# Breaking Down Fad Diets: Is There a Better Way?



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### DISCLOSURES

- No financial disclosures
- But...





#### Certified Eating Disorders Registered Dietitian/CEDRD

## Certificate of Training in Obesity for Adults



### **OBJECTIVES:**

- 1. Distinguish fad diets from evidence-based practices
- 2. Recognize the harms associated with dieting practices
- 3. Identify a non-diet approach
- 4. Discuss practice recommendations for healthcare providers



### THE ISSUE

- 73.6% of Americans are overweight or obese<sup>(1)</sup>
- BMI > 30 associated with:
  - Type 2 diabetes, certain cancers, cardiovascular disease, osteoarthritis
- Annual medical cost of BMI > 25: \$209.7 billions<sup>(3)</sup>
- 21% US healthcare expenditures on obesity-related illness<sup>(3)</sup>
- Workforce: \$8.64 billion/year lost productivity<sup>(4)</sup>
- ~75% of adults have tried to lose weight<sup>(5)</sup>

1. Fryar, C. D., Carroll, M. D., & Afful, J. (2020). Prevalence of overweight, obesity, and severe obesity among adults aged 20 and over: United States, 1960–1962 through 2017–2018. *NCHS Health E-Stats*. 2. Stewart J, Manmathan G, Wilkinson P. Primary prevention of cardiovascular disease: a review of contemporary guidance and literature. JRSM Cardiovasc Dis 2017;6. 3. Cawley, J., & Meyerhoefer, C. (2012). The medical care costs of obesity: an instrumental variables approach. *Journal of health economics*, *31*(1), 219-230. 4. Andreyeva, T., Luedicke, J., & Wang, Y. C. (2014). State-level estimates of obesity-attributable costs of absenteeism. *Journal of occupational and environmental medicine/American College of Occupational and Environmental Medicine*, *56*(11), 1120. 5. Quinn, D.M., Puhl, R.M. and Reinka, M.A., 2020. Trying again (and again): Weight cycling and depressive symptoms in US adults. *Plos one*, *15*(9), p.e0239004.



### WHAT ARE FAD DIETS?

- Promise a quick fix
  - Rapid results
  - Touted at easy
- Claims: feel & look better
- Unrealistic expectations



Photo credit: (Bon Appetit/Alamy Stock Photo)

May cause short- or long-term health concerns



### THEY'VE BEEN AROUND...

1820: Lord Byron introduces the Vinegar & Water Diet

1925: Lucky Strike cigarette promotes "Reach for a Lucky instead of a Sweet"

1977: Slim Fast introduced – a 'super diet'

1992: Robert Atkins promotes his Atkins diet – high protein/low carb

2011: HCG – uses fertility drug + 500-800 kcal/day

Adapted from: Khawandanah, J., & Tewfik, I. (2016). Fad diets: lifestyle promises and health challenges. Journal of Food Research, 5(6), 80-94.



### **EXAMPLES OF CURRENT DIETS**

- OPTAVIA
- Ketogenic diet
- Intermittent fasting
  - Time-restricted eating
  - Alternate day fasting
- Noom
- Celery Juice



### AHA: HOW TO RECOGNIZE A FAD DIET

- Magic or miracle foods?
- Proprietary blend
- Claim rapid weight loss
- Weight loss without exercise
- Promote strange amounts of foods
- Elimination of certain foods
- Rigid menu or schedule

American Heart Association. American Heart Association No-Fad Diet: A Personal Plan for Healthy Weight Loss. 2nd ed. New York: Clarkson Potter, 2011. https://www.heart.org/en/healthy-living/healthy-lifestyle/mental-health-and-wellbeing/be-science-savvy-to-avoid-falling-for-health-trends-and-fad-diets



### THEY'RE TEMPING...

- Peer pressure (FOMO)
  - Family, friends, outside environment
- Media influences
- Placebo effect
- Correlation vs. causation
- Marketing:
  - Confirmation bias
  - Law of very large numbers







### FAD DIET VS. LIFESTYLE CHANGE

- Lifestyle changes:
  - Patterns that can be maintained long-term
  - Work with:
    - Holidays
    - Travel
    - Social environments
  - Gradual
  - Moderation, not deprivation



### THE EVIDENCE : WEIGHT MANAGEMENT BEST PRACTICES

- Many diets can work<sup>(1, 2)</sup>:
  - Finding an approach patients can adhere to
  - 500-1,000 kcal deficit; ↑ energy expenditure; CBT
  - Weight loss 5-7% improvements in obesity-related comorbidities
- Dietary patterns & behavioral strategies:
  - Meal replacements
  - Portion control
  - Logging & tracking
- Weight maintenance-specific strategies:
  - Problem solving, behavioral skills, contingency plans<sup>(3)</sup>

<sup>1.</sup> Look AHEAD Research Group, Wing RR, Bolin P, et al. Cardiovascular effects of intensive lifestyle intervention in type 2 diabetes. N Engl J Med. 2013;369(2):145–54. 2. Knowler WC, Fowler SE, Hamman RF, Christophi CA, Hoffman HJ, Brenneman AT, et al.10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study. Lancet. 2009;374(9702):1677–86. 3. Hall KD, Kahan S. Maintenance of Lost Weight and Long-Term Management of Obesity. Med Clin North Am. 2018 Jan;102(1):183-197..



"Ultimately, the best diet is the one the patient will follow and incorporate into his or her daily life for lifelong maintenance of a healthy body weight."

Matarese LE, Pories WJ. Adult weight loss diets: metabolic effects and outcomes. Nutr Clin Pract. 2014 Dec;29(6):759-67.



# DOES DIETING WORK IN THE LONG-TERM?



"If I gain 20 pounds, it will give me the motivation I need to stick to my diet!"



Image Source: http://www.glasbergen.com

### DIETING: ADVERSE HEALTH EFFECTS

- Inadequate nutrient intakes<sup>(1)</sup>
  - Micronutrients
  - Macronutrients
  - Fiber
- Reduced bone mineral accrual<sup>(2)</sup>
- Decreased metabolic rate<sup>(3)</sup>
- One of strongest predictors of weight gain: dieting<sup>(4)</sup>

Sources: Brouns, F. (2018). Overweight and diabetes prevention: Is a low-carbohydrate-high-fat diet recommendable? *European Journal of Clinical Nutrition*, 57, 1301–1312. Calton, J. B. (2010). Prevalence of micronutrient deficiency in popular diet plans. *Journal of the International Society of Sports Nutrition*, 7, 1–9. 2. Hohman, E. E., Balantekin, K. N., Birch, L. L., & Savage, J. S. (2018). Dieting is associated with reduced bone mineral accrual in a longitudinal cohort of girls. *BMC public health*, *18*(1), 1-10. 4. O'hara, L., & Taylor, J. (2018). What's wrong with the 'war on obesity?' A narrative review of the weight-centered health paradigm and development of the 3C framework to build critical competency for a paradigm shift. *Sage Open*, *8*(2), 2158244018772888.



### ADVERSE HEALTH EFFECTS

- Psychological Effects<sup>(1)</sup>
  - Food obsession
  - Distractibility
  - Increased emotional responsiveness; fatigue
  - Low self-esteem
  - Depression
  - Higher rates of disordered eating and eating disorders

Polivy, J.(1996). Psychological consequences of food restriction, Journal of the American Dietetic Association, 96(6), 589-592.



### AND, WEIGHT IS REGAINED...

- 12+ months out: Weight loss not sustained<sup>(1-4)</sup>
  - 50% weight regained in 2 years
  - 5 years: > 80% regained the weight<sup>(3)</sup>
  - 1/3-2/3 individuals gained back *more* weight<sup>(4)</sup>
  - Perpetuates cycles of weight loss and weight regain

Anderson, J. W., Konz, E. C., Frederich, R. C., & Wood, C. L. (2001). Long-term weight-loss maintenance: a meta-analysis of US studies. The American journal of clinical nutrition, 74(5), 579-584. 4. Mann T, Tomiyama AJ, Westling E, Lew A-M, Samuels B, Chatman J. Medicare's search for effective obesity treatments: Diets are not the answer. Am Psychol. 2007;62(3):220-233.



## THE DIETER'S DILEMMA



Tribole, E., & Resch, E. (2020). Intuitive eating: A revolutionary anti-diet approach. St. Martin's Essentials.



### WEIGHT CYCLING: NOT THE GOAL

- Increased risk for<sup>(1-3)</sup>:
  - Eating disorders and disordered eating
  - Type 2 diabetes
  - Cardiovascular disease
  - Mortality

#### - Depression

1. Rhee, E. J. (2017). Weight cycling and its cardiometabolic impact. Journal of obesity & metabolic syndrome, 26(4), 237. 2. Rhee, E.J., Cho, J.H., Kwon, H., Park, S.E., Park, C.Y., Oh, K.W., Park, S.W. and Lee, W.Y., 2018. Increased risk of diabetes development in individuals with weight cycling over 4 years: the Kangbuk Samsung Health study. Diabetes research and clinical practice, 139, pp.230-238. 3. Quinn, D.M., Puhl, R.M. and Reinka, M.A., 2020. Trying again (and again): Weight cycling and depressive symptoms in US adults. Plos one, 15(9), p.e0239004.



## WEIGHT LOSS MAINTENANCE IS DIFFICULT

- Behavioral Factors<sup>(1,2)</sup>
  - Inability to permanently adopt lifestyle behaviors
  - Obesogenic environment
- Biological factors: Energy Gap<sup>(1,2)</sup>
  - Increased hunger
  - Decreased total energy expenditure
    - Greater decrease in leptin; Resting Metabolic Rate
    - Decreased Thermic Effect of Food
    - Increased energy efficiency

1. Melby, C. L., Paris, H. L., Foright, R. M., & Peth, J. (2017). Attenuating the biologic drive for weight regain following weight loss: must what goes down always go back up?. Nutrients, 9(5), 468. 2. Busetto, L., Bettini, S., Makaronidis, J., Roberts, C. A., Halford, J. C., & Batterham, R. L. (2021). Mechanisms of weight regain. *European Journal of Internal Medicine*.





Busetto, L., Bettini, S., Makaronidis, J., Roberts, C. A., Halford, J. C., & Batterham, R. L. (2021). Mechanisms of weight regain. *European Journal of Internal Medicine*.

### IT'S NOT THAT SIMPLE...

"Exercise regularly and eat a variety of

unprocessed or minimally processed foods

### with moderate portions."

Cleveland Clinic: <u>https://my.clevelandclinic.org/health/articles/9476-fad-diets</u>

### ...Is this helpful?



## ETHICAL QUESTION

- If dieting isn't shown to be effective
- If weight cycling associated with adverse health effects...

# *Is it ethical to encourage people to lose weight?*



### ACADEMY OF NUTRITION & DIETETICS





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### WEIGHT STIGMA

- "Negative weight-related attitudes, beliefs, assumptions, judgments toward individuals who are overweight and obese"<sup>(1)</sup>
- "The social devaluation and denigration of people perceived to carry excess weight, [which] leads to prejudice, negative stereotyping and discrimination toward those people."<sup>(2)</sup>
- Health professionals are perpetuators of weight stigma

1. Washington RL. Childhood obesity: issues of weight bias. Preventing chronic disease. 2011. 2. Tomiyama AJ. Weight Stigma Is Stressful. A Review of Evidence for the Cyclic Obesity/Weight-Based Stigma Model. Appetite. 2014;82:8-15.



### WEIGHT MANAGEMENT CAN LEAD TO WEIGHT STIGMA (Frederick et al. 2016)

- 1. An individual's weight is the result of poor food choices
- 2. Individuals have control over their weight
- 3. Obesity is a matter of personal responsibility.

The consequences of this model:

- Increases anti-fat prejudice
- Increases discrimination against higher BMIs

Frederick DA, Saguy AC, Sandhu G, Mann T. Effects of competing news media frames of weight on antifat stigma, beliefs about weight and support for obesity related public policies. *Int J Obes*. 2016;40(3):543-549.



## WEIGHT DISCRIMINATION

- Contributes to obesity<sup>(1-3)</sup>
  - Individuals may avoid treatment
  - Reduced engagement with social support
  - Promotes disordered eating
  - Adoption of less healthful food choices
  - Emotional dysregulation
- Directly linked to overeating, physical inactivity<sup>(4)</sup>

1. Phelan SM, Burgess DJ, Yeazel MW, et al.: Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. Obes Rev. 2015, 16:319–326. 2. Puhl RM, Brownell KD: Confronting and coping with weight stigma: an investigation of overweight and obese adults. Obesity (Silver Spring). 2006, 14:1802–1815. 3. Puhl RM, Moss-Racusin CA, Schwartz MB: Internalization of weight bias: implications for binge eating and emotional well-being. Obesity (Silver Spring). 2007, 15:19–23. 3. Sikorski C, Luppa M, Luck T, Riedel-Heller SG: Weight stigma "gets under the skin"-evidence for an adapted psychological mediation framework: A systematic review. Obesity (Silver Spring). 2015, 23:266–276. 4. Nolan LJ, Eshleman A: Paved with good intentions: paradoxical eating responses to weight stigma. Appetite. 2016, 102:15–24.



### WEIGHT DISCRIMINATION

- Independent risk factor (Vadiveloo M & Mattei J, 2017):
  - Allostatic load: highly associated with T2DM, CVD, HTN, mortality
  - Perceived weight discrimination: 2 x 10-yr risk high allostatic load
  - Most strongly associated with
    - Lipid & metabolic dysregulation
    - Glucose metabolism
    - Markers of inflammation
  - Reducing weight stigma may improve weight-loss self-efficacy and attitudes towards exercise

Vadiveloo, M., & Mattei, J. (2017). Perceived weight discrimination and 10-year risk of allostatic load among US adults. Annals of Behavioral Medicine, 51(1), 94-104.



## IS THERE AN ALTERNATIVE?



Image source: https://www.shutterstock.com/search/person+different+paths



# HEALTH AT EVERY SIZE<sup>®</sup> (HAES)

- 1. Weight Inclusivity: Accept and respect the inherent diversity of body shapes and sizes; reject idealizing or pathologizing of specific weights
- 2. Health Enhancement: Support health policies that improve and equalize access to information and services, and personal practices that improve human well-being, including attention to individual physical, economic, social, spiritual, emotional and other needs
- 3. Eating for Well-Being: Promote flexible, individualized eating based on hunger, satiety, nutritional needs, and pleasure, rather than any externally regulated eating plan focused on weight control

Source: The Association for Size Diversity and Health



## HEALTH AT EVERY SIZE<sup>®</sup> (HAES)

- 4. Respectful Care: Acknowledge our biases, and work to end weight discrimination, weight stigma, and weight bias. Provide information and services from an understanding that socioeconomic status, race, gender, sexual orientation, age, and other identities impact weight stigma, and support environments that address these inequities
- 5. Life-Enhancing Movement: Support physical activities that allow people of all sizes, abilities, and interests to engage in enjoyable movement, to the degree that they choose.



Source: The Association for Size Diversity and Health

## HEALTH AT EVERY SIZE<sup>®</sup> (HAES)

- Myth: Everyone is healthy regardless of weight
- Facts:
  - Not everyone may be at a weight that is appropriate for them
  - Yet, efforts to lose weight may be futile, or even harmful
  - HAES supports individuals in making good health choices regardless of size

Source: Health at Every Size Curriculum: https://haescurriculum.com/



## HAES

- Respects body shape & size diversity
- Minimizes weight stigma
  - Considers other mediating disease risk factors
  - Genetics, environment
- Weight neutral
  - Emphasizes health-related behaviors



## WEIGHT-NEUTRAL APPROACH: CAN IT WORK?

- RCT: Mensinger et all, 2016
  - Weight loss group: lifestyle intervention changing diet
    & lifestyle skills, goal of weight loss
  - Weight-neutral program: intuitive eating, size acceptance, physical activity
  - Results: 2 years out:
    - Weight loss group lower BMI and BW
    - Weight-neutral group lower LDL, greater intuitive eating
    - Both improved lifestyle behaviors: PA, fruit/veggie intake, psychological well-being, cardio-metabolic fitness



## HAES & HEALTH OUTCOMES

- HAES (compared with weight loss group)<sup>(1-4)</sup>:
  - Improved:
    - Blood lipid levels
    - Blood pressure
    - Self-esteem
    - Body image
    - Depression
    - Quality of Life
  - Decreased risk for:
    - Eating disorders, disordered eating

1. Bacon L, Stern JS, Van Loan MD, Keim NL. Size acceptance and intuitive eating improve health for obese, female chronic dieters. J Am Diet Assoc. 2005;105:929–936. 2. Bacon L, Keim NL, Van Loan MD, et al. Evaluating a 'non-diet' wellness intervention for improvement of metabolic fitness, psychological well-being and eating and activity behaviors. Int J Obes Relat Metab Disord. 2002;26:854–865. 3. Bacon L, Aphramor L. Weight science: evaluating the evidence for a paradigm shift. Nutr J. 2011;10:9. 4. Ulian MD, Aburad L, da Silva Oliveira MS, et al. Effects of Health at Every Size interventions on health-related outcomes of people with overweight and obesity: a systematic review. Obes Rev. 2018;19:1659–1666.



### IS IT ALL BAD ...?





Source: https://vocal.media/motivation/meaning-of-don-t-throw-the-baby-out-with-the-bathwater

### **REMAINING QUESTIONS**





## ADDITIONAL QUESTIONS

- More research on weight-neutral interventions
- Personalized nutrition
  - Increase adherence?
  - Metabolic and genetic predisposition
- Screen for high-risk individuals
  - SDE, SCOFF, EDS-PC
  - Compare scores at baseline, during, post-intervention?



### WHAT CAN WE DO?

- Certain approaches better for specific comorbidities
  - Mediterranean approaches: improve CV outcomes
- Focus on behaviors
- Discussion with patient
  - Dietary preferences
  - Lifestyle habits
  - Preferred movement patterns
- Close nonjudgmental follow-up
  - RDN
  - Exercise Specialists
  - Therapeutic support



## AS PROVIDERS

- Recognize the conflict: Cognitive Dissonance
  - Our training: a person's weight determines their health
- More to health than what you eat
  - Relationship with food
  - Mental health
  - Social determinants of Health
- A journey of the great unlearning?

Tribole, E., & Resch, E. (2020). Intuitive eating: A revolutionary anti-diet approach. St. Martin's Essentials.



### WEIGHT BIAS?

- Anti-fat Attitudes Questionnaire (AFA)<sup>1</sup>
- Anti-fat Attitudes Scale (AFAS)<sup>2</sup>
- Anti-fat Attitudes Test (AFAT)<sup>3</sup>
- Attitudes toward Obese Persons Scale (ATOP)<sup>4</sup>
- Beliefs about Obese Persons Scale (BAOP)<sup>5</sup>
- Fat Phobia Scale short form
- Universal Measure of Bias-Fat Scale (UMB-FAT)
- Weight Bias Internalization Scale (WBIS)<sup>8</sup>
- Weight Bias Internalization Scale Modified (WBIS-M)
- Stigmatizing Situations Inventory (SSI)<sup>10</sup>
- Stigmatizing Situations Inventory- Brief (SSI Brief)
- Harvard University's Weight Implicit Association Test/IAT<sup>12</sup>

Sources: 1. Crandall, C.S. (1994). Prejudice against fat people: Ideology and self-interest. Journal of Personality and Social Psychology, 66, 882-894. 2. Morrison, T.G., & O'Connor, W.E. (1999). Psychometric properties of a scale measuring negative attitudes toward overweight individuals. Journal of Social Psychology, 139, 436-445. 3. Lewis, R.J., Cash, T.F., Jacobi, L., & Bubb-Lewis, C. (1997). Prejudice toward fat people: The development and validation of the Anti-fat Attitudes Test. Obesity Research, 5, 297-307. 4. Allison, D.B., Basile, V.C., & Yuker, H.E. (1991). The measurement of attitudes toward and beliefs about obese persons. International Journal of Eating Disorders, 10, 599-607. 5. Allison, D.B., Basile, V.C., & Yuker, H.E. (1991). The measurement of attitudes toward and beliefs about obese persons. International Journal of Eating Disorders, 10, 599-607. 6. Bacon, J.G., Scheltema, K.E., & Robinson, B.E. (2001). Fat Phobia Scale revisited: The short form. International Journal of Obesity, 25, 252-257. 7. Latner, J. D., O'Brien, K. S., Durso, L. E., Brinkman, L. A., & MacDonald, T. (2008). Weighing obesity stigma: the relative strength of different forms of bias. International Journal of Obesity, 32(7), 1145-1152. 8. Durso, L. E., & Latner, J. D. (2008). Understanding Self-directed Stigma: Development of the Weight Bias Internalization Scale. Obesity, 16(S2), S80-S86. 9. Pearl, R. L., & Puhl, R. M. (2014). Measuring internalized weight attitudes across body weight categories: Validation of the Modified Weight Bias Internalization Scale. Body image, 11(1), 89-92. 10. Myers, A., & Rosen, J.C. (1999). Obesity stigmatization and coping: Relation to mental health symptoms, body image, and self-esteem. International Journal of Obesity, 23, 221–230. 11. Vartanian, L.R. (2015). Development and validation of a brief version of the Stigmatizing Situations Inventory. Obesity Science & Practice, 1(2), 119-125[PR1].



### RESOURCES

- Health at Every Size: <u>https://haescommunity.com/</u>
- Association for Size Diversity and Health: <u>https://asdah.org/</u>
- The Non-Diet Approach Guidebook for Dietitians: A How-To Guide for Applying the Non-Diet Approach to Individual Dietetic Counselling
- National Association to Advance Fat Acceptance (NAAFA): <u>https://naafa.org/</u>
- Society for Nutrition Education and Behavior: <u>https://www.sneb.org/</u>
- Intuitive Eating, 4<sup>th</sup> edition, Evelyn Tribole & Elyse Resch: <u>https://www.intuitiveeating.org/</u>
- Council on Size and Weight Discrimination: <u>http://cswd.org/</u>



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"Every time I go on a diet, I lose my mind. Unfortunately, it doesn't weigh very much."

### Thank you

Image Source: http://www.glasbergen.com



### METABOLIC EFFICIENCY (ME)

- Initially triggered  $\downarrow$  liver glycogen, decreased body water weight
  - Result of significant decline in insulin levels
  - Related to resting energy expenditure
- As weight loss continues, ME increases in relation to fat loss
  - Decline in leptin, T3, SNS
  - Related to non-resting energy expenditure
- Other factors likely play a role
  - Thermoregulation
  - Decrease spontaneous physical activity

