



# What about the 650 million?

Challenging the way we view and manage obesity

## Time for change

The 21st century faces an obesity epidemic. Worldwide, obesity has almost tripled since 1975, and in 2016 more than 1.9 billion adults were affected by overweight, of which 650 million had obesity.<sup>1</sup> High body-mass-index (BMI) accounted for at least four million premature deaths in 2015 alone.<sup>2</sup> What was once only a health issue faced by developed countries has now become a worldwide challenge and by 2030, predictions indicate that up to 1.12 billion people worldwide will have obesity.<sup>3</sup>

Obesity places a significant burden on people affected, increasing their risk of unintended health consequences<sup>4</sup> and reducing their life expectancy.<sup>5</sup> Rising obesity levels have also had an adverse effect on society and economic prosperity, causing a decrease in economic activity through loss of productive life years,<sup>6</sup> and by placing increasing demands on healthcare systems.<sup>7</sup>

Despite the scientific community recognising obesity as a multifactorial chronic disease which requires long-term management,<sup>8,9</sup> it is often considered to be the responsibility of the individual by governments, healthcare systems and even people with obesity.<sup>10,11</sup>

The majority of current obesity strategies focus on prevention or interventions focussed on diet and exercise.<sup>10,11,12,13</sup> While these strategies are important in the wider fight against obesity, they reinforce the concept of individual responsibility and do not address the complex nature of obesity or recognise the need for a holistic, integrated approach. Without support, individuals with obesity will not likely seek treatment for obesity, and will experience unnecessary health consequences throughout their lifetimes, such as type 2 diabetes, cardiovascular disease and certain cancers,<sup>4,14,15</sup> and are likely to continuously need access to costly multidisciplinary care and treatment.<sup>16,17,18</sup>

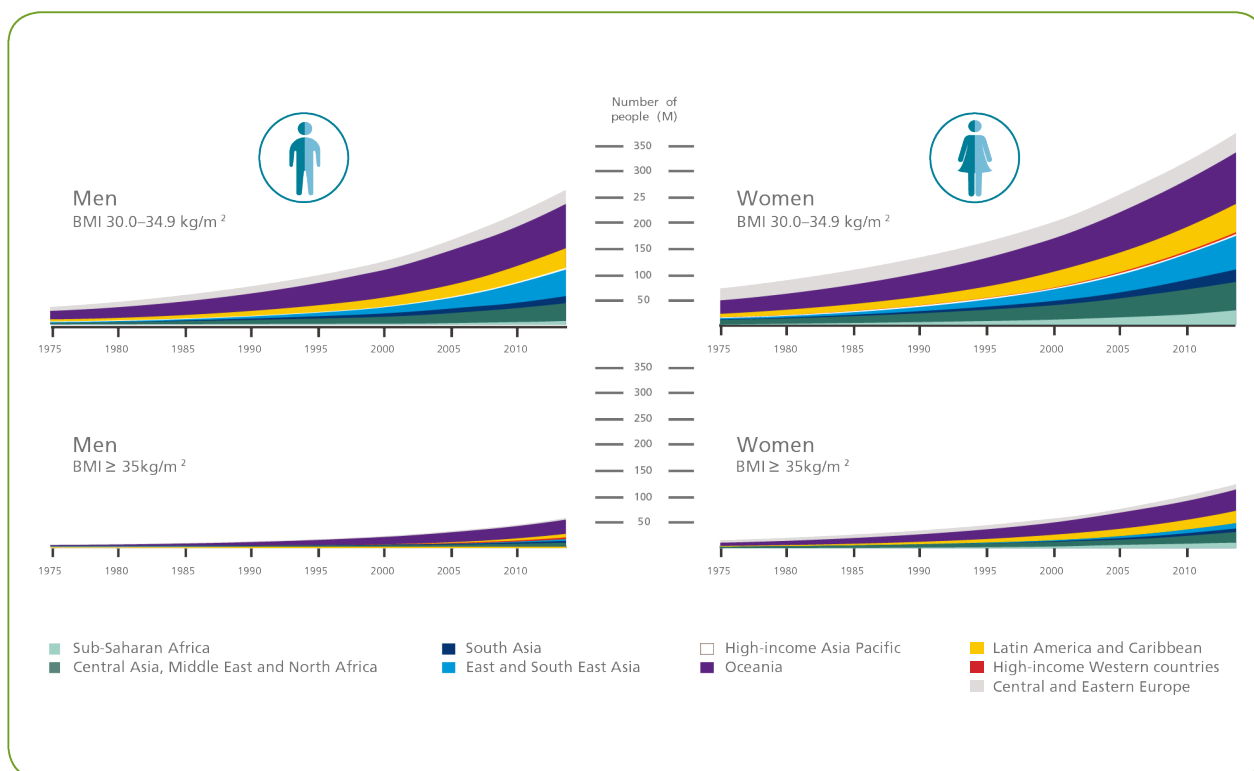
Country:	Adults* with obesity in 2014 <sup>1,2</sup>	Projected prevalence of obesity in 2025 if no further action is taken <sup>2</sup>	Number of adults who will have obesity in 2025 if no further action is taken <sup>2</sup>
Australia	3 in 10 adults (4.9 million)	34%	6.9 million
Canada	3 in 10 adults (7.7 million)	34%	10.4 million
Germany	2 in 10 adults (13.9 million)	25%	16.7 million
United Kingdom	3 in 10 adults (13.4 million)	34%	17.7 million
United States	3 in 10 adults (81 million)	n/a	n/a

Ref: 1. NCD Risk Factor Collaboration. Lancet. 2016;387(10026):1377–1396. 2. World Obesity Federation. World Obesity Day. Our data. World Obesity Federation 2017. <https://www.obesityday.worldobesity.org/ourdata2017>  
Adults defined as ≥ 20 years old

Country:	Number of adults dying from overweight and obesity related causes in 2015	Deaths per day
Australia	>14,000	39 <sup>†</sup>
Canada	>20,000	55 <sup>†</sup>
Germany	>64,800	178 <sup>†</sup>
United Kingdom	>39,900	110 <sup>†</sup>
United States	>291,000	799 <sup>†</sup>

Ref: The GBD 2015 Obesity Collaborators. New England Journal of Medicine. 2017;377:13–27.  
<sup>†</sup>Calculated based on a mortality rate of 98per 100,000

Obesity is not a new health challenge and many strategies exist. But a different approach is urgently needed; one that recognises that obesity is not a simple case of calories in vs calories out but a complex chronic disease, for which multidisciplinary, holistic strategies should be prioritised to ensure that effective support is provided to people with obesity.<sup>19</sup> If the current trend continues, obesity, and the substantial economic costs associated with it, will continue to rise and place an even greater burden on healthcare systems and societies at large.<sup>18,20,21</sup>



Ref: NCD. Risk Factor Collaboration. 2016. Trends in adult body-mass index in 200 countries from 1975 to 2014: a pooled analysis of 1698 population-based measurement studies with 19.2 million participants. The Lancet; 387(10026):1377-96.

People with obesity may be genetically susceptible to having a high Body Mass Index (BMI). As human bodies consider too little body fat to be a threat to survival, people with obesity are fighting against a biological response to fat loss which increases hunger and energy efficiency, and undermines their very ability to lose weight and maintain weight loss.<sup>22,24</sup> Obesity is not a choice but a complex multifactorial chronic disease which is influenced by genetic, physiological, environmental, psychological and socioeconomic factors.<sup>22,23,24,25</sup>

Despite the complex nature of obesity, it has long been the subject of stigma and misconceptions and this has influenced attitudes towards people with obesity, resulting in an approach that follows the widely accepted notion of 'eat less and exercise more'.<sup>10</sup> An approach that so far has not been sufficient in halting the rise of people with obesity.<sup>26</sup>

To truly create an environment which supports people with obesity and ensures that those who need to achieve and maintain weight loss are given the right tools to do so, we must address the barriers that are preventing this from happening today.

## Widespread stigma and misconceptions are a key barrier to effectively tackling obesity

Obesity stigma affects a person with obesity in all aspects of their lives



Ref: Puhl RM, Heuer CA (2009) The stigma of obesity: A review and update. *Obesity* 17: 941–964

Myths and misconceptions of obesity are prevalent in the media, popular culture and scientific literature with 72% of images in media representing people with obesity as lazy, unhealthy and unmotivated individuals.<sup>27,28,29</sup> It is therefore unsurprising that the stigmatisation of people with obesity has been called the 'last acceptable prejudice'.<sup>30</sup>

At the root of the problem is the belief that obesity is a lifestyle choice which is due to poor self-discipline and lack of motivation. This belief remains strong among the public with a 66% increase in weight discrimination over the past decade.<sup>31</sup> It is even observed in the perceptions of healthcare practitioners (HCPs), who have been identified as the second most frequent source of weight stigma after family members.<sup>32</sup>

A recent survey of European General Practitioners (GPs) revealed that over a third of GPs felt their colleagues were biased against people with obesity and 55% said that biases and misconceptions around obesity are common among practitioners.<sup>33</sup> Another study done in the U.S. showed that one in two

physicians in the U.S. regard patients with obesity as 'awkward, unattractive, ugly and non-compliant'.<sup>34</sup>

Weight bias amongst HCPs is impairing the care of people with obesity for a number of reasons. Their prejudice is preventing them from having an emotional rapport with their patients which in turn results in a lack of diagnosis, and provision of support and effective weight management intervention.<sup>10,35</sup> In addition, HCPs' behaviour and wider societal stigma prevents people with obesity from seeking help.<sup>10,31,36,37</sup> In fact, compared with women with a normal BMI, women with obesity are more likely to delay clinical breast examinations, gynaecological examinations and pap smears.<sup>38</sup>

The barrier to effective care is not the only consequence of stigma. For individuals with obesity, stigmatisation is associated with greater psychological distress and more severe obesity.<sup>39</sup> In addition, from a wider societal perspective, the presence of stigma can result in poorly-informed clinical decisions, inaccurate public health recommendations and unproductive allocation of limited research resources.<sup>40</sup>

## The complex nature of obesity means individuals cannot be expected to tackle their chronic disease alone

### COMMON MISCONCEPTIONS AROUND OBESITY<sup>29,41,42</sup>

#### 1. Obesity is primarily caused by a lack of physical activity or by unhealthy dietary habits

Many other factors can have an equal influence on weight gain (e.g. insufficient sleep, psychological stress, endocrine disruptors, medications and hormonal imbalances etc.)

#### 2. People with obesity are less active than their normal weight counterparts

When looking at physical activity levels and calories expended (kcal per day) people with obesity would likely burn more calories daily due to the added effort required. Most people, with or without obesity, do not meet the recommended amount of physical activity required each day for health benefits. Everyone regardless of body size, would benefit from an increase in physical activity and a decrease in sitting time

#### 3. Everyone can lose weight with enough willpower

There are numerous genetic variables that have been shown to be associated with obesity, and various medical conditions (hypothyroidism, polycystic ovary syndrome, depression) that can increase the risk of weight gain. The body also has numerous hormones and biological pathways that are supposed to regulate body weight. These tend to be dysfunctional in people with obesity, making it much harder to lose weight and keep it off.

The implementation and prioritisation of environmental interventions such as sugar tax, improved infrastructures and exercise programmes in schools are valuable elements in the wider fight against obesity. However, they do not take into account the physiological, genetic and psychological factors that have an impact on a person's ability to lose weight and maintain weight loss.

When left untreated, obesity can greatly impact all areas of a person's life, leading to increased absenteeism from work,<sup>17</sup> mental health issues,<sup>31,43</sup> and can adversely affect personal relationships.<sup>43</sup> These consequences, as well as the stigma faced, impact psychological health and can cause a perpetual cycle of mood disturbance, overeating and weight gain in individuals with obesity.<sup>43</sup> This cycle is particularly prevalent in individuals with a genetic predisposition to obesity or when living in an environment where calorically dense foods are readily available and opportunities for physical activity are limited.<sup>43</sup>

**“Obesity can greatly impact all areas of a person's life”<sup>17,31,43</sup>**





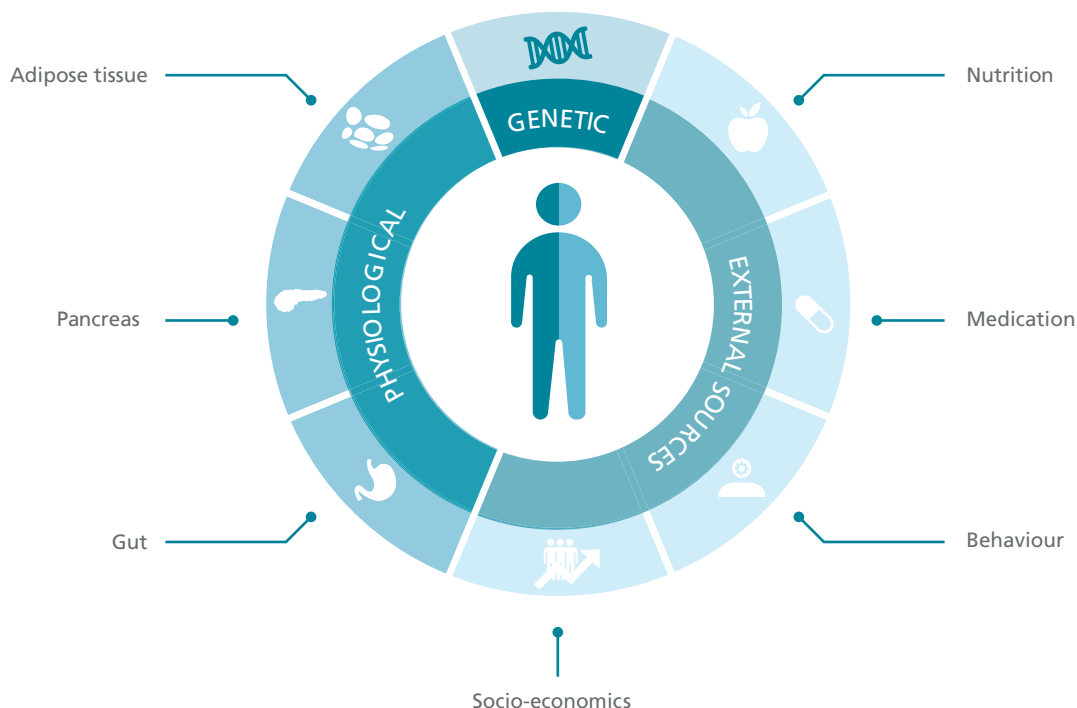
People with obesity who have the desire to lose weight have often achieved significant weight loss several times<sup>35,44</sup> but are unable to maintain it due to physiological factors.<sup>42</sup> Weight loss triggers a hormonal response that ensures increased appetite and reduced energy expenditure. This response does not subside even several years after the initial weight loss.<sup>42</sup>

In addition, the complications that result from obesity make it difficult for an individual to achieve weight loss without weight management intervention. People with obesity often experience deficiencies in daily physical functions due to shortness of breath,<sup>45</sup> pain in weight-bearing joints such as knees,<sup>46</sup> low energy level (fatigue) and/or loss of mobility.<sup>47</sup> Moreover, obesity may increase perceived fatigue and physical function loss.<sup>48</sup>

People with obesity who report not receiving a formal diagnosis and provision of external support have a lower chance of reporting weight loss success.<sup>35,44,49</sup> Without continuous support, people with obesity experience decreased motivation and confidence which negatively affect their weight and overall health.<sup>35,44</sup>

The simplistic but widely accepted 'calories in vs calories out' algorithm ignores the multiple and complex factors of obesity.<sup>31</sup> Not treating obesity like any other chronic disease requiring holistic interventions which combine lifestyle modifications with behavioural therapy, pharmacotherapy and in certain cases surgery, translates into a vicious cycle of inaction and increases their risk of obesity related complications.<sup>19,31</sup> People cannot be expected to overcome obesity on their own.

## Many factors influence a person's metabolic balance throughout their life



Ref: 1. Woods & Seeley. *Int J Obes Relat Metab Disord.* 2002;26 Suppl 4:S8-S10. 2. Campfield & Smith. *Baillieres Best Pract Res Clin Endocrinol Metab.* 1999;13(1):13-30. 3. Badman & Flier. *Science.* 2005;307(5717):1909-14. 4. Kyle & Kuehl. [www.obesityaction.org/community/article-library/prescription-medications-weight-gain](http://www.obesityaction.org/community/article-library/prescription-medications-weight-gain)

## Healthcare providers are not equipped to tackle obesity effectively

Organisations such as the European Association for the Study of Obesity (EASO),<sup>50</sup> the Canadian Medical Association (CMA),<sup>8</sup> the American Medical Association (AMA)<sup>9</sup>, and the World Obesity Federation (WOF),<sup>51</sup> have all recognised obesity as a multifactorial chronic disease requiring long term management. However, only a minority of people with obesity today are diagnosed<sup>52</sup> and have access to holistic and long-term support.<sup>31,53,54</sup>

Current clinical practice and governmental policy have long been influenced by the predominant notion that obesity is driven by individual behaviour and as a result the responsibility of weight loss sits with the individual.<sup>19,31</sup> This understanding of obesity has had a significant impact on the frameworks and initiatives currently put in place to manage obesity which mainly focus on public health interventions enabling people to make healthier choices in respect to diet and exercise.<sup>11,12,13</sup> This is despite scientific evidence and expert advice which recommends that a holistic, integrated approach is required to tackle the complex factors associated with obesity.<sup>19</sup>

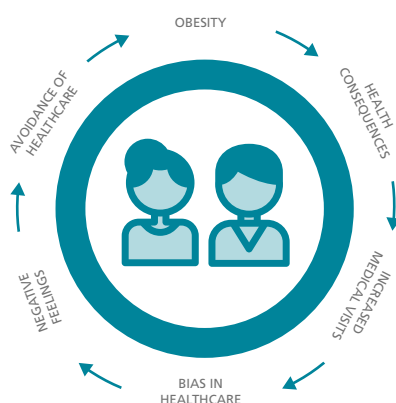
The current understanding of obesity has resulted in several barriers to effective clinical management, including a lack of disease understanding among healthcare professionals,<sup>55,56</sup> leading to misperceptions and bias towards people with obesity,<sup>32,33,34</sup> poor patient-HCP communication,<sup>52,57</sup> limited availability and adoption of treatment options,<sup>58,59,60</sup> and insufficient reimbursement for obesity management.<sup>60</sup> Pathophysiology and management of obesity are

often absent from HCPs' medical training; 88% of GPs in Europe receive none or less than 48 hours of training during their entire education which typically takes around 10 years.<sup>33</sup> In addition, 26% of GPs say that they do not receive any advice from their relevant health authorities on how to address obesity and a further 20% are not sure whether they are provided this advice by their relevant health authorities.<sup>33</sup> Findings that underpin the fact that only 20% of GPs in Europe cited genetics as a common cause of obesity.<sup>33</sup>

Furthermore, the lack of education and guidance leave most healthcare practitioners ill-equipped to effectively communicate with patients and provide appropriate diagnosis and treatment. In fact, many HCPs do not proactively discuss weight with their patients even if the patient appears to have obesity.<sup>14,33</sup> The top reasons given by HCPs in the U.S. are lack of time, more important issues to discuss, or they feel patients are not motivated to lose weight.<sup>14</sup> Similarly, in Europe the top reasons are: lack of time, patients would not like them to discuss their weight or they feel it is the responsibility of the patient to talk about it if they want to discuss it.<sup>33</sup> A sentiment that correlates with the finding that 74% of GPs in Europe believe it is the responsibility of the patient to manage their weight.<sup>33</sup>

When placing the responsibility on the individual to discuss their weight, it is assumed that patients are aware of their condition. Whereas, the reality is that 50% of people with obesity and even severe obesity

### The vicious cycle of stigma and bias in obesity



Refs: 1. Puhl, R Heuer, C. 2010. Obesity stigma: important considerations for public health. American Journal of Public Health; 100 (6): 1019-1028 2. Wang, Y.C., et al. 2011 Health and economic burden of the projected obesity trends in the USA and the UK, Lancet; 378(9793):81525.

identify themselves as being overweight (48%) or even of normal weight (2%) vs having obesity. Even when aware, 82% of people with obesity echo the sentiment of HCPs, as they feel that losing weight is completely their responsibility.<sup>14</sup>

There are many barriers to effective management of obesity but central to all of them is that current practices in healthcare do not treat obesity as a complex problem. This leaves HCPs with minimal resources to support their patients, including insufficient training on the causes, consequences and treatment of obesity, and assessment tools which do not correctly identify people with obesity.<sup>33,61,62</sup>

Due to these factors, the situation currently is that many GPs feel that not much can be done by medical practitioners to effectively manage obesity.<sup>10,63</sup> As a result, only 32% of GPs keep records of all their patients' weight, despite 58% of patients being either overweight or having obesity, and only a minority of GPs follow-up with patients to monitor their progress in losing weight.<sup>33</sup>

Ultimately, current strategies have left us with healthcare systems which provide little to no clinical management of obesity.

**“Current practices in healthcare do not treat obesity as a complex problem.”**





## Treatment of obesity related complications are prioritised vs obesity itself

Approximately 46% of people with a BMI < 40 (kg/m<sup>2</sup>) have at least five related complications, rising to 55% of individuals with a BMI > 60 (kg/m<sup>2</sup>).<sup>4</sup> These complications can include type 2 diabetes, cardiovascular disease and certain cancers which all require a substantial level of care and medication.<sup>15</sup> These complications are only three of the 236 disorders associated with obesity, and with the number of people with obesity set to rise, we can expect obesity to continue to place a tremendous strain on healthcare systems worldwide.<sup>3,15</sup>

High BMI is estimated to drive between 2% and 7% of healthcare spending in developed countries.<sup>18</sup> Compared with normal-weight individuals, people who are overweight or have obesity incur over 22%

higher healthcare costs due to hospitalisation, day procedures and physician costs.<sup>16</sup> These figures exclude the financial cost of treating associated complications, which can increase healthcare spending in developed countries by up to 20% according to some estimates.<sup>18</sup> The global cost of treating ill-health caused by obesity is set to top \$1.2 trillion annually from 2025,<sup>20</sup> an unaffordable amount for healthcare systems. At present, the U.S. faces by far the biggest treatment bill, costing society \$388 billion for treating its health consequences in 2017, accounting for 13% of its total healthcare expenditure. In Germany, treating obesity related complications accounts for 10% of their total healthcare expenditure and in the United Kingdom, it accounts for 8%.<sup>21</sup>

**“The global cost of treating ill-health caused by obesity is set to top \$1.2 trillion annually from 2025.”<sup>4</sup>**



### Potential benefits of 5–10% weight loss



Reduction in risk of T2DM<sup>1</sup>



Reduction in cardiovascular mortality<sup>2</sup>



Improvements in blood lipid profile<sup>3</sup>



Improvements in blood pressure control<sup>4,5</sup>



Improvements in severity of sleep apnoea<sup>6,8</sup>



Improvements in HRQoL<sup>9,10</sup>

Refs: 1. Knowler et al. N Engl J Med 2002;346:393–403; 2. Li et al. Lancet Diabetes Endocrinol. 2014;2(6):474–80; 3. Dattilo et al. Am J Clin Nutr 1992;56:320–8; 4. Siebenhofer et al. Cochrane Database Syst Rev. 2011(9):CD008274; 5. Wing et al. Diabetes Care. 2011;34(7):1481–6; 6. Tuomilehto et al. Am J Respir Crit Care Med. 2009;179(4):320–7; 7. Foster et al. Arch Intern Med. 2009;169(17):1619–26. 8. Kuna et al. Sleep. 2013;36(5):641–9A; 9. Warkentin et al. Obes Rev. 2014;15(3):169–82; 10. Wright et al. J Health Psychol. 2013 Apr;18(4):574–86.

The economic impact of obesity is not limited to healthcare systems alone. Indirect costs of obesity include premature mortality, disability and loss of economic productivity which accounts for over half of the economic burden of obesity.<sup>17</sup> Some estimate the global economic impact of obesity to be as much as \$2 trillion or 2.8% of global gross domestic product (GDP).<sup>18</sup> Overall, obesity today has the same impact on the global economy as armed conflict or smoking.<sup>18</sup>

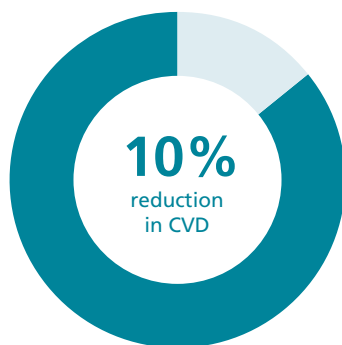
To reduce the estimated costs, we must focus on treating obesity as the cause vs a risk factor. Studies have shown that in people who have obesity or are overweight a 5–10% weight loss can reduce the severity or risk of complications as well as reducing cost to the healthcare system.<sup>64,65</sup> For instance, a moderate (0.10–0.50 kg/m<sup>2</sup>) short-term annual decrease in BMI is linked to a 25% decreased risk of

mortality from any cancer.<sup>66</sup> In men a mean weight loss of 5.1 kg leads to a reduction of 20.4% and in women a mean weight loss of 5.4 kg leads to a reduction of 12.6% of CV risk factors.<sup>67</sup>

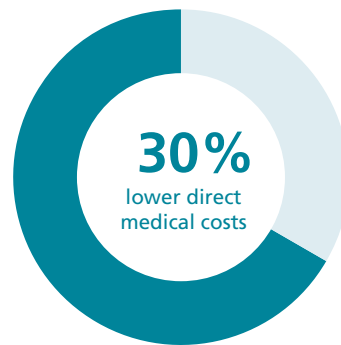
The benefits of a 5-10% weight loss go beyond reducing the risk of severe and unintended health consequences: it also has a wider impact on the individual and their ability to positively contribute to society, as it is associated with moderate improvements in physical function, self-esteem and health related quality of life (HRQoL).<sup>68</sup>

As a result, the provision of effective care for people with obesity will be an investment in the future health of society and healthcare systems.

## **“We must focus on treating obesity as the cause vs a risk factor.”**



Elimination of central obesity (excess abdominal fat) may reduce the frequency of cardiovascular disease (CVD) by up to 10% in Europe<sup>1</sup>



In Australia, direct medical costs for people with obesity or excess weight who lost weight (-1.4 kg/m<sup>2</sup>) and/or reduced their waist circumference (-7.1 cm) were approximately 30% lower than for those who still had obesity<sup>2</sup>

Refs: 1. Fox et al. Eur Heart J. 2009;30(24):3055-63. 2. Colagiuri et al. Med J Aust. 2010;192(5):260-4.

<b>Australia</b>	In 2017, the total cost of treating the health consequences of obesity was <b>11.2 billion USD<sup>†</sup></b>	<b>Investing 188 million USD*</b> between 2014–2025 for treating obesity could successfully reduce the adult prevalence of obesity by 1% by 2025 <sup>§</sup>
<b>Germany</b>	In 2017 the total cost of treating the health consequences of obesity was <b>36.5 billion USD<sup>†</sup></b>	<b>Investing 376 million USD*</b> between 2014–2025 for treating obesity could successfully reduce the adult prevalence of obesity by 1% by 2025 <sup>§</sup>
<b>Canada</b>	In 2017, the total cost of treating the health consequences of obesity was <b>15.3 billion USD<sup>†</sup></b>	<b>Investing 237 million USD*</b> between 2014–2025 for treating obesity could successfully reduce the adult prevalence of obesity by 1% by 2025 <sup>§</sup>
<b>United Kingdom</b>	In 2017, the total cost of treating the health consequences of obesity was <b>22.2 billion USD<sup>†</sup></b>	<b>Investing 444 million USD*</b> between 2014–2025 for treating obesity could successfully reduce the adult prevalence of obesity by 1% by 2025 <sup>§</sup>
<b>United States</b>	In 2017, the total cost of treating the health consequences of obesity was <b>388 billion USD<sup>†</sup></b>	<b>Investing 2.6 billion USD*</b> between 2014–2025 for treating obesity could successfully reduce the adult prevalence of obesity by 1% by 2025 <sup>§</sup>

Ref: World Obesity Federation. World Obesity Day. Our data. World Obesity Federation 2017.  
Available at <https://www.obesityday.worldobesity.org/ourdata2017>

*\*Based on calculations from the World Obesity Federation. †Health consequences of obesity refer to additional healthcare costs due to excess weight compared to an individual of normal weight. Health consequences include treatment of treatment for diseases such as diabetes, liver disease, cancers and heart disease.  
§ Treating obesity includes general practitioner personal programmes, bariatric surgery, pharmaceuticals and environmental interventions.*

## Where do we go from here?

The increase in the prevalence of obesity will continue to place a significant burden on health services and the wider economy, unless a cross-society approach is adopted. Governments should be applauded for the preventative policies being implemented, but more needs to be done to support the population living with obesity now. Prevention is not enough; to minimise the economic burden and positively impact society, policies need to be established that focus on tackling all causes of obesity, be they environmental, behavioural or psychological.

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