

Summary of Commentary

**Wellness programs should never use BMI – or any-weight-related measure - as a metric that plays a role in incentivizing or penalizing employees.**

Supporting Facts

Substantial evidence suggests that **body fat is biologically regulated** and not controllable to the degree commonly assumed. The classical notion that body weight is a function of only two controllable variables – food intake and calories expended in exercise – has been revised to a much more complex formulation involving a well regulated setpoint, in large part genetically determined. An individual's setpoint resists down-regulation (meaning it defends against sustained weight loss), though it is vulnerable to up-regulation (meaning it is lax in preventing weight gain). Many environmental conditions have been identified as contributing to the rise in population obesity that has occurred over the last few decades. For example, it is well established that viruses and bacteria, as well as dioxins, pesticides, and other environmental toxins, alter endocrine function in such a way that increases fat deposition. Scientists have even coined a name for these compounds: "obesogens." There is also evidence that implicates dieting as a contributor to upregulation. Other evidence suggests that increasing carbon in the environment (a factor in global warming) may cause people to more readily store bodyfat. Given these influences, there is little support that an individual's body fat is within their control. Rather, an individual's weight merely reflects their particular biological response to lifestyle and environmental factors. In other words, some people are genetically predisposed to store fat under current lifestyle and environmental conditions while others are less efficient at fat storage. While research suggests that those who exercise regularly may average a few pounds less than those that don't, other research suggests that the eating habits of the fat and thin aren't remarkably different.

The assumption that fat people can lose weight if only they exercise sufficient willpower is likewise countered by the evidence. The fact remains that **there are no known treatments that are successful in making fat people lose weight.** Eating well and exercising regularly have been well-established to result in short-term weight loss, however, long-term follow-up studies document that the majority of individuals regain virtually all of the lost weight, even if they maintain their diet or exercise program. There is a paucity of long term data regarding surgical interventions, but emerging results indicate gradual post-surgery weight regain as well.

A growing understanding of biological and bio-behavioral mechanisms indicates that energy balance naturally thwarts weight-loss attempts. Energy balance is controlled by a feedback loop through which signals reflecting bodyfat stores are sensed by the hypothalamus, which in turn generates signals that modulate food intake and energy use. The body responds with regulatory mechanisms both conscious and instinctive. Those that elicit our participation may include an increase in appetite (which helps explain why so many individuals abandon diets). Below the level of conscious control, a lowering of basal metabolism can cause weight gain even for those who stick to a calorie-restricted diet.

**It is also well-established that focusing on weight loss is detrimental to health – and more likely to result in weight gain.** The most common result of conventional weight loss practices is weight cycling, which is known to increase morbidity and mortality risk. Ironically, many studies confirm that weight loss attempts strongly predict future weight *gain*. The theory is this: Given the commonness of food shortages in human prehistory and history, natural selection favored individuals who could effectively store calories in times of surplus. Over the course of evolution, metabolic adaptation gave some individuals a predisposition toward obesity, though without

conditions (such as food abundance) that would make them fat. Initially this was a very effective survival technique, allowing humans to endure famines over the course of evolution. Since the body perceives dieting as a form of starvation, the repetitive dieting common today may trigger this atavistic response and upregulate the natural setpoint, explaining at least partially the increase in population “obesity.”

Another danger of making weight a basis for determining legal protections is that elevating the value of thinness exacerbates already widespread anxiety about weight. Evidence on eating disorders indicates they are triggered and worsened by an emphasis on weight control and thinness. Prospective studies associated body dissatisfaction with binge eating and other eating disordered behaviors, as well as lower levels of physical activity.

Another unintended consequence of the thinness ideal is an increase in stigmatization and discrimination against fat individuals. Discrimination based on weight now equals or exceeds that based on race or gender. Research indicates that stigmatizing fat demotivates, rather than encourages, changes in health behaviors. Adults who face weight stigmatization and discrimination report eating more, avoiding exercise, and postponing or avoiding medical care (for fear of experiencing stigmatization). Even when they do see medical professionals, fat people are likely to suffer from stigmatization. Bias among practitioners is well-documented, and results in lower quality care – again, an undermining of the legislation’s desired result.

#### The New Paradigm in Addressing Weight Concerns

There is a growing trans-disciplinary movement called **Health at Every Size® (HAES) which shifts the focus from weight to health**. A HAES approach supports improved health behaviors for people of all sizes without using weight as a mediator; weight loss may or may not be a side effect. I am one of several researchers who have conducted clinical trials comparing a HAES intervention to conventional weight-focused treatment. Evidence from these trials indicates that a HAES approach is associated with statistically and clinically relevant improvements in physiological measures (e.g. blood pressure, blood lipids), health behaviors (e.g. physical activity, eating disorder pathology) and psychosocial outcomes (e.g. mood, self-esteem, body image). No studies found adverse changes. In other words, trial participants supported in a HAES approach (which includes education in size acceptance, intuitive eating, and a championing of enjoyable exercise) experienced greater improvements in medical and lifestyle measures than control groups following conventional diet and exercise recommendations.

**Given the evidence of the success of a HAES approach, as well as the evidence that a weight focus is not only ineffective at producing thinner, healthier bodies, but also damaging, it is imperative that we shift our focus from weight to health.** Everyone should have the right to inhabit our bodies and be treated equally under the law. Whether viewed from the perspective of social justice or health improvement, the evidence is clear. For all of these reasons, **I urge you to consider that the majority of employer-based wellness programs are not supported by scientific evidence and violate, or are poised to violate, anti-discrimination laws. Reconsideration is critical in creating a kinder, more compassionate and more just world.**

Scientific citations can be found in the following peer-reviewed publication:

Bacon, L., & Aphramor, L. Weight Science: Evaluating the Evidence for a Paradigm Shift, *Nutrition Journal*, 2011, 10(9). Available for free download at <http://www.nutritionj.com/content/10/1/9>.

**About the Commenter, Linda Bacon, PhD**

I am a scientist and internationally recognized authority on weight and health. A nutrition professor and researcher, I hold graduate degrees in physiology, psychology, and exercise metabolism, with a specialty in nutrition. I have conducted federally funded studies on diet and health, and published in influential, peer-reviewed journals.

I earned my PhD in physiology from the University of California, Davis, where I currently serve as an Associate Nutritionist. My research has been supported by grants from the United States Department of Agriculture and the National Institutes of Health.

My latest scientific review, published in *Nutrition Journal*, has been influential in challenging the public health discourse and ranks as “most-highly accessed.” It examines the scientific literature on weight and health and determines that weight-focused public health policy is ineffective and damaging. Its conclusions call for a paradigm shift towards evidence-based health care based on non-discrimination.

My advocacy for Health at Every Size® has a large following on the international lecture circuit and in social media. I am the author of a book, *Health at Every Size: The Surprising Truth About Your Weight*, that *Prevention Magazine* considers the “Bible” of the alternative health movement. A top seller among Amazon’s health titles, it is favorably reviewed by both health professionals and lay people. My recent interviews include media outlets such as the *New York Times*, *London Sunday Times*, *ABC Nightly News* with Diane Sawyer, and magazines including *Prevention*, *Glamour*, *Cooking Light*, and *National Geographic*. Well known for my political and social commentary, I write a “health expert” column for the *Huffington Post*.

I represent my own views, and also write on behalf of the Association for Size Diversity and Health, an international organization of health professionals and advocates committed to promoting education, research, and services that enhance health and well-being, free from weight-based assumptions and weight discrimination, and the National Association to Advance Fat Acceptance, a non-profit civil rights organization dedicated to ending size discrimination in all of its forms. One of the objectives of these two organizations is to encourage the adoption of governmental, business, and social policies consistent with this commitment.

Synopsis of Bacon’s HAES research and its implications on reverse.

I examined the question of how to improve the health and well-being of fat people. I conducted a randomized controlled study, which is considered to be the gold standard in research. The research was funded by the United States Department of Agriculture and the National Institutes of Health and its results have been published in well-respected scientific journals.

The study participants were women who met the medical criteria for obesity and had a history of struggling with their weight.

Half of the women were randomly assigned to a control group where they were given the conventional message that their body fat was cause for concern and were supported in attempting to reduce their weight via commonly accepted methods, including a moderate calorie restriction diet and regular exercise.

The others were assigned to a group called Health at Every Size, and were supported in accepting and appreciating their bodies. They were taught techniques to better hear and respond to their internal cues of hunger, fullness and appetite and encouraged to make choices that helped them feel good, as opposed to those that were purported to help reduce their weight.

As they learned more about the science behind weight loss, why some bodies naturally weigh more than others, why conventional recommendations to diet or exercise may not have much impact on weight in the long run, and that weight is not such an important factor in measuring one's health or worthiness anyway, an incredible transformation occurred.

In the end, the women participating in the Health at Every Size program emerged with better physical health, higher self esteem and a relationship with food that's as healthy as their improved cholesterol and blood pressure levels. The women participating in the diet program experienced none of these benefits, and regained the weight they initially lost. Their self-esteem plummeted. Another large difference between the groups is that 40% of the women in the conventional diet program dropped out, compared to only 8% dropout in the Health at Every Size group.

What does this have to do with legislation? It tells us that people are less likely to take good care of themselves when they view their bodies as wrong, when they don't feel entitled to fully inhabit their bodies. On the other hand, when people are supported in appreciating their bodies, regardless of size, they move on and make better health choices.

**We can support our citizens in good health by ensuring that fat people have the right to inhabit their bodies with equal protection under the law.**

Linda Bacon, PhD