- Mobility limitations
- Some types of cancer (13 total)
  - Breast cancer
  - Colon cancer
  - Ovarian cancer
  - Liver cancer
  - Thyroid cancer

10

METRICS USED TO DETERMINE WEIGHT STATUS

Body Mass Index (kg/m^2)

BMI	Weight Status
Below 18.5	Underweight
18.5-24.9	'Healthy' Weight
25.0-29.9	Overweight
30.0-34.9	Class 1 Obesity
35.0-39.9	Class 2 Obesity
40.0 and above	Class 3 Obesity or Severe Obesity

Note. For Asians, overweight is 23-24.9; obesity is ≥25.

BMI Percentile (Youth)

BMI	Weight Status
<5th %ile	Underweight
5th to <85th %ile	'Healthy' Weight
85th to <95th %ile	Overweight
≥95th %ile	Obesity
≥120% of the 95th %ile OR >35 kg/m^2	Severe Obesity

Waist Circumference

Men: Waist circumference greater than 40 inches, increased risk for obesity-related conditions

Women (not pregnant): Waist circumference greater than 35 inches, increased risk for obesity-related conditions

LIMITATIONS OF BODY MASS INDEX

- Measure based on a sample of European males in the mid-1800s – Adolphe Quetelet, Belgian mathematician
- Does not distinguish fat mass and muscle mass
- Better in determining population health, not individual health

METRICS USED TO DETERMINE WEIGHT STATUS

PLEASE TYPE IN THE CHAT OTHER METHODS YOU ARE AWARE OF TO DETERMINE WEIGHT STATUS/OBESITY.

BEHAVIORAL TREATMENT FOR OBESITY

Circulation
Volume 129, Issue 25_suppl_2, 24 June 2014: Pages S102-S138
https://doi.org/10.1161/01.cir.0000437739.71477.ee

AHA/ACC/TOS PREVENTION GUIDELINE

2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society

JAMA | US Preventive Services Task Force | RECOMMENDATION STATEMENT

Behavioral Weight Loss Interventions to Prevent Obesity-Related Morbidity and Mortality in Adults
US Preventive Services Task Force
Recommendation Statement

US Preventive Services Task Force; Curry SJ, Krist AH, Owens DK, Barry MJ, Caughey AB, Davidson KW, Doubeni CA, Epling JW Jr, Grossman DC, Kemper AR, Kubik M, Landefeld CS, Mangione CM, Phipps MG, Silverstein M, Simon MA, Tseng CW, Wong JB. Behavioral Weight Loss Interventions to Prevent Obesity-Related Morbidity and Mortality in Adults: US Preventive Services Task Force Recommendation Statement. JAMA. 2018 Sep 18;320(11):1163-1171.

American Psychological Association's
Clinical Practice Guideline for the Treatment of Obesity and Overweight in Children and Adolescents

The 2018 guideline recommends interventions for the treatment of overweight and obesity in children and adolescents aged 2–18. Recommendations are based on a systematic review of the scientific evidence, a weighing of the benefits and harms of interventions, consideration of what is known about patient values and preferences, and consideration of the applicability of the evidence across demographic groups and settings.

American Psychological Association, Clinical Practice Guideline Panel. (2018). Clinical practice guideline for multicomponent behavioral treatment of obesity and overweight in children and adolescents: Current state of the evidence and research needs. Retrieved from http://www.apa.org/obesity-guideline/obesity.pdf

BEHAVIORAL TREATMENT FOR OBESITY

- ❑ First-line treatment for obesity
- ❑ Results in 5%-10% loss of initial weight
  - ❑ Associated with reduction in risk for diabetes and cardiovascular disease
  - ❑ Improved quality of life
- ❑ Multi-component behavioral interventions recommended:
  - ❑ Nutrition
  - ❑ Physical Activity
  - ❑ Behavior Change Strategies

NUTRITION



VIEWPOINT

A Call for an End to the Diet Debates

Sherry L. Pagoto, PhD
University of Massachusetts Medical School, Worcester.

Bradley M. Appelhans, PhD
Rush University Medical Center, Chicago, Illinois.

As the obesity epidemic persists, the time has come to end the pursuit of the "ideal" diet for weight loss and disease prevention. The dietary debate in the scientific community and reported in the media about the optimal macronutrient-focused weight loss diet sheds little light on the treatment of obesity and may mislead the public regarding proper weight management. Numerous randomized trials comparing diets differing in macronutrient compositions (eg, low-carbohydrate, low-fat, Mediterranean) have demonstrated differences in most entirely related to macronutrient composition (eg, Zone, Atkins, South Beach, Dukan, Paleo). A second factor is the assumption that lifestyle interventions are ineffective. Poor adherence (and consequent weight regain) following the intervention is cited as evidence that these interventions do not work.[5] This conclusion can be challenged because it assumes a definition for efficacy more stringent than that applied to other forms of preventive care.

Termination of treatment or nonadherence almost

"Because behavioral adherence is much more important than diet composition, the best approach is to counsel patients to choose a dietary plan they find easiest to adhere to in the long term."

Pagoto SL, Appelhans BM. A Call for an End to the Diet Debates. *JAMA*. 2013;310(7):687–688. doi:10.1001/jama.2013.8601

PHYSICAL ACTIVITY

Move More and Sit Less



U.S. Department of Health and Human Services. Physical Activity Guidelines for Americans, 2nd edition. Washington, DC: U.S. Department of Health and Human Services; 2018.

17

BEHAVIOR CHANGE STRATEGIES

- ❑ Goal Setting
  - ❑ Specific, Measurable, Attainable, Relevant, Time-based
- ❑ Self-Monitoring
  - ❑ Weight
  - ❑ Food Intake
  - ❑ Physical Activity
- ❑ Problem Solving – Identifying barriers to behavior change and developing and implementing solutions to address those barriers to behavior change
- ❑ Environmental Modification – Modifying one's environment to reduce triggers/cues for unhealthy behaviors and to increase/facilitate engagement in healthy behaviors

18

ROLE OF TECHNOLOGY – SELF-MONITORING

- ❑ Smart phones
- ❑ Smart watches
- ❑ Bluetooth weight scales
- ❑ Apps to track food intake, physical activity, mood/level of stress
- ❑ Continuous glucose monitors

EXAMPLE OF REAL-WORLD APPLICATION

- ❑ Assessment
  - ❑ Weight management history
  - ❑ Physical and mental health history
  - ❑ Current stressors
  - ❑ Support network
  - ❑ 24-hour recall (establish sleep, eating, and activity patterns)
- ❑ Establish SMART Goals
  - ❑ Walk for 20 minutes, 3 days a week after work
  - ❑ Eat 1 cup of vegetables with dinner at least 3 times a week
- ❑ Self-monitoring Plan
  - ❑ Track minutes of physical activity and/or steps using smart watch or pedometer
  - ❑ Track food intake using app
- ❑ Problem Solve
  - ❑ Pack workout clothes and leave in the car (environmental modification)
  - ❑ Ask a friend or family member to walk with you
  - ❑ Put vegetables on the grocery list
  - ❑ Set reminders

PSYCHOLOGICAL THERAPY APPROACHES FOR OBESITY

- Cognitive-Behavioral Treatment of Obesity: A Clinician's Guide (Cooper, Fairburn, and Hawker, 2003)
- Effective Weight Loss: An Acceptance-Based Behavioral Approach (Forman and Butryn, 2016)

BARIATRIC SURGERY AND WEIGHT LOSS MEDICATIONS

- People lose significantly more weight with weight loss medications and bariatric surgery compared to behavioral treatment alone; **HOWEVER**,
- Behavioral treatment for obesity should still be used in conjunction with other obesity treatment approaches. Bariatric surgery and weight loss medications are not replacements to eating healthy and staying active.

Cornier MA. A review of current guidelines for the treatment of obesity. Am J Manag Care. 2022 Dec;28(15 Suppl):S288-S296.

WEIGHT STIGMA

- ❑ Weight stigma – the societal devaluation of people because of their body weight or body size
- ❑ 40% of adults report experiencing weight stigma and/or discrimination
- ❑ Weight stigma leads to depression, anxiety, poor body image, suicidality, substance use, disordered eating, and engagement in unhealthy weight control behaviors
- ❑ Weight stigma occurs in various settings including at home, school, work, and doctor's office

Puhl RM. Weight Stigma and Barriers to Effective Obesity Care. Gastroenterol Clin North Am. 2023 Jun;52(2):417-428.

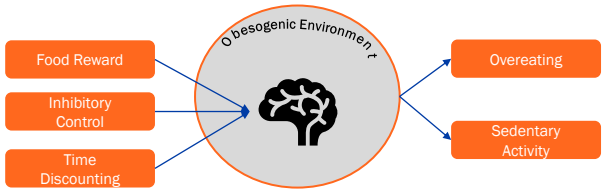
BEHAVIORAL MANAGEMENT VS. WILLPOWER

Willpower

- o Usually involves All or Nothing thinking
- o Have it or don't have it
- o Feel like a failure and blame self when behavior change goals not achieved

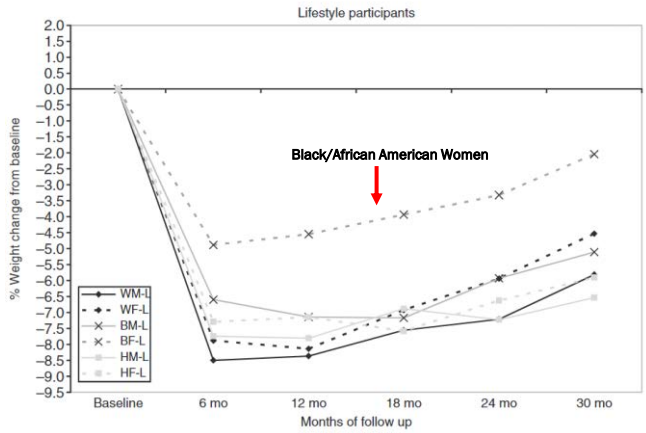
Behavioral Management

- o Flexible
- o Focus on behaviors, not qualities of the person
- o Acknowledges neurobehavioral processes and role of obesogenic environment



Appelhans BM, Whited MC, Schneider KL, Pagoto SL. Time to abandon the notion of personal choice in dietary counseling for obesity? J Am Diet Assoc. 2011 Aug;111(8):1130-6.

RACIAL AND ETHNIC DIFFERENCES IN THE EFFECTIVENESS OF BEHAVIORAL TREATMENTS FOR OBESITY



West DS, Elaine Prewitt T, Bursac Z, Felix HC. Weight loss of black, white, and Hispanic men and women in the Diabetes Prevention Program. Obesity (Silver Spring). 2008 Jun;16(6):1413-20.

25

Obesity from a Health Equity Lens: Historical, Social, Economic, and Political Contexts

Historical, social, economic, physical, and policy contexts

Legal risks and protections

Institutional racism and other forms discrimination

Political voice and voter registration

Economics:
- Debt
- Poverty
- Home ownership
- Wealth-building/Inheritance
- Health insurance
- Minimum wage
- Public assistance
- Housing costs
- Employment discrimination
- Marketing
- Cost of living

Employment and occupation:
- Education attainment
- Employment discrimination
- Health insurance/Amenities
- Physical demand of job/Sitting vs. standing
- Job flexibility

Education:
- School district
- Neighborhood segregation
- Housing discrimination
- Public funding for schools
- School quality
- Higher-education access

Neighborhood/Locality:
- Rurality
- Jurisdiction
- Public transportation
- Distance to healthcare
- Retail outlets
- Food access
- Racial segregation
- Poverty rates
- Wage deserts
- Job access
- Housing stock
- School quality
- After-school programs
- Walking and biking infrastructure
- Community centers
- Neighborhood safety
- Parks
- Neighborhood resources (e.g., higher-education institution)
- Policing and law enforcement
- Stigma and interpersonal racism
- Blight, community ecology

Systematic effects on daily life and choices

Food-related:
- Food access, affordability, appeal
- Exposure to food advertising
- Federal nutrition assistance
- Food and nutrition literacy
- Food norms
- Dieting

Physical activity-related:
- Options for safe, affordable recreation
- Personal transportation
- Public transportation
- Exposure to violence
- Activity norms
- Exercise

Resource limitations:
- Discretionary time
- Discretionary income
- Income stability
- Housing stability
- Healthcare access

Chronic stress

Sleep health

Food security

Weight control and related contextual outcomes and effects on individuals

Food intake

Dietary quality

Child feeding and parenting

Physical activity

Sedentary behavior

Excess weight gain

Ability to lose weight

Ability to maintain weight

Body composition and fitness

Source: Kumanyika S. "A Health Equity Approach to Obesity Efforts: A Workshop." Washington, DC: National Academies of Sciences, Engineering, and

26

RESEARCH FUTURE DIRECTIONS

- ❑ Pragmatic trials to test the effectiveness of combined behavioral lifestyle and social health interventions
- ❑ Strategies to support behavior change maintenance → weight loss maintenance
  - ❑ Role of artificial intelligence
- ❑ Test strategies to implement evidence-based interventions or prevention programs for childhood obesity in clinical and community-based settings
- ❑ Establishing the evidence base for obesity treatment reimbursement/payment models that acknowledge psychologists and make all forms of obesity treatment more accessible

QUESTIONS?

sfitzpatrick1@northwell.edu

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Centers for Disease Control and Prevention. Childhood Obesity Facts. https://www.cdc.gov/obesity/data/childhood.html. Accessed October 15, 2023.

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Hales CM, Fryar CD, Carroll MD, Freedman DS, Ogden CL. Trends in Obesity and Severe Obesity Prevalence in US Youth and Adults by Sex and Age, 2007-2008 to 2015-2016. *JAMA*. 2018 Apr 24;319(16):1723-1725. doi: 10.1001/jama.2018.3060.

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