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The Government's role in addressing population obesity: Past and future

Executive summary

- Despite billions of pounds spent on obesity-prevention initiatives and public health campaigns in the UK alone, it should be evident to any observer that these initiatives are not working.
- Weight management efforts are more likely to result in weight gain, often beyond initial starting point, with a worse metabolic profile, than they are to produce lasting weight loss; the literature on weight-loss research is often misleading at best and intentionally manipulated at worst to render the findings more palatable.
- Individual-level strategies to combat obesity are not only ineffective but worsen population health, perpetuate and expand existing health inequalities, and are fundamentally unethical.
- Weight stigma (and other forms of prejudice) is also linked to worse health outcomes in its own right.
- Top-down leadership is needed to deliver a weight-neutral approach in public health policy, supported by legislative changes. Such an approach would be more fiscally responsible, more ethical, and more likely to deliver the desired improvements in population health.

About the Author

Dr Angela Meadows is a Lecturer (Teaching and Research) in Psychology at the University of Essex in Colchester, UK. Her research specialism is weight-related stigma and its impact on health and wellbeing, which she considers at both the individual level (attitudes and behaviours) and society level (sociocultural and policy environment). She has been

working in the field of weight stigma for 10 years and is recognised internationally as a leader in the field. In 2013, she founded the interdisciplinary Weight Stigma Conference, now an annual 2-day event drawing international scholars and practitioners from the fields of public health, medicine, psychology, sport and exercise science, education, business, law, social sciences, and others to consider research, policy, and practice around the issue of weight stigma. This evidence is submitted in an individual capacity. Dr Meadows has no conflicts of interest to declare.

What we've been getting wrong:

- (i) The **current focus on obesity reduction is not evidence-based** (Calogero et al., 2019; Hunger et al., 2020). We have been trying and failing to reduce 'obesity' for 60 years, from the superficially straightforward (eat less, move more) to the absolutely barbaric (recently developed magnetic jaw clamps), with little effect. Despite investment of billions of pounds (worldwide), populations are getting fatter. **Dieting (or caloric restriction) is more likely to result in weight gain**, often beyond initial starting point, with a worse metabolic profile, than it is to produce lasting weight loss; the **literature on weight-loss research is often misleading at best and intentionally manipulated at worst to render the findings more palatable** (Mann et al., 2007; Rothblum, 2018).
- (ii) In a review of randomised controlled dieting studies with at least one year follow-up, **most did not produce improvements in metabolic health outcomes**, and those that did were not related to amount of weight lost, suggesting other factors are likely to be causing the improvements, most importantly, increases in physical activity levels (Tomiya et al., 2013). However, due to messaging that weight loss is needed for improved health, the physiological effects of dieting that tend to promote weight regain, and the lack of effectiveness of exercise (at least at safe levels) for driving weight loss, many dieters become frustrated with lack of progress and stop exercising, with previously recorded health benefits being lost (Thomas et al., 2015).
- (iii) **Evidence from twin studies** confirms that intentional weight loss attempts are linked with increased BMI in a dose-dependent

manner; that is, every weight loss attempt is linked with bounce-back weight (Pietilainen et al., 2012). This is true of monozygotic twins who share identical DNA, confirming that is not simply that fatter people tend to diet more, but that **dieting itself is linked with weight gain**, through a series of mechanisms. One such mechanism is **adaptive thermogenesis**, whereby **a complex interplay of endocrine signals encourage biochemical and physiological changes that encourage weight regain**. These adaptations include decreases in fat burning, increases in fat storage, changes in appetite regulation, and disproportionate (for the level of weight loss) changes in energy expenditure (Sumithran & Proietto, 2013; Tremblay et al., 2013) – what lay people think of as ‘messing up your metabolism.’ These changes are maintained after the initial weight-loss period, meaning that **every diet attempt will likely result in further weight gain and even lower likelihood of weight loss in future**. The mechanisms involved in adaptive thermogenesis have been confirmed in in-patient studies, where participants’ dietary intake and energy expenditure can be objectively monitored (Hinkle et al., 2013; Rosenbaum & Liebel, 2010).

- (iv) Thus, the widespread failure of anti-obesity efforts to deliver on their promise is not entirely surprising. **Existing policy directions are based on flawed evidence** that often does not stand up to scrutiny (Aphramor, 2010; Mann et al., 2007), or which has been carefully framed to support a particular, sometimes politically expedient, agenda (Baum & Fisher, 2014; Schorb, 2021; Thille, 2018). Further, the **influence of big pharma in driving this narrative** (Bombak et al., 2022; O’Hara et al., 2024), particularly in recent years, **raises considerable ethical issues** for healthcare professionals and policy makers alike.

- (v) Indeed, the promotion of an **anti-obesity policy that focuses on individual behaviour change** is not only **ineffective at improving health** at either an individual or population level, but are, at best, inappropriate and misguided (Medvedyuk et al., 2017; O'Hara & Taylor, 2018; Pausé, 2017), and at worst, it has been argued, in violation of over a dozen Articles of the Universal Declaration of Human Rights (O'Hara & Gregg, 2012).

The role of weight stigma in the obesity–health equation

- (vi) It is true that higher-weight status is linked with a wide range of health conditions, including heart disease, diabetes, hypertension, some cancers, mental health issues, poor obstetric outcomes, and others, as well as premature mortality. Yet, **exposure to stigma, including weight stigma but also racism and other forms of stigma**, is a chronic stressor for affected population and is also **linked to worse metabolic health outcomes, birth outcomes, and premature mortality** (Smart Richman & Hatzenbuehler, 2014). That is, all **the negative health outcomes we associate with obesity, are also seen in racial minorities and other stigmatised groups**.
- (vii) This raises the question of whether the weight is the driver of ill health or whether living in an environment where your body is constantly a target may be driving these phenomena. While it is increasingly difficult to find cultures and countries where higher-weight bodies are idealised, historical data suggest that **when fat bodies are not stigmatised, the adverse relationship between weight and health is severely weakened or eliminated entirely** (Muennig, 2008).
- (viii) **Higher-weight people face weight stigma (prejudice and discrimination based on body size) in all aspects of daily life**, including education, employment, and especially healthcare

(Phelan, 2015; Puhl & King, 2013; Shaw & Meadows, 2022). A recent examination of longitudinal trends in prejudicial attitudes toward a range of stigmatized groups found that between 2007 and 2016, both explicit and implicit anti-fat attitudes either remained stable or worsened, even as stigma toward many other oppressed groups demonstrated a downward trajectory (Charlesworth & Banaji, 2019). Yet, **weight is not a protected category under the Equality Act 2010** (Meadows et al., 2021).

- (ix) Weight stigma is not about “being mean to fat people” – stigma is a structural issue and is a fundamental cause of health inequality in its own right (Goldberg, 2014; Hatzebhuehler et al., 2013).
- (x) Exposure to **weight stigma has been linked with double the risk** of having high allostatic load– a marker of **dysregulation**, representing the ‘wear and tear’ our environments have on our bodies and health – ten years later (Vadiveloo & Mattei, 2017). Weight stigma has also been linked to an array of **chronic medical conditions** (Udo et al. 2016), and **premature mortality** (Sutin et al, 2015), even after controlling for other likely explanations.
- (xi) Further, **weight stigma contributes and magnifies existing health disparities**. High-weight status tends to be more prevalent in lower socioeconomic groups and certain racial and ethnic groups, as are upward trajectories in BMI (Ailshire & House, 2011;). Weight stigma also varies by gender, socioeconomic status and race, leading to compound forms of oppression (Ciciurkaite & Perry, 2018; Makowski et al., 2019), and multiply stigmatised individuals face worse health outcomes (Grollman, 2014; Udo & Grilo, 2017).
- (xii) Pursuit of **anti-obesity policies focused at individual-level behaviour change** not only utilises scarce resources on provably ineffective strategies, but **worsen population health inequalities** and **increase stigma** against the most

marginalised groups, making such policies **fundamentally unethical** (Goldberg, 2012; Medvedyuk et al., 2017).

- (xiii) Weight stigma in healthcare also contributes directly and indirectly to poorer health outcomes in higher-weight people. Many **higher-weight people report negative experiences when accessing healthcare** (Haque & Meadows, 2023; Phelan et al., 2015). These range from **offhand remarks** that may not have been intended to cause harm, to **blatant fatphobic treatment**, and **incorrect or negligent care**. Perhaps most common is **concerns being attributed to weight and not taken seriously, sometimes with fatal results** (Chrisler et al., 2017; Gabriel et al., 2006; Phelan et al., 2015). In other cases, individual clinicians or local authorities may **deny access to some treatments for higher-weight patients**, despite lack of evidence that such an approach is warranted for health reasons (e.g., MacLaughlin & Campbell, 2019).
- (xiv) Unsurprisingly, **fear of being stigmatised or shamed** can result in people avoiding healthcare, especially in non-emergent situations. This is associated with **reduced uptake of preventive screening**, including for a range of cancers, patients **presenting with more advanced disease**, and **increased usage of more expensive emergency healthcare** options (Phelan et al., 2015). In the current COVID climate, some data from the **2009–2011 H1N1 influenza pandemic** are worth consideration. A review of 22 studies involving over 25,000 laboratory-confirmed H5N1 patients, suggested that 'obesity' was associated with an 81% increased risk of fatality and 67% increased risk of critical complications. The effect disappeared when accounting for early anti-viral treatment; in other words, **delay in accessing healthcare**, for whatever reason, was **enormously costly for healthcare systems (in monetary**

and resource terms) and likely cost a lot of heavier people their lives (Sun et al., 2016).

- (xv) Women with high levels of **internalised weight stigma** experience greater body-related shame, which is in turn **associated with healthcare-stress, and healthcare avoidance** (Mensinger et al., 2018). Even something as simple as the prospect of being weighed can cause people to avoid going to the doctor; however, women with higher body appreciation, i.e., who value their bodies more, irrespective of their BMI, are less likely to avoid accessing healthcare for this reason (Cook et al., 2020).

- (xvi) Pervasive anti-fat rhetoric in society means that people of all body shapes and sizes are considering their bodies through a lens of fat hatred – whether they are already considered fat or are afraid of becoming so. **Anti-fat attitudes have been recorded in children as young as three** (Puhl & Latner, 2007), and hospital admissions for children with eating disorders were up 20% in 2019–2020 over the previous year. **One in eight of over 19,000 hospital admissions with a diagnosis of eating disorder in England in 2018–2019 was a child under the age of 16** (NHS Digital, 2019). Figures for 2020 and 2021 are higher still (NHS Digital, 2022).

- (xvii) Contrary to the widespread belief that youngsters having an accurate perception of their overweight status will be a good thing – leading to behaviour change and weight loss, being labelled as too heavy has the opposite effect. In a large US study of approximately 2000 adolescent girls, **being labelled as ‘too fat’ at age 10** by family, friends, or teachers, **predicted being in the ‘obese’ BMI category at age 19, nearly a decade**

later even controlling for their BMI at the start (so again, this result remains true independent of the girls' actual starting weight) (Hunger et al., 2014). Those that had ever been labelled as too fat by the time they were 14 **engaged in more unhealthy weight control behaviours and disordered eating up to five years later, including fasting, forced vomiting after eating, use of laxatives, taking diet pills (e.g., amphetamines), and smoking** (Hunger et al., 2018). In a study of 113 female university students, higher-weight students who were labelled as 'overweight' had **greater internalised weight stigma** (see next section) than those told they were not 'overweight,' more **negative emotional responses**, but **no increase in intentions to diet** (Essayli et al., 2017).

(xviii) **Internalised weight stigma** – when people devalue themselves because of their weight, is linked to a **wide range of negative psychological, physical and behaviour outcomes in men, women, children, and across the BMI spectrum**. These include **anxiety, depression, low self-esteem, reduced health-related quality of life, and suicidality; disordered eating**, including **binge eating** and **purging; motivation to avoid exercise, reduced exercise self-efficacy** (the belief that exercise is something they can be successful at) and **reduced exercise enjoyment** – two of the most important predictors of actually engaging in exercise, and **no increase in exercise behaviour** (some studies find no effect, others find reduced physical activity; none link internalised weight stigma to increases in physical activity; and a study of 178 'obese' adults in a weight-loss trial found higher internalised weight stigma was associated with **increased likelihood of having metabolic syndrome, a cluster of risk factors for cardiovascular**

disease (Brochu et al., 2021; Mensinger & Meadows, 2017; Pearl & Puhl, 2018; Rochas-Sánchez et al., 2022).

- (xix) Anti-obesity campaigns have been fraught with both overt and more subtle anti-fat messaging. **Anti-obesity campaigns not only fail to encourage higher-weight people to engage in healthy behaviour or to lead to weight loss, but can have the opposite effect** (Hunger et al., 2020). They also perpetuate the notion that weight is completely under individual control, 'overweight' is problematic – to the individual and to society – and that higher-weight people are to blame for not remedying their condition (Hunger et al., 2020). As long as higher-weight bodies are problematised in health campaigns, people will internalise that message. **It is not possible to target obesity without causing harm**, both psychological and physical.
- (xx) Several large studies are now showing that simply **being unhappy about your weight** can **predict** who will be at **increased risk of mental and physical ill health** (Muennig et al., 2008) and even who will go on to develop **diabetes, heart disease, or other metabolic problems** over time (Wirth et al., 2014; Wirth et al., 2015). For example, **in a longitudinal study of nearly 10,000 adults, people who were unhappy about their weight at the start of the study were 83% more likely to develop diabetes during the follow-up period. The comparable risk for having a family history of diabetes was only 46%** (Wirth et al., 2014). **Those who were weight dissatisfied at the start and the end of the study – i.e., chronic weight dissatisfaction, had nearly three times the risk of developing diabetes compared with those who were satisfied at both time points. Interestingly, those who started out unhappy about their weight but who were more accepting of their bodies at the end of the study were at no increased risk compared with those who were satisfied all along.** In

all of these studies, the results remained the same after controlling for BMI. What this means is that it is not just that heavier people are more unhappy with their bodies—**whatever your weight, being unhappy with your body causes long-term mental and physical health problems.**

- (xxi) Randomised controlled studies of **weight-neutral health interventions** – those that focus on holistic wellbeing, self-acceptance, enjoying movement, and so on, reliably **deliver improved psychological and physical health outcomes compared with weight-focused interventions** (Ulian et al., 2018; Hunger et al., 2020). However, large-scale funding for such studies is less available than funding for studies promising weight-loss as a potential outcome, and the existing studies therefore tend to be relatively small.

What we should be doing instead

- (xxii) In perhaps the most **in-depth analysis of national anti-obesity policies**, a team from the School of Health Policy and Management at York University, Toronto, concluded “conformity to dominant models of the obesity and health relationship by health sciences researchers, public health workers, and the media lead to activities **that rather than promoting health, actually threaten it**” and concluded that the only way forward was to “call for an end to seeing obesity as a significant public health issue” (Medvedyuk et al., 2017).
- (xxiii) The single most critical consideration in addressing the potential policy role in addressing obesity, one that is often overlooked, is that **we are not actually trying to reduce ‘obesity’ – we are trying to reduce hypertension, heart disease, diabetes, cancers**, and so on. ‘Obesity’ has become a proxy for this configuration of conditions often associated with higher body weight, but they are not interchangeable.

(xxiv) The goal should not be to achieve a thin population, but to achieve a healthy population. For this, true vision and leadership will be required. But we are in a position to lead the world in improving population health.

(xxv) From a policy perspective, this is good news. **We do not need to reduce 'obesity' to improve health.** Markers of metabolic health and long-term health outcomes can be improved in the absence of weight loss by increasing physical activity, getting adequate good-quality nutrition, drinking only in moderation, and refraining from smoking (e.g., Matheson et al., 2012; Ulian et al., 2018). These behaviours are likely to be more malleable and sustainable than achievement of permanent weight loss.

(xxvi) Further, an analysis of a nationally representative US sample of 40,000 individuals in the 2005–2012 National Health and Nutrition Examination Survey, found that more than 30% of 'normal weight' adults (BMI 18.5–24.9 kg/m²) were metabolically unhealthy (based on cholesterol, insulin sensitivity, inflammatory proteins, etc.), whereas nearly half of 'overweight' adults (BMI 25–29.9 kg/m²) and 29% obese adults (BMI ≥ 30 kg/m²) were metabolically healthy. To put these numbers into perspective, **using BMI category as a proxy for metabolic health would equate to approximately 75 million Americans being misclassified (Tomiyama et al., 2016), or over 16 million UK adults** based on the latest Health Survey for England BMI data. Metabolically unhealthy 'normal weight' people have over 3 times the risk of all-cause mortality and/or cardiovascular events compared with metabolically healthy 'normal weight' – a figure higher than that for metabolically unhealthy 'overweight' and 'obese' individuals (Kramer et al., 2013). In fact, this the metabolically unhealthy 'normal weight' group tends to have the worst health outcomes in all studies that include them, but in

many, the analyses are not reported, and where they are, the findings are rarely noted in study abstracts or discussions, focusing solely on 'obesity.' The **equation of weight and health means that the costs of 'treating' healthy individuals, and under-diagnosing unhealthy individuals, are being borne by our healthcare system and by those whose illnesses are not being detected in a timely fashion resulting in more severe disease and worse prognosis.**

(xxvii) The staggering investment in anti-obesity research, both worldwide and in the UK, has yet to produce dividends in terms of weight reduction or improved health. The **current approach is not fit for purpose; it is expensive, ineffective, and magnifies existing health disparities.**

(xxviii) While the idea of abolishing the UK's "anti-obesity" agenda may seem farfetched, **we have an opportunity to do something better, that will deliver on the goals and missions of the government: to "lead the debate on protecting and improving global and domestic health."**

Given the current anti-obesity agenda, this will require a complex, multi-level shift in perspective away from a weight-based agenda to one focused on improving health for the whole population. This will likely include not only changes to the policy framework but also financial and legislative consideration. Top down-direction will be needed for systematic change to be effective. In particular, **integrated system-wide changes are needed across the NHS, NICE, Health Education England, and the Health Research Authority.**

(xxix) The **usefulness and cost-effectiveness of the National Childhood Measurement Programme should be revisited.**

Ideally, BMI surveillance as a measure of health should be scrapped and more useful measures of children's health collected. Reporting of children's weight category to parents should be

abolished (see Section 1-iii). Additionally, **body size should be incorporated into any diversity training provided in schools, along with media literacy training.**

(xxx) **Funding** should be made available **for rigorous exploration of weight-neutral approaches.** Such funding would enable **larger trials, longer follow-up periods, and the development and evaluation of scalable intervention programs.** These research endeavours are needed if the weight-neutral perspective is to grow beyond a niche practice into feasible and sustainable public health policies that eliminate fatphobia and promote health equity for all.

(xxxii) **Weight should be included as a protected category in anti-discrimination legislation.**

(xxxii) It is also imperative that governments and policy **recognise and target structural inequalities.** Individual health behaviours, whilst delivering a degree of health improvement, nevertheless explain only a small proportion of the variance in population health outcomes. Effective health policy must recognise the **social and structural determinants of health** and address existing **disparities based on race, ethnicity, sex, sexual orientation, health status** etc. Policies and campaigns that target individual behaviour change should not be used at the expense of systemic change.

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