

# Living Well with a Healthy Weight: A Case of the Body Mass Index as a Governing Practice

Piotr Maron

*Faculty of Arts, Design and Architecture, Centre for Social Research in Health, University of New South Wales, Australia/ p.maron@unsw.edu.au*

## Abstract

This article troubles the intervention of the Body Mass Index (BMI) calculator from the National Health Service (NHS) website ([www.nhs.uk](http://www.nhs.uk)) through a situated experiment involving my body. Specifically, it demonstrates how the assemblage of online location, the BMI calculator, and my male body are entangled in generating political effects for my healthy eating, healthy weight and wellbeing. By exploring the NHS website's online intervention tool, I present how evidence-based repertoires allow the production of collateral realities of my body governed by my BMI result.

This provokes a discussion about how different effects of numbering governance are possible through applying care-based intervention practices and through a situated intervention. One response to the outcomes of this analysis might be the possibility to change the logics and mechanics of an Internet-based intervention from exercising specific, fixed and standardised norms to more carefully enacting care as situated and relational.

**Keywords:** the body mass index, intervention, situated experiment, male body

## Introduction

A sociological scholarship has theorised the Body Mass Index (BMI) as a governing object entangled in medicalisation leading to an 'obesity epidemic' (Fletcher, 2014; Monaghan, 2007); and a tool of institutionalised power (Colls and Evans, 2010; Evans and Colls, 2009). Critical obesity and fat studies accounts on the BMI have highlighted the detrimental effects of "promoting weight loss towards the BMI measure" (Dickson, 2015: 474), its co-construction of the obesity epidemic and overdramatization potential of the BMI index (Guthman, 2013), the inability of the BMI to account for complex socio-cultural arrangements (Burkhauser and Cawley, 2008) and a patient distrust in the

BMI score in relation to the measures of obesity (Kwan, 2012). Furthermore, critical digital health studies scholars conceptualised the BMI calculator as a token of broader digital health, self-tracking, or quantified-self initiatives (Lupton, 2013, 2016; Sanders, 2017). Generally, the BMI index facilitates and underpins the oppressive 'weight anxiety' (Dickson, 2015) and social exclusion of people that are 'too fat' (Monaghan, 2007). In that respect, Greenhalgh (2015, 2016) claims that in the US 'war on fat' has been transformed into the national spectacle mobilizing medical professionals, educators, scientists, families and fitness industry.



This work is licensed under  
a Creative Commons Attribution 4.0  
International License

This article adds to these discussions taking an inventive turn from digital health and obesity and fat studies scholarship, conducting a situated and embodied experiment with the BMI online intervention via the National Health Service (NHS) website. This is achieved by tinkering and intra-acting, instead of merely following with the BMI device to offer innovative ways of doing an online intervention and care. By extension, I build on Zuiderant-Jerak's (2015) argument of social sciences struggle between 'detachment and engagement' from the research subjects.

### **The Body Mass Index**

While the BMI is not the only algorithm used to quantify bodies in relation to weight or mass (Kouri et al., 1995; Schutz et al., 2002), it is one of few quantification tools to have been recognised, standardised, and implemented on a global scale (Fletcher, 2014).

A recent report by the Royal College of Psychiatrists in the United Kingdom reinforces the relevance of the BMI for public health, signposting the BMI number as an entry point for anorexic patients to receive medical services (Marsh, 2019). Relevantly, The United Kingdom and The United States launched national public service announcement campaigns to inform, fight, prevent and reduce the levels of obesity (Greenhalgh, 2012, 2015, 2016; Monaghan, 2007). Greenhalgh situates the BMI score as a governing object for young students life goals. She links 'war on fat' with increasing number of eating disorders among students who obsessively want to maintain a proper BMI (Greenhalgh, 2016: 549). Similarly, Gard and Wright's (2005) argue that the BMI metric inadequately accesses risks of obesity by amplifying the concern about body weight and solidifying the 'obesity epidemic'.

Aligning with biomedical, evidence-based approaches, the NHS has assigned a specific section of its website to provide an online space for a digital health intervention using the BMI device. The NHS website, which hosts the BMI calculator, is an instance of a nation-wide, online health intervention platform that offers self-care remotely through a digital device. As one of the biggest public health care providers globally, the NHS is particularly influential in shaping and impacting public opinion (Dayan et al., 2018).

The BMI calculator, and the NHS website, which hosts it, are intertwined in an assemblage of intervention in relation to weight and body image as a public health concern. The assemblage enrolls the online calculator, my body, eating practices, dieting, fitness routines, health risks, and quality of life. Furthermore, the BMI device, as a tool of health intervention, connects with broader evidence-based medicine (EBM) approaches, which materialise health governance through standardisation practices, including calculation, intervention, policy, guidelines, and protocols (Berg, 1997; Hoeyer et al., 2019; Timmermans and Berg, 2003).

Taking the problematisation of the BMI as a force of governmentality (Dickson, 2015; Gutin, 2018; Metzl and Kirkland, 2010) I demonstrate how autoethnography can be utilized as a methodology to conduct public health research. My argument is structured around an application of Jacques Lacan's psychoanalytic theory which I see as supporting and extending a critical understanding of the so-called obesity epidemic and related issues. I argue that the body mass index (BMI), I conduct a situated experiment investigating how the NHS website and the BMI calculator intervene on my body. I propose a new perspective on tinkering through interfering with the tool and shaking up the mechanics of its intervention while travelling through an online location. I then trouble the governing practices of the BMI calculator by proposing an evidence-making intervention (EMI) as an alternative framework for enacting care through an online intervention.

### **Approach**

Advancing the previous sociological work conceptualising the BMI as a social construct and an instrument of biomedicalization processes (Gutin, 2018; Nicholls, 2013) and obesity as a socially undesirable, stigmatizing construct opposing thinness as the healthy ideal. Less often considered is the role of body mass index (BMI and building on a material feminism approach (Warin, 2015), I am going to utilise new-materialism thinking (Barad, 2007; Haraway, 1998; Puig de la Bellacasa, 2017) to unpack the assemblage of numbers and Internet-based self-care. Conscious about the broad scope of new materialism approaches and their limita-

tions I am particularly attuned to tinkering, intra-action and relational care as the guiding analytical tools. More over the chosen concepts build on and advance Haraway's (1998) notion of situatedness while developing Zuiderent-Jerak's (2015) proposal of situated intervention. The intervention through the BMI calculator is selected as the object for the analysis here because it entangles the implementation of self-care through a remote, digital device with the performance of routine checks and standards regarding body weight, and by extension, quality of life. This will trouble the 'remoteness' of the web-based device in relation to my body and show how tinkering with the BMI calculator affords an ontological disturbance of standardised norms and governing practices to offer a more careful way of delivering care.

Mindful of the vast literature on bio-metric, self-tracking, and wearable devices (Gardner and Jenkins, 2016; Pugliese, 2010; Rao, 2018), I approach the BMI as a springboard for an embodied and situated experiment through which I explore the NHS website and interrogate how this particular form of resource accommodates remote health interventions. I argue that the intervention through the BMI combines the logics of numbering and governing to produce ontopolitical effects (Mol, 2013) for 'good' weight, health, and life. That is, following Mol, the reality of the intervention is not preformatted, but it comes to be through practices. Therefore, it is open and multiple (Mol, 1999). Consequently, enrolling my body into this assemblage of practices allows disrupting the assumed remoteness of digital self-care by engaging with the device in-the-now. Hence, following Puig de la Bellacasa (2011, 2017) and Rosengarten and Savransky (2019) cues, through this analysis, I wish to provoke a discussion about how different effects of numbering governance are made possible through applying evidence-making instead of evidence-based intervention practices. I will propose that one response to the outcomes of this analysis might be the possibility to change the logics and mechanics of an internet-based intervention from exercising specific, fixed, and standardised ontonorms to more carefully fostering care as a situated intervention (Zuiderent-Jerak, 2015).

Therefore, I draw on Barad's (2007) notion of intra-action to map my entanglements between my body, the website, and the device. I understand intra-acting as continuous remodelling of the traditional concept of causality (Barad, 2007: 140) to disrupt the normative governing of the NHS website and the BMI device. By troubling the causal relations between the normativities of the BMI and my body, this experiment creatively engages politically through a research practice (Juelskjær et al., 2020). With the event of intra-acting, I claim that space (the website), time (here and now), and matter (my body) generate particular ontopolitical effects disturbing the causal relation between intervening, numbering, governing, moral edicts, and evaluation of my health and life. Thinking with intra-actions redefines how I, my body are becoming online, and offline in relation to the NHS supported online intervention highlighting how care could be done differently.

Then, my experiment constitutes an instance of Rhodes and Lancaster's (2019b) 'evidence-making intervention' (EMI). The term 'evidence-making intervention' is posited as a means to trouble 'evidence-based intervention' (EBI) by emphasising that interventions and standards are always implemented in situated practices involving controversy, fluidity, multiplicity, and difference. Lancaster and Rhodes (2020) propose to challenge how evidenced-based interventions are implemented in various sites and locations. They advance a framework that accentuates the "'transformations' which occur as health interventions are put to use, made to work and evidenced in local situated policies and practices" (Lancaster and Rhodes, 2020: 7). The situated experiment underpinning this paper constitutes an application of this novel approach. Additionally, they identify a '*within limits contingency*' [emphasis in original] (Rhodes and Lancaster, 2019b) in implementation science, which maintains an epistemological claim to interventions being 'evidence-based' across diverse contexts. Ultimately, realist-oriented approaches to 'evidence-based' intervention reproduce an underlying ambition of universalisation and standardisation as a means of health governance (Berg, 1997; Timmermans and Berg, 2003), which the NHS

website hosting the BMI calculator also does. I follow Woolgar and Neyland (2013) conceptualising governing as an invisible form of ordering reality embedded and entrenched in mundane (invisible) objects.

In my analysis, I am positioning myself as a researcher situated in material-semiotic contexts (Barad, 2007; Haraway, 1998), which I define as spaces, realms, domains, realities where human and non-human objects are all enacted. Consequently, my own body is enacted by the assemblage of the website, the BMI, intervention, standards, governing, numbering, diets, workout plans, public health, nutrition, eating practices, obesity, eating disorders, and discourse of happy life. Those enactments generate and maintain new locations and realities, whereby my body is becoming together with my BMI numbers. Such a framework is inspired by inventive feminist studies approaches that recognise the embodied relations of researchers with their data, thereby transgressing the detachment from the body in the social studies of health (Ellingson, 2006; Harris, 2015; Sharma et al., 2009).

My approach to analysing the website is twofold. One is to attend it as a resource of Internet-based intervention that evaluates components of a healthy weight and living. The second is to take my body as a matter of the situated experiment, entangle it with the quantification practices while engaging with this online location. In the second part of the analysis, I will bring myself and my male body trajectories, experiences, situatedness, and measurements to receive my BMI result and explore further what that entails. Consequently, I will tinker with my numbers (body mass) and activity level to disrupt the presumed stability of the online intervention. The experiment will be conducted through traveling through and with the website starting from "Live well" (fig. 1) and affectively engage with the following subpages: "Eat well" (fig. 2), "Healthy body" (fig. 3), "Healthy weight" (fig. 4), "Manage my weight" (fig. 5) and "The BMI calculator" (fig. 6). My actions will be informed by the overarching aim to critically analyse the effects of tensions emerging between the implementation of 'evidence-based intervening,' the governing potency of the BMI, my body, and the quality of my life.

## The NHS recipes for a "good" life

The travel across the online location starts from the exploration of the introductory "Live Well" page. Further, I follow the subpages that it activates relating to my healthy body, healthy weight, and healthy eating exploring them. Thus, I click the "Live well" tab on the website (fig. 1), and I am presented with the following results:

Three subpages – "eat well" (fig.2), "healthy weight" (fig. 3), "healthy body" (fig. 4) – directly relate to the above-mentioned debates on BMI, obesity, weight management, and healthy life. As a person with what might be described as an obsessive attitude towards my body shape and weight, the short descriptions attentively enrol me and my body into the cluster of discourses of 'major food groups,' 'healthy balanced diet,' 'healthy body,' 'tip top health,' 'healthy weight' and 'BMI calculator.' Exploring them further allows me to interrogate how exploring the online location governs me, my body, and my life "incidentally and along the way" (Law, 2012: 156).

'Eat well' assembles knowledge of food, food products, various types of diets, and eating practices. Questions generate uncertainty about my eating practices and my body mass prompting subsequent recommendations about what else is needed for me to be 'my best.' Thus, If I want to be 'my best,' the intake of five portions of fruit and vegetables becomes a moral obligation – to stay healthy and live well. Continuously, the bolded headline pinpoints 'a balanced diet' as a crucial ingredient of 'good' health and 'feeling your (*my*) best' (emphasis added). Therefore, instantly, I feel responsible for my knowledge about particular products and their influence on my body and the right and wrong combinations of those diets and recipes. I notice 'balance' as situated in the moment, affective expression (Dennis, 2019) that is the most valuable and desirable relation between me, my body, and food. Significantly, the entire category of 'balanced diet' orders my body to become in a certain way by specific means.

Food – through dieting - becomes politicised and entrenched into the discourse on health and wellbeing; a carrier of political and moral values; producer of realities and effects; and one of the places where governance of me is being done.



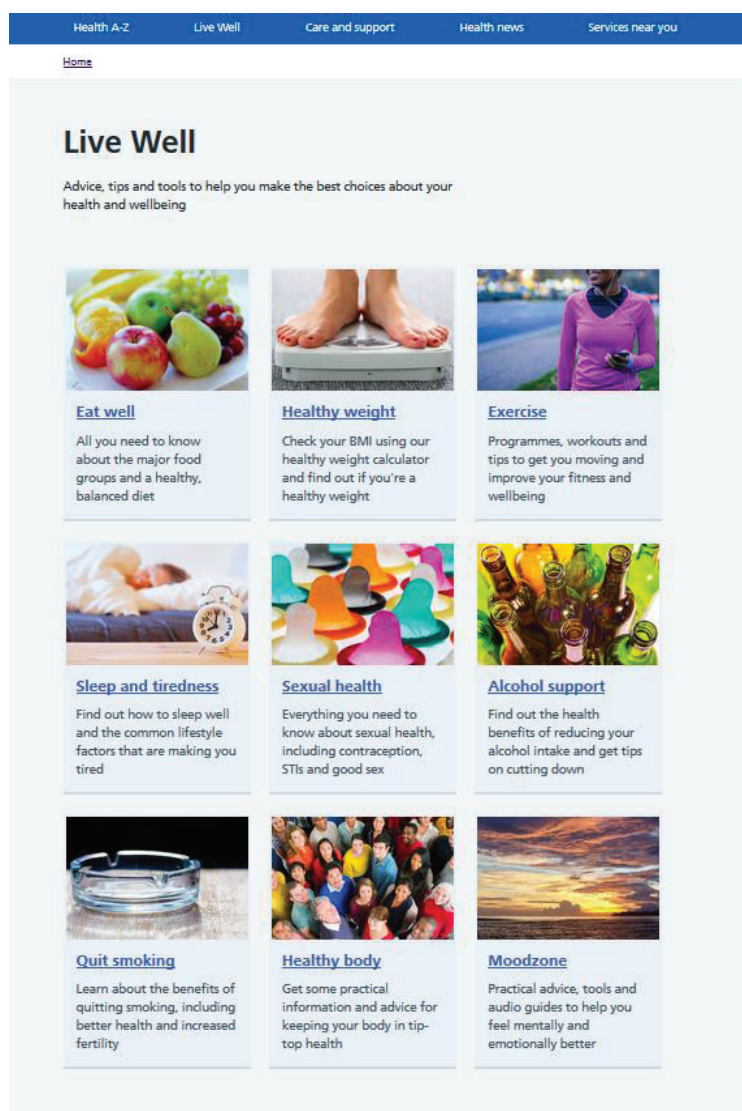


Figure 1.

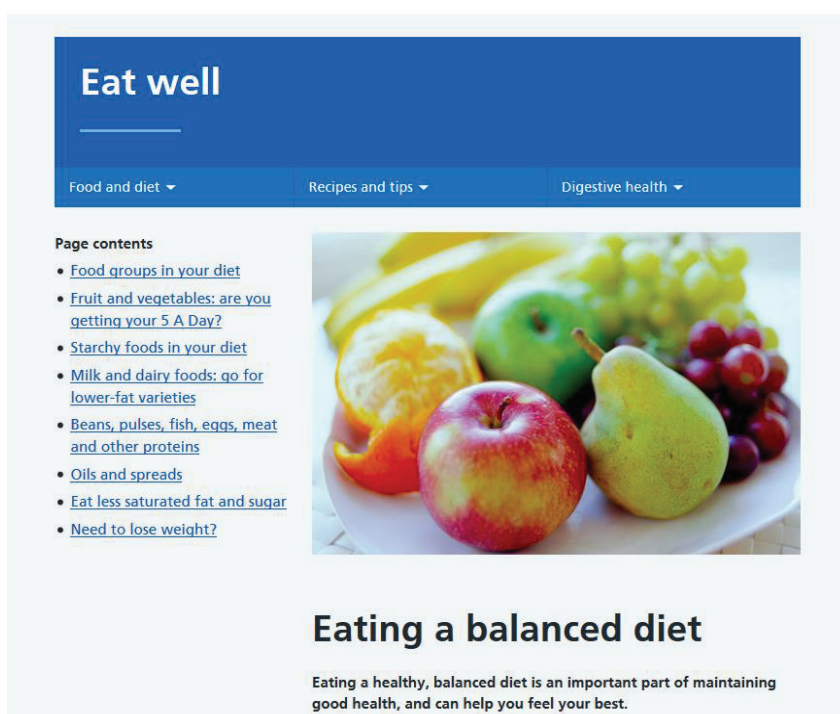
quently, all nutrition components become morally and politically significant through normative edicts. To verify what I put into my body, I am encouraged to read food labels to recognise in more detail what is good or bad. And so food, dietary components, and labels become – I argue – another modes of governance.

Additionally, this subpage mobilises a 'healthy heart,' suggesting that it is inseparably linked to a 'healthy body', positioning it as a crucial outcome of a healthy diet, something that I should "look after." A 'healthy heart' emerges as a materialised element of a healthy life and a focal point of the online intervention.

The 'managing my weight' (fig. 4) section strengthens the connection between being overweight and heart disease, emphasising the link between a healthy weight and a healthy heart again. To remain healthy, I am again encouraged to stick to particular eating practices.

The "Healthy body" location recommends ten practices that help maintain it, and for a person with body image issues, I am promptly interested in what they are and do. The category of 'Top 10' tips is subsequently evidencing and assembling advice for the healthy body pursuit. Food is enacted through smaller elements: fibre, saturated fat, '5 a day', salt, fish, alcohol and food products labelling. Conse-

Figure 2.




# Healthy body

[Body](#)
[Head](#)
[Seasonal health](#)
[Self-help tips](#)

**Page contents**

- [Give up smoking](#)
- [Get active](#)
- [Manage your weight](#)
- [Eat more fibre](#)
- [Cut down on saturated fat](#)
- [Get your 5 A Day](#)
- [Cut down on salt](#)
- [Eat fish](#)
- [Drink less alcohol](#)
- [Read the food label](#)



## Top 10 healthy heart tips

A healthy lifestyle will make your heart healthier. Here are 10 things you can do to look after your heart.

Figure 3.

Nevertheless, diet and weight management should be accompanied by “regular physical activity”. Regular means repetitive, ongoing, continuous actions that I should do with my body. Thus, I ought to monitor what and how many times I eat. Although, it might be not enough. It works best together with ‘regularly’ working out. I am told to check the BMI calculator to see if I am at a healthy weight range. And if I am not, I can use the twelve-week weight loss protocol. Managing

my weight assembles efforts of balancing, regularity, diet, working out, the BMI and a 12-week plan. Incorporation of those practices into my life asserts sustaining a healthy body. However, governing the body through a balanced diet or exercising cannot guarantee an ontological certainty that my body will stay healthy and fit; it does not reduce the risks of becoming unhealthy again. It generates effects of an ontological tension epitomised and reinforced by a moral obligation to constantly evaluate what I do to and with my body. Thus becoming an ‘ontonorm’ – an imperative of how I should be in the world (Mol, 2013).

### Manage your weight


Being overweight can increase your risk of heart disease. Stick to a [healthy, balanced diet](#) low in [fat](#) and [sugar](#), with plenty of fruit and vegetables, combined with regular physical activity.

Find out if you're a healthy weight with the [BMI calculator](#). If you're overweight, try our 12-week [NHS weight loss plan](#).

Figure 4.

# Healthy weight

[You and your weight ▾](#)
[Weight loss support ▾](#)
[Safe weight gain ▾](#)
[Real stories ▾](#)



To find out if you're a healthy weight for your height, work out your body mass index (BMI).

You can easily check your BMI by using this [BMI calculator](#). A BMI between 18.5 and 24.9 is considered healthy.

The BMI calculator can also be used to check if your child is a healthy weight.

**Figure 5.**

The narrative about “healthy weight” (fig. 5) is visually reinforced by the moment of weighing. Standing on a scale disrupts the remoteness of the online self-care accentuating the weight measurement here-and-now as a key component of health. That is why – it is asserted – I should monitor it through the usage of the BMI calculator. The healthy weight ratio ranges from 18.5 to 24.9 points. Thus, potential calculation opens up another concern: staying within the healthy range. Those numbers and the BMI metric reflect the question posed in a previous screenshot (fig. 4): Should I check my BMI and find out if I weigh too much? How much weight might I consider losing? Therefore, a seemingly innocent and simple edict – measuring my BMI – becomes a moral matter of concern further extrapolated into living with a healthy weight and having a good life.

To sum up, engaging with the three subpages of the “Live Well” section makes up my body,

weight, health, and wellbeing through a sequence of normative recommendations about eating practices, good and bad nutrients, and the BMI ratio and exercising. Hence, I am invited to check my BMI using the BMI calculator, and thus, to bring my numbers into play locally and here-and-now. These numbers are assumed to objectively represent my external, real body. My numbers, though – both weight and height – in reality, are messy and fluid. In fact, over the last six months, my weight fluctuated between 88 and 95 kilograms. To mitigate the messiness, I would need to use a scale. But the scale might be inaccurate or faulty. If I do not have a scale at hand, I would have to rely on my memory or imagine how much I weigh now. I do not have a scale in my home; hence I sometimes use the one at my local gym, which is always a stressful moment for someone with a body and weight distorted perception. Especially because, having a problematic relation with my



body shape and weight, I desire to be of a certain weight. Thus, an act of measuring my weight has concrete effects: anxiety and stress before and happiness or disappointment after the weigh-in. Thus, typing my imagined weight into the calculator may be a projection of what I would like my 191cm tall body to look like. Therefore, “checking my BMI” means that I am invited to translate the reality of my messy, fluid, and contingent body mass through ‘accurate’ numbers into a seemingly objective, stable, and standardised tool to address and regulate the uncertainty about my health. I claim that tinkering with the numbers will trouble the regulatory objectivity (Moreira et al., 2009) of the BMI calculator, arguing that it is not a static, passive and stable tool representing my body, but it actively participates in momentarily re-doing different versions of my body. Consequently, the device activates respective assemblages of the NHS website invoking and amplifying the problematic relationship between me, my body shape and weight and my life.

### Tinkering with numbers

Through staging an experiment with my numbers and eventually with the BMI device, I engage with an *evidence-making intervention* framework to disrupt the apparent precision of numbers and the BMI calculation. On the other hand, I will also trouble the online intervention’s assumed remoteness showing how my engagement with the digital device situates the event in my local context and lived experience of weight and body perception issues.

After I have clicked into the suggested BMI tool tab (fig. 6), the short diagram with height, weight, age, sex, ethnic group and activity level pops up.

The original BMI calculator categorises me and my body based only on sex and age. However, the NHS version extends it by ‘ethnic group’ and ‘activity level’. Activity level is broken down into three categories. Although, more importantly, my fitness trajectory is done by a certain numerical range that predefines three (inactive, moderately active, active) potential manners of my workout practices. Therefore, a concrete time frame pre-

determines my imagined fitness level ordering my body to fit in and enacting it through fixed numerical categories. However, tinkering with the BMI does not necessarily work that way; it potentiates affective qualities because my personal trajectories and my body mass are messy and contingent. More importantly, experimenting with my activity levels and calculating my BMI momentarily activates thinking about my entire sport history, my struggles with my body shape perception and the process of pursuing what

**BMI calculator**

**Adult** **Child**

**Height** [Switch to ft, in](#)  
Centimetres

**Weight** [Switch to st, lb](#)  
Kg

**Age**

**Sex**  
[Why are we asking?](#)  
☐ Male  
☐ Female

**Ethnic group (optional)**  
[Why are we asking?](#)

**Activity level**  
So we can personalize your results  
[What counts?](#)  
☐ Inactive  
Less than 30 minutes a week  
☐ Moderately active  
Between 30 and 60 minutes a week  
☐ Active  
Between 60 and 150 minutes a week

**Calculate** [Reset](#)

Figure 6.



I am now. Playing with numbers invites me to type in any weight I want because – as I argued before – weight is messy, fluid and situated in the here-and-now. It differs in the morning, in the afternoon, before and after dinner, before and after a workout. Combinations are endless and dependent on either my imaginative weight or weight mediated through everyday technologies. The same goes for my height. Assuming how tall I

am, I may relate to documents stating my height, I may recall its last measurement, or I can simply imagine it. In this article, I experiment with my weights to explore what the new spaces such an experiment can open up and what ontopolitical effects does the BMI intervention afford

Tinkering with my weight (being between 89 and 92 kilograms) involves me sitting in front of my office screen stressing out because I want

The figure displays two versions of a BMI calculator interface, side-by-side. Both versions have a blue header with the title 'BMI calculator' and two tabs: 'Adult' and 'Child'. The left version shows the 'Adult' tab selected, with input fields for Height (191 cm), Weight (89 kg), Age (34), Sex (Male), Ethnic group (White), and Activity level (Active). The right version shows the 'Adult' tab selected, with input fields for Height (191 cm), Weight (92 kg), Age (34), Sex (Male), Ethnic group (Not stated), and Activity level (Active). Both versions have a green 'Calculate' button and a 'Reset' link.

**BMI calculator**

**Adult** **Child**

**Height** [Switch to ft, in](#)

Centimetres

191

**Weight** [Switch to st, lb](#)

Kg

89

**Age**

34

**Sex**

[Why are we asking?](#)

☒ Male

☐ Female

**Ethnic group (optional)**

[Why are we asking?](#)

White

**Activity level**

So we can personalize your results

[What counts?](#)

☐ Inactive  
Less than 30 minutes a week

☐ Moderately active  
Between 30 and 60 minutes a week

☒ Active  
Between 60 and 150 minutes a week

**Calculate** [Reset](#)

**BMI calculator**

**Adult** **Child**

**Height** [Switch to ft, in](#)

Centimetres

191

**Weight** [Switch to st, lb](#)

Kg

92

**Age**

34

**Sex**

[Why are we asking?](#)

☒ Male

☐ Female

**Ethnic group (optional)**

[Why are we asking?](#)

Not stated

**Activity level**

So we can personalize your results

[What counts?](#)

☐ Inactive  
Less than 30 minutes a week

☐ Moderately active  
Between 30 and 60 minutes a week

☒ Active  
Between 60 and 150 minutes a week

**Calculate** [Reset](#)

Figure 7.

my BMI to reflect how fit and healthy, I imagine I am and if my martial arts, rowing and triathlon training for the last 20 years paid off. Therefore, the desire to be fit generates tension, excitement and anxiety about my result. I really want to be recognised and acknowledged as someone in exceptional shape.

The calculation generates two different subpages set apart by a BMI difference of 0.6 points; a seemingly insignificant difference, but one which enacts two different realities of a healthy weight and overweight. The initial weight of 89 kilograms (my usual post-workout weight) allows me to stay in the 'healthy weight' category. If I remake myself as weighing 92 kilograms – as I sometimes am – the numbers change, and the BMI changes. And so do the results and ontopolitical consequences.

### Healthy weight reality

My first BMI result is 24.6 (fig. 8), which – according to the scale suggested by the NHS calculator – indicates that I came up at the “higher end”

of healthy weight. For me, the maximum weight to remain 'healthy' would be 91.2kg. But it is not over yet. I receive advice and a recommendation to 'keep an eye' on my weight. Therefore, I cannot simply forget about my BMI and carry on. I must monitor it to stay in 'the healthy range' because my health is not stable, nor is my wellbeing. I argue that 'keeping an eye' on my weight transforms the dynamic of number governance. From a static, remote instruction to have a given body mass within a given range (67.5-91.2 kg), it is now made into a dynamic and continuous process of thinking about and maintaining my weight – creating a fluid, affective matter of concern adding to my already problematic weight and body perception. In other words, I am never *just* 89 kilograms. My body mass is never stable and static. On the contrary – every time I measure my BMI, I am becoming differently, and in order to be healthy and happy, I need to be constantly becoming differently but within a fixed numerical range.

“Keeping an eye on my weight” performs the matter of concern in several other domains as well.

One is my own agency that is not to be fully

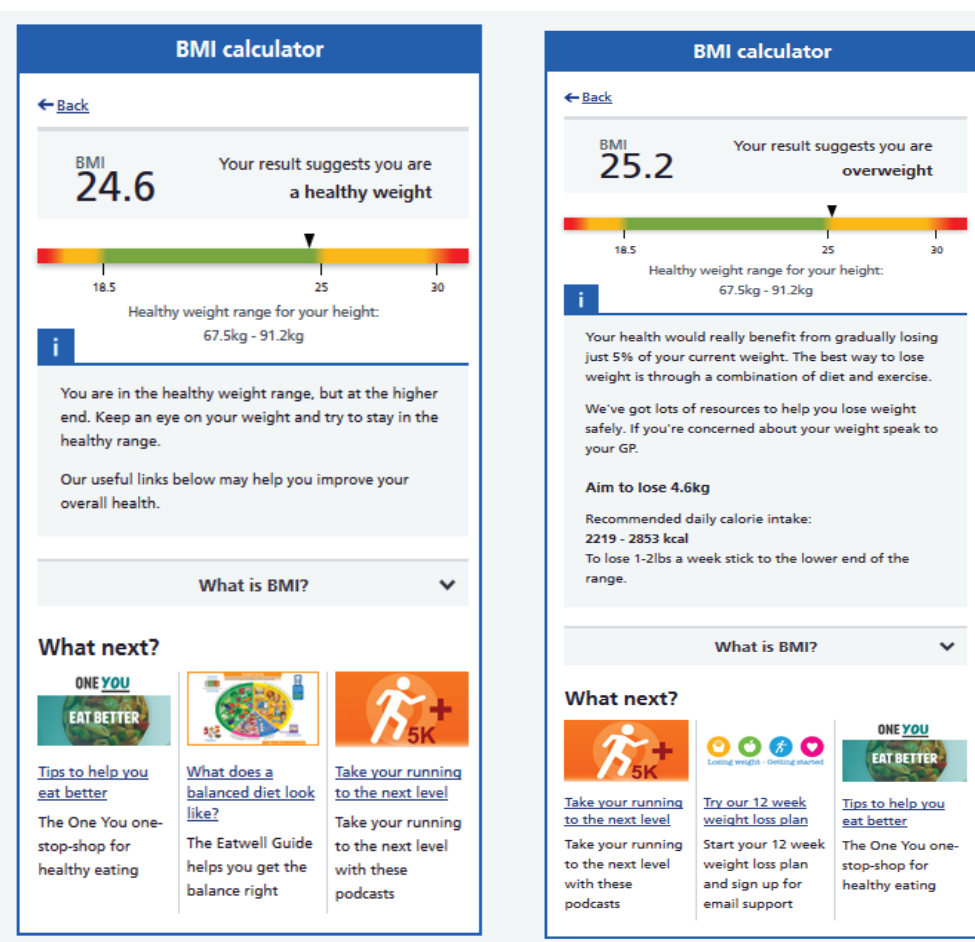


Figure 8.

trusted – I must “keep an eye” on myself because I am close to surpassing the healthy BMI number. The next concern also pertains to my weight, encouraging me to ask: do I have a single and stable weight? Should I step on the scale every time before putting my numbers in? Is my weight assumed to be changing to the point that the NHS edicts me to constantly monitor it? Answers to those questions are not, however, standardised, nor they are implicitly suggested. They are tied up with the process of me remaking myself through my daily weight and body related routines. They demonstrate how a seemingly simple intervention through the universal device is, in fact, locally situated and entangled in my bodily practices. Hence, performing a moral ordering of me and my life that is instigated by intra-acting with the website.

My BMI number – 24.6 – facilitates affective flows that the calculation entails. I may or may not act accordingly to the website edicts. I may or may not feel happy, sad, worried or depressed, but the online intervention is presumed to trigger an affective reaction that will result in improving my life.

To address the above concerns, the NHS employs the future imaginaries (Brown and Michael, 2003) to explain the significance of my number by asking: “What next?”. Three recommended options expressed as recipes propose the answer to the question. Two of them advocate the path of eating well and having a balanced diet. There is even a guide with a significant title: “Eat better” – a subpage that further fortifies the specific form of managing a good and healthy life. The tab presenting the reality of a “balanced diet” is construed as a representation of healthy living, with an annotation that “The Eatwell Guide”

will assist in getting the balance right. The third suggestion provides a form of a protocol titled: “Take your running to the next level”, aiming to improve my running capabilities, constituting the running (of all sports) as the primary activity that administers the maintenance of healthy weight and life. The promotion of running does not, however, account for my knee injuries, worn out joints or my marathons history making running a health risk in my case. Nevertheless, all three of those options govern me, my body and ultimately, my life in a particular way.

I claim that the NHS advocates for precise ontological and moral standards of specifically enacted healthy weight, body and life. It is crucial for a good, healthy life preventing me from a whole spectrum of diseases. For me to reduce the risk related to being overweight, I am advised to follow proposed, normatively prescribed protocols. My body mass maintenance should be performed by the incorporation of detailed mechanics of action. Hence, in the following subpages, I can find eating advice, recipes for balanced meals and references to where and how help may be sought out. The “Next steps” (fig. 9) section discusses possible topics to raise with my GP and lists possible health risks if I become overweight.

Therefore, my weight mobilises new actors and triggers possible further interventions to govern my body and making my health and wellbeing, translated through my numbers, a matter of care.

### Overweight realities

Not every intra-action with the tool produces new realities, but it may produce different *effects* (Rhodes and Lancaster, 2019a). Namely, when I tinker with my activity level and put “less than 30 minutes a week” instead of “between 60 to 150 minutes a week”, my BMI stays the same – 24.6! Even though, apparently, my numbers do not change, what does it say about my weekly effort? Is it worth it at all if it does not affect the overall recommendation? Because I am still close to be overweight and thus at health risk. My activity level – in practice – does not matter. My BMI result, staying the same, does not actually incorporate and personalise my specific position as an

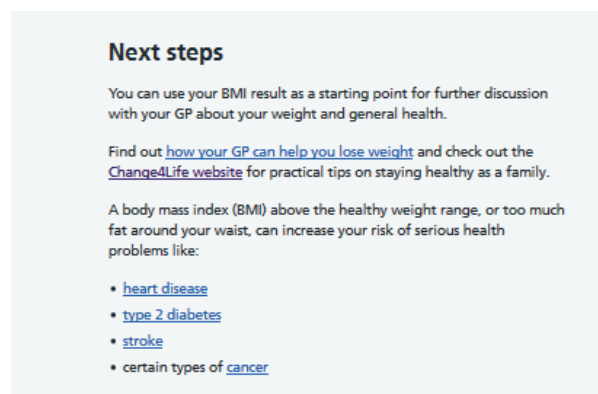


Figure 9.

extremely active person. The notion of a *within-limits contingency* (Rhodes and Lancaster, 2019b) captures this surprising outcome. It also unpacks the tension between the standardised and limited intervention of the BMI and a realist attempt to address contingencies. Ultimately, tinkering with my activity level does not enact *me* through the intervention but supports the premise of universalisation. Rhodes and Lancaster (2019b) claim that *within-limits contingency* reproduces the underlying ambition for universalisation and standardisation that the NHS website performs. In other words, the BMI calculations account for my personal fitness trajectory, but within the limits of an evidence-based approach, which does not produce new health recommendations but relies on predefined *me* and my presumed setting. The section called “What is BMI?” (fig. 10) outlining the restrictions of the calculator links a higher BMI with bigger muscularity, but it does not exhaust how relational and contingently ‘open’ the BMI calculator, in fact, is.

When I experiment with being 92 kilograms (fig. 8), I am reconfigured as ‘overweight’. Hence, in a span of a couple of months, I crossed a threshold of a healthy weight, and I am told that losing five kilograms would be beneficial for my health. The estimated aim is set as 4.6 kilograms and a recommended daily calorie intake that sits between 2219 to 2853 kcal. Finally, there is an edict to cut my weight by 1-2 lbs per week, suggesting aiming at the lower end of calories consumption. Numerical calculations perform my ‘overweight’ reality in four ways. Firstly, my BMI is 25.2, which transfers me beyond the cutoff point. Because of that, I should become 87.4 kilograms, a number that I have not seen on a scale for years, and not 92 kilograms as before. Consequently, the above described two realities (being muscular and being overweight) are generated by a single BMI number mobilising strictly quantified eating practices, including a twelve-week plan and a correct calories intake. Additionally, it activates protocols of exercise represented by the ‘running beyond the five kilometres’ plan. Hence, my 92 kilogram body may be muscular and not overweight, or 4.6 kilograms too much and overweight. Both scenarios trigger different ontopolitical effects: becoming lighter to become healthy or one of

being muscular – staying healthy. Therefore, my weight is not only simplified and reduced to precise numbers. It is translated through numbers and becomes entangled in the discussion about my general health, mental health, healthy eating, physical activity, and good life. Weight fluctuations, seemingly self-explanatory, appear to have moral consequences: one might become healthy or overweight in a short time. Following Gard and Wright (2005) I argue that the fluctuations are not innocent. In fact, combined with the NHS and the BMI assemblages, categorising weight shifting between borderline healthy, and overweight reinforces the discourse of the ‘obesity epidemic’ and ‘weight anxiety’. Tinkering with this device unravels the stark consequences that using the BMI tool might have for people with problematic relationship with their weight and body. Ultimately, producing unwarranted concerns for the website’s users.

Exploring the website further, I can find information about running programs or fitness routines. However, the goal of implementing these

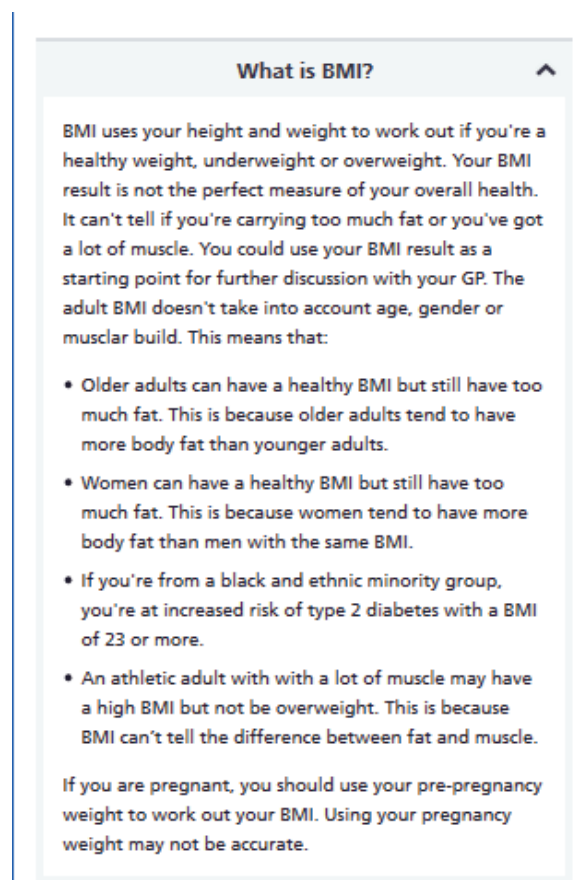


Figure 10.



is to keep me not in a good physical condition *per se*, but rather to maintain a healthy weight within a concrete weight category. In other words – in a material enactment of standardised *ontonorm*.

Weight is never stable and fixed. Nor is the BMI calculator appearing instable and fluid as well. But it does things that go beyond mere tinkering: triggers my affective reaction and remakes me as overweight hence unfit, throwing away all the years of continuous commitment to be and stay in shape. Therefore, despite its remoteness, the BMI still does things in the real.

Furthermore, experimenting with my numbers unfolds the fluidity and liveliness of the online intervention and relationality of the calculator that, in fact, *makes* evidence along the way (Rhodes et al., 2019; Rhodes and Lancaster, 2019b).

In my final discussion, I will show how my intervening with the BMI device opens up the possibilities for caring differently about my healthy life situating it in my intra-actions with the calculator.

## Discussion

By intra-acting with the NHS website, I demonstrated how evidence-based repertoires of the online intervention produce an array of collateral realities of my body governed by my BMI result. Bringing my own body as a subject/object of the situated experiment, I showed how the intervention through the BMI calculator is messy and contingent producing, rather than remotely reducing, ontological uncertainties about my weight, my health and my wellbeing. I argue, drawing on Puig del la Bellacasa's (2017) 'matters of care', that *situated* caring about the BMI could be then a form of care located in material-semiotic discourses, contexts and realities.

The discussed intra-action with an online location and intervention engages with a critical dialogue on the limitations of evidence-based forms of numbering governance. The case above demonstrated how multiple *ontopolitics* are simultaneously entrenched into a deceptively remote measurement practice. It has been shown how the result of such validation is entangled into ordering and governing my wellbeing through numbering and governing practices generating an environment where ontological uncertainty becomes normalised. Acknowledging the existing

body of literature critically analysing the BMI, the conducted embodied experiment sheds a light on how online interventions and health care promotion could benefit from sensory sensitivity acknowledging relational contexts of the website's audience.

Furthermore, intra-acting with the website and the calculator inflicts this article with my own sensibilities, affections and my body (Myers, 2015) illustrating the entanglements of my body with the BMI. It is hence a methodological contribution to the new venues in sociology of health (Fox, 2016) of how to think with and work with Barad's approach. Although the concept of intra-action has been utilised in studies on quantification (Fox et al., 2018; Lupton, 2019) this article contributes to the broader debate on sociological experiments conceptualising research practice as a situated, embodied experiment and intervention in the making (Zuiderent-Jerak, 2015).

I posit my experiment then, as an instance of 'evidence-making intervention' and my tinkering with my numbers through the BMI device to make a deliberate ontological disturbance, as a means to interfere with the relative thresholds between 'within limits' and 'open' contingencies regarding the 'healthy weights'. This experiment has shown how numbering and measuring trigger affective encounters that transgress the virtual/real and remote/here-and-now dichotomies troubling the intervention of the BMI device. I argue that this particular evidence-based intervention accommodates rather than reduces concern-loaded effects of ordering me to constantly re-make myself as 'healthy'. Consequently, it may follow that the BMI calculator is more useful for a population level measurement rather than for a personal use.

Moreira (2012) acknowledges that in the context of investigating standards, Science and Technology Studies has done much to pinpoint how deeply politics has penetrated and informed standardised infrastructures. This article has expanded that work in showing how much the NHS website owes to evidence-based biomedical machineries by demonstrating how measuring and numbering are, in fact, moral orderings and governing practices. I also accentuated that evidence-based oriented repertoires enacted through an online location produce specific

ontonomorphs that me and my body should follow to assure a healthy weight and life. I argue that those conventional ways of deploying standards and 'regulatory objectivity' (Moreira et al., 2009) are not the only option. Thinking with the framework of the EMI in the context of the NHS website, the BMI calculator and my body move the entire mechanics of the online intervention and self-care into a form of *ontological disruption*. Bodies become enacted more carefully. The taken-for-granted evidence-based resources and recommendations become supported through other forms of expertise and knowledges. Me, my body and any other body cannot be presumed as static but become fluid in how they are situated in specific material-semiotic contexts. Subsequently, it might allow for transforming the practices of numbering, where I become with my numbers, and not be done and governed by them. Governing might then lose its moralising attributes and potentially acknowledge my agency in enacting my body with the website. Therefore, Internet-based intervention could be then done differently because the evidence would be made not only by and within the website resources but by complex trajectories of my bodily experiences. As a form of an active, lively dialogue between me, my numbers, the calculator, and the NHS health recommendations. A dialogue where the health promoting information, underpinning decision making, bring together the website's normative edicts with end users situated and lived experiences. In other words, such a framework could inform policy makers with new forms of knowledge by giving a voice to policy addressees (Lancaster and Rhodes, 2020) through participatory intervention, more personalised features of the calculator or a nuanced feedback option.

## Conclusion

Inspired by recent work in feminism technoscience that invites us to think with lively activism (Puig de la Bellacasa, 2011, 2017) 2011, 2017, I provocatively ask: What if I will not let the BMI device render standardised intervention upon me? Caring would be then *situated* (Zuiderent-Jerak, 2015). It is not to say that health promotion campaigns and online interventions addressing health risks pertaining to

obesity and eating disorders do not derive from a concern or care. It is to say that the mechanics and logics behind them are fused by realist epistemologies generating ontological concerns about weight and health reversing the desired results of the online intervention. I argue that online interventions through the BMI calculator are distressing especially in relation to a very problematic and complex relations people have with their bodies. Contrarily, a care-based intervention goes beyond the numbers governance and cannot be assessed remotely through an online calculator. Realising that the BMI calculator cannot be discarded in an instance, intra-acting with the BMI proposes disrupting the causal relation between the BMI result, people health and wellbeing. I consider, making the evidence through intra-acting with the website as a more careful, care-based approach. That is, a careful method would prevent the online interventions from producing damaging effects of underweight/overweight labelling and moralising edicts. Therefore, the NHS could promote care for the public differently. For instance, not promoting, through the BMI device, a controversial assumption that being 'overweight' is a health risk (Gard and Wright, 2005). Instead, the NHS website could better nuance the importance of the BMI calculator. For example, by fully recognising fit and muscular bodies in relation to the BMI ratio. And conversely, by acknowledging that healthy body and healthy life does not depend on the BMI measurement.

Care will not be then enacted by evidence-based politics, governing and numbering imposed on the body. Care would be framed as continuous responsiveness to the emerging embodied entanglements here-and-now (Barad, 2007). Thinking with evidence-making intervention would open up possibilities where body stays active in the entanglements launched by the website and the BMI. Caring for wellbeing and the good life will then be done by recognising and acknowledging situated complexities of bodies and life rather than being ordered by the device to become in a certain way.

## **Acknowledgements**

This research was funded by Australian Government Research Training Program Scholarship. I would also like to thank Tim Rhodes and Kari Lancaster for reading and providing much appreci-

ated comments on an earlier draft of this paper. Finally, I wish to say thanks to the anonymous reviewers and the editor at Science and Technology Studies for helpful comments.

## References

- Barad KM (2007) *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press.
- Berg M (1997) *Rationalizing Medical Work: Decision-Support Techniques and Medical Practices*. Inside technology. Cambridge, Mass: MIT Press.
- Brown N and Michael M (2003) A Sociology of Expectations: Retrospecting Prospects and Prospecting Retrospects. *Technology Analysis & Strategic Management* 15(1): 3–18. DOI: 10.1080/0953732032000046024.
- Burkhauser RV and Cawley J (2008) Beyond BMI: The value of more accurate measures of fatness and obesity in social science research. *Journal of Health Economics* 27(2): 519–529. DOI: 10.1016/j.jhealeco.2007.05.005.
- Colls R and Evans B (2010) Challenging Assumptions: Re-thinking ‘the obesity problem’. *Geography* 95(2): 99–105.
- Dayan M, Ward D, Gardner T and Kelly E (2018) *How Good Is the NHS?*. The Health Foundation, the Institute for Fiscal Studies, The King’s Fund and the Nuffield Trust. Available at: [http://allcatsrgrey.org.uk/wp/download/health\\_services/the-nhs-at-70-how-good-is-the-nhs.pdf](http://allcatsrgrey.org.uk/wp/download/health_services/the-nhs-at-70-how-good-is-the-nhs.pdf) (accessed 4 April 2022).
- Dennis F (2019) *Injecting Bodies in More-than-Human Worlds*. 1st ed. London: Routledge. DOI: 10.4324/9780429466137.
- Dickson A (2015) Re:living the body mass index: How A Lacanian autoethnography can inform public health practice. *Critical Public Health* 25(4): 474–487. DOI: 10.1080/09581596.2014.888400.
- Ellingson LL (2006) Embodied Knowledge: Writing Researchers’ Bodies Into Qualitative Health Research. *Qualitative Health Research* 16(2): 298–310. DOI: 10.1177/1049732305281944.
- Evans B and Colls R (2009) Measuring Fatness, Governing Bodies: The Spatialities of the Body Mass Index (BMI) in Anti-Obesity Politics. *Antipode* 41(5): 1051–1083. DOI: 10.1111/j.1467-8330.2009.00706.x.
- Fletcher I (2014) Defining an epidemic: the body mass index in British and US obesity research 1960–2000. *Sociology of Health & Illness* 36(3): 338–353. DOI: 10.1111/1467-9566.12050.
- Fox NJ (2016) Health sociology from post-structuralism to the new materialisms: *Health* 20(1):62–74. doi:10.1177/1363459315615393
- Fox NJ, Bissell P, Peacock M and Blackburn J (2018) The Micropolitics of Obesity: Materialism, Markets and Food Sovereignty. *Sociology* 52(1): 111–127. DOI: 10.1177/0038038516647668.
- Gard M and Wright J (2005) *The Obesity Epidemic: Science, Morality, and Ideology*. London and New York: Routledge.
- Gardner P and Jenkins B (2016) Bodily Intra-actions with Biometric Devices. *Body & Society* 22(1): 3–30. DOI: 10.1177/1357034X15604030.
- Greenhalgh S (2012) Weighty subjects: The biopolitics of the U.S. war on fat. *American Ethnologist* 39(3): 471–487. DOI: 10.1111/j.1548-1425.2012.01375.x.
- Greenhalgh S (2015) *Fat-Talk Nation: The Human Costs of America’s War on Fat*. Ithaca, New York: Cornell University Press.
- Greenhalgh S (2016) Disordered Eating/Eating Disorder: Hidden Perils of the Nation’s Fight against Fat: Disordered Eating/Eating Disorder. *Medical Anthropology Quarterly* 30(4): 545–562. DOI: 10.1111/maq.12257.
- Guthman J (2013) Fatuous measures: the artifactual construction of the obesity epidemic. *Critical Public Health* 23(3): 263–273. DOI: 10.1080/09581596.2013.766670.
- Gutin I (2018) In BMI we trust: reframing the body mass index as a measure of health. *Social Theory & Health* 16(3): 256–271. DOI: 10.1057/s41285-017-0055-0.



- Haraway DJ (1998) *Simians, Cyborgs, and Women: The Reinvention of Nature*. Reprinted. London: Free Association Books.
- Harris M (2015) “Three in the Room”: Embodiment, Disclosure, and Vulnerability in Qualitative Research. *Qualitative Health Research* 25(12): 1689–1699. DOI: 10.1177/1049732314566324.
- Hoeyer K, Bauer S and Pickersgill M (2019) Datafication and accountability in public health: Introduction to a special issue: *Social Studies of Science* 49(4):459–475. DOI: 10.1177/0306312719860202.
- Juelskjær M, Plauborg H and Adrian SW (2020) *Dialogues on Agential Realism: Engaging in Worldings through Research Practice*. Abingdon, Oxon and New York, NY: Routledge.
- Kouri EM, Pope HG, Katz DL, et al. (1995) Fat-Free Mass Index in Users and Nonusers of Anabolic-Androgenic Steroids: *Clinical Journal of Sport Medicine* 5(4): 223–228. DOI: 10.1097/00042752-199510000-00003.
- Kwan S (2012) Lay perspectives on the biomedical paradigm on ‘obesity’: Theorizing weight, health and happiness. *Social Theory & Health* 10(1): 61–77. DOI: 10.1057/sth.2011.12.
- Lancaster K and Rhodes T (2020) What prevents health policy being ‘evidence-based’? New ways to think about evidence, policy and interventions in health. *British Medical Bulletin* 135(1): 38–49. DOI: 10.1093/bmb/ldaa026.
- Law J (2012) Collateral realities. In: Dominguez Rubio F and Baert P (eds) *The Politics of Knowledge*. London: Routledge, pp. 156–178. Available at: <http://www.routledge.com/books/details/9780415497107/> (accessed 8 April 2019).
- Lupton D (2013) Quantifying the body: monitoring and measuring health in the age of mHealth technologies. *Critical Public Health* 23(4): 393–403. DOI: 10.1080/09581596.2013.794931.
- Lupton D (2016) Towards critical digital health studies: Reflections on two decades of research in *health* and the way forward. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 20(1): 49–61. DOI: 10.1177/1363459315611940.
- Lupton D (2019) ‘It’s made me a lot more aware’: a new materialist analysis of health self-tracking. *Media International Australia* 171(1): 66–79. DOI: 10.1177/1329878X19844042.
- Marsh S (2019) Adults with eating disorders ‘face appalling NHS failings’. *The Guardian*, 18 May 2019. Available at: <https://www.theguardian.com/society/2019/may/18/adults-with-eating-disorders-face-appalling-nhs-failings> (accessed 11 November 2019).
- Metzl J and Kirkland AR (eds) (2010) *Against Health: How Health Became the New Morality*. Biopolitics, medicine, technoscience, and health in the 21st century. New York: New York University Press.
- Mol A (1999) Ontological Politics. A Word and Some Questions. *The Sociological Review* 47(1\_suppl): 74–89. DOI: 10.1111/j.1467-954X.1999.tb03483.x.
- Mol A (2013) Mind your plate! The ontonorms of Dutch dieting. *Social Studies of Science* 43(3): 379–396. DOI: 10.1177/0306312712456948.
- Monaghan LF (2007) Body Mass Index, masculinities and moral worth: men’s critical understandings of ‘appropriate’ weight-for-height: Body Mass Index, masculinities and moral worth. *Sociology of Health & Illness* 29(4): 584–609. DOI: 10.1111/j.1467-9566.2007.01007.x.
- Moreira T (2012) Health Care Standards and the Politics of Singularities: Shifting In and Out of Context. *Science, Technology, & Human Values* 37(4): 307–331. DOI: 10.1177/0162243911414921.
- Moreira T, May C and Bond J (2009) Regulatory Objectivity in Action: Mild Cognitive Impairment and the Collective Production of Uncertainty. *Social Studies of Science* 39(5): 665–690. DOI: 10.1177/0306312709103481.
- Myers N (2015) *Rendering Life Molecular: Models, Modelers, and Excitable Matter*. Experimental futures : technological lives, scientific arts, anthropological voices. Durham: Duke University Press.

- Nicholls SG (2013) Standards and classification: A perspective on the 'obesity epidemic'. *Social Science & Medicine* 87: 9–15. DOI: 10.1016/j.socscimed.2013.03.009.
- Pugliese J (ed) (2010) *Biometrics: Bodies, Technologies, Biopolitics*. Routledge studies in science, technology, and society. New York: Routledge.
- Puig de la Bellacasa M (2011) Matters of care in technoscience: Assembling neglected things. *Social Studies of Science* 41(1): 85–106. DOI: 10.1177/0306312710380301.
- Puig de la Bellacasa M (2017) *Matters of Care: Speculative Ethics in More than Human Worlds*. Posthumanities 41. Minneapolis: University of Minnesota Press.
- Rao U (2018) Biometric Bodies, Or How to Make Electronic Fingerprinting Work in India. *Body & Society* 24(3): 68–94. DOI: 10.1177/1357034X18780983.
- Rhodes T and Lancaster K (2019a) Evidence-making hepatitis C cure: Towards a science that knows more carefully. *International Journal of Drug Policy* 72: 40–46. DOI: 10.1016/j.drugpo.2019.06.023.
- Rhodes T and Lancaster K (2019b) Evidence-making interventions in health: A conceptual framing. *Social Science & Medicine* 238: 112488. DOI: 10.1016/j.socscimed.2019.112488.
- Rhodes T, Lancaster K, Harris M and Treloar C (2019) Evidence-making controversies: the case of hepatitis C treatment and the promise of viral elimination. *Critical Public Health* 29(3): 260–273, DOI: 10.1080/09581596.2018.1459475
- Rosengarten M and Savransky M (2019) A careful biomedicine? Generalization and abstraction in RCTs. *Critical Public Health* 29(2): 181–191. DOI: 10.1080/09581596.2018.1431387.
- Sanders R (2017) Self-tracking in the Digital Era: Biopower, Patriarchy, and the New Biometric Body Projects. *Body & Society* 23(1): 36–63. DOI: 10.1177/1357034X16660366.
- Schutz Y, Kyle U and Pichard C (2002) Fat-free mass index and fat mass index percentiles in Caucasians aged 18–98 y. *International Journal of Obesity* 26(7): 953–960. DOI: 10.1038/sj.ijo.0802037.
- Sharma S, Reimer-Kirkham S and Cochrane M (2009) Practicing the Awareness of Embodiment in Qualitative Health Research: Methodological Reflections. *Qualitative Health Research* 19(11): 1642–1650. DOI: 10.1177/1049732309350684.
- Timmermans S and Berg M (2003) *The Gold Standard: The Challenge of Evidence-Based Medicine and Standardization in Health Care*. Philadelphia, Pa: Temple University Press.
- Warin M (2015) Material Feminism, Obesity Science and the Limits of Discursive Critique. *Body & Society* 21(4): 48–76. DOI: 10.1177/1357034X14537320.
- Woolgar S and Neyland D (2013) *Mundane Governance: Ontology and Accountability*. First Edition. Oxford, United Kingdom: Oxford University Press.
- Zuiderent-Jerak T (2015) *Situated Intervention: Sociological Experiment in Health Care*. Inside technology. Cambridge, Massachusetts: The MIT Press.