Although obesity can be a serious health threat, we lack effective strategies to address this condition on an individual and a societal level. Myths and misconceptions about obesity are pervasive in the media, popular culture, and scientific literature. As recently discussed in the New England Journal of Medicine, the promulgation of unsupported beliefs might yield poorly informed clinical decisions, inaccurate public health recommendations, and unproductive allocation of limited research resources. Using Internet searches of popular media and scientific literature, we identified 7 misconceptions about obesity that we believe warrant attention. The objective of this article is to challenge readers to rethink how we should approach obesity and its management.

**Misconceptions**

**Obesity is primarily caused by a lack of physical activity or by unhealthy dietary habits.** The positive energy balance underlying obesity is generally attributed to chronic excess energy intake or reduced physical activity. Unhealthy diet and physical inactivity are the “big 2” on which almost all preventive and therapeutic programs for obesity are focused, thereby neglecting other possible contributors to excess body weight. Although intuitively appealing, clear evidence (eg, individual-level epidemiologic data and randomized experiments) beyond ecological correlations is lacking for the big 2.2 Many other putative contributors to the increase in obesity (eg, insufficient sleep, psychological stress, endocrine disruptors, medications, intrauterine and intergenerational effects, etc) have supportive evidence that is as compelling as, if not more compelling than, the evidence for the big 2.3–4 These nontraditional or new determinants of obesity influence energy input and output; overeating and reduced energy expenditure are perceived as “symptoms” and not as the root causes of the excess weight.5 On the treatment side, an accumulating body of evidence shows that insufficient sleep can impede weight loss and addressing sleep for weight management has recently been endorsed by the Canadian Obesity Network.6 Overall, accumulating evidence suggests that health practitioners and clinicians might need to consider a broader range of influential factors (eg, medications, lack of time, psychological stress, fatigue, chronic pain) to adequately identify and address the key factors responsible for the patient’s obesity, which is likely a clinical sign of chronic caloric “retention” (similar to edema being a clinical sign of fluid “retention”).5 This will enable health practitioners and clinicians to develop a personalized framework that addresses the root causes of patients’ weight gain.

Physicians must move beyond the simplistic and generally ineffective recommendation to “eat less and move more” by investigating and addressing the determinants of increased energy intake, decreased metabolic rate, and reduced activity.

**Obese individuals are less active than their normal-weight counterparts.** It is very common to hear that obese people are lazy and should get off the couch. This discriminatory bias against those with excess weight is not only widespread among the lay public but also among health professionals, even those in regular contact with patients with obesity.7 Yet, the most recent data from the Canadian Health Measures Survey, a study of a nationally representative sample that used accelerometers to measure physical activity, suggest otherwise. Based on objective measures, only 7% of Canadian children and youth and 15% of Canadian adults meet physical activity guidelines. When split by body mass index categories, obese girls average 11 159 steps per day, while normal-weight girls average 10 224 steps per day. Obese boys average fewer steps (10 256 steps per day) than their normal-weight counterparts (12 584 steps per day), but they have a larger body to carry. Translating this physical activity level into calories expended (kcal per day) would likely show that obese boys actually burn more calories on a daily basis.10 Similar findings are observed for Canadian adults. Overall, the message is that there is a physical inactivity crisis in Canada—most people do not meet the recommended amount of physical activity required each day for health benefits—and every Canadian, regardless of body size, would benefit from an increase in physical activity and a decrease in sitting time.

Rather than focusing on burning calories, interventions should aim at reducing sedentary activities and increasing physical activities to improve overall health and general well-being.

**Diets work in the long term.** Approximately two-thirds of people who lose weight will regain it within 1 year, and almost all of them will regain it within 5 years.11 Although dieting (ie, caloric restriction) to lose weight is
Successful obesity management requires identifying and addressing the obesity drivers as well as the barriers to and potential complications of weight management. Family physicians should discuss the possible adverse effects of weight loss with their patients and actively look for these effects in patients trying to lose weight.

Exercising is better than dieting to lose weight. There is now a consistent body of evidence showing that exercise alone, despite a range of health benefits associated with regular exercise, results in rather modest weight loss (less than 2 kg on average). One of the explanations is that exercise is often accompanied by an increase in sedentary activities and appetite and a decrease in dietary restraint that counteract the increased energy expenditure of exercise. However, increased exercise has been shown to reduce visceral adiposity (even with minimal changes in body weight). Individuals who include regular exercise and active living as part of a weight-loss program are more likely to improve their overall health and keep the weight off. This latter finding might be attributable to the effect of regular exercise on caloric intake rather than on caloric expenditure per se.

Exercise alone generally promotes modest weight loss; however, individuals who exercise regularly might improve their overall health independent of weight loss and are more likely to keep their weight off.

Everyone can lose weight with enough willpower. It is common to hear that weight loss is a matter of willpower and compliance with the weight-reducing program. However, the magnitude of weight loss is very different among individuals with the same weight-loss intervention and prescription, and the same compliance to the program—one size does not fit all. Thus, for some people (especially those who have already lost some weight), simply putting more effort into a weight-loss program will not always result in additional weight loss given the different compensatory adaptations to weight loss. For example, the decrease in energy expenditure that occurs during weight loss is highly variable between people and might dampen efforts to lose additional body fat. Such compensatory mechanisms might sometimes fully counteract the 500 kcal per day decrease recommended in most dietary interventions, making it very difficult for such “poor responders” to lose weight.

Physicians should remember that obesity is not a choice and weight-loss success is different for every patient. Success can be defined as better quality of life, greater self-esteem, higher energy levels, improved overall health, or the prevention of further weight gain.

A successful obesity management program is measured by the amount of weight lost. Given the importance of obesity as a public health problem, there is widespread
effort to encourage people with excess weight to attempt weight loss. However, a growing body of evidence sug-
gests that a focus on weight loss as an indicator of suc-
cess is not only ineffective at producing thinner, healthier bodies, but could also be damaging, contributing to food
and body preoccupation, repeated cycles of weight loss
and regain, reduced self-esteem, eating disorders, and
social weight stigmatization and discrimination.25 There
is also concern that “anti-fat” talk in public health camp-
aigins might further promote weight bias and discrimina-
tion.26 Therefore, it might be time to shift the focus away
from body weight to health and wellness in public health
interventions. Recently, the Canadian Obesity Network
launched a tool called the 5As of Obesity Management
(www.obesitynetwork.ca/5As) to guide primary care
practitioners in obesity counseling and management.27
Minimal intervention strategies such as the 5 As (ask,
assess, advise, agree, and assist) can guide the process of
counseling a patient about behaviour change and can be
implemented in busy practice settings.28
Obesity management should focus on promoting
healthier behaviour rather than simply reducing num-
bers on the scale. The 5As of Obesity Management is a
practical tool to improve the success of weight manage-
ment within primary care.

Conclusion
This article briefly addresses some misconceptions about
obesity and attempts to promote novel ways of think-
ing in this field of research and practice that appears
highly prone to preconceived ideas, dogma, and biases.
Simplistic notions based on “energy in and energy out”
have proven largely ineffective both when dealing with
individuals and with populations. This might be owing
to the fact that current interventions do not take into
account the complex biopsychological responses to
defend body weight or the notion that only overcon-
sumption of food and physical inactivity are the root
causes of obesity.

Dr Chaput is Assistant Professor of Pediatrics at the University of Ottawa
and Junior Research Chair in Healthy Active Living and Obesity Research at
the Children’s Hospital of Eastern Ontario Research Institute in Ottawa. Dr
Ferraro is a researcher at the Children’s Hospital of Eastern Ontario Research
Institute. Dr Prud’homme is Professor of Human Kinetics, Associate Vice
President of Research, and Scientific Director of the Institut de recherche de
l’Hôpital Montfort in Ottawa. Dr Sharma is Scientific Director of the Canadian
Obesity Network and Professor and Endowed Chair in Obesity Research and
Management at the University of Alberta in Edmonton.

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Correspondence
Dr Jean-Philippe Chaput, Children’s Hospital of Eastern Ontario Research
Institute, Healthy Active Living and Obesity Research Group, 401 Smyth Rd,
Ottawa, ON K1H 8L1, telephone 613 737-7600, extension 3683; fax 613 738-
4800; e-mail jpcaput@cheo.on.ca

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