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# Obesity in Canada

Overstated Problems,  
Misguided Policy  
Solutions

by Nadeem Esmail  
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## Contents

Executive summary / iii

Introduction / 1

1. How fat are we? / 2

2. Public (and private) consequences of overweight and obesity / 16

3. Can government cure obesity? / 28

Conclusion / 65

References / 67

About the authors / 86

Acknowledgments / 86

Publishing information / 87

Supporting the Fraser Institute / 88

Purpose, funding, & independence / 89

About the Fraser Institute / 90

Editorial Advisory Board / 91



## Executive summary

Everyone knows The Truth about obesity. A large and growing number of us have expanded waist lines. Consequently, our irrational and poor choices are leading us to illness and early death. Given this dire public health scenario, only government intervention can save us from ourselves.

An empirical evaluation of this truth reveals a very different story, however.

Measurements of overweight and obesity among the Canadian population from Statistics Canada suggest that the contemporary Canadian situation largely lacks a negative or disconcerting trend. Among Canadian adults, there has been no statistically significant change in the rate of overweight (Body Mass Index between 25 and 30) among the population between 2003 and 2012. With respect to obesity (Body Mass Index greater than 30), the rate of obesity among Canadian adult males appears to have stabilized or perhaps even begun to decrease, with there now being no difference between the rate in 2012 and that in 2007. For adult females, however, there has been a steady increase in the prevalence of obesity since 2003. Among Canadian youth (aged 12 to 17), the rates of overweight and obesity between 2005 and 2012 are largely unchanged (2003 data were not available). This remains true even when data are separated for males and females.

Overall, while the prevalence of overweight and obesity may remain relatively high historically, the state of Canadians' waistlines is only really continuing to expand among adult females. On the other hand, the shares of Canadian adult males and Canadian youth carrying excess weight appear to have stabilized and may be turning a corner among obese adult males.

The health consequences of excess weight might also be overstated in the popular debate. A number of studies of the relationship between overweight, obesity, and early mortality have suggested that the risks associated with obesity lie at the higher end of the scale, above a BMI of 35 (known as Class II or Class III obese). They also suggest those who are classified as overweight, with a BMI between 25 and 30, may have lower rates of premature mortality than those who are "normal weight," while those who would fall into the Class 1 obese range with a BMI of 30 to 35 face similar risks to those in the normal weight range.



This suggests that the health-based justification for obesity interventions may only exist among a small section of the population with BMIs over 35; a much smaller group of the population than is commonly claimed to be at risk from their lifestyle behaviours/choices.

While much of the focus on the obesity problem relates to the health consequences of carrying too much excess weight, there is also the important concern about the costs obesity imposes on the economy. Indeed, many advocates of government intervention justify the need for intervention by pointing to the increased burden on Canada's tax-financed health system. A closer examination of the consequences of excess weight finds, however, that the majority of the costs of obesity are borne directly by the individual—in terms of lower income, reduced employment opportunities, reduced enjoyment of life, greater illness, and a potentially shorter lifespan, all of which may provide incentives for weight loss. It also finds that the justification for intervention on the basis of resolving the insurance externality—created by the costs obese individuals impose on others through the tax-funded health care system—is weakened by the possibility that obese individuals may in fact not be a net burden to taxpayers over their lifetimes, and by the possibility that there may be a positive innovation externality.

There is also little solid evidence that commonly proposed government policy interventions could systematically reduce the prevalence of excess weight and obesity. To the contrary, even if concerns about poor consumer decision making as a result of limited information and hyperbolic discounting are correct, commonly recommended interventions (e.g., fat taxes or junk food taxes, menu labeling requirements, reduced availability of/access to particular foods, simplified or directive food labels, graphic warning labels, vending machine bans, zoning restrictions, and advertising restrictions) are likely unable to reduce the prevalence of obesity. Private solutions to the problem of excess weight may be more effective in helping individuals reduce excess weight.

While government interventions may not be effective in reducing obesity prevalence, they would impose costs indiscriminately (and potentially regressively) on both non-obese and obese Canadians, not to mention inappropriately vilify particular foods and food manufacturers. Increased costs for individuals and families might come from reduced options/choices, increased travel times, increased costs from taxation, increased costs of goods and services as a result of regulation, or taxpayer funding of programs and of the increased bureaucracy that may be required. Interventions may also create barriers to entry for smaller businesses or artificial constraints on growth, and generate higher business costs from regulation. Interventions may also result in a transfer of funds from one group of legal businesses to another simply because one provides a product that is disliked by interventionists.



In total, a review of the facts about the prevalence of obesity, the risks associated with obesity, and the efficacy of commonly proposed policy interventions suggests a very different truth about obesity. While there still may be too many expanded Canadian waist lines, the number appears to have stabilized and may even be turning a corner. Further, health concerns associated with obesity may impact fewer of those with excess weight than is sometimes suggested by advocates of government intervention. Finally, commonly proposed government interventions would not be likely to change behaviours in ways that systematically lead to a lower prevalence of obesity.



## Introduction

Everyone knows The Truth about obesity. Too many of us have expanded waist lines, and as a consequence our irrational and poor choices are leading us to illness and early death. Given this dire public health scenario, only government intervention can save us from ourselves.

This paper evaluates the empirical truth in The Truth about obesity. It begins with an examination of the obesity crisis and rates of obesity in Canada. Section 2 considers the connection between overweight/obesity and poor health and early mortality, as well as the incidence of the costs of overweight and obesity. Section 3 evaluates the plethora of policy prescriptions that are touted as at least a partial solution to the obesity crisis in Canada. A conclusion follows.

## 1. How fat are we?

Much has been said and written about the obesity crisis in Canada. Yet a closer look at Statistics Canada's measurements of changes in obesity over time suggests that these claims may be overstated. Equally importantly, the measure commonly used to track overweight and obesity in Canada (and elsewhere) has important weaknesses that must be considered.

### Not really an 'epidemic'

The state of Canadians' weight is often referred to as an 'obesity epidemic' (e.g., Ubelacker, 2013; Al-khalidi, 2013). This description is subject to several difficulties, one of which is the problem of defining what is normal in this area. As Basham and Luik (2008: 244) note, much of the data on obesity is "limited, equivocal, and compromised in terms of extent and the reliability of the measurements and the populations sampled."

For example, American data on population weights go back to only 1960. There is however evidence to suggest that the contemporary situation in the US might be close to normal (Basham and Luik, 2008). In 1960, according to sex-specific weight-for-height tables corresponding to a body mass index of 25 to less than 30, 45 percent of the population was overweight (Flegal, 2006). In the 1970s, 22 percent of males between the ages of 18 and 19 were overweight, while 16.7 percent of males between the ages of 12 and 19 were overweight in 2002 (Hedley et al., 2004). Further, some expansion in our waistlines and inseams might be expected over time. For example, Fogel's (2004) work on the relationship between health, mortality, nutrition, and technology in various countries suggests that populations gain in both height and weight as they grow more prosperous, healthier, and longer-lived.

A second key difficulty is the definition of the term 'epidemic'. Correctly understood, an epidemic refers to the outbreak of a disease or illness that spreads rapidly, that is, exponentially, and simultaneously among individuals in a population at the same time. Putting aside the rather large question of whether obesity should be classified as a disease or illness, and whether that

disease or illness is communicable, there remains the thorny necessity of an exponential rate of growth.<sup>1</sup>

Current data are highly equivocal in their support for claims of an epidemic. For example, the average population weight gain in the US from 1960 to 2002 was 10.9 kg, or 0.26 kg a year (Ogden et al., 2005). Yet, for more than a decade, according to the US National Health and Nutrition Examination Survey, there were no significant changes in the prevalence of overweight or obesity among US adults or in the prevalence of overweight among children (Hedley et al., 2004).

The Gallup research organization has now confirmed what a plethora of earlier data suggested, that is, that the growth in the number of obese Americans may have peaked and may now be on the decline. Obesity rates for all demographic groups included in Gallup's analysis were either trending down or were statistically unchanged in 2011. For example, Gallup found that more Americans are a normal weight than are overweight. In the third quarter of 2009, 26.3 percent of Americans were officially obese. However, by the third quarter of 2011 the percentage was 25.8, a statistically significant difference.<sup>2</sup>

A US Centers for Disease Control and Prevention study of adult obesity published in the *Journal of the American Medical Association*, based on data drawn from the National Health and Nutrition Examination Survey using a representative sample of the American population, measured the heights and weights of 5,555 adult women and men. The results do not support claims of an obesity epidemic. For women, the study found no statistically significant changes in obesity prevalence over the entire decade, while for men there were no prevalence differences during the last five years of the decade. As the researchers note, obesity prevalence may have "entered another period of relative stability" (Flegal et al., 2010).

The very latest CDC study confirmed that in recent years the adult obesity rate has plateaued, at worst. Surprisingly, perhaps, the average American adult's caloric intake is equivalent to that of a decade ago. Interestingly, a decade ago 13 percent of an average American's caloric intake came from fast foods; today, it is 11 percent (Fryar and Ervin, 2013).

Similar trends have been observed in the UK. According to the UK Department of Health's *Health Survey for England*, there has been a decline in the prevalence of overweight and obesity for adult men, while for adult women prevalence has remained the same. Comparing the results with those of earlier surveys, there have been either declines or no significant changes in male prevalence of overweight and obesity in all age groups from 16 to 54.

1. From the perspective of those supporting the view that there is an obesity 'epidemic', it should be more accurately referred to as a pandemic since some claim that obesity is now a global crisis.

2. Data drawn from Mendes (2012).

Measurements of overweight and obesity among the Canadian population from Statistics Canada also suggest that the contemporary Canadian situation largely lacks a negative or disconcerting trend, and certainly not a trend indicating an epidemic.

According to Statistics Canada, “[f]rom 2003 to 2011, obesity among men rose from 16.0 percent to 19.8 percent, and among women, from 14.5 percent to 16.8 percent.” Over the past decade, then, the rate of growth has been observable, modest, and clearly not exponential. Even if one were to employ the most elastic definition of rapid or exponential growth to assess the past decade’s data, one would still rub up against the problem of the most recent trend: “[i]n 2011, 18.3 percent of Canadians aged 18 and older ... reported height and weight that classified them as obese, *virtually unchanged from 2009*” (Statistics Canada, 2011; emphasis added).<sup>3</sup> Consequently, Statistics Canada finds that “[t]he rates of overweight and obese females and males have remained stable since 2009.” Furthermore, Statistics Canada found that “overweight rates have been stable from 2003 to 2011” (Statistics Canada, 2011).

Therefore, data from Canada’s national statistical agency conclude that the growth in obesity prevalence may have plateaued in recent years, and the ratio of overweight Canadians is no higher than its level of a decade ago. The latter statistic is of considerable interest, too, because proponents of intervention often combine the overweight and obese populations in order to present to the media a far larger number of Canadians in harm’s way, stimulating more attention than might otherwise be the case.<sup>4</sup>

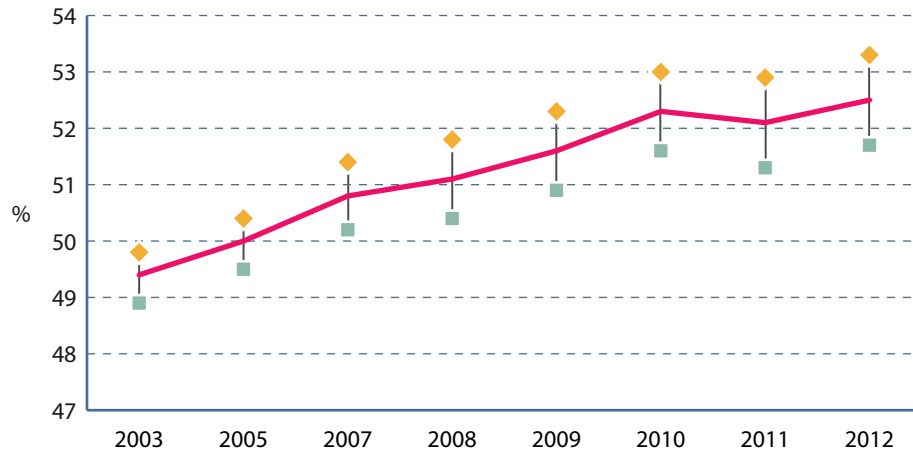
Given the strong demand for government action on obesity, it is perhaps valuable to examine Canadian rates of overweight and obesity further. As shown in [figure 1](#), there clearly has been an increase in the proportion of Canadians who are overweight/obese between 2003 and 2012. It is important to recognize however that Canadian measurements of overweight/obesity, like many measurements used in developed nations, are based on surveys of small samples of the population, and thus also come with statistical confidence intervals within which, we can be 95 percent confident, the true population average lies. A look at these confidence intervals shows that, while obesity has risen between 2003 and 2012, there has been no statistical change between 2008 and 2012 for the population as a whole.

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3. See also Le Petit et al. (2006) and Orpana et al. (2007).

4. This tactic is disingenuous for two reasons. First, the argument is often that the brewing public health crisis will result from an explosion in extremely overweight, that is, obese, individuals, rather than from an increase in mildly or moderately overweight individuals. Second, as detailed later in this paper, the health outcomes that accrue to being overweight (but not obese) may be on balance much less negative (if not potentially positive) in comparison to the risks of being obese.

**Figure 1: Percent of Canadian adults overweight and obese, self-reported body mass index, both sexes, 2003–2012**



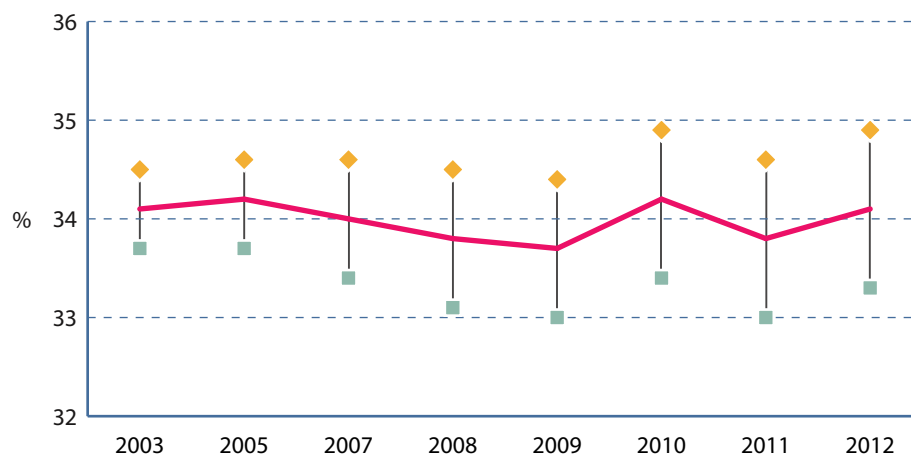
Source: Statistics Canada, CANSIM Table 105-0501.

Digging deeper, the rate of overweight among the Canadian population has not changed statistically over the entire period (**figure 2**). In 2003, 34.1 percent of the population were estimated to be overweight (body mass index of 25 to 29.99), with a 95 percent confidence interval of 33.7 percent to 34.5 percent.<sup>5</sup> In 2012, the estimate was also 34.1 percent with a 95 percent confidence interval of 33.3 percent to 34.9 percent. Conversely, the rate of obesity (body mass index of 30 and above) among the Canadian population clearly increased between 2003 (15.3 percent) and 2012 (18.4 percent), though again there is no statistically significant difference between the rates in 2009 and 2012 (**figure 3**).

5. This can also be stated as plus or minus 0.4 percent 19 times out of 20.

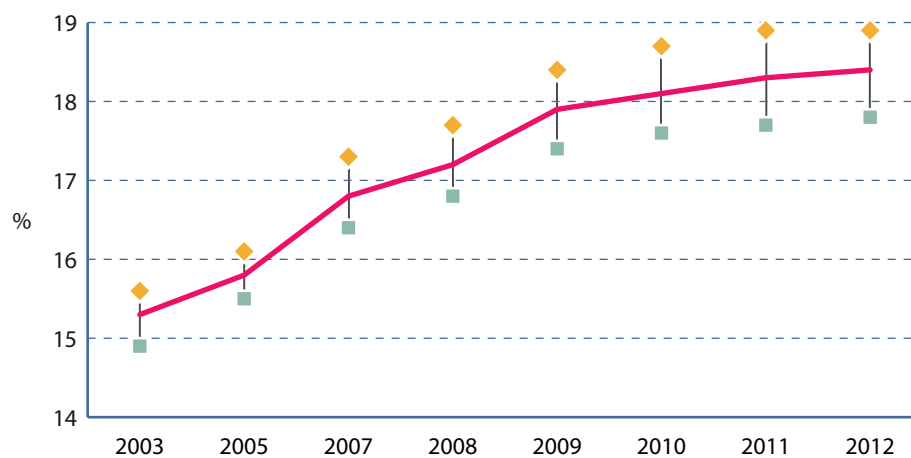


**Figure 2: Percent of Canadian adults overweight, self-reported body mass index, both sexes, 2003–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

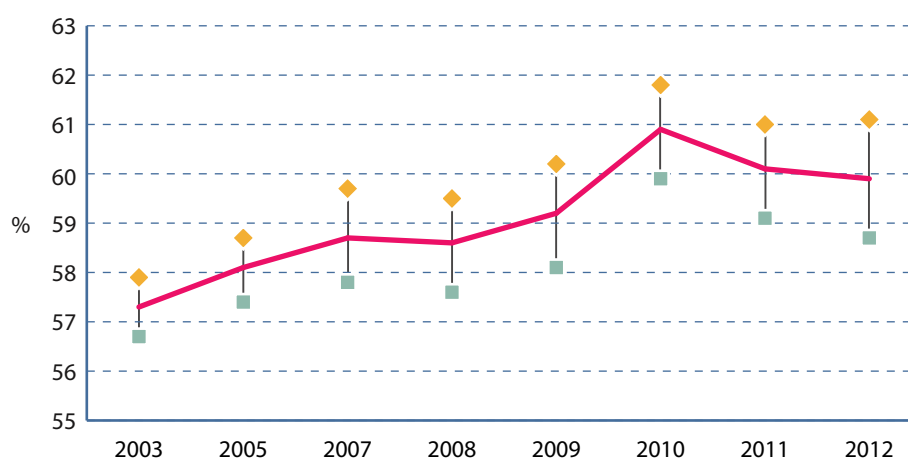
**Figure 3: Percent of Canadian adults obese, self-reported body mass index, both sexes, 2003–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

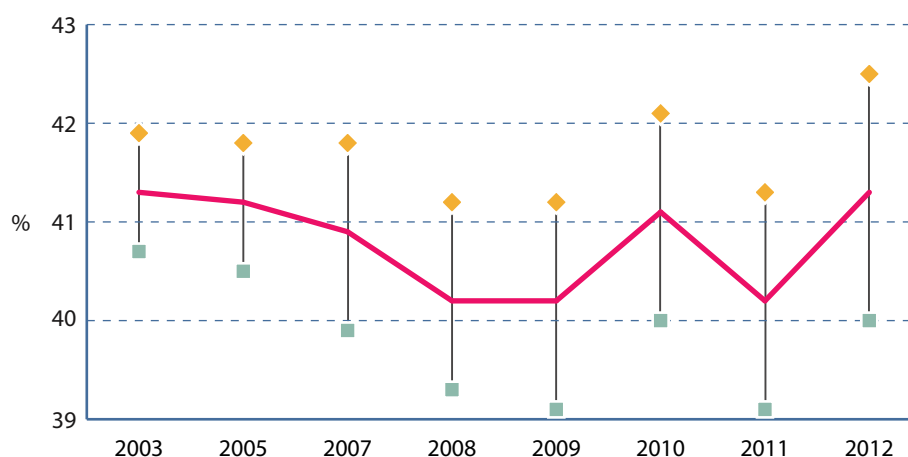
An even more interesting reality is revealed when rates of overweight and obesity are broken out between males and females. As shown in **figure 4**, the rate of overweight and obesity among males increased between 2003 and 2010, but has since fallen to a level that is not statistically significantly different from the rate in 2007. Looked at separately, rates of overweight for Canadian males appear to have stabilized (**figure 5**) while rates of obesity increased steadily between 2003 and 2010 but have since stabilized with no statistically significant difference between the rates in 2007 and 2012 (**figure 6**).

**Figure 4: Percent of Canadian adult males overweight and obese, self-reported body mass index, 2003–2012**



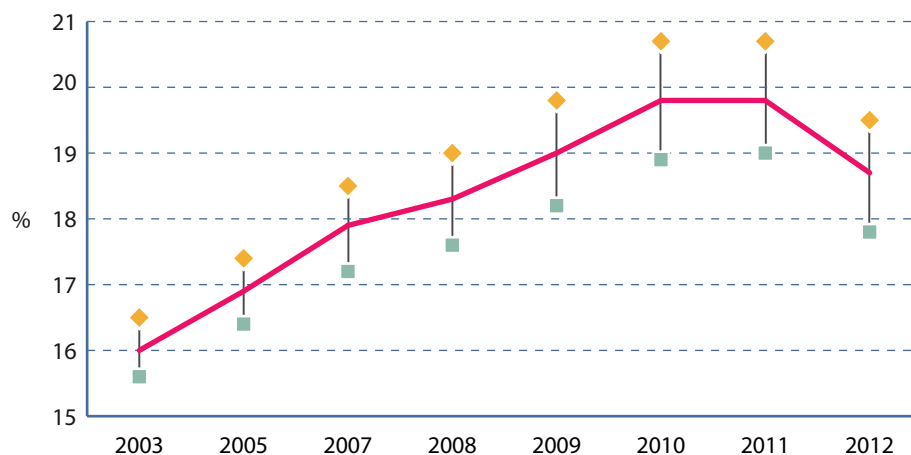
Source: Statistics Canada, CANSIM Table 105-0501.

**Figure 5: Percent of Canadian adult males overweight, self-reported body mass index, 2003–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

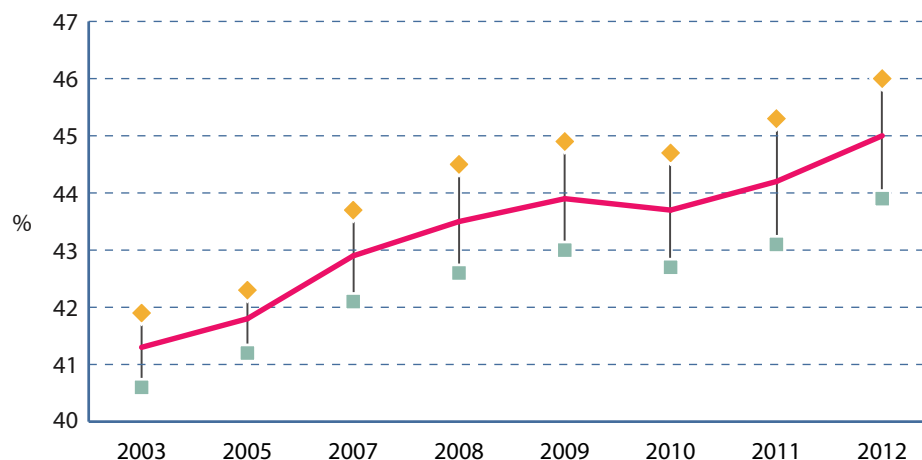
**Figure 6: Percent of Canadian adult males obese, self-reported body mass index, 2003–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

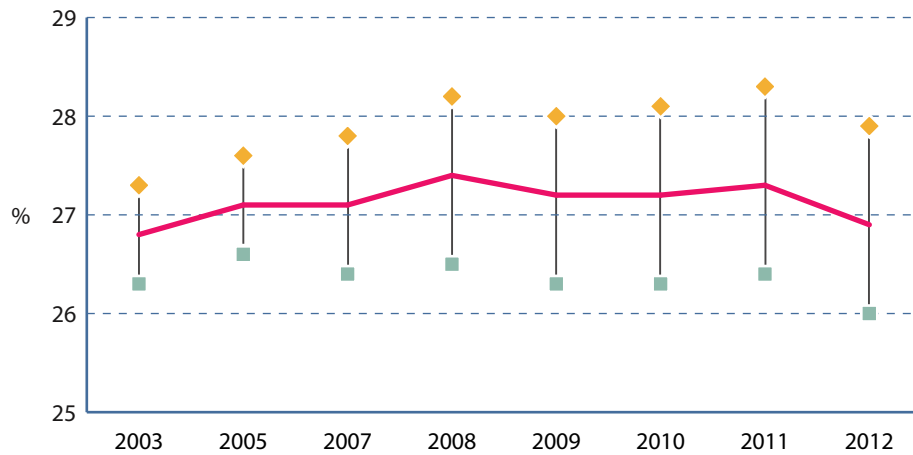
The story is considerably different for females, where rates of overweight and obesity appear to be on an upward trend, though again statistically there is no significant difference between the rates in 2008 and 2012 ([figure 7](#)). This increase is not being driven by changes in overweight, where the rate is largely unchanged over the period for which data are available ([figure 8](#)). Rather, the increased rate for females is largely driven by an increase in the prevalence of obesity, which has climbed steadily since 2003 ([figure 9](#)).

**Figure 7: Percent of Canadian adult females overweight and obese, self-reported body mass index, 2003–2012**



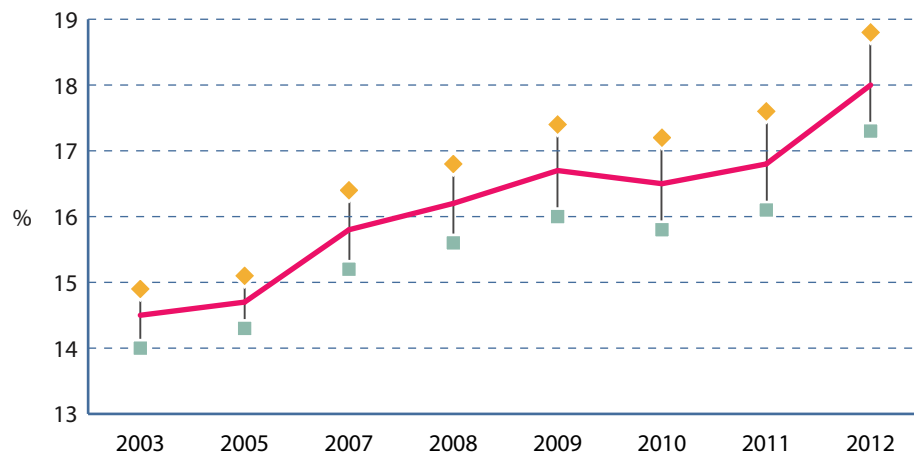
Source: Statistics Canada, CANSIM Table 105-0501.

**Figure 8: Percent of Canadian adult females overweight, self-reported body mass index, 2003–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

**Figure 9: Percent of Canadian adult females obese, self-reported body mass index, 2003–2012**

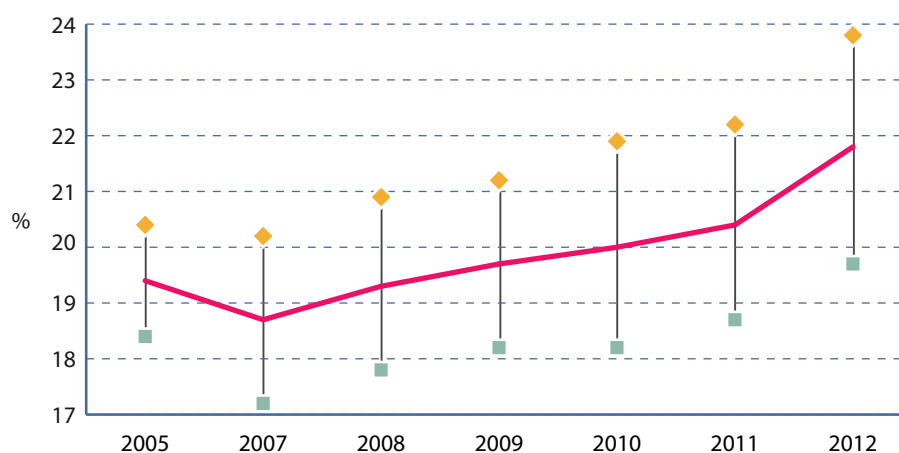


Source: Statistics Canada, CANSIM Table 105-0501.

For adults, then, the primary concern when it comes to the prevalence of overweight and obesity should be its increase among Canadian females, since the rate of overweight and obesity for Canadian males may have stabilized in recent years.

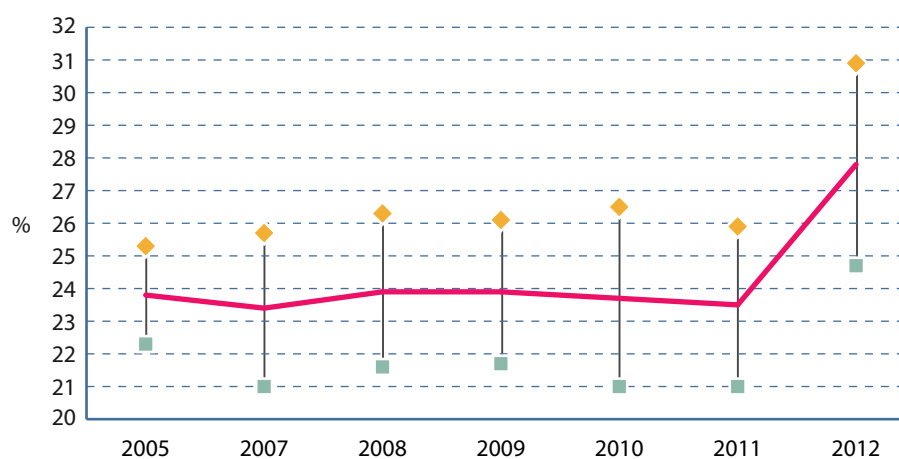
When it comes to youth, changes in the prevalence of overweight and obesity suggest even less need for concern. For those aged 12 to 17, rates of overweight and obesity between 2005 and 2012 (data were not available for 2003) are largely unchanged (**figure 10**). This remains true even when the data are separated for males and females (**figures 11 and 12**).

**Figure 10: Percent of Canadian youth (12–17 years) overweight and obese, self-reported body mass index, both sexes, 2005–2012**



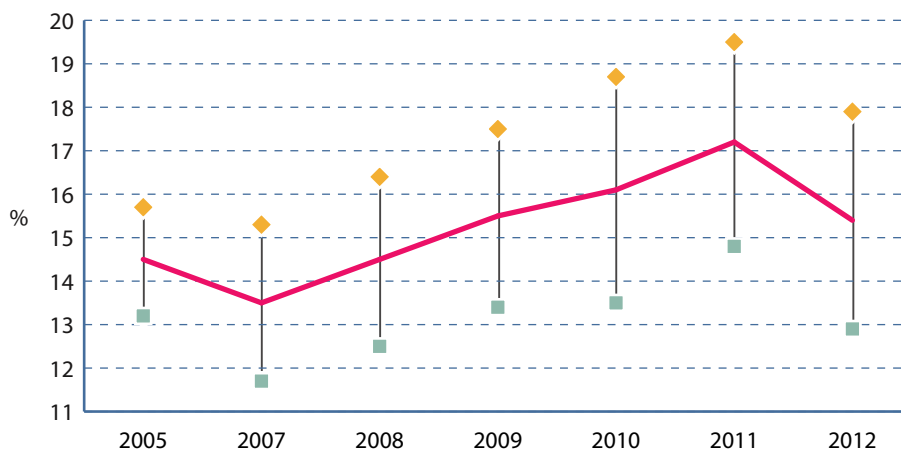
Source: Statistics Canada, CANSIM Table 105-0501.

**Figure 11: Percent of Canadian youth (12–17 years) overweight and obese, self-reported body mass index, males, 2005–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

**Figure 12: Percent of Canadian youth (12–17 years) overweight and obese, self-reported body mass index, females, 2005–2012**



Source: Statistics Canada, CANSIM Table 105-0501.

Overall, a closer look at Canadian data suggests that the state of Canadians' waistlines is only really continuing to expand among adult females. On the other hand, the shares of Canadian adult males and Canadian youth carrying excess weight (at least by the current BMI-based standards) are either stable over time or may be stabilizing. Of course, it is still possible that prevalence remains relatively high historically, though one might expect prevalence to be higher given the increase in living standards over time. But a reality of potentially high but stable and perhaps even declining overweight and obesity is much different from the commonly heard argument that we are growing ever fatter. Given these data, is the need for government intervention less great than proponents of government paternalism would have us believe?

## Body Mass Index and the mismeasurement of obesity

A central problem with the analysis above is that it relies on a commonly used but potentially problematic measure: the Body Mass Index (BMI).<sup>6</sup> BMI calculates obesity using a weight-to-height ratio, or more specifically weight over the square of height (weight in kg / (height in m)<sup>2</sup>). For the determination of whether an adult is underweight, normal weight, or obese (and how severely obese), the following bands are used:

BMI < 18.50	Underweight
18.50 ≤ BMI ≤ 24.99	Normal weight
25.00 ≤ BMI ≤ 29.99	Overweight
BMI ≥ 30.00	Obese
30.00 ≤ BMI ≤ 34.99	Class I obese
35.00 ≤ BMI ≤ 39.99	Class II obese
BMI ≥ 40.00	Class III obese

BMI, and bands such as these, are used to measure obesity worldwide, including by the World Health Organization, Health Canada, other national governments, and private organizations such as Gallup. Unfortunately, BMI scores are deeply flawed in a methodological sense, though their easy applicability and common use may have led to them acquiring an authority of unwarranted validity. The result of over-reliance on BMI is obesity statistics that arguably are not necessarily helpful at best and harmful at worst.

The BMI categories for normal, overweight, and obese are determined arbitrarily (Basham and Luik, 2008). They are also, as discussed in the next section, not necessarily aligned with research on the relationship between BMI and mortality. That lack of alignment may substantially weaken the scientific pretensions and diagnostic value of the index.

The BMI ranges for obesity and overweight commonly used today are the product of the 1997 US National Institutes for Health task force report on the prevention and treatment of obesity. In that report, these BMI bands were associated with increased risk of death. The study behind the report does not however support these associations, having actually found that the death risks for overweight and obese males (BMI of 29 to 31) were the same as those for men with lower BMIs (19 to 21) (Troiano et al., 1996).

Further, BMI lacks precision in some applications because of its inability to distinguish between body fat and muscle, or to capture the distribution of body fat, both of which may be far more important in determining health risks associated with excess weight. For example, a 6-foot-tall athlete

6. There are additional concerns, not discussed here, about errors in self-reported weight and height data.



weighing 250 pounds would be classified as obese by BMI standards, the same as a sedentary person of the same weight and height. BMI also cannot distinguish between a person whose weight is evenly spread across their body, or concentrated in the hips and thighs, and a person whose excess weight is concentrated in the central abdomen.

These issues become increasingly important for younger Canadians, as BMI is an unreliable indicator of overweight and obesity in children and adolescents.<sup>7</sup> For example, a study from *Pediatrics* noted that BMI was an unreliable obesity-overweight measure since “BMI measures cannot differentiate between increased weight for height attributable to relatively greater fat-free mass (muscle, bone and fluids) and that attributable to greater fat” (Whitlock et al., 2005) and is affected substantially by thin or heavy body frames, by the relative length of legs and torso, etc. For instance, a 2004 study found that 42 percent of males and 32.1 percent of females classified as overweight or obese according to the BMI did “not have really high adiposity” (Rodriguez et al., 2004).

Statistics Canada offers some acknowledgement that using BMI for measuring childhood obesity may be problematic:

Establishing a standard BMI classification system for children has been more challenging, because of variations in growth rates and the difficulty of linking estimated adiposity levels in childhood to weight-related health outcomes that tend to manifest later in life. A number of classification systems for use at the population level have been developed to estimate overweight and obesity in children. Since 2004, Canada has used the age-/sex-specific classification cut-offs established by the International Obesity Task Force (IOTF). In 2007, the World Health Organization (WHO) released a new set of age-/sex-specific classification cut-offs for children and adolescents aged 5 to 19. (Roberts et al., 2012: 3).

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7. For an exhaustive methodological critique of the Body Mass Index’s utility, see Basham et al. (2007: Chapter 2). Pithier critiques are found in Basham and Luik (2008) and Oliver (2006).

## Overstated childhood obesity?

Statistics Canada acknowledges that it now employs the WHO version of the BMI scale, thereby producing significantly higher levels of overweight and obesity than are found through employment of the IOTF's BMI scale:

The WHO cut-offs identified a greater percentage of children as overweight or obese than did the IOTF cut-offs: 31.5% versus 24.8% ... At ages 5 to 11, the difference was more pronounced than at ages 12 to 17. According to the WHO cut-offs, an estimated 32.8% of 5- to 11-year-olds were overweight or obese, compared with an estimated 22.6% based on the IOTF cut-offs. (Roberts et al., 2012: 5)

Even this less conservative choice fails to support the claim that Canada faces an epidemic of overweight and obese children. In Canada, nearly a third of children (5 to 17 years old) are overweight (19.8 percent) or obese (11.7 percent), according to Statistics Canada data from 2011 (Roberts et al., 2012). Critically, these official figures reveal that childhood obesity levels are no longer rising and may have stabilized nationally: “these estimates have not changed significantly in recent years” (Roberts et al., 2012: 6).

It is a tremendous irony—and, perhaps, *the* untold story of the obesity debate—that, not only in Canada but throughout the developed world, governmental claims about childhood (and, obviously, adult) obesity are not necessarily supported by the data produced by the very same governments.

To cite an American example, a US Centers for Disease Control and Prevention study about obesity in children and adolescents, published in the *Journal of the American Medical Association*, examined the BMI of children and adolescents over five time periods between 1999 and 2008, the decade during which child obesity was consistently described as America's pre-eminent public health problem (Ogden et al., 2010). The study is based on data drawn from the National Health and Nutrition Examination Survey, which is a representative sample of the American population. The survey measured the heights and weights of 3,281 children and adolescents and 719 infants and toddlers.

The results are striking. During none of the five periods was there a statistically significant trend, except for boys at the highest BMI levels. In other words, if there was a spike in obesity, it was narrowly confined to a very small number of very obese boys.

The CDC has found that childhood obesity rates have actually fallen in some American states (for example, New York, Mississippi, and Pennsylvania) during the past few years. In part, that may reflect the fact that, contrary to conventional wisdom, the average child's caloric intake is lower today than it was a decade ago. Specifically, American boys are consuming 7 percent fewer

calories, while American girls are, on average, consuming 4 percent fewer calories than did their peers a decade earlier (Ervin and Ogden, 2013).<sup>8</sup> The very latest CDC data confirms that obesity rates may be on the decline among American children (Payne, 2013; Mantel, 2013).

In the British case, it was already apparent several years ago that the childhood obesity epidemic was not really an epidemic. According to the UK Department of Health's *Health Survey for England 2007*, "[t]here was no significant change in mean BMI overweight/obesity prevalence between 2006 and 2007, and there are indications that the trend in obesity prevalence may have begun to flatten out over the last two to three years" (NHS-IC, 2008: 220). For instance, there was a decrease in the obesity rate of girls aged 2 to 15 from 18 percent in 2005 to 15 percent in 2006. Among boys aged 2 to 10, the prevalence of overweight declined from 16 percent in 2005 to 12 percent in 2006. In fact, the data showed that amongst boys and girls aged between 2 and 15 years old, overweight and obesity has been declining since 2004. In girls, obesity prevalence levels are largely unchanged from where they were in 2001. These findings are confirmed by other studies.

## Conclusion

The Social Issues Research Centre's report on obesity cautions that "[w]e do no service to the people at risk of obesity related morbidities in our society by 'hyping' their plight, exaggerating their numbers or diverting limited educational, medical and financial resources away from where the problems really lie" (SIRC, 2005: 10). Indeed.

At the very least, there is a growing volume of data showing that the proportion of Canadians carrying excess weight has stabilized or may even be turning a corner. While that level may still be historically high, such a finding suggests that caution may be warranted in regulatory approaches, rather than aggressive intervention. At the very least, interventions should have at least a likelihood of reducing the prevalence of overweight/obesity, should be focused on real and understood health concerns, and should be cost effective. A closer look at the risks associated with obesity and the efficacy of commonly proposed policy interventions in the next two sections raises serious questions about the direction being suggested for Canadian public policy.

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8. Additionally, there is of course the important matter of the anti-obesity campaign's negative influence upon children's self-esteem and body image, which increasingly may result in under- rather than over-consumption of calories.

## 2. Public (and private) consequences of overweight and obesity

Writing in the *National Post*, James Aw (2012) states that “[o]besity is on track to surpass smoking as Canada’s leading cause of preventable death.” The Ontario Medical Association claims that obesity is now a “full-scale public-health crisis,” resulting in soaring levels of heart disease, diabetes and other serious maladies (Blackwell, 2012). Of course, many studies and examinations have shown that there are potentially serious (and costly) consequences to carrying excess weight. On the other hand, there is also research suggesting that the risks and costs commonly associated with overweight/obesity may be (perhaps significantly) overstated, and that current measures of overweight/obesity may contribute to an overstatement of the problem.

### Overweight, obesity and mortality

A number of studies of the relationship between overweight, obesity, and early mortality have suggested that the risks associated with obesity lie at the higher end of the scale. On the other hand, they also suggest that those who are classified as “overweight” under the current (since 1997) BMI score ranges may have lower rates of premature mortality than those who are “normal weight,” while those who would fall into the Class 1 obese range face similar risks to those in the normal weight range. These findings are quite different from the often alarmist comments seen and heard in the popular press from those in favour of government intervention.

For example, research by Katherine Flegal and her colleagues at the US Centers for Disease Control and Prevention found that overweight Americans were less likely to experience premature death than normal weight Americans (Flegal et al., 2005). More specifically, the authors found more premature deaths among those with BMIs of less than 25—the so-called normal weight—than those with BMIs in excess of 25. The lowest death rates were in the overweight category, that is, those with BMIs from 25 to 29.9.

In the *American Journal of Public Health*, Jerome Gronniger (2006) of the US Congressional Budget Office studied weight and mortality for each BMI point, rather than simply comparing, as is usually done, mortality across broad categories, such as underweight, normal, overweight, and obese. Gronniger's analysis found negligible differences in risk of death among people with body mass index values from 20 to 25. He found that men in the normal weight category exhibited a mortality rate as high as that of men in the moderately obese category (BMI of 30 to 35); men in the overweight category clearly had the lowest mortality risk. Gronniger concluded that "[n]ormal weight individuals of both genders did not appear to be relatively more long-lived than mildly obese individuals ... whereas overweight people (BMI of 25 to 30) appeared healthiest of all."

Noting that his study and others "suggest that individuals who are overweight and mildly obese face no or very little increased mortality risk relative to normal weight individuals," Gronniger cautions that "it seems best to avoid exaggerating the mortality risks faced by individuals with BMIs below 35."

Similarly, in a study of the relationship between all-cause mortality and overweight/obesity, Flegal et al. (2013) find that the risks of obesity tend to be at the higher ranges. Specifically, they found higher all-cause mortality among those who fall into Class 2 and Class 3 obese categories. On the other hand, Class 1 obesity was not associated with higher mortality and overweight was associated with significantly lower all-cause mortality in comparison with the normal-weight category.

These findings are supported by a study of Canadian data by Orpana et al (2009). Their study of the Canadian population found that "[a] significant increased risk of mortality over the 12 years of follow-up was observed for underweight (BMI <18.5) and obesity class II+ (BMI >35). Overweight (BMI 25 to <30) was associated with a significantly decreased risk of death ... Our results are similar to those from other recent studies, confirming that underweight and obesity class II+ are clear risk factors for mortality, and showing that ... overweight appears to be protective against mortality. Obesity class I was not associated with an increased risk of mortality" (Orpana et al., 2009).

As noted above, there are of course weaknesses in BMI scores and thus potential weaknesses in their use in studies of the relationship between excess weight and mortality.<sup>9</sup> It has been suggested that the potential for a disconnect between BMI and important risk factors for illness and premature

9. Statistics Canada notes that "BMI can be used to compare body weight patterns and related health risks within and between populations, and to establish population trends. For an individual, this measure should be used with caution because the health risks associated with each BMI category vary considerably between individuals. Particular caution is warranted when classifying adults who are naturally very lean or very muscular, as well as some ethnic and racial groups, and seniors" (Statistics Canada, 2011).

mortality (including excess fat) may help to explain why some studies show limited consequences to lower levels of overweight and obesity.

Several alternatives to the BMI have been suggested, including such anthropometric variables as body shape, waist to hip ratio, skin fold thickness, and waist circumference. Indeed, Statistics Canada focused on the risks of “excess” weight as measured in terms of waist circumference in a 2012 study, stating that “[a] recent Canadian study showed that over time, waist circumference among Canadians of all ages has increased more than BMI. Evidence for adults indicates that changes in the distribution of body fat, such as increases in waist circumference, are associated with elevated health risk, and suggests that even if the population prevalence of BMI does not change, changes in the distribution of body fat may increase health risk” (Roberts et al., 2012: 6). Many others have suggested these measures have greater predictive power in judging the health risks associated with excess weight (of the wrong kind).

Others, however, have come to a different conclusion. For example, CDC and National Cancer Institute researchers Katherine Flegal and Barry Graubard, in a study published in the *American Journal of Clinical Nutrition*, looked at alternative measures of obesity, such as percentage of body fat, skin fold thickness, waist circumference, and waist-hip ratio, and found limited support for a linear relationship between excess weight and mortality (Flegal and Graubard, 2009). Flegal and Graubard used the US’ third National Health and Nutrition Examination Survey (NHANES III), which provided data on a variety of alternative measures of overweight and obesity, such as percentage of body fat, skin fold thickness, waist circumference, and waist-hip ratio, for a representative sample of the US population. For each of these alternative measures, the authors grouped the population into low, which corresponded to BMI of less than 18.5, normal (BMI of 25 to 30), and high (BMI above 30) groups. This data was then linked with death certificate data to determine the number of excess deaths associated with the three different levels of each of the alternative obesity measures. For example, Flegal and Graubard were able to calculate how many extra deaths were linked to having a low, intermediate, and high percentage of body fat, a high waist to hip ratio, etc. Their findings align well with BMI score-based studies. Flegal and Graubard found the rate of excess deaths was 0.1 percent using the percentage body fat measure comparable to an overweight BMI, but that estimates were below zero for waist circumferences and waist-stature. There was an equal level of uncertainty for measures that would be comparable to a BMI over 30, with none of the estimates being statistically significantly different from zero.

It might still be argued, of course, that there remains an association between these alternate measures, particular illnesses, and early mortality even if no association was found between these measures of overweight/obesity and overall mortality. Flegal and Graubard examined this possibility by



looking at 21 diseases commonly linked to obesity, including cardiovascular disease, diabetes, colon cancer, esophageal cancer, and breast cancer. Their study of the links between each of these illnesses, mortality rates, and the alternate measures of overweight/obesity found that “the associations of the corresponding levels of other anthropometric variables—including waist, hip, and arm circumferences; percentage body fat ... waist-hip ratio; the sum of four skin fold thicknesses, and the waist-stature ratio—also tended to be weak and in general were quite similar to the association of BMI with mortality ... These findings do not suggest that the weak adiposity-mortality associations would be stronger if measures of adiposity other than BMI were used.”

It is worth noting that increases in overweight and obesity have been paralleled by falls in total cardiovascular mortality and mortality from coronary heart disease and stroke, as well as in the prevalence of hypertension and hypercholesterolemia. While these may be the result of other processes and medical advances, they do nevertheless point to an uncertainty about whether overweight/obesity will necessarily increase mortality from its current level. Bhattacharya and Packalen (2008) come to a very interesting conclusion in this regard, noting that an increase in the prevalence of obesity may result in an increase in technological innovation for the treatment of diseases whose prevalence increases with obesity (because of the expansion in the potential market for these treatments). Since normal-weight/non-obese individuals are at risk for a similar pattern of disease, an increased prevalence of obesity may actually generate a positive benefit for the non-obese.

In total, numerous empirical analyses of the relationship of BMI to mortality have found that mortality rates are little different between groups with BMI scores from 20 to 35, and that normal weight individuals of both genders do not appear to be relatively more long-lived than overweight individuals or even Class I obese individuals. This all suggests that the justification for obesity interventions is among a small section of the population with BMIs over 35; a much smaller group of the population than is commonly claimed to be at risk from their lifestyle behaviours/choices.

This relatively small group might well benefit from medical and pharmaceutical interventions of various kinds—interventions that will depend on a better biological and medical understanding of obesity, not to mention a clearer focus on their individual situations, rather than the broad, unfocused, blunt approaches commonly being proposed today (discussed in the next section). Whatever the nature of these interventions for Class II and Class III obese, the important point is that they, and not the merely overweight and obese, perhaps should be the primary focus of any taxpayer-funded anti-obesity initiative.

It is worthwhile to also consider studies that have found a similarly limited relationship between overweight/obesity and health risk at the disease level. Of course, the effects of obesity on the prevalence of all diseases is not



known, but work has been done studying potential relationships in a number of areas, including heart disease, cancer, and diabetes.

As noted above, a commonly held view is that being “apple shaped”, or having body fat concentrated around the waist, as opposed to in the hips/thighs or more evenly around the body, increases risk of heart attack. The apple-shaped measurement method uses the waist-to-hip ratio and compares the distance around the hips and waist to measure what is known as central obesity. Unlike BMI, it can distinguish between those with a bulging middle (“apple shaped”) or those with a narrower waist and fatter hips and bottom (“pear shaped”).

A large study published in *The Lancet* medical journal raises important questions about the view that being “apple shaped” necessarily leads to increased risk of heart attack once other important risk factors are accounted for (Emerging Risk Factors Collaboration, 2011). Funded by the Medical Research Council and the British Heart Foundation, *The Lancet* study was conducted by a research team led by Cambridge University’s John Danesh, and studied 220,000 people over the course of a decade. The study found that the risk of heart attack was not increased by fat being concentrated around the waist, flatly contradicting earlier research that suggested overweight people with fat deposits in the middle of their body were three times as likely to suffer heart attacks as those with more generally distributed fat:

The results from our analysis of individual data from 221,934 people without initial cardiovascular disease have shown that BMI, waist circumference, or waist-to-hip ratio, assessed singly or in combination, do not importantly improve prediction of cardiovascular disease risk when additional information is available on blood pressure, history of diabetes, and cholesterol measures.

(Emerging Risk Factors Collaboration, 2011: 1092)

A review of data from the United Kingdom’s recent Million Women Study, which followed 1.2 million women aged 50 to 64 from 1996 to 2001, suggests that the link between obesity and cancer may also be less direct and definite than is sometimes suggested (Reeves et al., 2007). The study examined the link between 17 common cancers and BMI, finding that higher BMI was indeed associated with increased risk of 10 of those cancers, including 8 for all women, one for premenopausal women (colorectal cancer) and one for postmenopausal women (breast cancer). On the other hand, a significant inverse relationship between BMI and cancer incidence was found for squamous cell carcinoma of the esophagus and for lung cancer, and a nearly significant inverse relationship was found for premenopausal breast cancer.

For several years, we have been warned that today’s obesity epidemic could result in tomorrow’s type 2 diabetes epidemic. Basham and Luik present

a rigorous rebuttal of the conventional wisdom that there is a causal link, for example, between excess body fat and diabetes (Basham and Luik, 2009). Their findings suggest that several factors justify skepticism about the link between non-insulin-dependent diabetes mellitus and overweight/obesity.

These factors include the fact that type 2 diabetes is genetic in origin, the absence of compelling direct evidence that excess fat is the cause of insulin resistance (that is, the possibility that weight gain follows, rather than precedes, insulin resistance), the fact that the proposed link between diabetes and obesity fails four of the Austin Bradford Hill criteria for causality, and the fact that there is little evidence that weight loss mitigates diabetes, as increased physical activity and dietary changes reduce diabetes risk in advance of, or in the absence of, weight loss (Tuomilehto, 2001).

Basu et al. (2013), in a new article published in PLOS One, found that obesity is not related to the prevalence of type 2 diabetes at the population level. Rather, it is the consumption of high levels of sugar (sugar availability) that are related to higher levels of diabetes prevalence. Further, a 2012 study in the *Journal of the American Medical Association* found that people of normal weight with type 2 diabetes have twice the death rate of type 2 diabetes sufferers who are either overweight or obese (Camethon et al., 2012).

## **Fat children, obese adults?**

An important concern with lifestyle-related illnesses is of course their impact on future health and health in the longer term, rather than immediate health consequences. Statistics Canada asserts that “obese children tend to become obese adults, making childhood obesity a public health concern” (Roberts et al., 2012: 3). On the other hand, Basham and Luik (2009) find no evidence showing that overweight and obese children have notably poorer health outcomes than other children.

There is evidence to suggest that most fat adults were not fat children. Data from the Thousand Families Cohort Study, following families born in the UK in 1947, found both little consistency between childhood overweight and adult obesity and no net increase in adult risk of disease for overweight children or teenagers. Nor did childhood thinness protect against either adult obesity or coronary vascular disease (Wright et al, 2001; Ferraro et al, 2003). In their review of the data, Wright et al. (2001) conclude that there is “little tracking from childhood overweight to adulthood obesity.”

## Killing us early (while living longer)?

Despite the supposedly abnormal levels of overweight and obesity prevalent throughout Canada, the United States, and the United Kingdom, life expectancy continues to increase in each of these countries. Nevertheless, for years we have been assured that epidemics of obesity, binge drinking, and other lifestyle choices/social ills were going to shorten average lifespans significantly. Yet the latest life expectancy data shows that Canadians, Americans, and Britons are all projected to live longer than ever.<sup>10</sup>

Certainly, Canadians are living longer lives than ever before. Canadian life expectancy at birth has increased steadily since 1979, when it was 74.9 years. Statistics Canada data show that those born between 2006 and 2008 have a life expectancy of 80.9 years.

Life expectancy for the three-year period was up 0.2 years compared to the average for people born between 2005 and 2007. It is a significant gain from the national average of 78.4 years in 1995. Now, the nationwide average expectancy is 78.5 for men and 83.1 for women.

Across the country, Statistics Canada reported an upward trend of seniors living longer. At age 65, seniors had a life expectancy of another 20 years in 2006 to 2008, also up 0.2 years compared to 2005 to 2007. Jack Goodman, an associate professor in the University of Toronto's faculty of physical education and health, told the *National Post* that "the number of baby boomers who are just passing middle age now ... should have continually increasing lifespans" (Chai, 2011).

According to the US Centers for Disease Control and Prevention, American life expectancy reached a historic high in 2010, as fewer people died from heart disease and cancer—diseases previously projected to skyrocket as the prevalence of overweight and obesity increased.

Yet the average American man now had a life expectancy of 76.2 years, and the average American woman now has a life expectancy of 81.1 years. Average life expectancy has risen by two years for both men and women over the past decade of allegedly deteriorating public health.<sup>11</sup>

To place continuing progress in greater historical perspective, it is worth noting that, at the turn of the 20th century, average life expectancy was just 47 years; by the start of this decade, it had risen to 80 years, on average. The United Nations' demographers forecast that, by the dawn of the next century, the average American male will enjoy a life expectancy of 96.5 years, while the average female will have a life expectancy of precisely 100 years.<sup>12</sup>

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10. Life expectancy is the average number of years of life remaining at birth or at another age, and is normally calculated using three years of data.

11. Data cited on ABC World News, 11 January 2012.

12. Data drawn from Duncan (2012a), an essay adapted from Duncan (2012b).

And despite the supposedly dangerous levels of obesity in the UK, life expectancy continues to increase. According to the UK government's Office for National Statistics, in 1981 life expectancy for men was only 71 years; for women, it was 77 years. However, by 2011, life expectancy for men had risen to 78.7 years and to 82.6 years for women. It is projected that by 2031 life expectancy will have risen to 82.7 and 86.2, for men and women, respectively (O'Grady, 2013).

Given that the obesity epidemic has been ravaging public health across Canada, the United States, and the United Kingdom for over a decade, the fact that the upward trend in life expectancy continues unabated might be explained in several ways.

One possible reality is that a far more obese population will not overwhelm respective public health systems because advances in medical technology will permit an increasingly unhealthy populace to nevertheless live longer lives.<sup>13</sup>

Another possible reality is that a higher prevalence of obesity does not result in increasingly unfavourable health outcomes, especially regarding premature mortality. Much of this scenario would, according to the research presented above, rely on Class I obesity far dominating Class II or Class III obesity. In this situation, too, obesity is less of a medical or an economic time bomb.

Another possibility is that Class II and Class III obesity prevalence may simply be too small to exert a meaningful downward pressure on average life expectancy.

This list is obviously not exhaustive, and other less positive visions of the future might be conjured using more aggressive expectations for the negative impact of obesity on health and survival. It is nevertheless possible—based on the available evidence—that the sky is not falling.

## What's the cost?

While much of the focus on the obesity problem relates to the health consequences of carrying too much excess weight, there is also an important concern about the costs obesity imposes on the economy. Indeed, many advocates of government intervention justify the need for intervention by pointing to the potentially substantial increased burden on Canada's tax-financed health system. As numerous studies show, these are not the only economic costs associated with an increased prevalence of obesity.

13. It may even be the case, as suggested by Bhattacharya and Packalen (2008), that the increased prevalence of obesity positively contributes to these medical advances, to the benefit of both the obese and the non-obese.

It has been suggested that the obese earn less than the non-obese as a result of their increased weight. For example, Baum and Ford (2004) found a persistent wage penalty for both men and women in the first two decades of their careers, and suggested that “other variables—including job discrimination, health-related factors and/or obese workers’ behaviour patterns—may be the channels through which obesity adversely affects wages” (2004: 885). Similarly, Cawley (2004) found that obese white females earned 11.2 percent less wages than their non-obese counterparts, and that a weight difference of roughly 65 pounds could be associated with a 9 percent difference in wages.

Some further explanation for the wage penalty can be found in a study by Bhattacharya and Bundorf (2009). They determined that a large portion of the wage difference between the obese and non-obese could be attributed to differences in the costs of employer-sponsored health insurance in the US. Notably, they also determined that the wage offset exceeded the expected difference in health care costs for women, but not for men. Of course, from the Canadian perspective, this finding may be less relevant given that employers may sponsor only a portion of risk-rated health insurance coverage, with coverage for physician and hospital services being tax funded for all.

Then again, obesity has been associated with differences in work absences, productivity, and employment generally, all of which would be relevant from the Canadian perspective. McCormick et al. (2006), in a review of the economic costs of obesity, note that obese individuals are less likely to be in employment for reasons specifically related to non-health-status characteristics of obesity (perhaps job discrimination or perceptions of lower productivity), and that obesity is related to higher levels of absence from work due to illness. Marlow and Abdulkadirov (2012) note that a higher level of illness, which may potentially be related to higher levels of obesity, may negatively impact worker productivity and increase absenteeism, and that the costs associated with these may be substantial (which means the wage penalties are also likely to be significant).

More generally, obesity has been associated with negative effects on mental and emotional wellbeing, lost productivity, restricted activity, and poorer educational performance (see, for example, Raine, 2004; Olshansky et al., 2005; Ding et al, 2006; BCPHO, 2006; McCormick et al., 2006).

Beyond these broad economic costs associated with excess weight, and the economic costs associated with increased levels of premature mortality and illness, are the taxpayer-funded health care costs of providing the additional hospital and physician services obese individuals may require. Of course, the evidence reviewed above suggests that the link between obesity and negative health consequences is found at the higher end of the weight spectrum (Class II or Class III obese) and that obesity alone may not be the key to higher rates of disease prevalence. Nevertheless, there are clearly some increases in health costs associated with excess weight that must be accounted for.

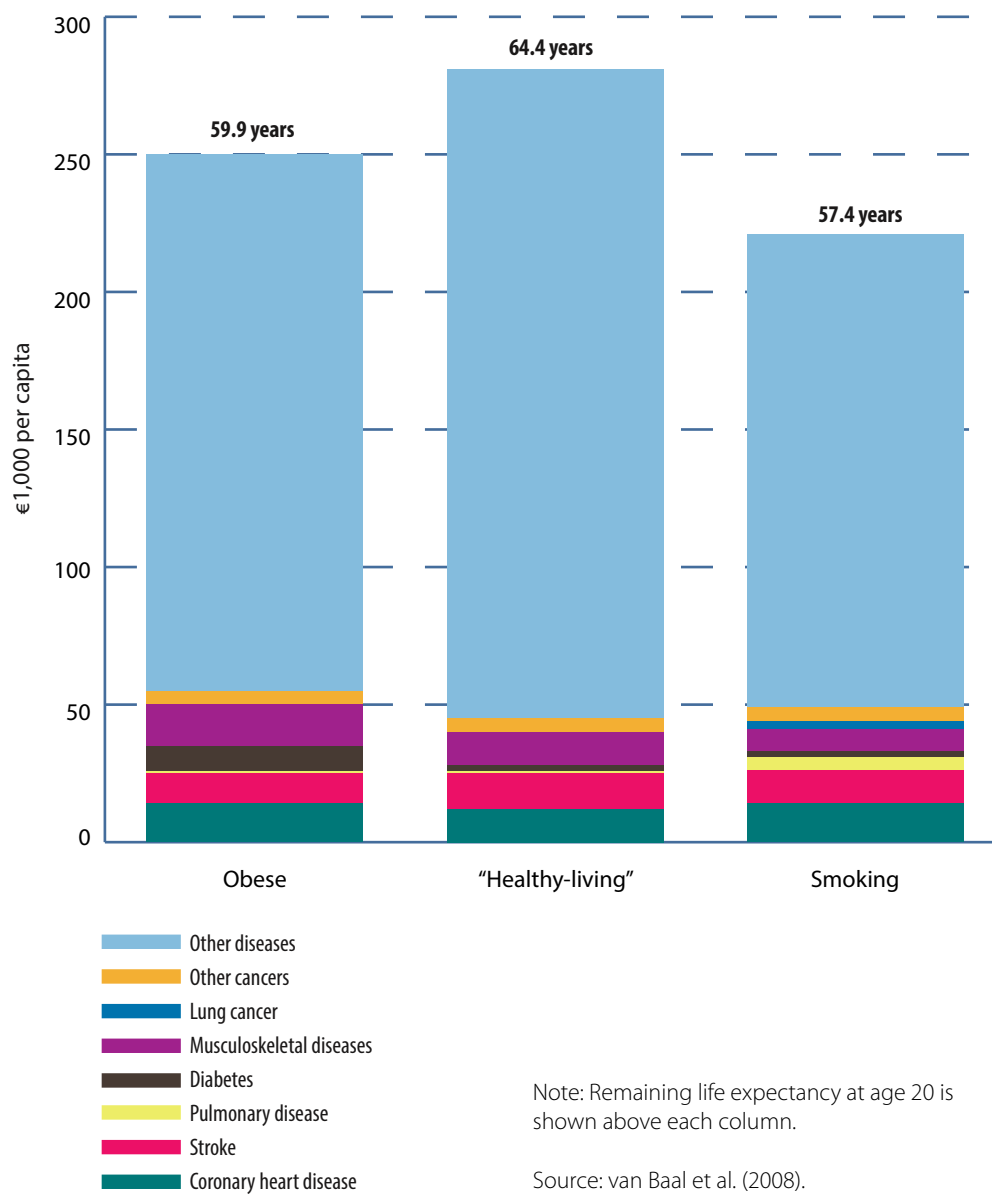
Studies have attempted to measure the additional cost imposed on the health care system by overweight and obesity. For example, a study by Katzmarzyk and Janssen found that “the global economic costs of physical inactivity and obesity represent 2.6% and 2.2% of all health care costs in Canada respectively” for 2001 (2004: 17). A Canadian study by Sturm (2002) estimated that the cost associated with being overweight (for both inpatient and ambulatory care) was \$125 per person per year, while the cost associated with being obese was \$395 per person per year. In the US, Finkelstein et al. (2002) estimated an average annual medical spending increase (including out-of-pocket spending) of \$247 per person for the overweight and \$732 per person for the obese.

What is interesting here—and what is important in public policy terms—is the burden of the costs of obesity. A closer examination of the consequences of excess weight throughout this section finds that the majority of the costs of obesity are borne directly by the individual in terms of lower income, reduced employment opportunities, reduced enjoyment of life, greater illness, and a potentially shorter lifespan. The only area where these costs are not borne almost entirely and directly by the individual is the increased burden on Canada’s tax-financed health care system. As noted above, many of the debates and discussions about policies to combat obesity in Canada begin with the health costs imposed on society through the health care system. From an externality perspective then (though this is not the only justification used for government intervention, as we shall discuss in the next section) the only area of the “obesity epidemic” where governments may have a legitimate role to intervene is to resolve the costs imposed by the obese on all taxpayers through the tax-funded health care system.

Then again, Bhattacharya and Packalen (2008) find that the public health insurance externality for obesity (at least in the US Medicare system, which provides health insurance for the elderly) is roughly the same as the positive innovation externality from obesity, which may substantially weaken the justification for intervention.

Perhaps more significantly, a study by van Baal et al. (2008) calculated that while obese individuals incurred higher health care costs than normal-weight non-smokers during their lifetimes, over an entire lifetime normal-weight non-smokers incurred greater health care costs in total because of differences in life expectancy and the costs of care associated with additional years of life. The study’s findings for each of the three cohorts studied (obese non-smokers; normal-weight non-smokers or the “healthy-living” cohort; and normal-weight smokers) are shown in [figure 13](#). These findings suggest that obese individuals may in fact not be a net burden to all taxpayers over their entire lifetimes, despite imposing a cost burden while they are alive. That finding is bolstered by considerations of reductions in costs associated with public pensions and other old age income supports (Hazel and Esmail, 2008).

**Figure 13: Expected remaining lifetime health-care costs and remaining life expectancy at age 20 for three cohorts**





## Conclusion

While there is clearly a relationship between premature mortality and weight, there is evidence to suggest that the problem may be overstated in Canada when claims include Class I Obese and the overweight among those supposedly at risk. Indeed, the risk of premature death for the Class I obese may be no different than for normal-weight individuals, while the overweight may actually face a lower risk. Similar concerns can be raised about the relationship between illness and obesity specifically, while medical innovations and advances over time (perhaps accelerated by the prevalence of obesity) may mean the negative consequences associated with obesity are ultimately less harmful than some suggest. And finally, while there are potentially large economic costs associated with obesity, many are borne directly by the obese individual, with the notable exception of health care costs funded through Canada's public health care system. Even then, a longer term perspective or more complete view may weaken the case for further government intervention into our private lives.

### 3. Can government cure obesity?

As discussed earlier, the term “obesity epidemic” has become the hook by which almost all Western governments commit themselves to answering the impolite question, *what is to be done about the growing number of fat people?* In Canada, recent reporting has made blanket references to “a growing obesity epidemic and its dire health consequences” (Blackwell, 2012), to “Canada’s worsening obesity epidemic,” (Lajoie, 2013), and to the “nation’s growing girth” (Kirkey, 2013). For purveyors of the obesity-as-an-epidemic narrative, the answer is both simple and radical. According to academic Steve Bloom, “[t]he answer is to stop obesity, and the way to do that is to change our society” (*BBC News*, 2004c). As the UK House of Commons’s health committee has put it, “[a]s the main factors contributing to the rapid rises in obesity seen in recent years are societal, it is critical that obesity is tackled first and foremost at a societal rather than an individual level” (Walker, 2004).

In this vein, the Canadian anti-obesity lobby continues to bemoan the fact that this is an area where respective federal and provincial governments have not yet done a great deal, especially in comparison with their European peers. “A wide gap exists between initiatives implemented internationally to curb the obesity epidemic and the actual number implemented or evaluated in the Canadian context,” wrote a team of physicians in a recent issue of the *Canadian Medical Association Journal* (Eisenberg et al., 2011: 1499). Such comparative reticence is in striking contrast to Canada’s reputation as a leader in the developed world’s increasingly draconian war on the tobacco industry.

Hence, in 2012, the Ontario Medical Association declared “war on obesity” (McParland, 2012). Arguing that anti-obesity regulations should be as aggressive as those used against smoking, the OMA campaign called for graphic warnings (similar to those that must be printed on cigarette packages) on less healthful food options such as sugar-sweetened soft drinks, French fries, and fruit juices. The OMA also called for restrictions on the sales of “junk foods” in recreational facilities frequented by children and teenagers, lower taxes on more healthful food options, and higher taxes on sugary or fatty foods.

The OMA is clearly not alone with it comes to proposing taxes on less-healthful food options such as soft drinks and candy bars. Indeed, there

appears to be much support for the vilification of food options among those who call for governmental intervention to resolve the apparent obesity crisis. For example, writing in the *New York Times* early this year, Mark Bittman claimed that “[w]hen we begin treating sugar-sweetened beverages as we do tobacco, we will make a huge stride in improving our diet” (Bittman, 2013).<sup>14</sup> Others have suggested variously that marketing be regulated or prohibited (beyond voluntary industry agreements), and that displays of less-healthy food options should be disallowed or regulated so that they don’t provide “temptation” to consumers at store checkouts (e.g., Powell, 2005; Babbage, 2013; Philipson, 2013).<sup>15</sup>

A 2004 report by the UK House of Commons’ health committee singled out the food and beverage industry as the major culprit in the obesity problem, telling food manufacturers that they should implement a voluntary ban on so-called “junk food” advertising targeted at children; calling for an end to celebrity endorsement of less healthy foods, and for super-sized products to be phased out; and proposing that purveyors of super-sized chocolate bars should be “publicly named and shamed” (House of Commons, 2004: 68).<sup>16</sup> It even went so far as to recommend price changes to the industry’s products to make healthier products more affordable. If industry did not demonstrate significant improvements in product labeling and product formulation, the report recommended that government step in.

As noted above, what seems to be missing here is perspective. As shown in Parts 1 and 2 of this study, while there is clearly a health and economic cost associated with a high prevalence of obesity, the problem may be much smaller than many have claimed. Importantly, it may be that the serious health consequences lie at the higher end of the weight spectrum, thus affecting a relatively small proportion of the population. And many of the economic costs associated with obesity are borne privately by the individual and thus may not justify government intervention. That is the framework within which policy options should be proposed, and within which they

<sup>14</sup> Some proponents of government policy intervention appear to hold an extreme policy agenda. For example, R. C. Davey wrote in the *British Journal of Sports Medicine* that “[t]he only effective approach is for governments to implement radical policy change” (Davey, 2004: 360). Upon closer inspection, the word radical may be inadequate to capture the true nature of the interventions into our private lives being proposed by some who seek, fundamentally, to regulate our consumption of food.

<sup>15</sup> The term “less-healthy” food options is used deliberately here. As discussed later in this section, the term “junk food” suggests that foods such as chocolate bars or sugar-sweetened beverages have no value. However, they still provide calories/energy and nourishment, and quench thirst/hydrate. While they are undoubtedly less healthy than some alternatives, to suggest they have no value is misleading.

<sup>16</sup> For a comprehensive overview of proposed regulations governing the advertising of food products to children, see Hawkes (2004).

should be considered. Thus, we turn in this section to the efficacy of several of the policy prescriptions that have been proposed to combat the “obesity epidemic.” Unfortunately, we find little reason to believe that these paternalistic interventions into our private lives would have a meaningful impact in reducing expanded Canadian waistlines, even if claims of a larger problem are to be believed.

## Why intervene?

Before looking at the specific interventions being proposed, it is perhaps valuable to briefly consider the justifications provided for government intervention into our private behaviours. If the only justification for intervention was the tax-funded health insurance externality, then the solution is straightforward: impose a scaled health premium on the obese that is equal in value to the additional cost of caring for them. Such an approach is far less distortionary than the policies commonly proposed to combat obesity today, and is also far more clearly and directly linked to the concerns created by obesity. The debate would then be much less about lifestyle choices (and how governments might regulate them) and much more about the size of the premium. Premium discussions would need to include considerations of whether the obese actually cost more over a lifetime, and whether there are other positive externalities (such as induced innovation) that would offset the negative one.

While many of those supporting government intervention have indeed used the taxpayer-funded insurance externality as their basis for intervention, the other justifications common to the debate warrant at least brief examination. These justifications broadly fall into two categories: lack of information/imperfect information among consumers, or lack of motivation/self-control to make the “right” choices.<sup>17</sup>

The lack of/imperfect information justification alleges that consumers lack important information they need to make informed decisions (and thus better decisions in the eyes of those supporting government paternalism) about their lifestyle and diet. For example, it may be that consumers lack information about their food choices as they relate to overweight/obesity, or lack information about the consequences of excess weight. It should be noted that the latter point may be questionable. Finkelstein et al. (2008) undertook a survey of 1,130 US adults focused on determining whether overweight and obese individuals recognize that they are at greater risk of certain illnesses and premature mortality. They found that both overweight and obese adults

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17. For more on the justifications for intervention, particularly from the perspective of behavioural economics, see Marlow and Abdukadirov (2012). For an example of the use of these justifications from the UK, see McCormick et al. (2007).

forecast shorter life expectancies than those of normal weight adults. We leave an exploration of weaknesses in the former point, and particularly whether government interventions are necessarily the answer, to the discussion below.

The lack of motivation argument alleges that consumers may have time-inconsistent preferences or suffer from hyperbolic discounting, where individuals make decisions to satisfy the urges of the present self (for example, eating less healthful foods or not exercising) that may not be consistent with the preferences of the long-term self. Put another way, individuals place insufficient value on the future (and thus the consequences of their decisions on the future) to alter their decision making today. Similarly, the lack of self-control argument is focused on addictive behaviours, people having self-control problems, and settings where individuals may not be able to exert full control over their lifestyle decisions (children, for example). One way of dealing with this, from the perspective of the paternalist, would be to make the choices the anti-obesity lobby does not like (consumption of certain foods for example) more costly or more difficult to access. Alternately, choices favoured by paternalists might be subject to lower taxes or subsidies. There are already costs associated with weight-increasing decisions, however, including reduced incomes, social stigma, and so on, suggesting at least that individuals may not be acting without constraint. Again, we leave exploration of weaknesses in arguments for intervention, and whether the proposed interventions are effective, to the discussion below.

## How to wage war on obesity

A comparative assessment of national regulatory structures in the area of food industry regulation is a disheartening endeavour. There is very little to recommend in the various approaches to waging war on obesity. Above all, one is struck by the inability of policymakers and regulators to learn from the failures and mistakes of their international counterparts. Consequently, each new regulatory act in this area constitutes an exercise in reinventing the wheel. The same false assumptions are laid down as the foundation upon which the same demonstrably unworkable, even counterproductive, policies are expected to support decades-long campaigns to change the eating and drinking habits of ordinary people.

Most governments attempt to tackle obesity by introducing an all-too-familiar menu of policies and regulatory items interfering in the business practices of private companies, as well as the lives and habits of individuals and their families. The items on this policy menu include advertising restrictions and bans, labeling systems for food, vending machine bans, eliminating access to less healthful foods in schools, fat taxes, lessons for schoolchildren on healthy eating, planning restrictions (both restricting business location

and requiring that developers/builders make outside exercise easier), and programs encouraging exercise/activity, including increasing and improving physical education.

How do you rapidly change people's eating and exercise habits? That is the daunting problem facing interventionist governments. Perhaps Canada's federal and provincial governments will learn some of the distasteful lessons offered in the following sections.

The following examinations of policy efficacy set aside the findings in Parts 1 and 2 of this paper, and seek to address the question of whether or not it is feasible for the government to attempt to reduce the number of overweight and obese people in our society through the implementation of the anti-obesity campaign's policy menu. It is to the detail of this policy menu that we now turn our attention. At the end of this section, we will return to the question of whether interventions on a massive (and massively expensive) scale should be considered.

## **A problematic menu**

Before examining several prominently proposed "solutions" to the obesity problem and the evidence questioning their efficacy, it is important to point to more general problems common among these solutions.

First, and perhaps most vitally, they are for the most part blunt instruments that impact both the obese and non-obese. That interventions such as fat taxes or junk food taxes, access restrictions, and zoning rules, among many others, affect everyone regardless of their girth or lifestyle choices should immediately prompt the question of whether the imposition on those who are generally making the "correct" or at least "preferred" lifestyle choices—in the eyes of paternalists—is reasonable. As noted in Part 1, the group imposed upon is not small: a sizable portion of the adult population and the majority of the youth population are neither overweight nor obese by body mass index standards.

Put another way, these solutions violate the central canon of evidence-based medicine, in that they are not connected directly with the cause of the problem. For example, soda prohibitions do not tackle obesity, but rather discourage soda consumption (likely among those with a more elastic demand rather than the obese specifically). Exercise programs encourage physical activity (again with potentially different impacts on individuals) rather than encouraging those who perhaps consume too many calories and/or expend too few to address their personal balance. And because they are not connected with the root cause of the problem, they are doomed to be both beside the point and unsuccessful.

Critically, obesity is not a soda problem, nor a “junk foods” problem, nor even necessarily just a calorie problem. The causes of obesity are multifactorial, where obesity in each individual case may be influenced by literally dozens of physiological, psychological, and socioeconomic factors. These factors include breast feeding, cultural characteristics, diet, education, entertainment habits, exercise, family life and structure, genetics, income, peer pressure, and sleep patterns (Basham et al., 2007; see especially Chapter 5). Indeed, differences in genetics may mean that, for similar levels of energy input and physical activity, some groups of individuals may experience more weight gain and higher obesity prevalence than other groups (Marlow and Shiers, 2012).

Second, these policies assume that the lifestyle interventions being advocated will succeed in reducing weight, reducing disease, and increasing longevity. There is no doubt some hubris here. While it may be possible for this to be the outcome if the regulation or intervention led to the desired behavioural change, it is also possible that the targeted behaviour will not be successful in achieving the intended aims and that future research will suggest a different optimal behaviour.

For example, the Women’s Health Initiative Dietary Modification Trial, the largest and most extensive randomized controlled diet trial ever carried out, was an eight year study that followed 49,000 American women aged 50 to 90 over an eight-year period starting in 1993.<sup>18</sup> The goal was to examine the value of a low-fat diet, which was at the time thought to be a path to reductions in various illnesses and excess weight. The study found no statistically significant differences between the control and intervention groups in heart disease, stroke, diabetes, weight, 30 different cancers, or mortality. In other words, there were no important differences between those who ate the supposedly superior low-fat diet and those who ate what they wished. Further research in this area has of course led to a reduced focus on low-fat diets and more of an emphasis on the type of fat being consumed. But the point remains: the ideal behaviour we are certain of today may turn out to not be the one that actually works.

In another example, two major clinical trials aimed at preventing cardiovascular disease failed to lower their subjects’ levels of low-density lipoprotein cholesterol and mortality (Mitka, 2009).

The failures experienced in these studies are not anomalies. Lifestyle interventions focused on altering diet composition or the quantity of foods eaten often fail to find significant benefit in terms of avoiding multifactorial diseases like diabetes, heart disease, or cancer, or of increasing longevity.

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18. For more on this study, see the discussion in Basham and Luik (2009) and Harvard School of Public Health (no date).



Third, these solutions are founded on a belief that government-facilitated, population-wide behavioural change affecting diet, lifestyle, physical activity levels, and ultimately weight is possible. Support for that assumption is limited.

Interventions based on creating such behavioural change almost always rely on theories such as cognitive learning and the theory of planned behaviour, in which changes in knowledge and beliefs lead to changes in intention and, finally, to changes in behaviour. These theories have rarely been subjected to rigorous evaluation, and where they have, they have generally been failures (Hardeman et al., 2002).

Part of the problem here is a phenomenon known as “behaviour decay,” where behavioural changes such as changes in diet and exercise will persist for a short time but then gradually decay leaving little or no long-term impact. For example, studies on dieting suggest a long-term success rate of less than 10 percent. Indeed, Merrill et al. (2008), in a study of behaviour decay focused on improving diet and physical activity, found that most of the change occurred by week six with significant decay at 18 months.<sup>19</sup>

The assumption that overweight and obesity is in large part a result of the environment in which we live is a fourth problem with many commonly proposed solutions. This assumption makes overweight and obesity a societal rather than individual problem. There is however evidence to suggest that the environmental contribution to obesity might be small. For example, Wardle et al. (2008) found for twins that the shared environment effect for both Body Mass Index and waist circumference is only 10 percent.

This finding has important implications for many commonly proposed solutions for obesity. If the environment (whether the food environment or the wider environment) plays only a small role in obesity prevalence, changing that environment may have an insignificant impact on obesity prevalence. There is also the not-often-discussed possibility that causality runs the other direction, and that fast food vendors among others locate in areas with a higher prevalence of obesity, as that is where their customers are. Of course, there may be areas where this is less true, but it is nevertheless a possibility that may limit the efficacy of many interventions.

A fifth problem is that interventionists often implicitly assume that bureaucrats and those behind the interventions are benevolent and rational, while the free market has shortcomings. Thus they are quick to vilify private companies serving consumers who voluntarily purchase their products, and to blame limited information and hyperbolic discounting for poor consumer behaviour, but at the same time quick to propose that government

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19. Of course, some people will be successful at losing weight and some will maintain the changed behaviour, though that may be the result of differences in conviction or resolve among the participants.



paternalism can overcome these to resolve the obesity problem. In doing so, they too readily ignore potential biases and informational limitations faced by policy makers, as well as the realities of having governments make decisions about the specifics of the intervention in a political process.

There is also the often-ignored cost these interventions are likely to have for taxpayers, on the economy, and on particular industries. Many of these interventions would require increased bureaucracy, for example an agency to determine which foods or beverages qualify for targeting or for particular food categories. Interventions may also create barriers to entry for smaller businesses or artificial constraints on growth, generate higher business costs or increase costs for consumers, increase travel times for consumers, impact business prospects, and potentially lead to job losses. Interventions may also result in a transfer of funds from one group of legal businesses to another simply because one provides a product that is disliked by interventionists.

### **Fat taxes (or “junk food” taxes)**

Among the more commonly recommended policy solutions for the obesity epidemic are fat taxes. For more than a decade, medical associations in leading Western countries have recommended that governments levy heavy sales taxes on “unhealthy” high-fat foods such as cookies, chips, cakes, and processed meals (Klein, 2003). The American Medical Association, for example, favours a fat tax on soft drinks (Wigmore, 2006; Brownness and Frieden, 2009). The World Health Organization recommends fat taxes to governments seeking to combat obesity. More specifically, and most recently, the WHO’s Global Conference on Health Promotion called for national governments to target soft drinks as a major health risk (Furey, 2013).

Governments have in some instances followed this advice. In late 2011, Denmark introduced such a tax through a surcharge being placed on high-fat foods, such as butter, milk, cheese, meat, and processed food (Topping, 2011). Also in 2011, the French government announced that it would impose a fat tax on sugary soft drinks (Sparks, 2011). UK Prime Minister David Cameron also told the media that his government would consider a fat tax, as he believes drastic action is needed to fight obesity (Press Association, 2011).

The argument is that such a tax will reduce consumption of the targeted foods, and thereby improve diets and overall public health (Basham et al., 2006). Yet, there are many reasons why a fat tax would be at best unsuccessful, and at worst economically and socially harmful.

Research strongly suggests that a fat tax may simply prove to be a futile instrument in influencing the behaviour and habits of the overweight and the obese. Those consumers “addicted” (to use the popular, if unscientific, term) to allegedly less healthy food will not be dissuaded from their eating habits

and patterns by a tax. Those consumers who strongly prefer these foods—those whom the public health establishment would label dietary “risk takers”—will continue to eat and drink according to their individual preferences, until such time as it becomes prohibitively expensive to do so (Kuchler et al., 2005). Thus, higher taxes will most likely deter low demanders, light users, or the non-addicted (who themselves may substitute into other non-taxed items that may be equally or more undesirable to advocates of intervention) while high demanders (possibly those with excess weight) will be much less deterred (Marlow and Abdulkadirov, 2012).

There is of course a larger problem with the artificial “good food” versus “bad food” paradigm (at least as it relates to overweight/obesity) created by fat taxes through their definitions of “undesirable” foods.<sup>20</sup> The consumption of less healthful and/or fattier foods, when balanced with other foods and exercise, will not lead to a person being overweight or obese, nor will it necessarily lead to poorer health. No single food or beverage can be held responsible for weight gain. A Canadian government study concluded that “it is not what you eat, but rather, how much—the total number of calories consumed—that significantly contributes to obesity” (Langlois et al., 2009).

Other research has found that energy-dense foods like hamburgers and hot dogs, which are regularly blamed for obesity, do not appear to contribute to the problem. Howarth et al (2005) state that “we found no statistically significant associations between DED [dietary energy density] and Body Mass Index, waist circumference, tricep skin folds, and subscapular skin fold. Similarly, we found no independent association between DED and glycosylated hemoglobin, fasting glucose, HDL, LDL, total cholesterol, and triglycerides.” Their study concluded that “DED is not significantly associated with BMI and other anthropometric measurements of obesity and adiposity. Moreover, DED is not significantly associated with the majority of common risk factors for cardiovascular disease and diabetes.”

The journal *Obesity Research* published an analysis that identified no statistically significant relationship between the percentage of calories from ice cream, baked goods, candy, or chips and BMI score in adolescent girls (Phillips et al., 2004). According to the researchers, these “energy dense snack foods” had no bearing on “weight status or fatness change over the adolescent period.” Chocolate bars and chips, often blamed for the rise in childhood obesity, are not, in fact, responsible for weight gain in children, according to research by Harvard University scientists (Dobson, 2004).

Other evidence suggests that higher prices do not reduce soft drink consumption. Fletcher et al. (2009) studied the potential for soft drink taxes to reduce obesity prevalence among adolescents using the National Health

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20. See also the discussion of “good” versus “bad” foods in the food labeling discussion below.

Examination and Nutrition Survey and American state soft drink sales tax data from 1988 to 2006. While they found that such taxes may lead to a moderate reduction in consumption, the reduction had no effect on obesity as it was “completely offset by increases in consumption of other high calorie drinks” (2009: 967). Furthermore, Sturm et al. (2010: 1052) found that soft drink taxes “do not substantially affect overall levels of soda consumption or obesity rates.”

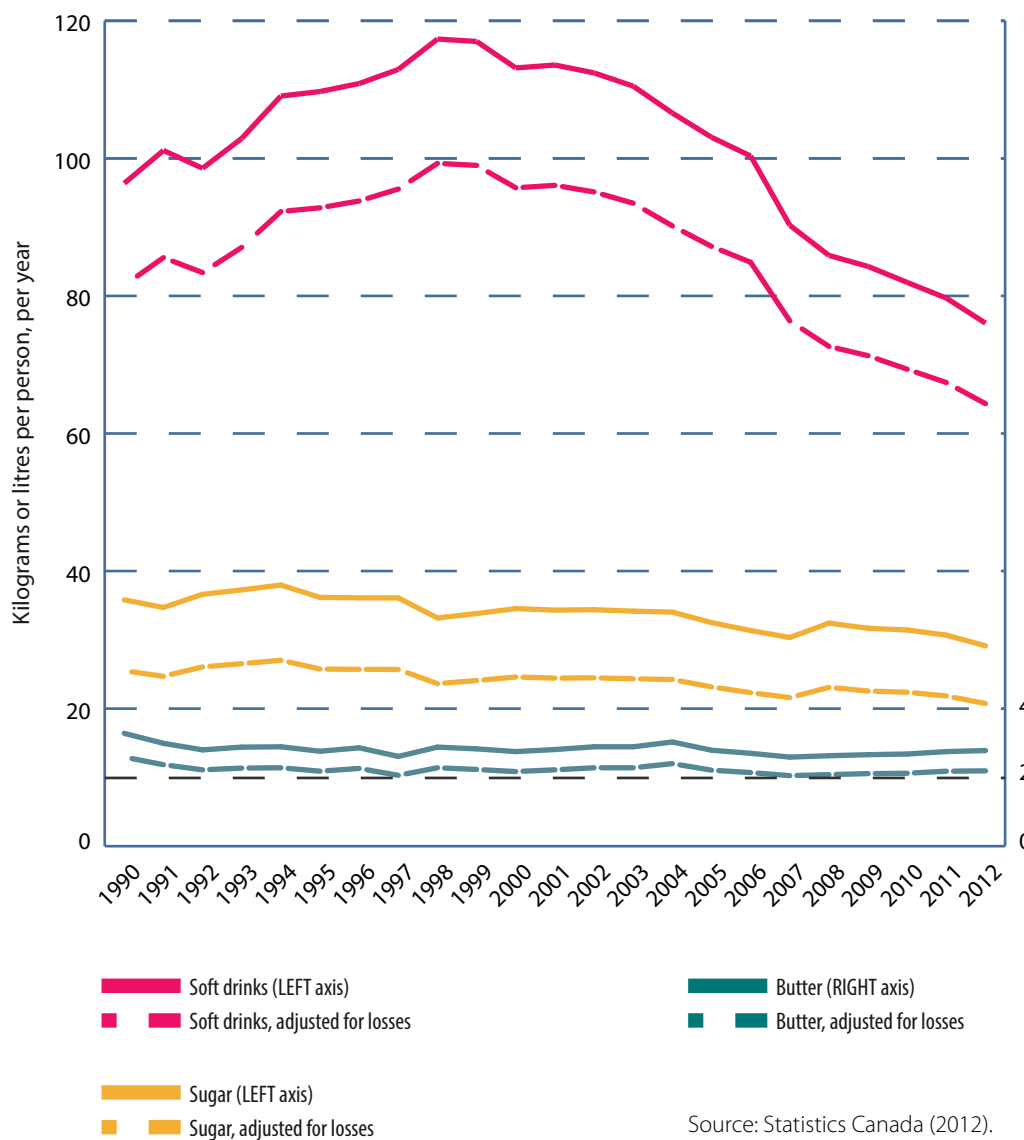
Consumer demand for soft drinks has also changed considerably over time, raising important questions about the justification for a soft drink tax. In Canada, for example, over the last 10 years, sales of regular-caloric sparkling beverages have declined, while diet product sales have risen. For example, low- and no-calorie drinks now account for 30 to 40 per cent of Coca-Cola’s sales in Canada (Krashinsky, 2013). Statistics Canada data on food available in Canada found that consumption of soft drinks (measured in terms of food available for consumption) decreased by some 35 percent between 1999 and 2012. Similarly, Canadian consumption of refined sugar fell 14 percent over the same time period, and consumption of butter fell 2 percent. Rates of decline from 1990 were even more impressive for sugar and butter (-19 percent and -15 percent respectively) and still large for soft drinks (-21 percent) (all data shown in [figure 14](#)). In the American context, US soft drink consumption has been falling since 1998 (Associated Press, 2012). All of this begs the question, how can soda (or even refined sugar) be causing the obesity epidemic?

The relationship between fat taxes and excess weight appears to be weak. Brio Oaks (2005), in an analysis of the effects of Maine’s fat tax (enacted in 1991 and repealed in 2001), found no statistically significant association between the fat tax and obesity prevalence. Similarly, Schroeter et al. found that while an increase in the price of high calorie foods might reduce demand for them, “it is not clear that such an outcome will actually reduce weight” (2008: 45).

In part, fat taxes fail because the demand for food tends to be largely price insensitive (Chouinard et al., 2007; Kuchler et al., 2005b). For example, Seale et al. (2003) report that a 10 percent increase in price reduces consumption by less than one percent.

Kuchler et al. (2004) modeled the expected effects of a fat tax on snack items such as chips and other salty snacks. A typical American household purchased a little less than 32 pounds of such foods with a spend of \$76 annually. Expected BMI reductions from a snack foods tax, based on price inelasticity and assumptions about tax rates, were found to be “close to zero.” Even at very high rates of price elasticity and tax, BMI reductions would be only two pounds in weight.

**Figure 14: Food available in Canada, kilograms or litres per person, per year, 1990–2012**



Similarly, Fletcher et al. (2010) looked at the relationship between taxes on soft drinks and population weight and found a very small effect from increases in taxation. Specifically, they found that a one percentage point increase in soda tax rates would decrease average BMI by 0.003 points. This means that a 58 percent tax on soda (equivalent to average cigarette taxes in the US) would drop average BMI by just 0.16 points. Remember that obesity is defined as having a BMI of 30 or more.

Of course, all of this assumes that the marketplace will not respond to fat taxes in a way that defeats their purpose. Manufacturers might decide

to lower the price of taxed goods, thus mitigating at least some of the price increase and thus the intended effect upon consumption.

Furthermore, fat taxes have perverse, unintended consequences. According to the US Economic Research Service, one unintended consequence of a fat tax on consumer behaviour is that taxes on snack foods could lead some consumers to replace the taxed food with other equally less healthful foods (Kuchler et al., 2005b). Drewnowski and Specter (2004) similarly found that poorer consumers react to higher food prices not by changing their diets, but by consuming even fewer “healthy” foods, such as fruits and vegetables, and eating more processed foods.

In part, this may be a consequence of dietary cost. Less healthful foods have been found to be cheaper (that is, dollars per calorie) than more healthful foods. Therefore, the argument is to tax these less healthful foods to a level that makes the more healthful foods a better value proposition (or at least makes the less healthful foods a poorer value proposition). Of course, that would be a fairly high level of taxation, and would be strongly regressive, a fact that has been acknowledged in the research literatures. The USDA’s Economic Research Service, for example, has determined that a fat tax would be economically regressive, as a disproportionate share of the tax would be paid by low earners, who pay a higher proportion of their incomes in sales tax and also consume a disproportionate share of less healthful foods (Kuchler et al., 2005b).<sup>21</sup> More generally, a number of studies have found that diets of less healthy food options are less expensive than diets of healthier food options, while lower socioeconomic classes are typically more dependent on fast foods for their nourishment. Both suggest that a tax on less healthful/fattier food options would have a disproportionate effect on lower-income Canadians.

Alternately, some have argued that healthier foods should be subsidized to overcome concerns about regressivity. A more reasonable argument would be for government regulations be relaxed to allow these foods to become more affordable through market mechanisms (for example, through increased trade, lower costs of production, lower labour costs, etc.).

It is also important not to ignore the revenue raising function of such taxes. While some argue that the revenues could be used for other obesity-combatting initiatives (however ineffective), it is also possible that the tax revenues might simply be used to support government expansion generally. Thus, proponents of fat taxes might also not be impartial advocates of expansions in government activity and the size of government. Also, governments may become themselves addicted to the additional funding provided by such fat taxes, and may be tempted to maintain them even in the presence of evidence showing their failings or even if the problem of excess weight was no longer there.

21. A lengthier analysis of fat taxes is found in Kuchler et al. (2004).

Fat taxes are conceptually flawed, have not shown promising results where they have been tried, and are insensitive to fundamental considerations of fairness. Critically, they fail to distinguish between the obese, those at risk of obesity, and those who are not, thus penalizing those who want a snack or treat as part of a healthy lifestyle. Why should people who eat well and take great care of themselves (at least in modern governmental or interventionist visions of good health), and have a healthy balanced diet, pay more for a treat?

The most telling footnote to any discussion of fat taxes comes from Scandinavia. The only fat tax in the world—introduced by Denmark in late 2011—was dropped after just 12 unsuccessful months. The decision was taken, first, due to the tax's negative economic impact. The Danish government discovered that the tax, which was charged on foods high in saturated fats, reduced Danish sales because people were heading to Germany or Sweden to buy the same products at lower prices (McParland, 2012). Second the tax failed to change the Danish people's actual eating habits (Agence-France Press, 2012).

### **Restricting access to soft drinks**

Last October, the Ontario Medical Association recommended that the provincial government limit the availability of sugary products in recreational facilities frequented by young people (Blackwell, 2012). Most recently, in the American context, the mayors of 18 major US cities asked the US Congress to prohibit the use of federal food stamps to purchase soft drinks and other sugary beverages (Peltz, 2013).

Methodologically flawed studies claiming that soft drinks are the driving force behind childhood obesity are the reasons that sugary sodas are perceived, erroneously, by both doctors and laypersons as a leading, and perhaps the principal, driver of weight gain among children. Exhibit A is a much-reported, highly influential study in the journal *Pediatrics*, from researchers at Boston's Children's Hospital (Ebbeling et al., 2006). This study epitomizes oftentimes poor quality obesity research that nonetheless garners headlines and the rapt attention of policymakers.

The small number of teenagers assessed is one of the study's many limitations. Just 103 teens were divided into two groups, an intervention group and a control group. In an effort to reduce soft drink consumption, intervention group teens received home deliveries of non-caloric beverages (including iced teas, bottled water, diet soft drinks, and lemonades) for 25 weeks. Perhaps not surprisingly, soft drink consumption was reduced by 82 percent.

Less commonly noticed was that there was no statistically significant difference between the BMI of the two groups (the non-caloric beverage intervention group and the regular consumption group) at the end of the six



months. It is difficult to see how this study indicts soft drinks as a principal cause of obesity when the 82 percent reduction in soft drink consumption did not make the kids thinner.

Equally importantly, the study failed to control for (or report on) other aspects of the two groups' respective diets. We do not know, for example, the daily caloric intake for study participants, making it difficult to determine if the two groups were similar (or identical) other than for soda consumption. We also cannot tell whether the elimination of soft drinks caused the small weight loss observed among the most obese participants.

Given that there are dozens of potential risk factors and causes for obesity, not to mention numerous reasons individuals might already be working to reduce their own excess weight, it is somewhat disingenuous to claim that the removed food is a cause of obesity without controlling for other factors/causes or foods. The Boston study is also guilty of a common assumption in the obesity debate: that soft drinks have a unique caloric effect. Removing any source of calories—whether from soft drinks or anything else—and not replacing them will result in fewer calories and perhaps fewer pounds.

Most recently, a study by Harvard University researchers claimed that 180,000 annual global deaths result from the consumption of too many sugary drinks (Singh et al., 2013). To be clear, the 180,000 deaths was out of 60 million annual deaths worldwide, or about 0.3 percent of mortality.

A larger problem with both of these studies is that they are contradicted by much of the published scientific literature on the connection between soft drinks and childhood obesity. For example, in 2005, researchers—including some from the Health Behaviour in School-Aged Children Obesity Working Group—published a study examining the alleged connection between soft drink consumption and obesity. Their review involved 137,593 schoolchildren in 34 countries, and found that “[o]verweight status was not associated with the intake of ... soft drinks” (Janssen et al., 2005: 123).

This study confirmed earlier research from Harvard University which found no association between snack food consumption (including soft drinks) and weight gain after following the eating habits of 14,000 children for three years (Berkey et al., 2003). Similarly, researchers at the US Centers for Disease Control and Prevention reported in 2005 that “[e]vidence for the association between sugar-sweetened drink consumption and obesity is inconclusive ... National data showed no association between sugar-sweetened beverage consumption and Body Mass Index” (Sherry, 2005: S121). In another study utilizing data from the US National Health Examination Surveys, researchers found no association between regular soft drinks and Body Mass Index, noting that “less than one percent of the variance in BMI among American children could be attributed to regular soft drinks (Forshee et al., 2005).

The soft drinks debate epitomizes how the media continues to give air time and column inches—and how the public and policy makers pay undue

attention—to alarmist conclusions that have little connection with the simple reality that no single food can be blamed as the culprit behind a high prevalence of obesity. That means banning or vilifying a particular food, as discussed at length above, is also less than useful in policy terms.

### **Bans on large-sized sodas**

Some have proposed that the public should at least not be allowed to easily access large quantities of soda at a single time, such as in the very large cup sizes offered in restaurants and movie theatres. Such a ban was most recently proposed in 2012 by New York City Mayor Michael Bloomberg. Banning or prohibiting large sodas is impractical, and would more likely result in consumers adapting (possibly in unintended directions) than in a reduction in obesity.<sup>22</sup>

Consumers are bound to procure in other ways and from other products and sources the fluids and the sweetened calories they want and need, regardless of the regulatory obstacles placed before them. For example, consumers may simply purchase two or more sodas in government-approved sizes to derive the same amount of pleasure and to achieve the same level of refreshment and hydration.

In the case of the ban proposed for New York, even if the theory to alter consumer behaviour was sound, the ban may not have achieved its goal because it applied only to restaurants, cinemas, and delicatessens. It notably did not apply to grocery and convenience stores. This highlights yet another problem with bans and access restrictions: how broad a net must be cast to keep people from making the choices they want (at least in the short run), and what is the price of imposing and policing that (including the impact on families and businesses)?

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22. This proposal also raises the question of how interventionists might propose to deal with “bottomless” or “free refill” drink offers. There is also a deeper problem with a large soda ban, or for that matter with proposals for restricting access to or placing additional taxes on particular food products. If they actually succeeded in changing consumption patterns, they would in effect constitute a government-directed redistribution of private consumer spending from officially stigmatized brands, products, and companies to government-approved brands, products, and companies. A very dangerous precedent, indeed.



## Calorie counts and menu labeling

Each January, the Washington-based Center for Science in the Public Interest (CSPI) publishes its annual list of so-called “food porn.” CSPI’s list seeks to alert consumers to restaurant menu items containing high levels of calories, fat, sugar, or salt. Concern about population weight gain also led to the proposal to require restaurants to include on their menus or menu boards the fat, sodium, and calorie counts for all of their offerings.

Many governments are now requiring or encouraging restaurant chains to disclose such nutritional information. The US Affordable Care Act requires that all American restaurants and cinemas post the number of calories in their foods. The US Food and Drug Administration proposed a rule for menus in 2011, but has yet to finalize the regulation. Canadian fast-food restaurants and those in grocery stores should display the number of calories of each item on their menus, according to the Ontario provincial government’s Healthy Kids Panel (Babbage, 2013). In a preemptive move, the Canadian beverage industry is currently rolling out across the country a front-of-pack labeling initiative called Clear on Calories to provide consumers with caloric content and serving size information.

Proponents of this policy believe consumers are generally uninformed or misinformed (particularly regarding the calorie count) about their restaurant meals. Therefore, providing consumers with this information will lead to changes in what and how much is consumed, with the ultimate benefit being a reduction in excess weight through reduced intake.

Menu labeling advocates suggest this is easily done. Reality is somewhat different: far from standard offerings, diners increasingly customize (and restaurants increasingly accommodate customization of) meal choices affecting methods of preparation, accompaniments, content, and meal size.

For example, the range of toppings a diner may select for a simple hamburger may potentially affect the final calorie count (not to mention sodium and fat content) by some 40 percent. Even a hamburger from a popular fast food chain restaurant might be prepared in over 200 ways, with each having a different calorie count.

The US National Restaurant Association notes that a five-ingredient sandwich (bread, meat, cheese, lettuce, and tomato) can be prepared in 120 different ways, each one with a different calorie count. Increasing the number of ingredients to ten could generate 3.6 million permutations. As the options increase, so does the number of possible outcomes: a pizza might be produced in 33 million different ways (Bomey, 2010). Even small changes can have large impacts. For example, a national restaurant chain found that the nutritional composition of forty menu items was affected by a change in one of its sauces. All of these realities raise important questions about the

practicality of providing even simple calorie counts (let alone additional nutritional information) for such a variety of offerings.

The Canadian Restaurant Association provides two examples of how even simple menu items result in enormous nutritional complexity.

#### **Example 1**

*“Breakfast Special”* of 2 eggs, toast, and choice of ham, bacon or sausage, plus juice, coffee or tea. This would require minimal nutritional information for:

- ◆ Eggs scrambled, poached, fried, or boiled;
- ◆ White or whole grain toast, with or without butter, jam, peanut butter, or honey;
- ◆ Ham, bacon, or sausage or a combination of the three; or a
- ◆ Fruit bowl instead of meat;
- ◆ Orange, grapefruit, cranberry, or apple juice; and
- ◆ Coffee or tea with or without milk, cream, and sugar.

#### **Example 2**

*Medium Latte*. This would require separate nutritional information depending on whether the drink was prepared with skim, 1%, 2%, whole, or soymilk (or another milk substitute), with or without sugar, and the choice of flavor shot. In all, the range of calories in the latte could range from 160 to 260.

Complete standardization is not necessarily a solution for this, unless that standardization is taken to a very high level, perhaps beyond what might be economically reasonable. The number of fries in a serving, for example, may vary, thus altering the number of calories in a given serving (though obviously not the number of calories per typical unit of weight). And of course there remains the small matter of consumer demand, and how consumers might respond to a lack of variation/customization, as well as to such careful metering.

Labeling requirements also run afoul of the fact that many restaurants change their menus on a daily basis, offering, for example, specials of the day. Other restaurants may have regular menu changes as part of their approach to food. These establishments would be required to continually undertake nutritional analysis, a potentially costly regulatory burden that may ultimately be passed on to consumers, at least in part, in increased food prices.

Bachman and Tuerck (2005) calculated detailed cost estimates for menu analysis. According to these economists, “[e]stimates to provide the nutritional analysis run from \$50 to \$100 to analyze an item for calories only, and between \$220 and \$650 for a full nutritional analysis ... Altogether, these costs represent a substantial burden to the effected chains. The Ruby Tuesday restaurant corporation, with over 700 locations, cited costs as a reason for abandoning their own pilot program of providing nutritional information on menus.”

While the costs of such analysis might be easier to absorb for larger organizations, they would clearly place a large burden on smaller restaurants or even create barriers to entry. Some have suggested that labeling requirements only be imposed on restaurant chains or restaurants with multiple locations, but this only solves part of the problem, while now creating a barrier to growth whereby businesses may prefer not to expand, or to create multiple entities to avoid the costly regulation. Recommendations to shelter individual or family-owned restaurants from the regulation also sometimes suggest a bias against corporate chains and larger organizations.

Menu labeling is clearly impractical and costly and may negatively affect the restaurant marketplace by erecting barriers to entry and barriers to growth. Equally importantly, menu labeling may be ineffective in reducing the prevalence of obesity.

Research has found, for example, that nutritional information has made no difference in food density choices. As the authors of a 2002 research study concluded, “[i]n this population, explaining the concept of energy density and providing nutritional information during meals had no overall impact on the weight of food consumed” (Kral et al., 2002).

Multiple studies have found that providing nutritional labeling brings about no net nutritional gains because consumers have a defined “nutrient budget.” This means that they tend to reward themselves for calorie or fat deprivation—for example, by increasing their calorie or fat content with another dish at the same meal or at a latter meal. Caputo and Mattes (1993) find that when people were told their meal was a lower-fat option than usual, subjects in their study increased their total daily intake of energy (including both protein and fat). Aron et al. (1995) found that individuals in their study, particularly males and “less restrained eaters,” increased their total energy intake when presented with information on energy and fat content. In all, Aron et al. suggest nutrition labels did not positively affect food choices and may have negatively affected food choices for certain groups. Shide and Rolls (1995), in a study of energy intake in women, found that women who consumed “low-fat” yogurts before lunch consumed more energy at lunch and overall (including dinner) in comparison with women who consumed “high fat” yogurts. Chapelot et al. (1995), also in a study of females, found that unrestrained eaters increased their subsequent energy intake after eating a low-fat lunch dish labeled as such, though this effect was not found in restrained eaters.

These findings have been replicated in restaurant settings as well. For example, Stubeitsky and colleagues (2000) found that providing information about healthy and unhealthy food “did not substantially affect expectations of sensory quality and acceptance, or overall energy and fat intake.” They further noted that “attitudinal characteristics such as beliefs and stage of change towards trying to choose a healthy option when eating out, had a significant

relationship with the selection of main course dish. In addition, other indirect attitude measures, such as the frequency of eating reduced-fat or reduced-sugar foods, were significantly related to attitude, intention to try to choose a healthy option when eating out, and stage of change, thereby confirming the importance of psychological influences on menu selection.” (Stubeitsky et al., 2000: 207). In other words, calorie counts on menus may be supporting people who would prefer to make lower-calorie or lower-fat choices (and who perhaps lack complete information to do so) while having less influence on decision making during the selection process. Indeed, Sproul et al. (2003), in a study on the effectiveness of nutrition labeling and marketing health attributes of entrees in an Army cafeteria, found no significant difference in the sales of the labeled items.

Considering the age of those studies, it is possible that the desired information has already been provided in the marketplace through a number of voluntary/private approaches (as opposed to government regulations). For example, Chandon and Wansink (2007) found that restaurant customers discriminated among fast food restaurants based on their understanding of the calorie count of the food and its healthiness, even in the absence of menu labeling. If the information desired by consumers is already available (and being provided effectively and cost-effectively), there may be less of a need for costly mandatory, standardized menu labeling.

Holdsworth et al. (2004) conducted a workplace intervention in England in which the researchers provided the type of menu information about healthier choices favoured by many paternalists. In the British context, this involved the Heartbeat Award (HBA) nutrition labeling program. This study is unique in that it tried to determine whether such information provision made any long-term difference by assessing six months before and six months after the scheme was implemented. The researchers found that “[o]verall, the HBA had a modest impact on dietary intake.” A closer look at their results shows that there was no statistically significant change in consumption of 16 of 20 foods studied and the authors, themselves, note in the study “the poor impact of the HBA scheme.”

In a review of 20 different nutritional labeling programs published in the *Journal of Human Nutrition and Dietetics*, Holdsworth and Haslam (1998) found that the programs “may not have an immediate effect on food choice” but that tailoring labeling for the target audience showed some promise.

Included in the Holdsworth review are a series of studies by Mayer et al. (1987) which examined the effect of calorie labeling over a four week period. The point of the intervention was to increase consumption of salads, low-fat milk, and fruit. However, the study found that calorie labeling did not significantly lower overall calorie intake. This brings us back to an important point made earlier: caloric excess of a given amount, whether that amount is from apples or soda, will increase weight, all else being equal.

More recent research focused on adolescent behaviour confirms that menu labels may not lead to changed eating behaviours that drive weight loss among the obese. Yamamoto and colleagues asked adolescent volunteers aged 11 to 15 to order dinner from three restaurant menus. Participants were then asked to order from a set of menus with the same items that also included both calorie and fat content for each item. The majority of subjects (71 percent) did not change their orders when provided calorie and fat content information, while a small number of orders (10 percent) actually had higher calories after information was provided (Yamamoto et al 2005: 397).

More broadly, the US Department of Agriculture's Jayachandran Variyam, in a 2005 assessment of restaurant nutrition labeling, suggested that "the benefits of labeling (a change in consumer behaviour leading to better nutritional outcomes) may be small or uncertain at best" (2005: 10). Kuchler and colleagues, also from the US Department of Agriculture's Economic Research Service, noted in their literature review that "[r]ecent consumer choice studies suggest that the effect of nutritional information on diet in FAFH [Food Away From Home] settings may be modest" (Kuchler et al., 2005b).

There are several reasons why menu labeling may not be an effective tool for changing consumer behaviour. Critically, the argument that there is a food information void that must be filled is questionable, particularly as consumer information about food choices and consumer understanding of the consequences of dietary choices might be considered to have steadily increased over time. For example, there are currently multiple sources of nutritional information available to consumers from tray liners, online calorie calculators, and existing in-store displays. In addition, the demand for information and the desire to use it may vary among the population in ways that are also related to excess weight and weight preferences. Remember that in the obesity policy discussion the aim of nutrition labeling is not just to provide information to consumers, but for that information to be used to reduce energy intake and ultimately lead to weight loss. Thus even studies showing changes in dietary habits among some consumers may not provide sufficient support for the next step in the process.

Further support for this perspective comes from a 2003 Gallup Poll which found that two thirds of consumers believed that fast food was not healthy for them. Based on the results from the Diet and Health Knowledge Survey, Kuchler et al. (2005b) report that "most U.S. consumers have basic nutrition knowledge and that they can discriminate among foods on the basis of fat, fiber, and cholesterol. Most are aware of health problems related to certain nutrients." They further note that "[t]he sheer volume of media coverage devoted to diet and weight makes it difficult to believe that Americans are unaware of the relationship between a healthful diet and obesity." The same is likely to be true in Canada.

Behind these concerns are deeper limitations to informational approaches such as menu labeling. A key general problem plaguing policy involving social marketing is the assumption that providing information, and ensuring that the information is recalled, means that the information has been accepted and that it will influence behaviour. Numerous health interventions come to grief over this conflation of changing knowledge and changing behaviour. Yet the justification for menu labeling rests squarely on such an assumption. Vitally, while a consumer may recall an informational campaign, that doesn't mean they necessarily agree with it (Adler and Pittle, 1984).

A study by Burton et al. (2006) is often used as a source of support for nutrition information on menu boards and menus. This study concluded that “[p]rovision of nutrition information on restaurant menus could potentially have a positive impact on public health by reducing the consumption of less healthful foods.” But even the authors of this research supporting menu labeling acknowledge that consumers clearly recognize that less healthful food options have more calories and fat than more healthful options. This constitutes an implicit acceptance of the fact that the major goal of menu labeling—the provision of information for healthy eating and calorie restriction—may have already been achieved.

Another problem for menu labeling advocates is that many consumers, particularly in restaurant settings and despite consumers' understanding of healthy eating, choose their foods primarily for taste or other sense reasons rather than nutrient content or calories.

Acharya et al. (2002) studied the attitudes and responses of restaurant diners to a major healthy eating campaign, and found that even such a campaign aimed at improving nutrition in restaurant meals had a limited effect. According to the researchers, this outcome is due to the fact that “time-pressured, convenience-seeking diners, who place a high importance on taste, continue to view healthy menu items as less appealing options.” In effect, changing consumer eating habits is not, as suggested by advocates of menu labeling, simply a matter of providing more information. Rather, eating habits are driven by a more fundamental issue: individual taste and personal preferences.

This research finding reveals a potential dark side to calls for menu labeling. The common argument is that menu labeling is required to overcome an informational deficit and help consumers make more informed choices. But if there is not an information deficit about nutrients and calories and the healthfulness of various options, then what is the remaining case for labeling? One is left to hope that it is not the agenda of some of those championing menu labeling to coerce restaurants into changing their offerings in order to compel consumers into changing what they choose to eat (including effectively creating classes of “bad” foods that paternalists would prefer we not consume). Of course, such an approach is bound to fail in a



competitive marketplace with relatively free entry and exit. But as noted above, menu labeling creates barriers to entry and exit and creates distortions in the marketplace in terms of differential regulatory burdens and the cost of testing. Indeed, after public health advocates find their initial labeling intervention has failed, they are likely to simply call for more and stronger interventions. Interventionists are fixated on their end game (the eradication of weight, potentially through behaviour change), which appears to be the real point of this exercise, rather than simply disseminating better information to consumers and allowing them to choose for themselves.

Such continued intervention is likely beyond the scope of appropriate regulation. In the discussion over nutrition labeling, and indeed in obesity policy generally, the issue may be less about an informational void around food, calories, or nutrition, and more about personal preferences around diet and indeed weight (including preferences to not lose the excess weight). As Bhattacharya and Sood (2005: 2) note, “[i]f rational individuals pay the full costs of their decisions about food intake and exercise, economists, policy makers, and public health officials should treat the obesity epidemic as a matter of indifference.”

There is also the issue of whether consumers will use the mandatory (or even currently provided voluntary) labels when making purchasing decisions. Krukowski et al. (2006), for example, found that 44 to 57 percent of consumers surveyed about their attitudes to calorie labeling in restaurants reported that they were not likely to use food label information in restaurants if it were available. In a study of the economics of food labeling, Golan et al. (2003) found that the ineffectiveness of labels stems from the fact that consumers often make hasty food choices and ignore the information provided. Aldrich (1999), in an examination of how consumers use information in determining their purchasing and consumption patterns, found that income (not labeling) was the key factor in determining the foods that were purchased and consumed. It is perhaps worth noting here that obesity prevalence among females in Canada tends to fall as income rises (PHAC, 2011).

More evidence of the empirically unsupported case for menu labeling might be found in a candid comment from Michael Jacobson, executive director of the Center for Science in the Public Interest—one of the most vigorous champions of menu labeling. . Reacting to the decision of one restaurant voluntarily to adopt menu labeling, Jacobson told *Time* that, regrettably, too many people will look past the calorie, fat, carb, and fibre counts on the menu (Kadlec, 2004). Indeed, no critic of compulsory nutrition information on menu boards and menus could have said it better.

As suggested above, some have indeed argued that menu labeling is not only about informing consumers, but that it will also drive changes in how products are made in order to make the presented information more attractive to diners—the assumption being that consumers will demand

better nutritional statistics for their favourite foods (rather than adapt to new information by altering consumption of other items or changing quantity consumed or altering activity levels), and that the foods can be made more healthful without a negative impact on taste, appearance, or price. Kuchler et al. (2005b), however, provide support for the argument that this is unlikely, finding little change in the analyzed nutritional quality of five product categories before and after the National Labeling and Education Act was introduced.

Menu labeling may also be counterproductive, depending on the information provided and the format it is provided in.<sup>23</sup> Indeed, labels may end up providing unclear and mixed nutritional messages to consumers. Based simply on calories, for instance, a glass of milk may show up with more calories than a soft drink, a yogurt with more calories than a bag of chips, or a bagel with more calories than a doughnut. Though the milk, yogurt, and bagel might offer superior nutrition, a consumer making a decision simply based on a menu with calories might incorrectly perceive the difference in healthfulness between these choices, given the less nutritionally balanced choice is also the less calorie-laden one.

### **Simplified/directive food labeling**

Nutrition labeling on pre-packaged foods in Canada is now commonplace, having been legislated in the 2000s. These nutrition labels are in addition to other voluntary labels that are intended to direct consumers to ostensibly more healthful food options. Through both the mandatory and voluntary nutrition programs, consumers are able to quickly and readily access more complete information about the foods they are purchasing. In theory, this should lead to more healthful diets and ultimately a reduction in obesity.

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**23.** Labeling may also result in behaviours that are at odds with the intended message of the paternalist. For at least some consumers, particularly those who display what psychologists call “reactance”—a high level of resistance to the demands of outside authority and control—the menu label with its implicit warning may be seen to represent an attempt to unreasonably shape and control their behaviour. As Pawan (1993) observes, in some settings identifying menu items as low calorie or healthy can antagonize customers who see this as attempting to interfere with their freedom of choice. In effect, menu labeling may be a form of what researchers Chandon and Wansink (2007) have recently described as “finger-pointing toward food indulgences.” As they argue, “[t]his can be counterproductive because temptations abound, and willpower is notoriously fallible. The risk is that this accusatory approach may lead to demotivation and create a backlash.” Chandon and Wansink (2007) suggest that rather than making the provision of information mandatory, a “less controversial solution would be to launch educational campaigns encouraging people to examine critically the health claims associated with various restaurants and foods in addition to evaluating the quality and quantity of the ingredients.”



Some interventionists, however, have proposed a more directive and cruder system of warning labels on food products. Explains James Aw (2012), a prominent Toronto physician, “if we’re going to alter the packaging of food to fight against obesity, we should consider something the United Kingdom’s been using since 2005—a ‘traffic light’ food-labeling system that colour-categorizes foods by nutritional status.” “Keep it simple,” he recommends.

This so-called “traffic-light” system supposedly identifies unhealthy foods in an attempt to encourage people to eat more healthfully.<sup>24</sup> Under the traffic-light model, high-fat, salty, or sugary foods receive a red label, while more healthful choices (such as fruits and vegetables) attract a green label. Nutritious but high-fat foods, such as cheese, are given an amber label (*BBC News*, 2004b).

Of course, assigning the colours to particular foods is not so simple. In the UK, which defined the traffic light system, it was the subject of much debate (and the cause of much expense, both public and private). And there is no doubt that something less than strict empirical values is used to assign foods to particular groups. For example, under a trial traffic-light scheme, raspberries were labeled with an unhealthy red dot because of their sugar content.

These simplified labeling schemes typify the vilification of particular foods and products that seems to dominate debate and policymaking in this area. Under the guise of scientific analysis, certain foods are deemed to be “junk,” while others are deemed to be “healthy.” This approach should be challenged on its very premise.

In scientific terms, the definition of certain foods as junk food is contentious, to say the least. Rather than being used as a strictly scientific category, the term actually conveys a moral judgment on certain people’s food preferences. A balanced, healthy diet can include a reasonable quantity of all types of “junk” foods, so long as moderation is the watchword. Demonizing specific foods actually runs counter to the advice of some nutritionists who maintain that there are no good or bad foods, only good and bad diets.

For example, leading biochemist Vincent Marks, co-editor of *Panic Nation: Unpicking the Myths We’re Told about Food and Health* (2005), asserts that “[j]unk food is an oxymoron.” As he explains, “[f]ood is either good, that is, it is enjoyable to eat and will sustain life, or it is good food that has gone bad, meaning that it has deteriorated and gone off. To label a food as ‘junk’ is just another way of saying, ‘I disapprove of it.’ There are bad diets, that is,

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24. Labeling food products with warnings about their inherent unhealthiness is the closest we allow ourselves to come to actually labeling the consumers of these products. According to Michael Fitzpatrick, a writer for *The Lancet* and author of *The Tyranny of Health: Doctors and the Regulation of Lifestyle*, eating junk food is one of the greatest social sins of our times. “Gluttony,” he says, “used to be one of the seven deadly sins; now eating junk food invites moral opprobrium” (O’Neill, 2005).

bad mixtures and quantities of food, but there are no ‘bad foods’ except those that have become bad through contamination or deterioration.”

According to Marks, all foods—from the notorious Chicken McNugget to the renowned freshly picked apple—are just combinations of protein, fat, and carbohydrates, and our bodies will take from them what we need and get rid of the rest. “Even hamburgers provide energy in a palatable and affordable form,” asserts Marks. He adds that foods must be considered in perspective, including where foods are served and how much is being consumed. “No food is ‘better for us’ than any other; it all depends upon circumstances. For people on a limited income or in times of famine, high energy density food is best and will enable survival. For the affluent and in times of plenty ... fruit is an important part of a mixed diet.”

Marks maintains that we should focus less on individual foodstuffs and more on diet. “There is no such thing as junk food, but there is such a thing as a ‘junk diet.’ The quantity of food consumed, over say a weekly period, is just as important as its quality.”

Aside from the problems of assigning categories, both practically and theoretically, categorization may also lead to the oversimplification of food choices. For example, they may suggest to consumers that “good” foods may be eaten with impunity, while “bad” foods should be avoided. Such an approach can lead to unforeseen consequences, such as inadequate calcium or iron intake. This was the experience in Sweden after the adoption of a food labeling system (Matheson, 2004).

In addition, it is important to recognize that labels and warnings have differential effects on individuals, depending on their own preferences and realities. These findings were confirmed in an FDA analysis of the evidence on food labeling. This study by the Center for Food Safety and Applied Nutrition (2004) found that such factors as whether an individual was on a diet, attitudes toward nutrition, the price of food, health claims versus nutrition information, and taste (or perceived taste) were more salient than nutrition information in influencing consumer choice. Similarly, a study by Hoerr and Loudes (1993), which examined whether nutritional labeling of vending machine snacks would increase the sales of healthy choices, found that healthy snacks were unpopular.

It is also important to reflect on the value of mandating additional information about foods for consumers. Summarizing some of the studies on the effectiveness of labeling, Golan et al. (2007) noted that warning fatigue—the ubiquity of warnings in general or too many warnings and information on a single product—may “cause consumers to disregard the label completely.” As they observe, “even if consumers do consider each piece of information on a label, they may find it difficult to rank the information according to importance.” For example, out of 10 warnings on a label, consumers may have

difficulty picking out the most important. As a result, consumers may under-react to important information or overreact to less important information.”

Returning to the case of menu labeling, there is also a question of whether there remains a void in the provision of information about food choices. In this regard, it's worth looking more closely at a recent US Food and Drug Administration proposal that would require vending machines to display calorie content information. In that proposal, the government agency acknowledged that the vending machine market is highly competitive, and thus if there was demand for calorie count displays they would have already appeared. In other words, the agency was recommending a regulation that would impose costs on business and provide information to consumers that they either already know or disregard (Marlow and Abdukadirov, 2013).

More broadly then, is there an argument that Canadians do not have sufficient information about their food options, or continue to lack knowledge about the differences between them? Or is the recommendation for simplified and directive labels (a stronger and more interventionist regulation) a response by interventionists to a perception that the previous regulation failed?

Even if the latter is the reason for these calls, there is an important question of whether this should be done by governments through regulation. When it comes to providing health information to consumers, studies show government programs are less effective than those of private companies (Marlow and Abdukadirov, 2013). Further, prescriptive government regulations inhibit experimentation and innovation (and no doubt did so with nutrition information labeling in the past as well), ultimately reducing the possibility that the informational intervention will be successful in achieving the intended aims (in this case, less excess weight).

## Graphic health warnings

Some groups, including the Ontario Medical Association, have suggested that graphic warnings of the type used in anti-tobacco efforts might be used in anti-obesity initiatives as well (Weeks, 2012). For example, less healthful food options might be labeled with graphic images (such as an ulcer) and notes claiming a link between excess consumption of these products and disease/mortality. These recommendations have not necessarily been welcomed by other proponents of intervention, which is perhaps not surprising given the substantial difference between smoking/smoking-related illnesses (where consuming cigarettes is directly linked to smoking-related illnesses) and less healthful food options/obesity (where these foods not only have some nutritional value but are also not directly linked to excess weight). Not to mention the difficult matter of defining what foods would be subject to

graphic labeling, where certain bounds for fat or sugars may end up including foods that are often deemed to be more healthful, such as olive oil or berries.

As noted above, Canada already requires extensive nutrition labeling. With respect to obesity policy, the purpose would be to provide consumers with more information about their food in order to affect their eating patterns and reduce obesity. These nutritional labels have been purely informational to date, offering consumers information about the total number of calories and the grams of fat, cholesterol, sodium, protein, and carbohydrates. This suggests that the ultimate choice of what to eat, and in what balance, remains the consumers' choice. Graphic warning labels, which join information with an authoritative admonition about the health risks of certain behaviours, are very different in terms of their approach to the provision of information. Telling someone that a product has two grams of fat is quite different from warning them that eating foods high in fat increases their risk of heart disease.

Clearly, for some interventionists (such as the Ontario Medical Association), neutral informational labeling is insufficient. But supporting cigarette-type warnings for a range of food and drinks would require adopting the view that: 1) certain foods, like cigarettes, pose unacceptable health risks, potentially even in small quantities; and 2) only the salience and shock value of cigarette-type warnings will change consumer behaviour.

It should be noted that other interventionists have adopted the graphic warning approach in their outreach programs, though they have not yet gone as far as mandating them on food and beverage packaging. New York City's public health agency has for example produced and aired advertisements depicting an individual drinking fat from a glass, and utilized images of amputation to drive home the city's points about soda and portion sizes (Allen, 2012). The Boston Public Health Commission has promoted a "Fat Smack" campaign, which includes a video depicting a soda-drinking teen being smacked in the face with a glob of fat.<sup>25</sup>

The case for alarmist warnings is based on four assumptions. First, people wish to avoid disease and death. Second, consumers may suffer from an "information deficit," where they either do not understand the risks of a given behaviour, or they underestimate those risks, or may suffer from hyperbolic discounting or self-control problems whereby they have problems controlling urges over time because they place too little value on the future consequences. Third, once they know that a certain behaviour or product can lead to disease and death, or are pushed hard enough to place sufficient value on its future consequences, they will avoid it. Fourth, warnings give people the information/push necessary for them to change their behaviour.

Basham and Luik (2012), however, find that these assumptions may not hold in practice. In particular, they note that the reliance on fear,

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25. See <http://fatsmack.org/>.

oversimplification, and exaggeration of the message, personal characteristics of the message recipient, a lack of new and relevant information in the label, the general difficulties with health-based deterrents, potentially impaired credibility of the source, compliance costs, and the forbidden fruit effect may serve to limit the effectiveness of graphic warnings in reducing the prevalence of an activity. In this instance, the weakness of the link between the activity (consumption of a food or drink) and the goal (excess weight), not to mention the complexities associated with determining which foods should receive graphic warnings, adds a further dimension of concern about the efficacy of this approach with respect to obesity policy (Weeks, 2012).

Finally, highlighting smaller risks on food labels may lead some consumers to neglect larger risks, such as the consequences of a lack of exercise, that are not highlighted. To the extent that this occurs in practice, the graphic health warnings may cause harm to those the interventionists seek to help.

### Teaching healthy eating, and healthier school meals

A great deal of focus in obesity policy recommendations has been on how to combat childhood obesity, in order both to reduce the prevalence of obesity in adulthood (despite questions about the strength of this link) and to reduce the health risks associated with obesity in childhood. These recommendations have included a focus on better preparing young Canadians for dietary choices, for example by using school time in an effort to reduce weight, increase consumption of fruit and vegetables, and encourage healthy eating through cooking classes. There has also been a great deal of focus on the healthfulness of the food served in schools.

The first major educational program of this type was “Hungry for Success,” a school-based intervention in Scotland, which was initiated with great political fanfare as a veritable model for the nation (and other nations, too). Unfortunately, according to the report of the UK Government’s Inspectorate of Education, Hungry for Success failed to increase fruit and vegetable consumption in children, failed to reduce overweight and obesity in children, and has prompted the suggestion that lunch-time lock-downs might be needed to prevent children from leaving school and eating “inappropriately” (*Holyrood Magazine*, 2008).

When taxpayer dollars and precious curriculum hours are devoted to school-based public health programs, a reasonable expectation might be that such programs are founded upon evidence of their likely success. As with the limitations of other approaches above, a key concern must be that the potential failure of Hungry for Success and its international impersonators will be followed by calls for even stricter and more intrusive interventions in the future.

In recent years, many governments have pledged to improve nutritional standards in schools through improvements in school lunch menus. The US Congress passed a law requiring healthier school lunches. New York City's health commissioner, Thomas Farley, has already worked to improve school lunches. US First Lady Michelle Obama's January 2012 launch of a campaign for healthier school lunch is credited with serving as the political catalyst for much of the American activity in this area.

Depending upon the specific jurisdiction, many North American and Western European schoolchildren either are now or soon will be offered healthier alternatives, such as salads, freshly cooked pasta dishes, and dried fruit. Under many of these proposals, schoolchildren are only able to drink water, skimmed and semi-skimmed milk, pure fruit juices, certain types of smoothies, and yoghurt and milk drinks made with reduced-sugar content. Generally, colas, all other soft and sugary drinks, and drinks with artificial sweeteners, are to be unavailable. In some cases, candy, chocolate, chewing gum, cereal bars, fruit bars, and chocolate-coated cookies will also be banned. Salty snacks such as chips and salted nuts are also likely to disappear.

One barrier to the implementation and continuation of these programs, of course, has been their immense cost. As mentioned above in the fat taxes discussion, less healthful foods tend to be less expensive as well. This means that healthier food options can put a strain on school budgets. And there remains the difficult issue of having students accept the changed menu items.

There is also the problem of a conflict between efforts to aid in weight loss through reduced caloric intake (and improved nutritional value) during the school day and the longstanding US public health goal of ensuring that every child starts the school day having consumed breakfast. For example, New York City's health department, responding to a study of the issue, has drawn back its support for free school breakfasts out of concern that some children may first eat breakfast at home and then eat a second breakfast at their school. This despite evidence from Newark, Los Angeles, and Chicago that the school lunch program has generated benefits for children from lower-income families, including more regular consumption of healthier meals and less absenteeism (Grynbaum, 2012).

More fundamentally, there are important questions around whether better meals at school can alter the prevalence of obesity. Critically, school meals make up only a proportion of children's food intake, with many eating habits having developed before children attend school and being largely the consequence of parental decision making. If school meals are not accepted, children may still bring less healthful lunches from home. A low rate of acceptance may even threaten the viability of these programs (Smithers et al., 2005; Heine, 2013). Then again, it may be that families are already working to provide their children with meals that balance the desires of the child (including teaching children the value of a healthful diet and taking less healthful options in moderation) with the need for healthful meals that are part of a balanced diet (Smithers et al., 2005).



## Food bans in school vending machines

Banning vending machines from schools has become a common proposal from interventionists. In the Canadian context, this issue has been discussed for more than a decade. The argument is that childhood obesity is linked to poor eating habits and inactivity in Canada's young people, which is in part a result of the availability of higher-fat foods and candy at school and a lack of access to more healthful food options.

Several initiatives have already been implemented in Canada to limit access to junk food in schools (Eisenberg et al., 2011). In 2004, Ontario's provincial government announced a ban on potato chips, soft drinks, and other fast foods from vending machines at elementary schools (Ontario, 2004). The New Brunswick provincial government banned junk food from vending machines in elementary schools in 2005. Some districts have also banned the sale of sugary and unhealthy foods from their schools and vending machines, or banned vending machines altogether.

In America, there is a wave of regulation on vending machines (and school stores) by school districts and state legislatures. For example, politicians in Texas, New York, Philadelphia, and elsewhere have removed soft drinks from schools. In September 2005, California enacted a law banning soft drinks in all government-run schools. That ban went further than the beverage association's voluntary industry guidelines, announced in August 2005, which sought to limit soft drink sales to no more than 50 percent of a high-school vending machine's options. Most recently, the US federal government banned "junk food" in school cafeterias and vending machines (Associated Press, 2013; Strom, 2013).<sup>26</sup>

All of this activity is occurring despite serious questions being raised about the lack of a link between vending machines and childhood obesity. In 2005, researchers found that, in "91 percent of the countries examined, the frequency of sweets intake was lower in overweight than normal weight youth." More importantly, they discovered that the children who ate larger amounts of junk food actually had less chance of being overweight (Janssen et al., 2005: 123). Berkey et al. (2003) were also unable to find any link between snack foods and obesity, no matter how snack food was defined (with or without soft drinks). Moreover, the overweight children were not found to be eating more snack foods than the thin children.

More directly, Van Hook and Altman (2012) followed nearly 20,000 students from kindergarten through grade 8 in 1,000 schools (public and

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26. Similar initiatives have been seen in Europe as well. From September 2006, British schools were prohibited from selling "junk food" (Blair and Halpin, 2006). Also in Europe, the French government included in new public health legislation (passed in August 2004 and enacted in September 2005) a ban on all food-and-drink vending machines in schools.

private) and found no link between food sales in schools and obesity. More specifically, they found that 35.5 percent of children in grade eight in schools with “junk food” (such as candy bars, soft drinks, and potato chips) were overweight compared to 34.8 percent in schools without.

A study by Blum et al. (2005), presented at the North American Association for the Study of Obesity’s annual meeting, found that “the frequency of purchases [of soft drinks] from school vending machines was not associated with BMI percentile or DQ [dietary quality].” Similarly, studies conducted by the Georgetown Center for Food and Nutrition Policy (2000) found no link between soft drink consumption and obesity in children between the ages of 12 and 18. The thinnest children are often the biggest soft drink consumers. Forshee et al. (2005) also found no relationship between soft drink consumption and BMI in adolescents.

Veugelers and Fitzgerald (2005) assessed the health, nutrition, and lifestyle factors of 4,298 grade 5 students to determine which risk factors were most important for overweight children. They found no statistically significant difference in the number of soft drinks consumed between children who attended schools that did or did not sell soft drinks. Children in schools that sold soft drinks consumed an average of four cans per week, while children at schools that did not sell soft drinks consumed 3.6 cans per week. They also found no relationship between the availability of soft drinks at schools and the risk of children being overweight or obese, nor between the presence at schools of food vending machines and the same risk.

These findings suggest that focusing childhood obesity prevention programs on vending machines and their content in schools is not likely to have an impact on the prevalence of overweight and obesity.

One key factor in the success, or lack thereof, in such a policy approach is the response by children. Policy makers assume that schoolchildren will spend their parents’ money on unsugared, low-fat and low-salt options after the ban is in place. But instead of buying junk food products from the school’s vending machine, they may choose to bring junk food to school from home or leave the school grounds and buy it in nearby stores.

In 2004, Bedfordshire’s Queensbury School was one of the first British schools to remove soft drinks, crisps, and sweets from its vending machines. The junk food was replaced by mineral water, organic fruit juices, and cereal bars. Eighteen months later, the school ended the experiment. According to the head teacher, Nigel Hill, “[w]e have had to remove the vending machines because students were not using them, despite the extensive programme of health education and nutrition that we introduced at the same time. The youngsters ... simply wouldn’t buy the healthier food in the machines” (Lightfoot, 2005).

There is another reason to reject vending machine and machine contents bans, which relates to educating children about making good dietary



and lifestyle choices. It is difficult to teach responsible consumer decision making and the importance of balance and moderation if products are simply banned from school grounds (Brown, 2006). Even worse, banning certain foods may send the wrong signals, with the forbidden fruit effect alive and well in the experience of banning vending machines—children may actually increase consumption of the restricted item (*BBC News*, 2000).

## Advertising bans and restrictions

A link is often drawn between food advertising and the prevalence of obesity.<sup>27</sup> It has been claimed that liberal food advertising regulations may be associated with the prevalence of overweight and obesity (e.g., Thompson, 2004). According to Catherine Mah, head of the food policy research initiative at the Centre for Addiction and Mental Health in Toronto, the intensity and frequency of marketing for unhealthy foods is one of several factors that over the years has altered society's approach to eating (Blackwell, 2012).

These views have often led to calls for bans on the advertising of less healthful ('junk') food options, as well as various restrictions on food advertising.<sup>28</sup> The claim is that such actions will reduce the prevalence of excess weight through the reduction in messages promoting less healthful choices. For example, the Ontario Medical Association (2005) report on child obesity, *An Ounce of Prevention or a Ton of Trouble: Is There an Epidemic of Obesity in Children?*, included the recommendation that government introduce a ban on advertisements for high-fat foods that are targeted at children under 13 years of age.

While policymakers have heeded such calls in many nations, the regulatory die in Canada is not yet cast.

In contrast to the view put forth by many interventionists, the eminent epidemiologist, David Ashton, does not think the scientific evidence supports the conclusion that advertising influences children's diet: "I am not persuaded

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27. The paucity of evidence in support of this claim is addressed most fully in Basham and Luik (2007).

28. An editorial by *The Lancet*, a leading medical journal, even opined that, as long as advertising of "junk food" remains on the average viewer's television screen, celebrities should be banned from promoting it. The editorial suggested that celebrity endorsement of "junk food" was contributing to high rates of obesity, particularly among children. It called on legislators to ban the practice: "[o]ne of the most invidious techniques used by junk-food advertisers is to pay sports and pop celebrities to endorse foods—especially bizarre since sports celebrities need a properly balanced diet to achieve fitness. Such celebrities should be ashamed; as should others who get caught in the web of junk-food promotion ... the junk-food industry needs to be forced by legislation to clean up its act" (*The Lancet*, 2003: 1593).

at all that there is a link. It is convenient to blame large food manufacturers. It is much easier than confronting the real issue, which is that decline in physical activity over the last few decades is to blame” (Dunne, 2004).

From an industry perspective, the British Advertising Association’s Andrew Brown also questioned whether there is a link between childhood obesity and food advertising. He observed that, in the UK at least, “[p]er capita consumption of confectionery has not gone up in ten years, and the proportion of all advertising taken up by food advertising, including fast food advertising, is in decline. But kids are getting fatter” (*BBC News*, 2004c).

A few years ago, a 500-page report from the US National Academy of Sciences’ Institute of Medicine was received as the seminal examination of obesity and food marketing to children. Importantly, while proponents of intervention suggested it supported their perspective, the IOM report admitted that the evidence is not sufficient to arrive at any finding about a causal relationship between television advertising and obesity among children and youth (National Research Council, 2006: 7).<sup>29</sup>

Nobel Prize-winning economist Gary Becker (2005) reviewed the IOM report and concluded that “[t]he evidence provided by the report is weak and not persuasive.” According to Becker, “[t]he complex report by the Institute of Medicine ... did not include any studies (presumably because none are available) that directly look at the effects of advertising by fast food and beverage companies on the overall consumption of these goods by teenagers and younger children. Instead, virtually all the studies available to them examine the effects on children’s weight of greater or lesser exposure to television ... The Institute of Medicine’s report on obesity and advertising did not present any convincing evidence that television advertising oriented toward children has been responsible for the increase in children’s obesity during the past quarter century.”

Part of the problem here may be a misunderstanding about the function of advertising. In marketing terms, advertising has the potential to increase the sales of particular brands, but is generally not able to stimulate an increase in consumption across an industry.<sup>30</sup> As Becker explains, “[t]here is no doubt

29. Food advertising bans and restrictions also fly in the face of a report from the Social Issues Research Centre. This think tank’s study concluded that “[b]anning advertising of ‘junk food’ to children and similar measures may be popular in some quarters, but they are unlikely to impact much on the generation of people in their 50s and 60s—those with vastly higher rates of overweight and obesity than children and young people” (SIRC, 2005).

30. Studies of the impact of advertising on food consumption/demand support this conclusion. For example, Peter Kyle examined the impact of food advertising on food consumption and found no evidence to support the popular myth that advertising will increase market size (Kyle, 1997). Martyn Duffy (1999) studied the impact of advertising on 11 food categories. Not only did advertising have no effect on food demand, it had virtually no effect on the demand for any individual food. Eagle and Ambler’s (2002)

that McDonald's and other companies tend to increase their revenues when they raise advertising budgets—otherwise, companies would not be spending as much on advertising. But most of the increase in sales to a company when it advertises more tends to come at the expense of sales by competitors. So, if Wendy's raises its advertising, sales by McDonald's and other competitors would tend to fall. To the extent that advertising mainly redistributes customers among competitors, the elimination of advertising of fast foods or sugary beverages through regulation would have relatively little effect on the overall demand for these products."

Those who support an outright ban on food advertising are forced to confront the results of the only contemporary case studies in advertising bans, namely in Sweden and in the province of Quebec. Since 1980, Quebec has prohibited all food advertising to children. Similarly, Sweden has also had a ban on food advertising to children. Reviews undertaken in the early 2000s found little benefit. Dr. David Ashton, group medical director of BMI Healthcare and honorary senior lecturer in epidemiology/cardiac medicine at the Imperial College School of Medicine, stated that "[t]he bans have had no impact whatsoever on obesity rates ... Some people might want to say that Sweden and Quebec are not typical. That may indeed be the case. But they are the only live experiments on real people that we have and they have not shown any benefit" (Dunne, 2004).

The Swedish and Quebec experiments may have failed, in part, as a result of unintended (yet predictable) consequences of banning food advertising. Unable to compete with one another through conventional advertising methods, individual brands may have gained a larger market share through price reductions, which would also have stimulated an increase in the demand for that particular brand, if not the product itself. Furthermore, the removal of expensive television advertising campaigns from the budgets of food and beverage companies has enabled them to spend much larger amounts on non-broadcast marketing, thereby maximizing their respective market shares via other marketing instruments (see, for example, Kuchler et al., 2005b). This shift in marketing focus may become increasingly important in the future as the sources of entertainment shift from broadcast television to internet-based entertainment on demand.

What children actually watch on television is quite revealing. For example, a British study examined the food references and messages in regular television programming, as opposed to those contained in food advertising (Dickinson, 2000). The study found that there were as many references to food within regular programming as during the ads. Children's regular food programming contained references far more centred on healthy food, such as food and vegetables.

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research into the impact of advertising on chocolate consumption in five European countries found no connection between the amount of advertising and the size of the market.

## Zoning restrictions

Interventionists have also raised concerns about the number of restaurants per capita, in particular fast food restaurants, and higher obesity rates. This has led to proposals for fast-food-free zones around schools, if not also in areas of higher obesity prevalence. For example, Eisenberg et al. (2011) proposed that municipal governments pass laws to prevent fast-food outlets from operating near schools or hospitals: “zoning bylaws could be implemented that regulate the number and density of fast-food restaurants and their distance from schools and hospitals, or that ban them outright from specified areas and neighbourhoods ... These interventions could have a substantial impact on the prevalence of obesity” (2011: 1498).

Again, however, the evidence in support of this position is not without its shortcomings, while evidence to the contrary is also available.

Bate (2003) has found for example that the number of McDonald’s restaurants in a given area is unrelated to obesity prevalence: “McDonald’s restaurant penetration into European countries shows a negative correlation with [International Obesity Task Force] obesity data. In other words, the more McDonald’s restaurants per 10,000 people, the fewer people are overweight ... fast food has little to do with overall obesity rates. If fast food were the main cause of weight gain, we would expect to see the UK and France, with high fast food penetration, being the most obese. Yet it is Greece that has the most obese population, with over 70 percent of adults clinically overweight, while the country has few McDonald’s restaurants.”

Sturm and Datar followed a nationally representative sample of children over 4 years old and found no statistically significant relationship between fast-food prices or fast-food outlet density. They suggested that it was possible that “density, or at least the variation in density, of food outlets has a smaller impact on diet than commonly assumed” (Sturm and Datar, 2005: 1067). Similarly, Simmons et al. (2005), in a study of an Australian region with easy food availability, found no relationship between the prevalence of obesity and the availability of takeaway foods.

There is also the possibility that restaurants are not causing obesity but rather are responding to consumer demand (resulting from increases in hours of work and labour participation rates by most groups), and locating close to their customers. Research by Chou et al. (2002), for example, suggests that the restaurant industry is not the culprit in rising obesity prevalence, but rather that it has been responding to market demand from individuals who would rather consume restaurant food than take the time to cook at home.

## A private alternative?

It is important to recognize that government is not the only source of potential solutions to the problem of excess weight. The private sector might also be a source of solutions to concerns about the prevalence of obesity, and already provides a broad range of options for those who wish to alter their lifestyles and diets in search of a reduction in excess weight. For example, the diet and exercise industries are working to counter the prevalence of excess weight through books, videos, weight loss clinics, gyms, and exercise equipment, among other approaches. Restaurants and food producers are also involved in helping people reduce excess weight by offering lower calorie, lower fat, or other more healthful options. Many businesses also support weight loss through employer funded programs. We may also soon see medicinal solutions for excess weight and weight management.

There are a number of reasons why a private solution might outperform a government intervention in reducing the prevalence of excess weight. First, there is a market test for private solutions where products and services that fail to meet their promises or customer expectations will cease to be provided. This is quite different from government interventions that do not need to meet such a test and thus may continue even if they have failed to produce the desired results in practice. Government interventions may in fact become more stringent and interventionist over time in response to their failings.

Second, private companies will continue to innovate and experiment in an effort to best meet the needs and desires of consumers in a cost-effective way. This is very much unlike government interventions, which are often prescriptive and constrain innovation. The result is that private organizations are more likely to find effective and less costly solutions for individuals, and are better able to adjust to changing information and knowledge, and changing consumer preferences over time.

Third, private initiatives do not impose a cost on the non-obese generally. This is very much unlike government initiatives that impact both the obese and the non-obese, for example through reduced options/choices, increased travel time, increased costs from taxation, increased costs of goods and services as a result of regulation, or taxpayer-funding of programs.

Finally, and perhaps most critically, it is likely that most obese individuals realize they are heavy and that they may be making diet and lifestyle choices that keep them obese. They also have strong reasons to drop their excess weight including social stigma, reduced incomes, and the health risks associated with the excess weight. As Marlow and Abdulkadirov note, “[the obese] hardly need the government to give them additional incentives to lose weight. People aware of their mistakes also have strong incentives to correct them. This is an important point because interventions focusing on health risks of obesity may provide minimal new information and steer few people toward losing weight” (2012: 16).

## Conclusion

There is little solid evidence supporting the view that commonly proposed anti-obesity interventions could serve as effective systematic tools for reducing the prevalence of excess weight. Even if concerns about poor consumer decision making as a result of limited information and hyperbolic discounting are correct, the recommended interventions do not appear to be able reduce the prevalence of obesity. It is vital to also recognize that these interventions are not costless, imposing costs on both obese and non-obese Canadians.

## Conclusion

There are many advocates of government interventionism who claim that too many of us (and a growing number) have expanded waist lines. Consequently, our irrational and poor choices are leading us to illness and early death. Given this dire public health scenario, interventionists have suggested that only government intervention can save us from ourselves.

A closer look at the evidence reveals a very different story, however.

First, rates of overweight and obesity, while they may be historically high, are not expanding for all Canadians. Rather, there is a growing volume of data showing that the proportion of Canadian adult males and Canadian youth carrying excess weight (by BMI standards) has stabilized or may even be turning a corner. Only the prevalence of obesity among Canadian females continues to rise.

Second, while there are undoubtedly health and longevity consequences associated with obesity, interventionists may be overstating the problem. Critically, many of the negative consequences of obesity may primarily fall on those at the higher end of the obesity spectrum—the Class II and Class III obese—rather than the Class I obese. Further, while there are potentially large economic costs associated with obesity, many are borne directly by the obese individual, with the notable exception of health care costs funded through Canada’s public health care system. Even then, a longer term perspective or more complete view may weaken the case for further government intervention into our private lives.

Finally, the policy solutions commonly proposed by interventionists do not appear capable of actually reducing the prevalence of overweight and obesity. On the other hand, these interventions impose costs indiscriminately (and potentially regressively), and inappropriately vilify particular foods and food manufacturers. A key concern is that, if such policies are introduced, these failings will not be perceived as shortcomings of the policy approach in the first place but rather as evidence that the policy was not sufficiently strong or intrusive.

All of these facts suggest a very different truth about obesity. While there still may be too many expanded waist lines, the number may have stabilized and may be turning a corner. The health concerns associated with



obesity may impact fewer of those with excess weight than has often been suggested. And while there may be too many expanded waist lines, and while consumers may still make decisions for their short-term satisfaction rather than their longer-term health and well being, there is little that governments can do in terms of interventionist policy that would change these behaviours in ways that systematically lead to fewer expanded waistlines.

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Nous envisageons un monde libre et prospère, où chaque personne bénéficie d'un plus grand choix, de marchés concurrentiels et de responsabilités individuelles. Notre mission consiste à mesurer, à étudier et à communiquer l'effet des marchés concurrentiels et des interventions gouvernementales sur le bien-être des individus.

### Peer review—validating the accuracy of our research

The Fraser Institute maintains a rigorous peer review process for its research. New research, major research projects, and substantively modified research conducted by the Fraser Institute are reviewed by experts with a recognized expertise in the topic area being addressed. Whenever possible, external review is a blind process. Updates to previously reviewed research or new editions of previously reviewed research are not reviewed unless the update includes substantive or material changes in the methodology.

The review process is overseen by the directors of the Institute's research departments who are responsible for ensuring all research published by the Institute passes through the appropriate peer review. If a dispute about the recommendations of the reviewers should arise during the Institute's peer review process, the Institute has an Editorial Advisory Board, a panel of scholars from Canada, the United States, and Europe to whom it can turn for help in resolving the dispute.

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