


# Health At Every Size

## A Promising Weight-Inclusive Healthcare Model

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*Introduction*

Present-day American society is preoccupied with weight. Obesity statistics and weight loss techniques are ubiquitous, and Gallup polls have consistently shown that 50-60 percent of Americans want to lose weight at any given time.[1] Obesity rates in the United States have risen from 12.0% in 1991[2] to 19.8% in 2000.[3] Since 2003, the progression of obesity has plateaued, with about one third of Americans considered obese.[4] Obesity often occurs alongside other conditions, such as type 2 diabetes, hypertension, and cardiovascular diseases.[5] Organization, like the American Heart Association[6] and the American Diabetes Association,[7] and by primary care providers often recommend weight loss to improve health.[8]

While sometimes beneficial, weight loss is not the cure-all that it is touted to be. Almost no one achieves and maintains weight loss,[9] and weight cycling can be more harmful than weight maintenance, even when the maintained weight is higher than recommended.[10] Some studies have even shown that intentional weight loss is associated with a shorter

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[1] Alyssa Brown,"Americans' Desire to Shed Pounds Outweighs Efforts," *Gallup*, November 29, 2013, accessed August 20, 2015, http://www.gallup.com/poll/166082/americans-desire-shed-pounds-outweighs-effort.aspx.

[2] Ali H. Mokdad et al, "The Spread of the Obesity Epidemic in the United States," *JAMA* (1999): 1519-1522.

[3] Ali H. Mokdad et al., "The Continuing Epidemics of Obesity and Diabetes in the United States," *JAMA* (2001): 1195-1200.

[4] Katherine M. Flegal et al., "Prevalence and Trends in Obesity Among US Adults, 1999-2008," *JAMA* (2010): 235-241.

[5] T. Soleymani, S. Daniel, and W.T. Garvey, "Weight maintenance: challenges, tools and strategies for primary care physicians," *Obesity Prevention* (2015): 81-93, accessed January 2016.

[6] "Losing Weight," *American Heart Association*, August 2014, accessed February 7, 2016. http://www.heart.org/HEARTORG/HealthyLiving/WeightManagement/LosingWeight/Losing-Weight_UCM_307904_Article.jsp#.VrfhFVLQ78t.

[7] "Weight Loss," *American Diabetes Association*, accessed February 7, 2016, http://www.diabetes.org/food-and-fitness/weight-loss/.

[8] Christie A. Befort et al., "Weight-Related Perceptions Among Patients and Physicians," *Journal of General Internal Medicine* (2006): 1088.

[9] Garner and Wooley, "Confronting the Failure of Behavioral and Dietary Treatments for Obesity," 733.; Tracy L. et al., "The Weight-Inclusive versus Weight-Normative Approach to Health: Evaluating the Evidence for Prioritizing Well-Being over Weight Loss," *Journal of Obesity* (2014): 2.

[10] Garner and Wooley, "Confronting the Failure of Behavioral and Dietary Treatments for Obesity," 754.; Lynn L. Moore et al., "Can Sustained Weight Loss in Overweight Individuals Reduce the Risk of Diabetes Mellitus?" *Epidemiology* 11 (May 2000): 269-273.

lifespan.[11] In addition, weight loss failure or weight regain can also lead to a great deal of stress and anxiety,[12] especially when combined with the toxic weight stigma that plagues our society. This societal weight stigma has crept into medical offices, where medical professionals purposefully or inadvertently legitimize our society's fear of fat.[13]

Health professionals aim to provide evidence-based healthcare advice and attempt to do no harm. Both of these goals can be better achieved using the Health At Every Size (HAES) approach instead of the traditional weight-normative paradigm. HAES is a weight-inclusive approach that has gradually gained ground among the academic community since its inception in the 1960s.[14]

Lifestyle changes can greatly improve patients' health without weight loss, and our society's fixation on thinness can affect our health negatively. Weight-inclusive and weight-normative perspectives differ in the "relative importance they place on body weight in the context of health and medical treatment, their perceptions of the malleability of weight, and how they respond to patients based on their weight."[15]

The weight-normative approach suggests that each person has an ideal weight, usually determined by his or her height as seen in body mass index (BMI) charts. To calculate a person's BMI, you divide her/his weight in kilograms by her/his height in meters squared. A BMI of under 18.5 is considered "underweight," 18.5 to 25 is considered "normal," 25 to 30 is considered "overweight," and over 30 is considered "obese." There are

[11] Mikko Myrskla and Virginia W. Chang, "Weight Change, Initial BMI, and Mortality Among Middle- and Older-aged Adults," *Epidemiology* 20 (November 2009): 840-848.; David M. Garner and Susan C. Wooley, "Confronting the Failure of Behavioral and Dietary Treatments for Obesity," *Clinical Psychology Review* 11 (1991): 729-780.; DD Ingram and ME Mussolino, "Weight loss from maximum body weight and mortality: the Third National Health and Nutrition Examination Survey Linked Mortality File," *International Journal of Obesity* 34 (2010): 1044-1050.

[12] Kirsti Malterud, and Kiersti Ulrikson. "Obesity, stigma, and responsibility in health care: A synthesis of qualitative studies." *Int J Qualitative Stud Health Well-being* (2011): 2.

[13] Tylka et al., "The Weight-Inclusive versus Weight-Normative Approach," 4.; Malterud, and Ulrikson, "Obesity, stigma, and responsibility in health care," 9.

[14] L. Louderback, "More People Should Be FAT," *Saturday Evening Post* (Philadelphia, PA), November 4, 1967.

[15] Tylka et al., "The Weight-Inclusive versus Weight-Normative Approach," 2.

multiple classes of obesity: a BMI of 30 to 35 constitutes class I obesity, BMI 35 to 40 constitutes class II obesity, and any BMI over 40 constitutes class III obesity.[16]

The BMI system was originally proposed in 1832 to describe the average human.[17] Ancel Keys et al. then developed the number as a measure of adiposity, the amount of fat a person carries, in 1972. The authors suggested that BMI was preferable to other approximations of body fat due, in part, to its "applicability to all populations at all times."[18] Although the BMI measurement was initially proposed as a measure of adiposity in populations as a whole, the measurement is commonly assumed to reflect an individual's adiposity or their overall health. We need to be careful about how we apply BMI, keeping in mind its limited applicability to individuals.

The limits of the BMI system are widely recognized, with one study suggesting that about 25 percent of all men and almost 50 percent of all women are misclassified.[19] The CDC describes BMI as a measurement that can help "screen for weight categories that may lead to health problems but it is not diagnostic of the body fatness or health of an individual."[20] The application of the BMI system to individuals leads to paradoxes, such as in reference to athletes, whose percent fat mass is

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[16] "About Adult BMI," *Centers for Disease Control and Prevention*, May 15, 2015, accessed February 7, 2016, http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/#Used; Laura J. Martin, "Health risks of obesity," *MedlinePlus*, May 3, 2015, accessed February 7, 2016, https://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000348.htm.

[17] Jonathan CK Wells, "Commentary: The paradox of body mass index in obesity assessment: not a good index of adiposity, but not a bad index of cardio-metabolic risk," *International Journal of Epidemiology* (2014): 672.

[18] Ancel Keys et al. "Indices of relative weight and obesity." *Journal of Chronic Diseases* (1972): 329-343.

[19] Nirav R. Shah, and Eric R. Braverman, "Measuring Adiposity in Patients: The Utility of Body Mass Index (BMI), Percent Body Fat, and Leptin," *PLoS ONE* 7 (2012): 5 (on download). This affect is amplified in older women due to sarcopenic obesity (natural loss of muscle mass with age). This study suggests elevated leptin levels as a better predictor of obesity in women, calling for more research in this area.

[20] "Body Mass Index (BMI)." *Centers for Disease Control and Prevention*. Accessed February 9, 2016. http://www.cdc.gov/healthyweight/assessing/bmi/.

extremely low, being classified as "overweight."[21] A study of Division 1 collegiate football players found that "BMI overestimated the prevalence of overweight and obesity in 50.6% of the cases."[22] The same BMI in children and adolescents often corresponds to very different body fat percentages.[23] Furthermore, the same BMI corresponds to different body fat measurements between races and ethnicities.[24] BMI measurements also ignore the distribution of fat throughout the body, even though health risks are primarily associated with visceral fat mass, or fat surrounding the internal organs.[25]

Although the BMI system is deeply flawed, it has its advantages. BMI is convenient and free to calculate, making it accessible to anyone. The measurement is useful because it allows cross-comparison between populations and between studies. Additionally, although BMI is not a good measure of adiposity for everyone, it seems to correlate well with cardiovascular risk.[26] Because of these advantages, it seems that BMI is here to stay for the foreseeable future. However, in an attempt to address some of the criticisms of BMI, other methods of predicting risk associated with weight have been proposed.

One such measurement is termed A Body Shape Index (ABSI), which is calculated as follows:

$$\text{ABSI} = \frac{\text{waist circumference}}{\text{BMI}^{2/3} * \text{height}^{1/2}}$$

[21] Keith Devlin, "Top 10 Reasons Why The BMI Is Bogus," *NPR*, July 6, 2009, accessed February 7, 2016, www.npr.org/templates/story/story.php?storyId=106268439.
[22] Emily Millard Mathews and Dale R. Wagner, "Prevalence of Overweight and Obesity in Collegiate American Football Players, by Position," *Journal of American College Health* 57 (2008): 33-37.
[23] Hall and Cole, "What use is the BMI?"
[24] O. Affuso et al., "Standard obesity cut points based on BMI percentiles do not equally correspond to body fat percentage across racial/ethnic groups in a nationally representative of children and adolescents," *International Journal of Body Composition Research* 8 (2010): 117-122.
[25] Hall and Cole, "What use is the BMI?," 284.
[26] Jonathan CK Wells, "Commentary: The paradox of body mass index in obesity assessment: not a good index of adiposity, but not a bad index of cardio-metabolic risk," *International Journal of Epidemiology* (2014): 672-674.

Preliminary studies on ABSI suggest that it correlates more consistently with mortality risk than BMI.[27] Another popular measurement is body fat percentage, which is correlated with symptoms of metabolic syndrome such as high serum and LDL cholesterol, high diastolic and systolic blood pressure, and increased waist circumference.[28] A study of about 1700 young adults identified FMI (fat mass/height squared) as a better predictor of metabolic syndrome than BMI or percent body fat.[29] Cleary, more research is needed to determine how best to estimate an individual's health risk.

Because the weight-inclusive approach encourages individuals to determine their own healthiest weight, BMI terms are somewhat meaningless in weight-inclusive medicine. However, BMI is a useful measurement when discussing research that divides participants by weight, most of which utilizes BMI categories. I will therefore use BMI and research based on BMI measurements whilst questioning its validity. Similarly, I will use the terms "overweight" and "obese" according to their traditional meanings in medical literature, although these terms do not retain their traditional meaning within a weight-inclusive healthcare paradigm.

*Weight-Normative Versus Weight-Inclusive Approaches*

Health professionals operating under the weight-normative paradigm suggest that patients aim to lose or gain weight until their BMI falls within the prescribed "normal" range. This approach operates on the

[27] Mathews and Wagner, "Prevalence of Overweight and Obesity in Collegiate American Football Players, by Position," 33-37.
[28] K. Gokulakrishnan, M. Deepa, F. Monickaraj, and V. Mohan. "Relationship of body fat with insulin resistance and cardiometabolic risk factors among normal glucose-tolerant subjects." *Journal of Postgraduate Medicine* 57 (2011): 184-188.; Sirianong Namwongprom et al., "Relationship Between Total Body Adiposity Assessed by Dual-Energy X-ray Absorptiometry, Birth Weight and Metabolic Syndrome in Young Thai Adults," *Journal of Clinical Research in Pediatric Endrocrinology* 5 (2013): 252-257.
[29] Pengju Liu, Fang Ma, Huiping Lou, and Yanping Liu, "The utility of fat mass index vs. body mass index and percentage of body fat in the screening of metabolic syndrome," *BMC Public Health* 13 (2013): 1-8 (on download).

assumptions that weight is under personal control and that existing within the "normal" BMI range carries health benefits. The weight-normative paradigm views obesity as a major public health threat, and views weight loss efforts as our first and most important line of defense.[30]

In contrast, the weight-inclusive approach suggests that individuals can be healthy at any weight as long as they are leading a healthy lifestyle. This perspective suggests that an individual's healthiest weight is the set-point weight at which her or his body normalizes when practicing healthy behaviors.[31] Additionally, the weight-inclusive approach recognizes the harm caused by weight stigma and attempts to counteract its negative effects.[32] Within a weight-inclusive healthcare paradigm, being fat is not necessarily bad. Because there are no moral qualities associated with body size, calling someone "fat" is simply a description of their body, equitable to calling them "brunette" or "tall." Referring to someone as fat simply means that her/his body has excess adipose (fat) tissue.

The Health At Every Size (HAES) movement posits three specific qualities of a healthy lifestyle: intuitive eating, enjoyable activity, and self-care.[33] While the weight-normative approach recommends healthy behaviors to promote weight loss, the HAES perspective emphasizes the importance of beneficial behaviors to improve health, regardless of how those behaviors affect weight. HAES argues that lifestyle choices affect health more directly than weight does, and that efforts to improve patients'

[30] Linda Bacon, *Health At Every Size: The Surprising Truth About Your Weight*, Dallas: BenBella Books, Inc., 2008.; Paul Campos, *The Obesity Myth: Why America's Obsession with Weight is Hazardous to Your Health*, New York: Gotham Books, 2004.
[31] Bacon, *Health At Every Size: The Surprising Truth About Your Weight*, Dallas: BenBella Books, Inc., 2008.
[32] Tykla et al. "The Weight-Inclusive versus Weight-Normative Approach to Health," 2.
[33] Tarra L. Penney and Sara Kirk, "The Health at Every Size Paradigm and Obesity: Missing Empirical Evidence May Help Push the Reframing Obesity Debate Forward," *American Journal of Public Health* 105 May 2015): 39.; Tylka et al., "The Weight-Inclusive versus Weight-Normative," 8.; Vartanian and Smyth, "Primum Non Nocere: Obesity Stigma and Public Health," *Bioethical Inquiry* (January 2013): 49-57.; Bacon, *Health At Every Size*.

health would be more effective if we aimed for lifestyle style changes instead of weight loss.[34]

*Misunderstanding the Effect of Excess Weight*

The medical literature shows a correlation between weight and health. However, the degree to which we understand this relationship has been greatly exaggerated. Too often, the relationship between excess weight and health detriments is assumed to be causal. Due to the countless influential factors, as well as the ethical implications of starving or overfeeding people, causality is extremely difficult, if not impossible, to prove when it comes to weight and health. However, medical professionals and popular culture commonly claim that weight loss will improve health.[35]

While many studies show a correlation of excess weight with increased risk of health problems, the weight-normative approach often oversimplifies the results of this research by claiming causation. We know that a higher BMI is correlates with an increased risk of comorbidities like type 2 diabetes[36] and certain cancers,[37] as well as a lower health related quality of life (HRQL).[38] These correlations do not necessarily mean that excess weight causes negative health outcomes. Other variables, such as

[34] Vartanian and Smyth, "Primum Non Nocere," 53.
[35] "10 Reasons to Lose Just 10." *The Dr. Oz Show*. Accessed February 9, 2016. http://www.doctoroz.com/article/10-reasons-lose-just-10.; "Losing Weight." *Centers for Disease Control and Prevention*. Accessed February 9, 2016. http://www.cdc.gov/healthyweight/losing_weight/.;
[36] Helaine E. Resnick et al., "Relation of Weight Gain and Weight Loss on Subsequent Diabetes Risk in Overweight Adults," *Journal of Epidemiology and Community Heath* 54 (August 2000): 596-602.
[37] Ciara H. O'Flanagan, Laura W. Bowers, and Stephen D. Husting, "A weighty problem: metabolic perturbation and the obesity-cancer link," *Hormonal Molecular Biology and Clinical Investigation* (2015): 47-57.
[38] M.K. Hassan et al., "Obesity and health-related quality of life: a cross-sectional analysis of the US population," *International Journal of Obesity* 27 (2003): 1227-1232.; Haomiao Jia and Erica L. Lubetkin, "The impact of obesity on health-related quality-of-life in the general adult US population," *Journal of Public Health* 27 (April 2005): 156-164.; Christina C. Wee et al., "Obesity, Race, and Risk for Death or Functional Decline Among Medicare Beneficiaries," *Annals of Internal Medicine* 154 (2011): 645-655.

lifestyle or general inflammation,[39] could contribute to both higher weight and health risks.

Studies examining the relationship between weight and HRQL often find that obesity is associated with decreased HRQL, especially the aspects of physical functionality and self-perceived health.[40] Similar to the correlation between weight and health, the association between excess weight and diminished HRQL may not be causal, especially considering the multitude of factors that contribute to both weight and HRQL. For example, an old injury or mental illness could contribute to both excess weight and reduced HRQL. If healthcare efforts focus only on weight loss, without addressing the injury or mental health problems, we may miss an opportunity to improve a patient's health.

One prospective study of almost 2000 overweight, non-diabetic adults found that for most BMI ranges, individuals that developed diabetes were likely to have gained more weight in the last 10 years than individuals who did not develop diabetes.[41] Even more interesting, this study found that for every 10 kg of weight loss the men experienced over a 10-year period, there was a 33% reduction in their diabetes risk over the next 10 years when compared with their weight stable counterparts.[42]

This study is significant in that it supports a connection between weight and type 2 diabetes risk. Even so, weight gain and loss are not the only variables at play here. For example, this study does not take weight cycling into account. Another study on diabetes risk and weight also found a decrease in diabetes risk with sustained weight loss, but found that weight regain correlated with a 30% increase in diabetes risk over

[39] Sarinnapha Vasunilashorn, "Retrospective Reports of Weight Change and Inflammation in the US National Health and Nutrition Examination Survey," *Journal of Obesity* (2013): 1-6.; Estanislau Navarro et al., "Can metabolically healthy obesity be explained by diet, genetics, and inflammation?" *Molecular Nutrition & Food Research* 59 (2014): 75-93.
[40] K.R. Fontaine and I. Barofsky, "Obesity and health-related quality of life," *Obesity Reviews* 2 (2001): 173-182.; Haomiao Jia and Lubetkin, "The impact of obesity on health-related quality-of-life," 156-164.; Hassan et al., "Obesity and health-related quality of life," 1227-1232.
[41] Resnick et al., "Relation of Weight Gain and Weight Loss," 598-599.
[42] Ibid, 601.

baseline.[43] Such weight cycling, likely more common in overweight and obese populations, could contribute to the higher diabetes risks seen in higher weight populations. Further research is needed to determine how diabetes risk, especially in overweight and obese cohorts, is affected by weight cycling. Given the high likelihood of weight cycling associated with weight loss attempts, alternate methods of improving health should be considered.

As noted above, excess weight is associated with increased morbidity and decreased health related quality of life. This relationship tends to get stronger as BMI increases, especially when one becomes severely obese.[44] Meanwhile, studies examining the correlation between obesity and mortality risk generally find a significant effect associated with only extreme obesity or thinness.[45] In fact, moderate amounts of excess weight (BMI 25-30 kg/m$^2$) may lengthen one's life as compared with "normal" weight individuals (BMI 18-25 kg/m$^2$).[46] A large composite analysis of 20 prospective studies found that class III obesity (BMI 40 to 60 kg/m$^2$)[47] was associated with a significant increase in mortality risk over the normal BMI range (18-25 kg/m$^2$), with most of the increase seen in

[43] Lynn L. Moore et al., "Can Sustained Weight Loss in Overweight Individuals Reduce the Risk of Diabetes Mellitus?" *Epidemiology* 11 (May 2000): 270.
[44] Helaine E. Resnick et al., "Relation of Weight Gain and Weight Loss," 596-602."; Amy Trentham-Diaz et al., "Weight Change and Risk of Postmenopausal Breast Cancer," 533-542.; Keisha Tyler Robinson and James Butler, "Understanding the causal factors of obesity using the International Classification of Functioning, Disability and Health," *Disability and Rehabilitation* 33 (2011): 643-651.; Christina C. Wee et al., "Obesity, Race, and Risk of Death," 645-655.; Haomiao Jia and Erica L. Lubetkin, "The impact of obesity on health-related quality-of-life," 156-164.; K.R. Fontaine and I. Barofsky, "Obesity and health-related quality of life," 173-182.; Hassan et al., "Obesity and health-related quality of life," 1227-1232.
[45] Cari M. Kitahara et al., "Association between Class III Obesity (BMI of 40-59 kg/m$^2$) and Mortality: A Pooled Analysis of 20 Prospective Studies," *PLOS Medicine* 11 (July 2014): 1-14.; Katherine M. Flegal, Brian K. Kit, Heather Orpana, and Barry I. Graubard, "Association of All-Cause Mortality With Overweight and Obesity Using Standard Body Mass Index Category," *The Journal of the American Medical Association* 309 (2013): 71-82.
[46] Flegal et al., "Association of All-Cause Mortality," 79.; Bacon, *Health At Every Size*, 126.
[47] Consistent with common practice, this study had most specific BMI ranges than I report (e.g. 40 – 59.9 kg/m$^2$). However, in the interest of simplifying an unnecessarily complicated subject and in light of the arbitrary nature of BMI ranges, I have decided to report BMI ranges in whole numbers throughout this paper.

deaths from heart disease, cancer, and diabetes.[48] While this finding is noteworthy, it is relevant only to a small number of people as only 6% of Americans fall into the class III obesity category.[49]

A compositional study using data from 97 prospective studies of general population adults, representing almost 3 million subjects and more than 270,000 deaths, found that the overweight BMI range is associated with a lower all-cause mortality risk than the normal BMI range.[50] Class I obesity was associated with no increased all cause mortality risk when compared with the normal BMI category, while class II and III obesity were associated with increased risk. According to these findings, the BMI categories listed in order of increasing risk are: overweight, normal/class I obesity, and class II/III obesity.[51] It also worth noting that the BMI associated with the lower mortality risk varies by race, which should be taken into account when assessing health risks.[52] These results, and those of many other similar studies,[53] seem to have gone largely unnoticed in the medical community and general public. I suggest that the lack of awareness of this literature is driven, at least in part, by our society's fear of fat and our desire to disguise that fear as a commitment to health.

Although medical professionals and society tend to tell fat people that they should lose weight for their health, there is considerable empirical evidence supporting a more nuanced understanding of how

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[48] Kitahara et al., "Association between Class III Obesity (BMI of 40-59 kg/$m^2$) and Mortality: A Pooled Analysis of 20 Prospective Studies," *PLOS Medicine* 11 (July 2014): 11.
[49] Ibid, 1.
[50] Flegal et al., "Association of All-Cause Mortality," 79.; Bacon, *Health At Every Size*, 126. For a fuller discussion of why the medical paradigm and popular culture maintain the position that excess weight is harmful see *The Obesity Myth*. For a fuller discussion of the empirical evidence revealing the often-benign nature of excess weight see *Big Fat Lies*.
[51] Flegel et al., "Association of All-Cause Mortality," 71.
[52] Ramon A. Durazo-Arvizu et al., "Mortality and Optional Body Mass Index in a Sample of the US Population," *American Journal of Epidemiology* 147 (1997): 739-749.
[53] Flegal et al., "Association of All-Cause Mortality," 71-82.; Flegal et al., "Prevalence and Trends in Obesity Among US Adults," 1723-1727.; Kitahara et al., "Association between Class III Obesity," 1-14.; Ramon A. Durazo-Arvizu et al., "Mortality and Optional Body Mass Index," 739-749.

weight and health are related.[54] The authors of a 2010 article in the *American Journal of Public Health* urged readers to "note increasing research documenting a considerable percentage of overweight and obese persons who are metabolically healthy and nonoverweight individuals who exhibit metabolic and cardiovascular risk factors."[55] Additionally, significant evidence suggests the location of fat stores (e.g. abdominal vs. hip/thigh, visceral vs. subcutaneous) as an important risk factor, with abdominal (usually visceral) fat carrying more health risk than hip/thigh (subcutaneous) fat.[56] In fact, some scholars have suggested subcutaneous fat stores in the lower body are protective.[57] Such evidence points to the imprecise nature of using weight alone as a measure of health.

Evidence suggests that excess weight carries less health risk than we have been led to believe. Perhaps even more concerning, though, is the fact that weight loss does not necessarily confer health benefits. In fact, losing weight in certain circumstances is associated with a shorter lifespan,[58] which is not surprising given the panacea of unhealthy weight loss methods available to the public.

Even if weight loss conferred health benefits, medical professionals have no reliable way to help their patients lose weight. No weight loss technique has been shown to be effective in long-term studies.[59] In a 1991 literature review entitled "Confronting the Failure of Behavioral and Dietary Treatments for Obesity," David Garner and Susan Wooley found that most

[54] Flegel et al., "Association of All-Cause Mortality," 71.; Thirumagal Kanagasabai, "Differences in physical activity domains, guideline adherence, and weight history between metabolically healthy and metabolically abnormal obese adults: a cross-sectional study," *International Journal of Behavioral Nutrition and Physical Activity* 12 (2015): 1-12.; Bacon, *Health At Every Size*, 129.
[55] Rebecca M. Puhl and Chelsea A. Heuer. "Obesity Stigma: Important Considerations for Public Health." *American Journal of Public Health* 100 (June 2010): 1021.
[56] Glenn A. Gaesser, *Big Fat Lies,* Carlsbad: Gurze Books, 2016, 117-119.; Garner and Wooley, "Confronting the Failure," 751.
[57] Glenn A. Gaesser, *Big Fat Lies,* Carlsbad: Gurze Books, 2016, 117-119.
[58] Myrskla and Chang, "Weight Change, Initial BMI, Mortality," 844.; Ingram and Mussolino, "Weight loss from maximum body weight," 1048.; Pan et al., "Changes in Body Weight," 260.
[59] Garner and Wooley, "Confronting the Failure," 730, 733, 740.; Bacon, *Health At Every Size*, 43.; Vartanian and Smyth, "Primum Non Nocere," 51.

weight-loss programs show short-term success but conclude, "There is virtually no evidence that clinically significant weight loss can be maintained over the long-term by the vast majority of people."[60] In the rare cases when weight loss is maintained, it is most often sustained through lifestyle changes, such as healthier eating and physical activity.[61] However, even intensive weight maintenance coaching may not be enough to help keep the weight off. For example, a recent study found that only thirty percent of obese participants maintained a 5% weight loss after two years, regardless of whether or not they participated in a year of weight maintenance coaching.[62]

*Questioning the Necessity of Weight Loss*

Given the lack of success using techniques focusing solely on weight loss, when health professionals tell their patients to lose weight, they are essentially dooming their patients to failure. This is unnecessary. A literature review focusing on college-aged adults found that changes in physical activity and diet were easier to initiate than changes in weight,[63] suggesting that patients may benefit more from specific lifestyle recommendations than weight loss advice. Focusing on lifestyle instead of weight could also help lessen the guilt that patients often feel following failed weight loss attempts.[64] Furthermore, health professionals could help alleviate the shame many fat patients feel about their weight by explaining

[60] Garner and Wooley, "Confronting the Failure," 733. I recognize that this study was performed 25 years ago. Despite its age, I consider it relevant here for two reasons. First, the weight loss techniques used today are not appreciably different from those used 25 years ago. Second, I wish to highlight the fact that scholars have recognized the ineffectiveness of weight loss techniques for many years.
[61] Soleymani, Daniel, Garvey, "Weight maintenance," 81-93.; O'Flanagan, Bowers, and Husting, "A weighty problem," 47-57.; Sze Lin Yoong et al., "A systemic review of behavioral weight-loss interventions involving primary-care physicians in overweight and obese primary-care patients (1999-2011)," *Public Health Nutrition* 16 (2012): 2083-2099.
[62] Tuula Pekkarinen, Jarmo Kaukua, and Pertti Mustajoki, "Long-Term Weight Maintenance after a 17-Week Weight Loss Intervention with or without a One-Year Maintenance Program: A Randomized Controlled Trial," *Journal of Obesity* (2015): 1-10.
[63] Ronald C. Plotnikoff et al., "Effectiveness of interventions targeting physical activity, nutrition and healthy weight for university and college students: a systematic review and meta-analysis," *International Journal of Behavior Nutrition* 12 (2015): 1-10.
[64] Malterud and Ulrikson, "Obesity, stigma, and responsibility," 1-11.

the complexity of the connection of weight and health and by working with patients to develop realistic expectations about their weight.[65]

Rather than recommending weight loss to fat patients, HAES proposes that the patient's body will normalize at their healthiest weight when the patient maintains a healthy lifestyle. Underlying this claim is set point theory, which suggests that our bodies utilize various physiological processes to maintain weight despite over or under eating.[66] The set of mechanisms is similar to those that regulate body temperature. Our bodies have a set point temperature that our bodies "like" to be at, and our hypothalamus coordinates various physiological responses to help our body maintain that temperature (e.g. sweating when we get hot, shivering when we get cold). Similarly, claims set point theory, our hypothalamus helps us maintain a specific weight by overseeing and responding to the release of untold numbers of hormones that affect our satiety and energy levels, as well as how much energy our fat cells absorb.[67]

When we try to lose weight we are aiming to override the body's weight maintenance system. By eating fewer calories than we use and/or exercising to use more calories, we are essentially telling our body that we do not have enough food and need to be especially efficient at extracting and using calories. Our body responds by triggering our hunger drive and decreasing our metabolism in an effort retain weight.[68] Given this information, we should not be surprised that most dieters end up straying from their caloric goals or skipping the gym.

As a person loses weight, their metabolic rate continues to decrease, making further weight loss, and maintenance of that weight loss, increasingly difficult. When the person regains the weight, as they almost definitely will, their body slightly increases its set point weight to

[65] Garner and Wooley, "Confronting the Failure," 761.
[66] Ibid, 741.
[67] Bacon, *Health At Every Size*, 14-15.
[68] Ibid, xxiv.

protect against what it senses as future starvation periods.[69] The mechanism of this increase in set point may be explained by decreased secretion of leptin, a hormone responsible for increasing metabolism and decreasing appetite.[70] Leptin is present in chronically low levels in individuals who have repeatedly lost and regained weight.[71] A decrease in leptin sensitivity may also explain why some people are more prone to weight gain, as in the case of the severe early-onset obesity caused by a homozygous mutation in the genes that code for leptin.[72]

Although the mechanism is not fully understood, set point theory suggests that the human body is less concerned about preventing weight gain than about preventing weight loss.[73] This model makes sense evolutionarily, since our ancestors had a greater likelihood of dying of starvation than of diabetes. However well this system worked for our predecessors, it seems that evolution has not prepared our bodies to handle dieting.

According to set point theory, our bodies' weight maintenance system ensures that when we lose weight, we will usually regain that weight plus a little extra.[74] We likely all know someone who has lost weight and gradually regained it, and many of us have had this experience ourselves. The ubiquity of weight cycling, also known as yo-yo dieting, is a significant public health concern. Weight cycling is associated with higher negative health risks than weight maintenance, such as increased risk of diabetes, hypertension, and cardiovascular diseases.[75] For example, the

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[69] Ibid, 19-22.
[70] Plontikoff et al., "Effectiveness of interventions," 24.
[71] Thomas A. Wadden et al., "Short- and Long-Term Changes in Serum Leptin in Dieting Obese Women: Effects of Caloric Restriction and Weight Loss," Journal of Clinical Endocrinology and Metabolism 83 (1998): 214-218. As cited by Bacon, *Health At Every Size*, 49; R.G. Laessle, H. Wurmser, and K. M. Pirke, "Restrained eating and leptin levels in overweight preadolescents," *Physiology & Behavior* 70 (2000): 45-47.
[72] Farooqi, "Genetic, molecular, and physiological mechanisms," 25.
[73] Bacon, *Health At Every Size*, 22.
[74] Pietäilinen et al., "Does dieting make you fat?", 456-464.
[75] Tylka et al., "The Weight-Inclusive versus Weight-Normative Approach," 2; Bacon, *Health At Every Size*, 141.

decreased diabetes risk caused by weight loss returns to higher than original levels when the weight is regained.[76]

In most cases a return to normal, non-restrictive energy consumption will result in weight regain, because dieting results in a decreased metabolic rate.[77] If a return to normal eating, without the guidance of calorie counters and food scales, leads to weight regain and increased health risks, we need to question the logic of trying to lose weight for health purposes. Health professionals cannot reasonably tell their patients to count calories in and calories out for the rest of their lives in order to maintain weight loss. As suggested by Garner and Wooley, the preoccupation with calorie counting required to maintain weight loss would likely be classified as disordered eating in thin and "normal" weight patients.[78] Given the influence of genetics in determining one's set point weight[79] and our bodies' drive to maintain that set point,[80] asking fat patients to develop disordered eating while treating the same behaviors as a disease in thin and "normal" patients is illogical and discriminatory. Health professionals need to encourage patients to develop a healthy, sustainable lifestyle, regardless of their weight. While patients may benefit from consuming fewer calories and moving more, these practices must be sustainable. Providers should consider their recommendations holistically to ensure that they are not encouraging disordered or unsustainable eating in their fat patients.

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[76] Moore et al., "Can Sustained Weight Loss in Overweight Individuals," 270 & 273.
[77] Garner and Wooley, "Confronting the Failure," 745.; Bacon, *Health At Every Size*, 49.
[78] Ibid, 745.
[79] K. Silventoinen et al., "The genetic and environmental influences on childhood obesity: a systemic review of twin and adoption studies," *International Journal of Obesity* 24 (2010): 29-40.; Nelson et al., "Genetic and environmental influences on waist-to-hip ratio," 449-455.; Naukkarinen et al., "Causes and consequences of obesity," 1017-1024.; Sadaf I. Farooqi, "Genetic, molecular, and physiological mechanisms involved in human obesity: Society for Endocrinology Medal Lecture 2012," *Clinical Endocrinology* 82 (2015): 23-28.
[80] A. Bosy-Westphal et al., "Effect of weight loss and regain on adipose tissue distribution, composition of lean mass and resting energy expenditure in young overweight and obese adults," *International Journal of Obesity* 37 (2013): 1371-1377.; Merrill and Grassley, "Women's stories of their experiences," 139-146.

*Harmful And Ineffective Weight Loss*

In addition to the negative health effects of weight regain, some studies have found detrimental effects associated with weight loss itself.[81] One study of about 2000 men and women aged 50 to 70 years, which controlled for diagnosed conditions, established an association between weight loss and mortality risk. The authors saw an increased mortality risk in those with normal, overweight, and mildly obese BMI numbers when they experienced small (1.0-3.0 BMI units) or large (3.0-5.0 BMI units) weight loss. Meanwhile, weight gain was only associated with increased risk if the individuals were already obese and if the gain was significant.[82]

While the physical benefits of weight loss are uncertain, one might argue that weight loss confers mental health benefits. However, one study, which followed over 100,000 women, found little to no association between weight loss and the mental health component of health related quality of life (HRQL).[83] The mental health component was based on "vitality," "social functioning," "role limitations due to emotional problems," and "mental health."[84] Given that weight loss often does not confer significant physical or mental health benefits, medical professionals should consider shifting their focus from weight loss to lifestyle changes.

Although the empirical evidence concerning how weight loss affects our physical and mental health is inconsistent, people still search for a way to shed pounds. Our culture's weight stigma, combined with our bodies' inherent desire to retain weight,[85] often drives people towards desperate, and dangerous, weight loss strategies. Weight loss methods such as vomiting and very low calorie diets (VLCDs) are appearing at

[81] Ibid, 754.; Bacon, *Health At Every Size*, 140.; Ingram and Mussolino, "Weight loss from maximum body weight," 1048.; An Pan et al., "Changes in Body Weight and Health-Related Quality of Life: 2 Cohorts of US Women," *American Journal of Epidemiology* 180 (2014): 254-262.
[82] Myrskla and Chang, "Weight change, Initial BMI, and Mortality," 844-846.
[83] Pan et al., "Changes in Body Weight and Health-Related Quality of Life," 261.
[84] Ibid, 258.
[85] Merrill and Grassley, "Women's stories of their experiences," 139-146.; Bosy-Westphal et al., "Effect of weight loss and regain," 1371-1377.

younger ages, especially in women.[86] Bariatric surgery is another dangerous weight loss method common in the United States. This technique essentially involves purposefully inducing malnutrition, often leading to nutritional deficiencies following surgery.[87] Post-surgical risk of death is also extremely high following bariatric surgery.[88]

Despite the overwhelming complexity surrounding the science of weight loss, there is one interesting, increasingly popular theory worth discussing here. David Ludwig, a prominent endocrinologist involved in obesity research, recently published a book entitled, *Always Hungry? Conquer Your Cravings, Retrain Your Fat Cells, and Lose Weight Permanently*.[89] In the May 2014 editorial upon which the book was based, Ludwig and his colleague Mark Friedman argue that the calorie-counting approach to weight loss is misguided. They suggest that we do not get fat because we eat too much and move too little, but just the opposite. We eat too much and move too little because we are getting fat.[90]

This theory centers on our body's response to insulin, which promotes the storage of glucose in fat, muscle, and liver cells. The current American diet is high in processed carbohydrates, which stimulate insulin release and lead to more efficient fat storage.[91] Repeated insulin spikes caused by easily digestible carbohydrates can even lead to insulin resistance, a condition in which the body needs increasingly higher amounts of insulin to trigger the body to store the glucose present in the blood after a meal. Insulin resistance is considered a sign of prediabetes.[92]

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[86] Garner and Wooley, "Confronting the Failure," 732.
[87] Bacon, *Health At Every Size*, 62.
[88] Ibid, 62.
[89] David Ludwig, *Always Hungry?: Conquer Cravings, Retrain Your Fat Cells, and Lose Weight Permanently*, New York: Gotham Books, 2004.
[90] David Ludwig and Mark Friedman, "Always Hunger? Here's Why," *The New York Times*, May 16, 2014, accessed March 1, 2016.
[91] Ludwig and Friedman, "Always Hungry? Here's Why," *New York Times.*; Gary Taubes, *Why We Get Fat: And What to Do About It,* New York: Random House, 2011.
[92] "Insulin Resistance and Prediabetes," *National Institute of Health: National Institute of Diabetes and Digestive and Kidney Diseases,* June 2014, accessed February 7, 2016,

A diet high in carbohydrates, especially processed carbohydrates, may program fat cells to store glucose as fat, leaving less energy to be used for other purposes.[93] The mechanism behind how fat cells become locked in storage mode is not well understood. One theory suggests that muscle cells become resistant to insulin more easily than fat cells. When muscle cells become less responsive to insulin, the body must release more insulin to allow the muscle cells to absorb the energy they need to perform daily activities. The resulting higher insulin levels allow the less-inhibited fat cells to store glucose more easily, and thus increase in size.[94]

Another possible explanation relies on the observation that insulin enables the uptake and utilization of glucose, or carbohydrates, for fuel. [95] Higher insulin levels, in the absence of insulin resistance, would allow for easier glucose uptake and cause fat stores to be spared. In this way, fat stores might accumulate over time. Extensive research is needed to investigate how fat cells might become programmed to hoard energy.

The theory proposed by Ludwig and others suggests that, if our fat cells are stuck in overdrive, they are removing energy, in the form of glucose, from our bloodstream and storing it away in fat cells, or adipocytes. This leaves less energy for the rest of our body, which reacts to this need for energy by increasing our desire for food and decreasing our metabolic rate to conserve energy. This leaves us hungry and tired, and very unlikely to stick to the calorie restrictions we set for ourselves, let alone make it to the gym.[96]

Perhaps the best evidence for Ludwig's theory is in recent cultural history. The American obesity epidemic began around 1980, about the same time as the low-fat diet craze. At this time, Americans began

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http://www.niddk.nih.gov/health-information/health-topics/Diabetes/insulin-resistance-prediabetes/Pages/index.aspx#resistance.

[93] Taubes, *Why We Get Fat*.; Ludwig and Friedman, "Always Hungry? Here's Why."

[94] Bacon, *Health At Every Size*, 25-26.

[95] R. Bowen, "Physiologic Effects of Insulin," *Colorado State University,* August 1, 2009, accessed February 7, 2016, http://www.vivo.colostate.edu/hbooks/pathphys/endocrine/pancreas/insulin_phys.html

[96] Taubes, *Why We Get Fat.;* Ludwig and Friedman, "Always Hungry? Here's Why."

replacing Oreos with Snackwells, bacon with cereal, and cheese with crackers. American food manufacturers created low-fat diet foods that simply replaced fat with processed carbohydrates.[97] As Americans replaced fat with carbohydrates, they got fatter.

Many have made the argument that we overeat and don't have energy to exercise because of the way our fat cells store calories. In 1908, Gustav von Bergmann, a German doctor, proposed that excess weight occurs when the body's fat cells are programmed to absorb energy, a condition he termed "lipophilia."[98] Robert Atkins, founder of the Atkins diet, made a similar argument.[99] Gary Taubes, a renowned science writer, echoes this argument in his books, *Good Calories, Bad Calories* (2007)[100] and *Why We Get Fat and What To Do About It* (2010).[101] Ludwig's recent publication represents a significant contribution to the scholarly discourse surrounding diet composition.

The idea that we need to change how our body distributes the calories we consume, rather than simply the number of calories we consume, is promising. It makes constructive suggestions about how to change the type (rather than the number) of calories we consume in an attempt to retrain our fat cells to store less energy. Further, it helps vindicate those who struggle with their weight, suggesting that their inability to create and maintain a calorie deficit is not their fault but is instead a result of their bodies' natural response to dieting.

Theories like Ludwig's, which point to biological explanations for the difficulty of weight loss and weight loss maintenance, may help counteract the burden of weight stigma. Weight stigma pervades our society. Such

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[97] Ludwig and Friedman, "Always Hungry? Here's Why."; "Did the Low-Fat Era Make Us Fat?" *PBS: Frontline,* April 8, 2004, accessed February 7, 2016, http://www.pbs.org/wgbh/pages/frontline/shows/diet/themes/lowfat.html.
[98] Taubes, *Why We Get Fat*, 63.
[99] "The Benefits of a Low-Carb Diet: How Does Atkins Work?" *Atkins*. Accessed February 8, 2016, https://www.atkins.com/how-it-works.
[100] Gary Taubes, *Good Calories, Bad Calories: Fat Carbs, and the Controversial Science of Diet and Health*, New York: Random House, 2007.
[101] Taubes, *Why We Get Fat: And What to Do About It.*

stigma is present in medical offices[102] and can be harmful to patients', especially fat patients', health.[103] Weight stigma in medical offices both stems from and legitimizes weight stigma in society. Because the medical community holds considerable sway in our society and because this community is responsible for promoting the health of all people, it seems a fitting place to begin countering weight stigma. However, before medical weight stigma can be eradicated, it must first be recognized.

*Medical Weight Stigma*

Weight stigma in medical offices is communicated both implicitly and explicitly.[104] As soon as an overweight patient walks in the door of their doctor's office, they may get the impression that they aren't welcome due to inappropriately sized waiting room chairs and medical equipment such as blood pressure cuffs, pelvic exams instruments, and gowns.[105] One study found that emergency room equipment was more likely to be perceived as inadequate by both patients and nurses as BMI and waist circumference increased.[106] Medical professionals also implicitly communicate bias by recommending weight loss when the patient's reason for visiting is unrelated to their weight and the patient does not wish to discuss their weight.[107]

Providers communicate weight bias to overweight and obese patients when healthcare workers make stereotypical assumptions that

[102] Tylka et al., "The Weight-Inclusive versus Weight-Normative Approach," 4.; Malterud and Ulrikson, "Obesity, stigma, and responsibility in health care," 9.
[103] S.M. Phelan et al., "Impact of weight bias and stigma on quality of care and outcomes for patients with obesity," *Obesity Reviews* (April 2015): 319-326, accessed August 20, 2015, 321.; Christine Aramburu, Alegria Drury, and Margaret Louis, "Exploring the Association Between Body Weight, Stigma of Obesity, and Health Care Avoidance," *Journal of the American Academy of Nurse Practitioners* 14 (Dec. 2002): 555, accessed August 20, 2015.; Phelan et al., "Impact of weight bias and stigma on quality of care," 321.; Malterud and Ulrikson, "Obesity, stigma, and responsibility in health care," 7.
[104] Phelan et al., "Impact of weight bias and stigma," 320.
[105] Ibid, 322.
[106] Navneet Singh et al., "Emergency department equipment for obese patients: perceptions of adequacy," *Journal of Advanced Nursing* 59 (2007): 140-145.
[107] Phelan et al., "Impact of weight bias and stigma," 321.; Malterud and Ulriksen, "Obesity, stigma, and responsibility," 6.

such patients have less willpower than others or simply don't know how to take care of themselves. Studies have found that medical professionals maintain demeaning assumptions about their fat patients, explicitly referring to them as "lazy, undisciplined, and weak-willed."[108] These studies suggest that providers consider fat patients less compliant and respect them less than their other patients.[109] A survey of doctors in Michigan and Victorian, Australia found that roughly a quarter had negative associations with obese patients.[110] Providers often oversimplify the weight loss process, which can be patronizing to overweight and obese patients who have attempted weight loss before.[111] Although the calories in/calories out paradigm is thermodynamically sound, it represents a "gross simplification of human metabolism."[112] Phrases such as, "You just have to stop eating," represent an oversimplicification of the weight loss process that is common in medical offices.[113]

Furthermore, medical professionals tend to discuss obesity differently than other medical conditions. Obese patients are often seen "as both the culprit and the solution for obesity,"[114] and it is more acceptable to blame and degrade patients with obesity because it is seen as "their own fault."[115] As a result, medical professionals have "less respect for patients with obesity compared with those without," which

[108] Phelan et al., "Impact of weight bias and stigma," 321.
[109] Ibid.
[110] J.M. Najman, D. Klein, and C. Munro, "Patient Characteristic Negatively Stereotyped By Doctors," *Social Science & Medicine* 16 (1982): 1781-1789.
[111] Malterud and Ulriksen, "Obesity, stigma, and responsibility," 6.; Phelan et al., "Impact of weight bias and stigma," 322.
[112] J. Naukkarinen et al., "Causes and consequences of obesity: the contribution of recent twin studies," *International Journal of Obesity* 36 (2012): 1019.
[113] Malterud and Ulrikson, "Obesity, stigma, and responsibility in health care," 5.; Emily Merrill and Jane Grassley, "Women's stories of their experiences as overweight patients," *Journal of Advanced Nursing* 64 (2008): 143.
[114] Puhl and Heuer, "Obesity Stigma: Important Conclusions," 1021.
[115] Similar derision based on blame has been reported concerning drug and alcohol abusers. Delese Wear et al., "Making Fun of Patients: Medical Students' Perceptions and Use of Derogatory and Cynical Humor in Clinical Settings," *Academic Medicine* 81 (2006): 454-462. As cited in Malterud and Ulrikson, "Obesity, stigma, and responsibility in health care," 7.

leads to “less patient-centered communication” and “less time [spent] educating patients with obesity about their health.”[116]

Hostility between doctors and patients surrounding weight, whether perceived by one or both parties, has many negative consequences. Overweight and obese patients often feel that they are not welcome or heard at the doctor’s office[117] and studies have repeatedly shown that they receive lower quality care.[118] By focusing on weight to the exclusion of other variables, medical professionals may “overshadow patients’ health concerns and needs.”[119] For example, in a 2008 study of overweight and obese women’s experiences, one woman reported feeling that her doctors were “not listening when I say…that I don’t drink soda and I don’t eat fast food…that I don’t do that, I do this. I feel like they are not listening. They don’t care. It’s like they are too busy to stop and listen.”[120] Another woman recounted a story of seeing a chiropractor for arthritis who refused to treat her until she lost weight.[121] These stories exemplify the medical focus on weight that sometimes precludes fat patients’ non-weight-related health concerns.

Many patients who are told they need to lose weight feel unwelcome to return to the doctor until they do so.[122] Feeling ignored, mistreated, or guilty, overweight and obese patients often delay or avoid health care.[123] This trend often increases the severity of their health problems when they eventually make their way to a doctor’s office, making them more difficult to treat and further harming their health outcomes.[124]

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[116] Phelan et al., “Impact of weight bias and stigma,” 321.
[117] Malterud and Ulriksen, “Obesity, stigma, and responsibility,” 1-11.; Phelan et al., “Impact of weight bias and stigma,” 319-326.; Drury and Louis, “Exploring the Association,” 554-561.
[118] Puhl and Heuer, “Obesity Stigma,” 1019-1028.; Tylka et al., “The Weight-Inclusive versus Weight-Normative,” 1-18.; Drury and Louis, “Exploring the Association,” 554-561.; Phelan et al., “Impact of weight bias and stigma,” 319-326.
[119] Tylka et al., “The Weight-Inclusive versus Weight-Normative,” 2.
[120] Merrill and Grassley, “Women’s stories of their experiences as overweight patients,” 142.
[121] Ibid.
[122] Drury and Louis, “Exploring the Association,” 554-561.
[123] Tylka et al., “The Weight-Inclusive versus Weight-Normative,” 1-18.
[124] Phelan et al., “Impact of weight bias and stigma,” 321.

Stigma surrounding weight permeates our society to an alarming degree, and this stigma leads to an increased burden of stress on the overweight and obese.[125] While this prejudice against fatness is troubling in society, it is completely unacceptable in medical offices. Medical professionals have a duty to ensure that patients feel safe and free from judgment. When medical professionals judge patients' morality, likelihood of compliance, or desire for health solely based on their appearance, they further healthcare disparities.[126] As a result of such judgment often causes medical offices to be perceived as off-limits for the overweight and obese. All individuals deserve equal access to health care, and fat patients are denied this right when weight stigma is allowed into medical settings.

*Applying HAES to Individuals*

In order to remove weight stigma from medical settings, the current weight-normative paradigm should be replaced by a weight-inclusive paradigm, such as Health at Every Size (HAES). The three primary health-promoting behaviors that HAES proposes, intuitive eating, enjoyable physical activity, and self-care, will improve a patient's life, regardless of their weight or their weight change.

The weight-normative paradigm is full of negative messages about fat bodies. This perspective tells fat people that they can't trust their bodies, because their unruly impulses made them fat (and therefore not "normative") in the first place. In fact, the weight-normative paradigm even tells "normal" weight people that they can't trust their bodies, and that they need to control their diet and exercise and be careful not to "let themselves go." The overarching goal of the weight-inclusive approach is to encourage people to trust their bodies, and an important aspect of this trust is intuitive eating.

[125] Schafer and Ferraro, "The Stigma of Obesity," 76-97.; Puhl and Heuer, "Obesity Stigma," 1019-1028.; Garner and Wooley, "Confronting the Failure," 729-780.; Merrill and Grassley, "Women's stories of their experiences," 139-146.
[126] Malterud & Ulrikson, "Obesity, stigma, and responsibility," 1-11.; Phelan et al., "Impact of weight bias and stigma," 319-326.; Befort et al., "Weight-Related Perceptions," 1086-1090.

Importantly, intuitive eating does not mean simply eating what tastes good in the moment. Rather, this lifestyle uses intentional trial and error to discover how certain food choices make one's body feel. It encourages people to notice variables such as energy levels, digestion, mental acuity, and mood, and to allow their bodies' reaction to determine their food choices.[127]

For example, one might reach for a candy bar as a mid-afternoon energizing snack, only to experience a crash a few hours later. Listening to that cue might encourage one to choose a less sugary, more invigorating apple with almond butter next time. This approach may help people understand why certain foods are considered healthy and others aren't, and empower them to make choices that they know will make them feel better. In an effort to develop intuitive eating skills, one could try drinking more water or eliminating a certain food to which they may be sensitive (e.g. gluten, sugar, caffeine, dairy, eggs, nuts). Noticing how such a change affects the body gives us individualized information to help guide a person's food choices.

One important prerequisite to intuitive eating is the removal of moral labels surrounding foods, which could interfere with natural responses. For example, one may consider eggs an exceptionally healthy food. As such, one may not be inclined to blame an egg allergy for their regular indigestion, although a trial elimination of eggs could improve their health. On the other hand, one may turn to foods they consider unhealthy indulgences when looking for reward or comfort. Removing such labels that are often attached to foods and encouraging people to gauge their own reactions to specific foods could help them define 'healthy' and 'unhealthy' for themselves as unique individuals. These definitions may make it easier for them to choose foods based on how they affect their bodies, instead of their conscience.

[127] Leslie Cadena-Schlam and Gemma López-Guimerà, "Intuitive eating: An emerging approach to eating behavior," *Nutrición Hospitalaria* 31 (2015): 995.

When people try to control what they eat via external mechanisms, like counting calories or labeling certain foods as “good” or “bad,” their natural satiety regulatory systems are drowned out. As previously discussed, if we accept set point theory, the hypothalamus normally regulates body weight. Overriding the hypothalamus’s messages by emphasizing external satiety cues, as dieting requires, can trigger “robust increases in appetite,” as well as decreases in the amount of energy the body uses in everyday activities and in leisure time physical activity.[128]

It has been suggested that ignoring internal hunger and satiety cues often makes individuals more vulnerable to external hunger cues, like advertisements or the smell of French fries.[129] Such susceptibility to external cues makes it more difficult, in the long run, to control what and how much we eat. This phenomenon could help explain the trend of weight regain following weight loss.[130] On the other hand, putting the hypothalamus back in charge by heeding internal hunger and satiety cues may help with weight maintenance. Additionally, although losing weight is not an explicit goal of HAES, intuitive eating could lead to weight loss over time by giving people tools to identify foods that are unhealthy for them and to avoid over-eating encouraged by externally driven eating.

Listening to internal hunger and satiety cues is more sustainable than attempting to enforce external cues. In the same way, finding an enjoyable way to be physically active is more sustainable than dragging yourself to the gym a few times a week. Furthermore, while the wisdom of trying to lose weight is debatable, the benefits of exercise are clear.[131] As a predictor of longevity, physical fitness is more important than weight,[132] and higher levels of fitness are associated with metabolic health[133] and

[128] Merrill and Grassley, “Women’s stories of their experiences as overweight patients,” 234.
[129] Leslie Cadena-Schlam and Gemma López-Guimerà, “Intuitive eating: An emerging approach to eating behavior,” *Nutrición Hospitalaria* 31 (2015): 996.
[130] Ibid.
[131] Garner and Wooley, “Confronting the Failure,” 763.
[132] Bacon, *Health At Every Size,* 130.
[133] Kanagasabai. “Differences in physical activity domains,” *International Journal of Behavioral Nutrition and Physical Activity* 12 (2015): 7.

improved mental health.[134] One might find enjoyable physical activity by incorporating more movement into daily life and trying out different types of exercise.[135]

Perhaps most importantly though, people must confront and address factors that keep them from exercising. These factors may include shame or ridicule, which one can address by working out at home, finding a more welcoming environment to exercise in, or simply by purchasing body-positive workout clothes. Other factors, like physical limitations or injuries can be more difficult to address, and some creativity may be required to find enjoyable ways of being active.[136] Similar potential obstacles to enjoyable exercise exist for children and adolescents as well. In addition, factors such as time spent in front of a screen and an inability to be active at school or play outside safely may inhibit children's accessibility to physical activity.[137] It is vital that we address such hindrances at a young age, in order to help children establish healthy behaviors early.

Motivational interviewing has potential to help providers and patients overcome obstacles to physical activity. As the name suggests, motivational interviewing "focuses on motivation for changing behavior."[138] Studies have found motivational interviewing to be effective in producing moderate increases in physical activity.[139] Allowing the patient's

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[134] Garner and Wooley, "Confronting the Failure," 763.
[135] Bacon, *Health At Every Size,* 217.
[136] Bacon, *Health At Every Size,* 222-223.
[137] Kathleen E. Lacy et al., "Screen time and physical activity behaviours are associated with health-related quality of life in Australian adolescents," *Quality of Life Research* 21 (2012): 1085-1099.
[138] Sune Rubak et al., "General practitioners trained in motivational interviewing can positively affect the attitude to behavior change in people with type 2 diabetes," *Scandinavian Journal of Primary Health Care* 27 (2009): 172, accessed August 20, 2015.
[139] Mats Sjölig et al., "Effectiveness of motivational interviewing and physical activity on prescription on leisure exercise time in subjects suffering from mild to moderate hypertension," *BMC Research Notes* 4 (2011): 1-7.; Paul D. O'Halloran et al., "Motivational interviewing to increase physical activity in people with chronic health conditions: a systemic review and meta-analysis," *Clinical Rehabilitation* 28 (2014): 1159-1171.; Sarah Hardcastle, Nicola Blake, and Martin S. Hagger, "The effectiveness of a motivational interviewing primary-care based intervention on physical activity and predictors of change in a disadvantaged community," *Journal of Behavioral Medicine* 35 (2012): 318-333.

commitment level, available resources, and experiences to help determine the treatment approach may increase the chance of patient compliance and improve the dynamics of the provider-patient relationship. Techniques to overcome obstacles to physical activity, such as MI, should continue to be explored since enjoyable and sustainable physical activity is a vital health-promoting behavior.

The final health-promoting behavior foundational to HAES is self-care. Self-care requires a sense of self-worth, which makes listening to and caring for oneself much easier. As one might expect, accepting oneself carries significant health benefits. A study in Nuevo Leon, Mexico found that self-care behaviors correlated with better glycemic control in type 2 diabetics, that diet was the practice most strongly associated with improved risk factors, and that relationships between self-care and health were mediated by gender.[140] Other research has found the disparity between a person's actual and desired weight "is a much more powerful predictor of morbidity than is BMI."[141] The relationship between this weight disparity and morbidity is "stronger for women than men, and for whites than African-Americans or Hispanics,"[142] which is consistent with the earlier assertion that groups more affected by weight stigma show greater health detriments from excess weight. Furthermore, the potential improvements in health associated with being mildly overweight are only realized in groups "that tend not to see fat as unattractive."[143] To improve their health, patients should be encouraged to love and accept themselves. Medical professionals can help patients remove the obstacle of weight stigma by attributing patients' negative body image or self-concept to societal, rather than personal, faults.[144]

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[140] Lidia Guadalupe Compean Ortiz, Esther Carlota Gallegos Cabriales, Jose Gerardo Gonzalez, Marco Vinicio Gomez Meza, "Self-Care Behaviors and Health Indicators in Adults with Type 2 Diabetes," *Revista Latino-Americana de Enfermagem* 18 (2010): 675-680.
[141] Peter Muennig. "The body politic: the relationship between stigma and obesity-associated disease." *BMC Public Health* 8 (2008): 3.
[142] Ibid, 7.
[143] Ibid, 7.
[144] Garner and Wooley, "Confronting the Failure," 767.

*Empirical Support for HAES*

What sets HAES apart from other programs is its insistence that weight loss or gain should not be a health goal. Based on extensive research,[145] HAES suggests that significant health improvements can be made via lifestyle changes regardless of changes in weight. Given the established difficulty of weight loss maintenance, HAES improves its chances of success by focusing instead on lifestyle changes. Unhealthy lifestyle behaviors are the real root of the health problems facing our nation and, by targeting behavior instead of weight, HAES may improve the efficacy of health-promoting efforts.

Lifestyle changes have been shown to improve or reverse type 2 diabetes diagnoses "even when little or no weight is lost"[146] and the CDC found "little or no association of excess all-cancer mortality with any of the BMI categories."[147] Additionally, physical fitness is a stronger predictor of health than weight, as evidenced by the results of a 1999 study: "physically fit obese individuals had a lower risk of mortality than did unfit lean individuals and did not differ from the lean fit individuals."[148] A 2008 study similarly concluded that aerobic exercise improved aerobic fitness and arterial remodeling in eleven women with an average BMI of 29.1 $kg/m^2$ independent of weight loss.[149] Further research is needed to determine how a larger, and fatter, sample would affect these results.

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[145] Sabatier et al., "Femoral artery remodeling," 1-8 (on download).; Gannon and Nuttall, "Control of blood glucose in type 2 diabetes," 1-8 (on download).; Frassetto et al., "Metabolic and physiological improvements," 947-955.; Jönsson et al., "Beneficial effects of a Paleolithic diet," 1-14 (on download).

[146] Glenn A. Gaesser, "Weight Loss for the Obese: Panacea or Pound-Foolish?" *Quest* 56 (2004): 12-27. As cited by Bacon, *Health At Every Size,* 135.; Normand G. Boulé et al., "Effects of Exercise on Glycemic Control and Body Mass in Type 2 Diabetes Mellitus: A Meta-analysis of Controlled Clinical Trials," *The Journal of the American Medical Association* 286 (2001): 1218-1227.

[147] Katherine M. Flegal et al., "Cause-Specific Excess Deaths Associated With Underweight, Overweight, and Obesity," *Journal of the American Medical Association* 298 (2007): 2028-2037. As cited by Bacon, *Health At Every Size,* 137.

[148] Vartanian and Smyth, "Primum Non Nocere," 53.

[149] Manning J. Sabatier et al., "Femoral artery remodeling after aerobic exercise training without weight loss in women," *Dynamic Medicine* 7 (2008): 1-8.

Additionally, dietary changes have been shown to improve health measures in the absence of weight loss.[150] A few studies have demonstrated an association between coupled increased protein consumption and decreased carbohydrate consumption with improved control of blood glucose levels independent of weight loss in patients with type 2 diabetes.[151] Another interesting study examined nine nonobese sedentary healthy volunteers, who undertook a ten-day paleolithic diet during which they avoided grains, legumes and dairy, and consumed fruits, vegetables, lean meats, and nuts. Although the participants were nonobese, the average BMI of the participants (27.8 +/- 2.4 $kg/m^2$) was in the slightly overweight BMI category. Over this short time, the individuals' blood pressure, glucose tolerance, insulin sensitivity and secretion, and lipid profiles improved "without weight loss in healthy sedentary humans."[152] Further research, involving larger sample sizes and fatter participants, is needed to determine exactly what type of diet most benefits the health of overweight and obese patients. However, we know lifestyle factors like physical activity levels and diet can improve risk factors associated with obesity, so efforts to improve health should focus directly on those lifestyle factors, rather than changing patients' weight.[153]

At present, few scientific studies have focused on HAES. However, those that have been performed have shown promising results. Studies performed thus far have compared HAES with various traditional weight loss methods, and have found that HAES yields longer-term positive results.[154] Linda Bacon, PhD, the author of *Health at Every Size*, designed

[150] L.A. Frassetto et al., "Metabolic and physiologic improvements from consuming a paleolithic, hunter-gatherer type diet," *European Journal of Clinical Nutrition* 63 (2009): 947-955.
[151] Mary C. Gannon and Frank Q. Nuttall, "Control of blood glucose in type 2 diabetes without weight loss by modification of diet composition," *Nutrition & Metabolism* 3 (2006): 1-8.; Tommy Jönsson et al., "Beneficial effects of a Paleolithic diet on cardiovascular risk in type 2 diabetes: a randomized cross-over pilot study," *Cardiovascular Diabetology* 8 (2009): 1-14.
[152] Frassetto et al., "Metabolic and physiologic improvements," *European Journal of Clinical Nutrition* 63 (2009): 947.
[153] Garner and Wooley, "Confronting the Failure," 761.
[154] Penney and Kirk, "The Health at Every Size Paradigm and Obesity," *American Journal of Public Health* 105 (May 2015): 39.

a study with 78 non-smoking, Caucasian, 30-45 year old women with BMIs between 30 and 45. Half of these women received HAES-based counseling and the other half received traditional diet program counseling.[155] The HAES women attained significantly lower LDL ("bad") cholesterol and lower blood pressure measurements. Anecdotal evidence suggests that they were also less depressed, had higher activity levels, and higher self-esteem, although they experienced no significant weight change. Meanwhile, the same variables "either stayed the same or worsened" in the women on the traditional diet program, although their weight decreased in the short-term.[156]

Although promising, this research has some flaws. Studies have focused on a limited category: "female White participants with a history of binge eating or chronic dieting in Western culture."[157] Additionally, sample sizes have been small, with little to no focus on extreme (class II and III) obesity. Larger, more diverse studies must be conducted to determine whom HAES can best help. In the meantime, HAES principles should be considered in cases where patients have a history of disordered eating, poor body image, and/or chronic dieting.

Further research is needed to discern how best to implement HAES principles. We need to know how to help patients regain their ability to trust themselves, so that they can eat intuitively, find activities they enjoy, and care for themselves. Medical professionals also need to find ways to incorporate the abstract, individualized concept of self-care into the concrete, evidence-based medical world.

*Rebuttal: Is Weight Stigma a Positive Social Force?*

Although the limited research performed thus far has produced encouraging findings, there is pushback against HAES. Some people, medically trained and otherwise, suggest that weight stigma is actually a

[155] Bacon, *Health At Every Size,* 165-169.
[156] Ibid.
[157] Penney and Kirk, "The Health At Every Size Paradigm and Obesity," 40.

positive societal pressure. They argue that shaming fat people will spur them towards lifestyle changes, thus making them healthier. However, research shows that weight stigma is associated with increased weight, worsened health risk factors, and a decrease in healthy behaviors.[158] Overweight and obese people are more likely to react to weight stigma by overeating and avoiding dieting than by making healthy lifestyle choices.[159] Although the implications of weight stigma are cumulative, the effects can be seen immediately. One study compared the food consumption of various women after being shown different videos. Overweight women who were shown a stigmatizing video consumed more food in a subsequent task than normal or overweight women who were shown a neutral video.[160]

Despite the negative effect of weight stigma on healthy behavior in overweight and obese people, some public health campaigns target obesity using weight stigma.[161] One oft-cited example is a Georgia campaign released by Strong4Life and Children's Healthcare of Atlanta, entitled "Stop Sugarcoating."[162] This campaign includes black-and-white pictures and videos of sad, fat children with all-caps slogans such as, "It's hard to be a little girl if you're not." The videos show these same children confessing their diagnoses with obesity-related conditions like hypertension and diabetes, their love of video games, and their experiences of being mocked by other children. In one video, a chubby young girl says, "I don't like going to school because all of the other kids pick on me." She pauses and admits, "It hurts my feelings." Her face is

[158] Tylka et al., "The Weight-Inclusive versus Weight-Normative Approach," 5, 11.; Vartanian and Smyth, "Primum Non Nocere," 51-52.
[159] Markus H. Schafer and Kenneth F. Ferraro, "The Stigma of Obesity: Does Perceived Weight Discrimination Affect Identify and Physical Health?" *Social Psychology Quarterly* 74 (2011): 80.; Vartanian and Smyth, "Primum Non Nocere," 51.
[160] Vartanian and Smyth, "Primum Non Nocere," 51.
[161] Ibid, 49.
[162] Emma Gray, "Georgia Anti-Obesity Ads Say 'Stop Sugarcoating' Childhood Obesity," *Huffpost Parents,* January 2, 2012, accessed February 7, 2016, www.huffingtonpost.com/2012/01/03/georgia-anti-obesity-ads-stop-sugarcoating_n_1182023.html.

replaced by the phrase, “Being fat takes the fun out of being a kid.” Rather than blaming her bullies for her distress at school, this campaign blames the girl’s excess weight. This campaign does not teach children how to be healthy. Instead, it conveys the idea that bullying of fat children is justified by culpability.

Public health campaigns, especially those aimed at children, should focus on promoting healthy behaviors and not shaming fatness. For example, the NFL-sponsored “Play 60” program focuses on encouraging kids to be enjoyably active for 60 minutes a day. The program’s website features healthy lifestyle tips from NFL players and suggestions on ways to play actively, without bringing weight into the equation.[163] Although empirical studies have not been performed to assess the efficacy of the “Play 60” program, it is reasonable to hypothesize that it is more effective than programs that employ weight stigma, based on research associating weight stigma with negative health outcomes.[164] Empirical studies are needed to compare the efficacy of public health campaigns that do and do not employ weight stigma. Public health campaigns, like healthcare, should focus more on promoting healthy lifestyle changes than on encouraging our cultural preoccupation with weight.

While extensive evidence exists suggesting the negative effects of weight stigma, there is scholarly debate concerning the effects of excess weight. Why, then, do most public health measures focus on the perils of excess weight while ignoring weight stigma? It seems that some public health campaigns reflect our society’s fear of fat, rather than the complex, multidimensional evidence about weight and health, especially in relation to those considered overweight and moderately obese.

Though addressing weight stigma in medical settings is a vital and significant step, it is essential that we also address weight stigma in

[163] “NFL Rush Play 60,” *NFL Rush,* accessed February 7, 2016, http://www.nflrush.com/play60/?icampaign=nflrush-main_nav_bar-global-nflplay60

[164] Tylka et al., “The Health at Every Size Paradigm and Obesity,” 5,11.; Vartanian and Smyth, “Primum Non Nocere,” 51-52.; Schafer and Ferraro, “The Stigma of Obesity,” 80.

society. If our public health campaigns are really aimed at making us healthier, they should focus on lifestyle changes rather than perpetuating weight stigma. We need public health policies guided by HAES, policies that promote healthy habits instead of focusing on the number on a scale or clothing sizes.[165] As stated by health and psychology researchers Lenny Vartanian and Joshua Smyth, "We [public health officials] need to avoid stigmatizing and blaming individuals and instead look toward promoting healthy behavior, preventing obesity in the first place, and creating policies that support healthy behavioral decisions regardless of an individual's weight status."[166]

*Rebuttal: Is HAES Anti-Health?*

While some oppose weight-inclusive healthcare because they see weight stigma as a positive social influence, others critique the idea that healthcare efforts should focus on lifestyle changes instead of weight. They suggest that HAES is actually anti-health because it encourages fat people to remain fat and, therefore, unhealthy. However, it must be noted that HAES does not claim that any weight is healthy. Rather, HAES suggests that a person can be healthy at any weight by leading a healthy lifestyle. HAES simply shifts the focus from weight to lifestyle.

Furthermore, as previously established, fatness is not nearly as harmful as we have been led to believe. While individuals at the weight extremes (BMI of less than 18 or more than 40) often suffer from greater health risks,[167] "the vast majority of Americans fall closer to the middle of the bell curve, where weight is little more than a benign marker of an individual's genetic predisposition to carry it."[168] In a 1999 study of Swedish twins, researchers found that genetic effects contributed significantly to waist circumference (WC), more in men (46%) than women

[165] Muennig, "The body politic," 9.
[166] Vartanian and Smyth, "Primum non Nocere," 55.
[167] Kitahara et al., "Association between Class III Obesity," 71-82.
[168] Bacon, *Health At Every Size,* 156.

(66%).[169] Although waist circumference is a distinct measure from weight, larger WC can be assumed to parallel higher weights. Therefore, the conclusions of this study, that genetics affect WC, can be extended to apply to weight. Finally, HAES is preferable to weight-normative healthcare because advising patients to lose weight can lead to healthcare avoidance and/or weight cycling, each of which are more harmful than simply maintaining a higher weight.

It is important, when addressing the concern that HAES gives fat people an excuse to remain fat (and therefore unhealthy), to distinguish between the fat acceptance movement and HAES. While HAES and the fat acceptance movement share many core values and visions for the future, their central difference is in the importance they ascribe to health. Health is the primary objective of HAES. Meanwhile, supporters of fat acceptance often push back against our society's tendency to equate health with morality, and deny fat people respect and equal rights.[170] Fat acceptance, as a social movement, argues that people do not have to desire health in order to be good people and that fat people are equally deserving of respect as their thin counterparts. While affirming that health and morality do not always appear together, HAES, as a medical paradigm, focuses primarily on promoting health.

Fat acceptance suggests that fat people should feel comfortable in their bodies because their health does not determine their rights as a human. HAES argues that fat people should feel comfortable in their bodies because that comfort is part of a healthy lifestyle. HAES affirms fat people by suggesting that they do not have to lose weight in order to improve their health. Fat acceptance and HAES are united in their fight against weight stigma, and both see weight as a social justice issue.

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[169] T.L. Nelson et al., "Genetic and environmental influences on waist-to-hip ratio and waist circumference in an older Swedish twin population," *International Journal of Obesity* 23 (1999): 449-455.

[170] Jes Baker, "6 Things That I Understand About the Fat-Acceptance Movement," *Everyday Feminism,* August 16, 2014, accessed February 7, 2016, http://everydayfeminism.com/2014/08/i-understand-fat-acceptance-movement/

However, it is vital to understand the differences between these complimentary movements. Fat acceptance is a social justice movement seeking to end prejudice and discrimination against fat people, while HAES is a medical paradigm, based on empirical evidence and focused on improving the health of all people.

What does it mean to be "healthy"? Within the traditional medical community, specific numbers like BMI, blood pressure, cholesterol, and resting heart rate act as measures of health.[171] Many medical professionals are beginning to take a more nuanced approach to health, including variables such as psychological health and stress management skills. While these gauges of health have their merits, I would add the concept of balance to our medical definition of health. Balance is central to the health-promoting activities proposed within HAES: balance between work and fun, exercise and rest, stress and relaxation, eating your vegetables and indulging in dessert, challenging oneself to grow and loving oneself as one is.

A definition of health that excludes overweight and obese patients does not help fat patients. Medical professionals need to strike a balance between the clarity of numerical measurements and the abstract nature of self-care. We need to empower patients to listen to and care for their bodies, while maintaining the guidance offered by measurable health factors.

The argument that HAES does not promote health because it allows fat people to remain fat relies on the belief that fat people must become thinner in order to become healthier. In fact, HAES advocates a different perspective, based on evidence suggesting that weight loss (and correlated fluctuations in weight) can be both unnecessary and potentially harmful, when compared with weight maintenance. By aiming to make

[171] Bacon, *Health At Every Size,* 132.; Blood pressure may not be an adequate measure of health in fat patients. Obese people with hypertension have longer lives and lower disease risks than thinner people with hypertension. Some medical professionals have suggested that higher blood pressure may be normal for heavy people, rather than a marker of disease risk.

people healthier by encouraging healthy behaviors, HAES advocates for improved lifestyle over weight loss, and values health over thinness.

*Applying HAES in Medical Settings*

Medical professionals are better able to provide helpful, empirically supported healthcare advice when they operate under HAES principles, rather than a weight-normative paradigm, especially when working with patients most affected by weight stigma and those with a history of disordered eating and poor self-concept.[172] Medical professionals can integrate HAES practices into their work in myriad ways. These fall into three general categories: changing the physical medical environment, addressing weight bias in medical professionals, and developing interdisciplinary healthcare teams.

Making physical changes in medical environments is the simplest of these approaches. Such adjustments include providing appropriately sized waiting room chairs and medical instruments,[173] and implementing a zero-tolerance policy for jokes that degrade fat people, just as professionals have done with race, sex, and gender. Medical offices should display an explicitly inclusive mission statement and emphasize diversity in hiring choices, as well as in images exhibited in the office and in advertising.[174]

These simple changes are wonderful steps, but the more complicated process of addressing medical professionals' weight bias is also necessary. Medical advice is governed by social norms to an alarming extent. Like any stigmatized social position, weight interconnects with other stigmatized categories, such as gender, sex, race, and class. As discussed earlier in this paper, obese female patients are significantly more likely to be advised to lose weight than men within the same BMI

[172] Bacon, *Health At Every Size,* 165-169.
[173] Aramburu, Drury, and Louis, "Exploring the Association Between Body Weight," 560.
[174] Phelan et al., "Impact of weight bias and stigma," 323.

category.[175] This is likely due to medial professionals' internalization of societal standards for women's physiques, serving as an example that societal biases influence healthcare workers.

Healthcare workers need to be encouraged to recognize their biases and learn how to address them. These people are not impervious to the prejudices that plague other members of society. They must, however, be held to the higher standard of recognizing and addressing their biases in order to adequately serve their patients. Similarly, bias can affect what researchers choose to research and how they interpret their results. When researchers state their biases openly in their work, it may be easier for readers to understand how the research came about and to interpret what they are reading.

One important tool in addressing bias is education. Healthcare workers need to be educated on the myriad, complex causes of obesity, and on how little we actually understand about the mechanisms connecting weight and health. Multiple studies have found that primary care providers do not feel adequately trained to provide weight loss advice[176] or nutritional counseling.[177] Given the promising research showing that specific dietary changes could improve patients' health independent of weight loss, nutritional education is vital to primary care providers' practice.[178] Education on lifestyle changes to improve health needs to begin in medical school, and continue as evidence emerges supporting theories, such as Ludwig's suggestion that fat cells can be re-programmed to stop storing energy. Education on developing techniques

[175] Drury and Louis, "Exploring the Association," 555.; Malterud and Ulriksen, "Obesity, stigma, and responsibility," 7.
[176] Befort et al., "Weight-Related Perceptions Among Patients and Physicians," 1088.; Lisa J. Ware et al., "Exploring weight loss services in primary care and staff views on using a web-based programme," *Informatics in Primary Care* 20 (2012): 287.
[177] Kelly M. Adams, Martin Kohlmeier, and Steven H. Zeisel, "Nutrition Education in U.S. Medical School: Latest Update of a National Survey," *Academic Medicine* 85 (2010): 1537-1542.; Bacon, *Health At Every Size,* 116.
[178] Frassetto et al., "Metabolic and physiological improvements from consuming," 947.; Gannon and Nuttall, "Control of blood glucose in type 2 diabetes," 1-8.; Jönsson et al. "Beneficial effects of a Paleolithic diet on cardiovascular risk in type 2 diabetes," 1-14.; Taubes, *Why We Get Fat*.; Ludwig and Friedman, "Always Hungry? Here's Why."

like A Body Shape Index (ABSI) will also be vital as improvements are made to measurements that describe the correlation between weight and health.

Part of the problem lies in healthcare workers' desire to present a clear, concise, and confident answer to patients, who look to them as sources of reliable weight loss information.[179] There is also significant societal pressure encouraging health professionals to maintain the current polarized perspective on weight and health, rather than encouraging a nuanced discussion. Medical professionals who counter the general opinion may suffer blows to their reputation and career, discouraging them from questioning or challenging established assumptions about weight.[180]

Health professionals must recognize and embrace the complexity, and the subsequent uncertainty, surrounding the relationship between weight and health if they hope to have an honest relationship with their patients and their peers. As with bias, the public may be uncomfortable with medical professionals admitting uncertainty in their work. However, admitting both bias and ambiguity is necessary to heal fat people's relationship with medicine.

When medical professionals act as though weight loss is a simple matter of self-control, they alienate fat patients by ignoring their experiences. Although the simplicity of the "calories in/calories out" approach is tempting, research has shown this approach to be ineffective in improving patient health.[181] More foundationally, although Americans are consuming more calories on average,[182] a summary of seven studies has shown that fat people do not necessarily eat more than lean

[179] Mokdad et al., "The Continuing Epidemics," 1195-1200.
[180] Bacon, *Health At Every Size,* 155.
[181] Garner and Wooley, "Confronting the Failure," 733.; Vartanian and Smyth, "Primum Non Nocere," 51.
[182] "Profiling Food Consumption in America," *USDA*, accessed March 1, 2016, http://www.usda.gov/factbook/chapter2.pdf.

people.[183] Based on these studies, Bacon explains the general upward trend in American weight by suggesting that we are all eating more and some of us are genetically predisposed to store those calories as fat.[184]

Our genetics, [185] environment, [186] and lifestyle[187] affect our weight via countless mechanisms. Many complementary ideas exist concerning the causes of obesity, and there is significant potential for false assumptions of causation, because many correlative relationships could flow either way (e.g. stress contributes to obesity and obesity contributes to stress).[188] There are theories that center on insulin,[189] leptin,[190] chronic stress,[191] lack of sleep,[192] gut bacteria,[193] environmental pollutants,[194] and

[183] National Research Council, *Diet and Health: Implications for Reducing Chronic Disease Risk*, Washington, DC: The National Academies Press, 1989, 144.; Susan C. Wooley and Orland W. Wooley, "Should Obesity be Treated at All?" *Psychiatric Annals* (1983): 884-885.
As cited by Bacon, *Health At Every Size,* 68.; Leanord E. Braitman, E. Victor Adlin, and John L. Stanton, Jr., "Obesity and Caloric Intake: The National Health and Nutritional Examination Survey of 1971-1975," *Journal of Chronic Diseases* 38 (1985): 727-732.
[184] Bacon, *Health At Every Size,* 68.
[185] Bacon, *Health At Every Size,* 142.; Garner and Wooley, "Confronting the Failure," 748.
[186] Bacon, *Health At Every Size,* 55, 58-59, 102.
[187] Bacon, *Health At Every Size.*
[188] Muennig, "The body politic," 1-10.
[189] Taubes, *Why We Get Fat*.
[190] Wadden et al., "Short- and Long-Term Changes in Serum Leptin," 214-218. As cited by Bacon, *Health At Every Size*, 22.; Laessle, Wurmser, and Pirke, "Restrained eating and leptin levels," 45-47.
[191] N. Nishitani and H. Sakakibara, "Relationship of obesity to job stress and eating behavior in male Japanese workers," *International Journal of Obesity* 30 (2006): 528-533.; Eric J. Brunner, Tarani Chandola, and Michael G. Marmot, "Prospective Effect of Job Strain on General and Central Obesity in the Whitehall II Study," *American Journal of Epidemiology* (2007): 1-10. As cited by Bacon, *Health At Every Size,* 55.
[192] Jesus Vioque, Alberto Manual Torres-cantero, and Joan Quiles, "Time spent watching television, sleep duration and obesity in adults living in Valencia, Spain," *International Journal of Obesity* 24 (2000): 1683-1688.; R. von Kries et al., "Reduced risk for overweight and obesity in 5- and 6-y-old children by duration of sleep – a cross-sectional study," *International Journal of Obesity* 26 (2002): 710-716.; Gregor Hasler et al., "The Association Between Short Sleep Duration and Obesity in Young Adults: a 13-Year Prospective Study," *SLEEP* 27 (2004): 661-666.; Neeraj K. Gupta et al., "Is Obesity Associated With Poor Sleep Quality in Adolescents?" *American Journal of Human Biology* 14 (2002): 762-768. As cited by Bacon, *Health At Every Size*, 65.
[193] Justin Sonnenburg and Erica Sonnenburg, *The Good Gut: Taking Control of Your Weight, Your Mood, and Your Long-term Health*, New York: Penguin Random House, 2015.
[194] Felix Grün and Bruce Blumberg, "Environmental Obesogens: Organotins and Endocrine Disruption via Nuclear Resonance Signaling," *Endocrinology* 147 (2006): 50-55.; Felix Grün and Bruce Blumberg, "Perturbed nuclear receptor signaling by environmental obesogens as emerging factors in the obesity crisis," *Review in Endocrine and Metabolic Disorders* 8 (2007): 161-171.; Felix Grün, "Endocrine-Disrupting Organotin Compounds Are Potent Inducers of Adipogenesis in

even in utero dieting.[195] Given the myriad potential explanations and the lack of definitive proof for any one of them, medical professionals have a responsibility to represent honestly the multifactorial nature of weight in discussions with their patients.

Addressing our society's unhealthy relationship with fat (both adipose tissue and the macronutrient) will take serious time and effort. This cannot be done by medical doctors alone. We need interdisciplinary healthcare teams to address weight stigma on two fronts: societally and individually. Efforts to change how society treats and talks about fatness could help minimize societal weight stigma, while individualized healthcare is vital to support patients as they heal from the negative effects of weight stigma.

One study, which examined potential avenues to prevent and address eating disorders, found support for an array of multi-front approaches. These included eating disorder prevention programs in schools, education for sports coaches on eating disorder prevention, and anti-bullying effort in schools.[196] Similarly, multiple simultaneous approaches are necessary when attempting to eliminate weight stigma and mitigate its effects.

Individualization of healthcare, foundational to helping people discover a healthy sense of balance for themselves, is difficult to achieve in our current medical paradigm, which relies heavily on doctors who are only able to spend fifteen minutes with each patient. In order to shift the burden away from physicians, we need a movement towards interdisciplinary healthcare teams. These teams could include teachers,

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Vertebrates," *Molecular Endocrinology* 20 (2006): 2141-2155. As cited by Bacon, *Health At Every Size,* 58-59.

[195] M. H. Vickers et al., "Sedentary behavior during postnatal life is determined by the prenatal environment and exacerbated by postnatal hypercaloric nutrition," *American Journal of Physiology - Regulatory, Integrative and Comparative Physiology* 285 (2003): 271-273. As cited by Bacon, *Health At Every Size,* 55.

[196] Rebecca M. Puhl et al., "Setting policy priorities to address eating disorders and weight stigma: views from the field of eating disorders and the US general public," *BMC Public Health* 14 (2014): 12.

therapists of all sorts, coaches, nurses, chiropractors, nutritionists, naturopaths, and countless others who "could assist in the time-efficient and comprehensive management of patients with overweight and obesity."[197]

Perhaps most importantly, we need therapists who focus on helping clients regain their ability to trust their bodies. Years of chronic dieting, often fueled by self-hate and self-denial, will make it difficult for many to let go of the desire to count calories and trust their bodies. Long term dieting is a type of disordered eating, and some chronic dieters will suffer from symptoms similar to eating disorders, such as obsessing over calorie counts, periodic starvation, and/or binging. Researchers in the 1991 Garner study concluded, "The quantity, quality, and spacing of meals to approximate a normal eating pattern may have to be completely relearned."[198] Some fat patients and chronic dieters may struggle with issues of self-worth, and will have a difficult time learning how to genuinely care for themselves. We need healthcare professionals who specialize in addressing the issues that go with moving from a weight-normative to a weight-inclusive approach to health.

*Implementing HAES in Society*

While the medical world is an excellent place to start addressing weight stigma with HAES principles, we need strategies to counter weight stigma in society as well. One unique aspect of HAES is its emphasis on the social justice struggle surrounding weight and health. Recognizing that some groups are privileged in their access to health-promoting resources, HAES suggests that we "need to provide sufficient resources in the environment that enable individuals to engage in health-promoting behaviors,"[199] rather than blaming underprivileged groups for their poor

[197] K.H. Pietäilinen et al., "Does dieting make you fat? A twin study," *International Journal of Obesity* 36 (2012): 456.
[198] Garner and Wooley, "Confronting the Failure," 764.
[199] Puhl and Heuer, "Obesity Stigma," 1025.

health. Further, fat people suffer extensively from weight-based prejudice, personally and professionally. Employers, as well as classmates and potential romantic partners, often assume that fat people are gluttonous and lazy, unable to put in hard work or control themselves. Addressing medical and societal weight stigma will help counter these harmful stereotypes, but weight should also be a legally protected category.[200] Employers should not be able to discriminate against people based on stereotypes about their weight, and adding weight as a protected anti-discrimination category will draw attention to the weight stigma currently pervading our society.

An important initial step in addressing societal weight stigma will be the development of public health campaigns that target the negative stereotypes surrounding fat people. As previously discussed, public health campaigns should, at the very least, avoid contributing weight stigma. However, if we hope to eliminate weight stigma, public health campaigns need to directly counter the ideas that fatness is inherently unhealthy, that losing weight is always healthy, and that fat people are lazy and gluttonous. A discussion of specific public health campaign models consistent with HAES is outside the scope of this paper and should be explored in a different project.

*Conclusion*

The nature of our nation's discourse concerning weight leads many Americans to fear fat rather than engage in healthy behaviors. When popular culture harms Americans' health, it is troubling. When medical professionals do the same, it is unacceptable. Weight stigma in medical settings harms fat patients and legitimizes societal weight stigma. Therefore, by dismantling medical weight stigma, health professionals can help address societal weight stigma.

[200] Bacon, *Health At Every Size,* 259.; Puhl and Heuer, "Obesity Stigma," 1025.

Medical professionals have a responsibility to question a system that fails their patients, and to find a new solution. Our current approach to weight is severely lacking, and HAES may offer tools for improvement. We need a reminder that fat and healthy are not mutually exclusive categories. We need to recognize that our health relies on us caring for our bodies, by listening to our hunger and satiation, by moving our bodies, and by cherishing ourselves. We need a healthcare model that invites everyone to improve their health, by meeting them where they are. Health At Every Size offers a potential foundation for this promising healthcare model.

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