



Module 1:

Recognize the Impact

Why obesity and weight management matter to your organization

Employers

The Weigh Forward is a comprehensive program designed to assist with weight management for appropriate patients within your organization. As part of the program, this module is designed to increase awareness of the extent of obesity's prevalence, health risks, and costs, and the benefits of weight management for your employees and your organization.

Overview of key topics presented in this module



Understanding obesity and weight loss

The body weight of people with obesity is affected by multiple factors. Weight loss changes the way the body deals with hunger and how it burns calories.^{1,2}



Obesity's prevalence and associated complications

The prevalence of obesity will only continue to rise. Importantly, obesity is associated with numerous health consequences, such as hypertension, type 2 diabetes, osteoarthritis, and even cancer.^{3,4}



Obesity is costing your organization more than you know

Obesity is associated with increased sick days, disability claims, and healthcare costs. An estimated \$92.1 billion was determined to be the aggregate cost of obesity among full-time employees in the United States.^{5-7,a}



Weight management considerations for your organization

Even a small amount of weight loss (5% to 10%) can provide meaningful health benefits to your employees with obesity.⁴ It may also help curb annual medical expenditures.⁸ Consider treatment options, including anti-obesity medications (AOMs).^{4,9}

BMI=body mass index.

^a2006 data adjusted to 2019 inflation rate.^{6,7}

What is obesity and how is it defined?

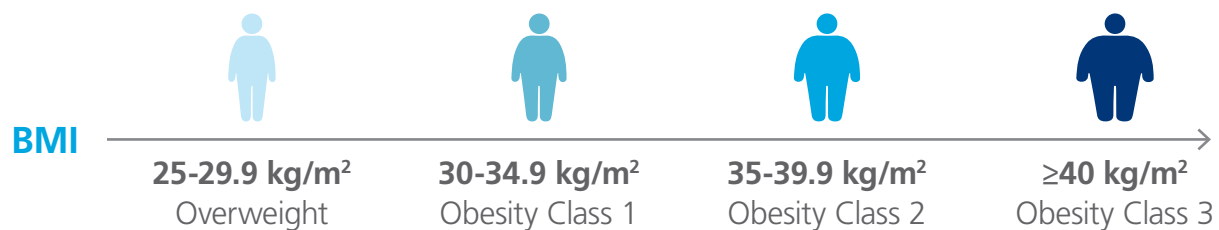
“Obesity is a complex, multifactorial condition characterized by excess body fat. It must be viewed as a chronic disorder that essentially requires perpetual care, support, and follow-up. Obesity causes many other diseases, and it warrants recognition by health-care providers and payers.”¹⁰



American Association of Clinical Endocrinologists
American College of Endocrinology Obesity Task Force

National organizations recognize obesity as a multifaceted, chronic disease.

Obesity is defined by a BMI of 30 kg/m² or higher⁹



Why is it so hard to lose weight? Why does weight return?

Multiple factors affect the body weight of people with obesity



Appetite signals

When weight is lost, the body increases the hunger hormone and decreases fullness hormones.²



Genetics

Genes may play an important role in how much weight is gained.^{11,12}



Behavior

Not enough sleep and lack of physical activity may be contributing factors.¹³



Environment

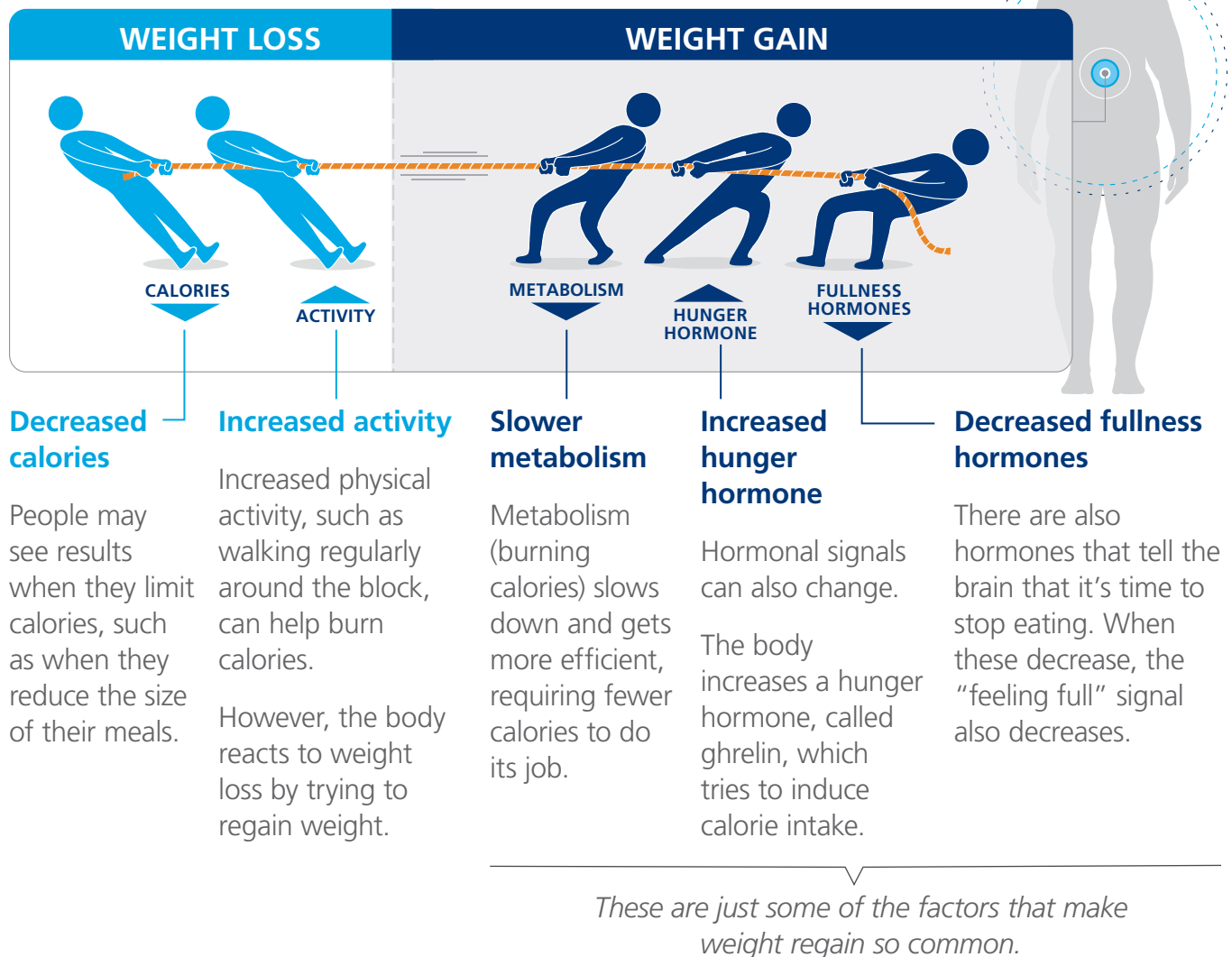
Having healthy food may be challenging (eg, location, price, time to prepare), which may result in buying more convenient, fatty, and calorie-dense food. Some individuals have no place to exercise.^{12,13}

Obesity, classified as a BMI of 30 kg/m² or greater, is driven by many factors that contribute to its widespread prevalence and complexity.^{9,14}

After weight loss, your body fights to put weight back on^{1,2}

Willpower vs biology: Metabolic and hormonal responses affect the ability to maintain weight loss.^{1,2}

The “tug-of-war” of weight management^{1,2}

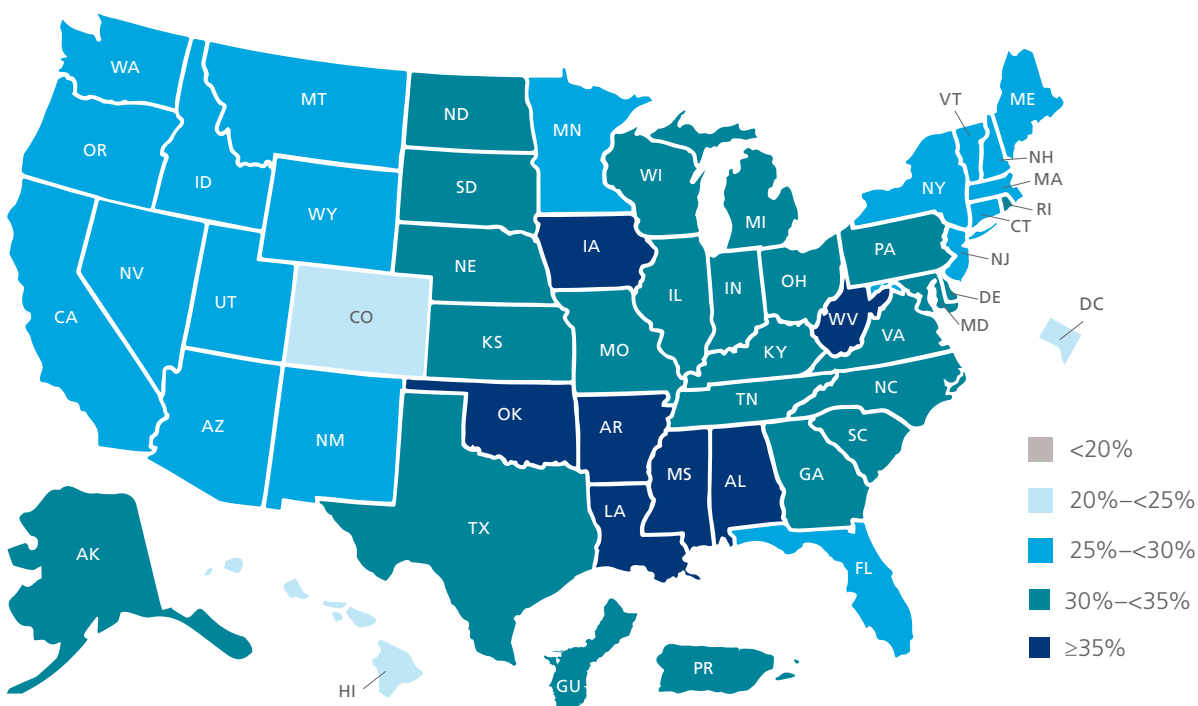


In people with obesity, the body will try to put the weight back on for at least 12 months after weight loss.²

How widespread is obesity in the United States?

The prevalence of obesity in the United States continues to grow³

2017 prevalence of self-reported obesity among US adults by state and territory^{14,a}



Out of ~327 million people, **~77 million adults**
are affected by obesity in the United States^{15,16}

- Obesity rates are highest in African-American and Hispanic adults^{16,b}
 - At ~46%, African-American adult women have the highest obesity rate of any demographic¹⁶

If the current trend continues, 51% of the US adult population will have obesity by 2030.³

How does this affect you?

31,685,988

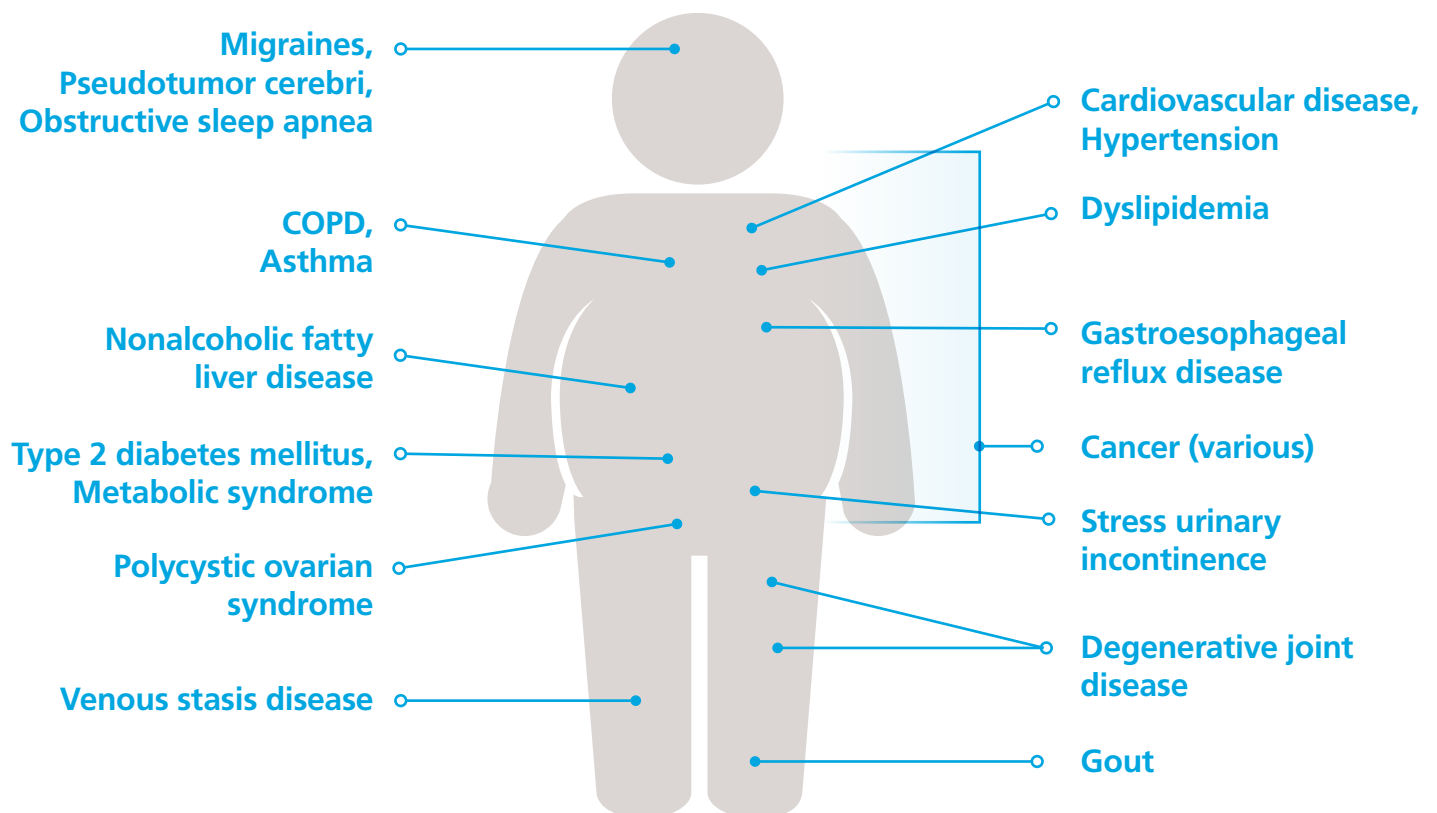
Full-time employees with overweight^{15,16,b}

23,076,851

Full-time employees with obesity^{15,16,b}

How does obesity impact the lives of people with the disease?

There are many comorbidities associated with obesity^{4,17-20,c}



COPD=chronic obstructive pulmonary disease.

^aPrevalence reflects Behavioral Risk Factor Surveillance System methodological changes started in 2011, and these estimates should not be compared with those before 2011.¹⁴



^bAdults aged ≥ 18 years.¹⁶

^cThe above list is not exhaustive and is intended to illustrate only a range of key complications.

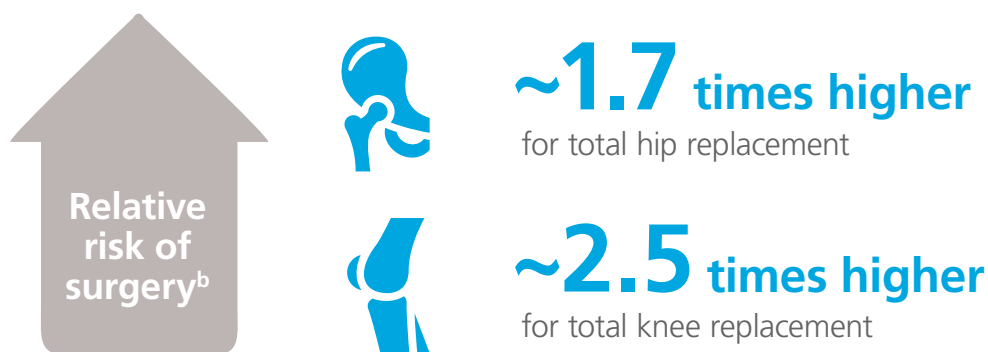
How does obesity impact the lives of people with the disease? (cont'd)

Obesity increases the risk of developing type 2 diabetes, hypertension, and coronary artery disease^{21,22}

Relative risk of developing costly comorbid conditions in adults with BMI ≥ 30 kg/m²^a

	Type 2 diabetes	Hypertension	Coronary artery disease
 Male	6.7x	1.8x	1.7x
 Female	12.4x	2.4x	3.1x

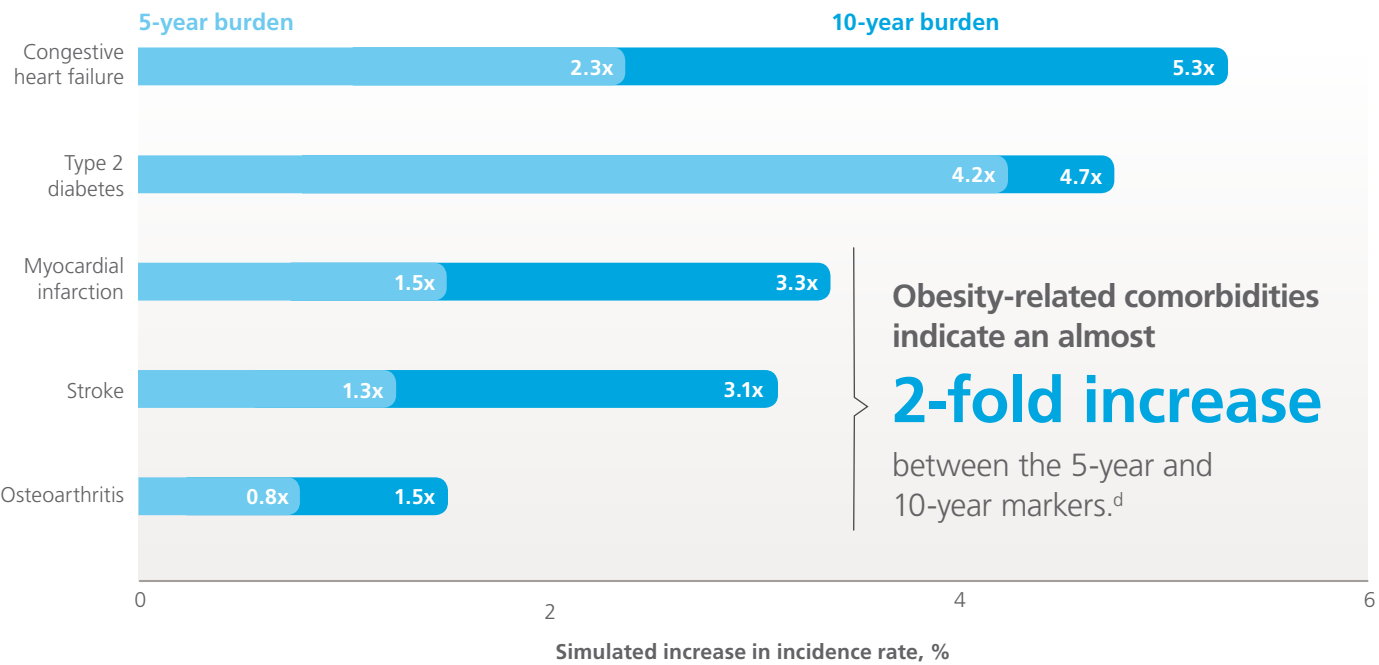
In osteoarthritis, weight gain may lead to increases in surgical intervention and postoperative pain^{23,24}



^aCompared with employees of normal weight.²¹

10 ^bBMI 25 to 29.9 kg/m² vs BMI 30 to 34.9 kg/m².²³

If obesity is left untreated, long-term incidence rates of comorbidities can increase over time^{25,c}



Obesity can be a debilitating disease that may be already impacting the health of your employees and your organization.^{4,14}

^cPopulation included 100,000 adults with obesity and 100,000 demographically matched normal-weight adults. Data taken from 2005-2012 National Health and Nutrition Examination Survey (NHANES) and shown in the graph as cumulative over 5 and 10 years and as absolute difference in prevalence.²⁵

^dWith the exception of type 2 diabetes.

What is the financial impact of obesity?

The effects of obesity have a distinct financial impact on employers²⁶

According to data from a 2006 survey and adjusted to 2019 inflation rates,

\$92.1 billion

is the aggregate cost of obesity among full-time employees in the United States.^{6,7}

This is roughly equivalent to the cost of hiring

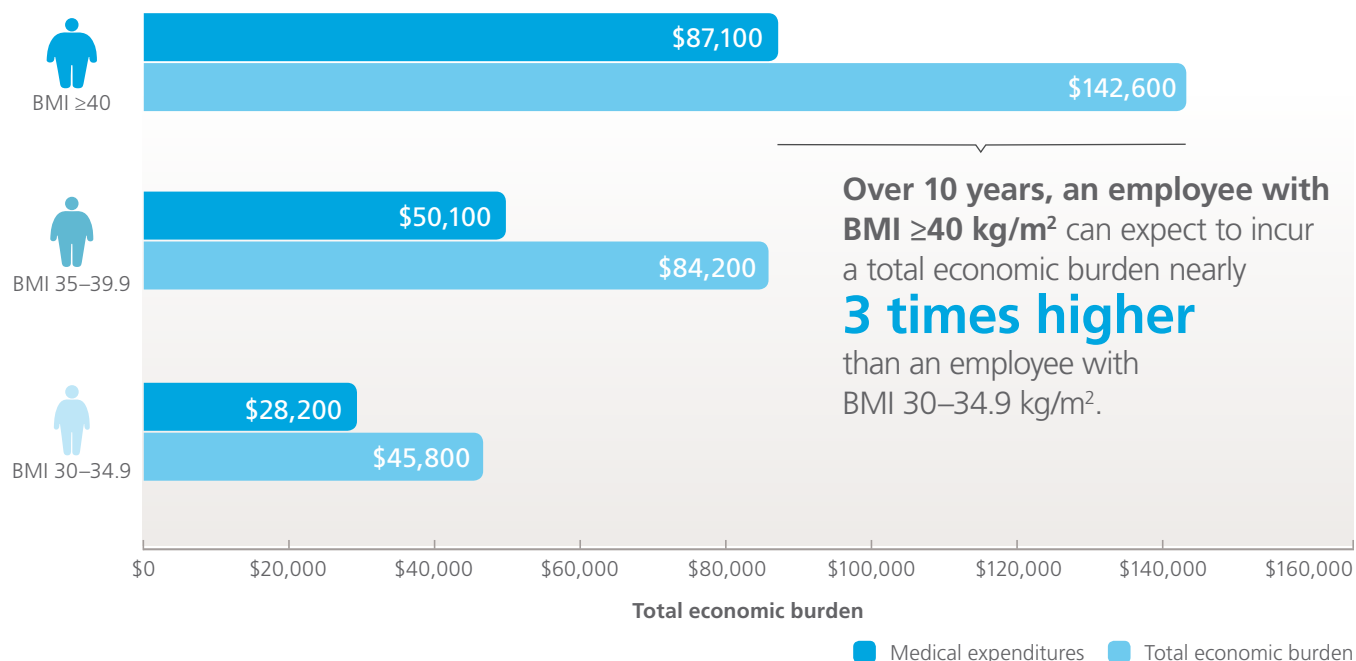
2 million

additional workers per year at

\$47,060 each.^{6,7,27}

The economic burden of comorbidities increases exponentially over time

10-year simulated economic outcomes^{25,a}



^aPopulation included 100,000 adults with obesity and 100,000 demographically matched normal-weight adults. Data taken from 2005-2012 NHANES and shown in the graph as cumulative over 10 years and as medical expenditure and total economic burden.²⁵

Obesity may be contributing to many other costs²²

Obesity-related complications can be costly^b

- **\$111.9 billion** due to type 2 diabetes
- **\$42.1 billion** due to osteoarthritis
- **\$10.9 billion** due to coronary heart disease

In a health plan of 100,000 members, consider the following direct medical costs^c:



Type 2 diabetes

5257 affected members

~**\$35.1 million** total direct annual cost

~**\$29.24** PMPM



Coronary
heart disease

844 affected members

~**\$3.4 million** total direct annual cost

~**\$2.86** PMPM



Osteoarthritis

6772 affected members

~**\$13.2 million** total direct annual cost

~**\$10.99** PMPM

**The impact of obesity-related comorbidities can be seen in
your medical and pharmacy costs.²³**

PMPM=per-member per-month.

^bCosts shown are the direct medical costs associated with treating specific overweight- and obesity-related comorbidities in 2014.²²

^cCosts shown are direct medical costs associated with treating specific overweight- and obesity-related comorbidities PMPM in 2014.²²

Are you aware of the costs of obesity to your organization?

As BMI increases, so do costs associated with short-term disability claims and workers' compensation claims

Short-term disability

According to a retrospective analysis of a large national employer database⁵

2x

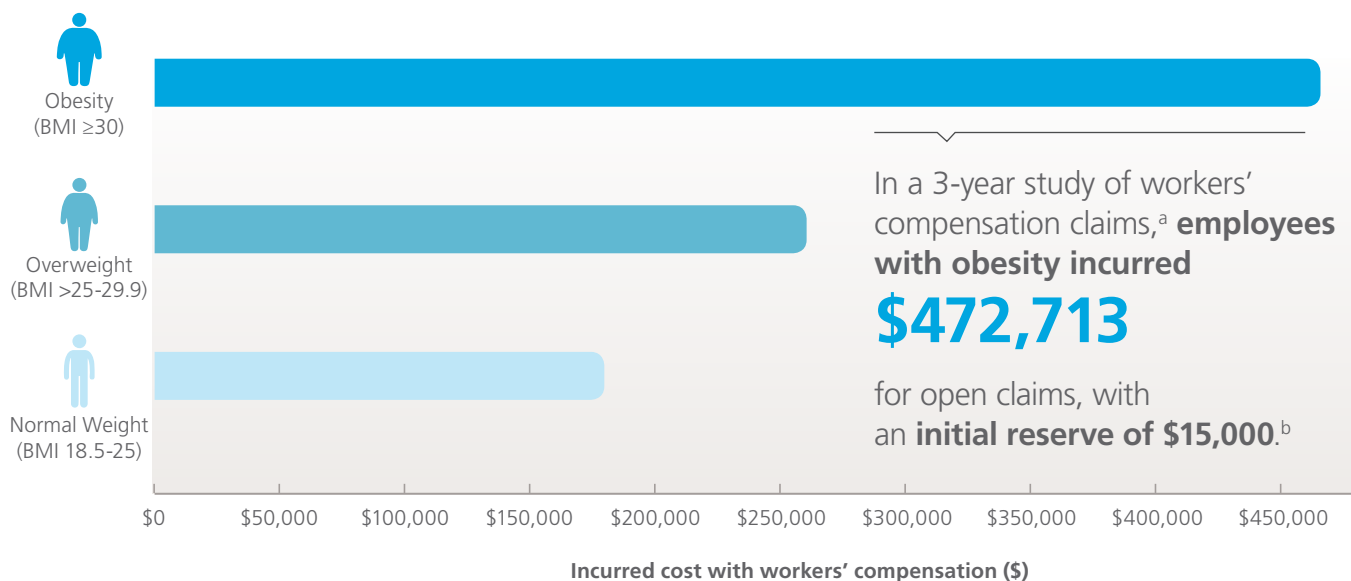
Employees with obesity-related complications are nearly **twice as likely** to file short-term disability claims



The number of claims can increase by **37%** as BMI increases from 30 kg/m² to 35 kg/m² for those with diabetes, hypertension, or hyperlipidemia

Workers' compensation

In a different study, workers' compensation claims were **160%** higher for employees with obesity (BMI ≥30 kg/m²) compared with those of normal weight (BMI 18.5-25 kg/m²).²⁸



^aStudy specific to the Louisiana Workers' Compensation Corporation Claims Payment Database for open claims. Study included ~2300 injured employees filing workers' compensation claims.²⁸

^bInitial reserve of at least \$15,000 was considered to represent a more severe injury requiring higher medical care expenses resulting in longer lost time from work.²⁸

Obesity may cause employees to miss more work days^c

According to one study using 2006-2008 survey data,⁵



employees with BMI of 40 kg/m²
will miss 77% more work days^d
compared with employees
with BMI of 25 kg/m²



obesity-related absenteeism
can cost employers
\$12.8 billion annually

Obesity is associated with increased presenteeism

Presenteeism is the average amount of time between arriving at work and starting work on days when an employee is not feeling well and the average frequency with which an employee engages in 5 specific behaviors⁶:

- Losing concentration
- Repeating a job
- Feeling fatigued at work
- Doing nothing at work
- Working more slowly than usual

Days of presenteeism per year ⁶ :		Potential cost of obesity-related presenteeism ⁶ :	
	2.3 for men with BMI 30 to 34.9 kg/m ²	\$391	per male worker with BMI 30 to 34.9 kg/m ²
	6.3 for women with BMI 30 to 34.9 kg/m ²	\$843	per female worker with BMI 30 to 34.9 kg/m ²

Presenteeism in the workplace has been shown to be the single largest cost driver associated with obesity, regardless of BMI.⁶

^cCross-sectional analysis of N=29,699 US employees. Sample population based on data taken from 3 large employer databases between 2006 and 2008.⁵

^dDue to sick days, short-term disability, and workers' compensation days.⁵

Does your health plan include AOMs as a treatment option for obesity?

Obesity management warrants a stepwise approach:
AHA/ACC/TOS guidelines^{9,a}





Treatment	BMI category (kg/m ²)				
	25-26.9	27-29.9	30-34.9	35-39.9	≥40
Diet, physical activity, and behavior therapy	Yes, with comorbidities	Yes	Yes	Yes	Yes
Pharmacotherapy		Yes, with comorbidities	Yes	Yes	Yes
Surgery				Yes, with comorbidities	Yes

Lifestyle modifications must be part of any weight-loss intervention, but they are not always sufficient for maintaining weight loss.⁹

ACC=American College of Cardiology; AHA=American Heart Association; TOS=The Obesity Society.

^aYes alone means that the treatment is indicated regardless of presence or absence of comorbidities. The solid arrow signifies the point at which treatment may be initiated.⁹

The current gap in covered care leaves appropriate patients without a sufficient option for weight management^{29,b}

	 BMI ≥27 to <30 kg/m²	 BMI ≥30 to <35 kg/m²	 (BMI ≥35 to <40 kg/m²)	 (BMI ≥40 kg/m²)
Overall	368,653	1,001,261	267,747	197,880
Treated with pharmacotherapy	752 (0.2%)	6099 (0.6%)	2364 (0.9%)	2647 (1.3%)
Untreated with pharmacotherapy	367,901	995,162	265,383	195,233

Less than 1% of patients were treated with pharmacotherapy out of 1.8 million potentially eligible patients.²⁹

You can address the care gap in obesity by ensuring coverage for AOMs as a treatment option.

^bRetrospective analysis conducted using data from the GE Centricity® database, a de-identified longitudinal ambulatory care EMR (electronic medical record) database with approximately 38 million patient records from primary care providers in 49 states and Washington, DC. Patients aged ≥18 years at the index date who had a BMI ≥30 kg/m² or BMI ≥27 to <30 kg/m² with ≥1 obesity-associated comorbidity (hypertension, dyslipidemia, or type 2 diabetes).²⁹

Does your health plan include AOMs as a treatment option for obesity? (cont'd)

Adding AOMs to a comprehensive weight management program may help patients with obesity lose weight³⁰

It is critical to offer various options to your employees with obesity, as one specific strategy will not address the needs of everyone with obesity in your organization.



^aAccording to a study of 224 men and women aged 18 to 65 years, with BMI of 30 to 45 kg/m², randomly assigned to receive pharmacotherapy (sibutramine) alone, lifestyle-modification counseling, or pharmacotherapy with lifestyle-modification counseling (combined therapy).³⁰

^bRetrospective, observational, longitudinal study using the GE Centricity[®] EMR database. Subjects aged ≥18 years with BMI ≥30 kg/m², had no medical conditions associated with unintentional weight changes, and had ≥4 BMI measurements/year for ≥2.5 years were included and categorized into groups (stable weight: within <5% of index BMI; modest weight loss: ≥5 to <10% of index BMI lost; moderate weight loss: ≥10 to <15% of index BMI lost; and high weight loss: ≥15% of index BMI lost) based on weight change during 6 months following index. No interventions were considered. Patterns of weight change were assessed for 2 years.³¹

Weight loss of 5% to 10% can lead to clinically meaningful results⁴

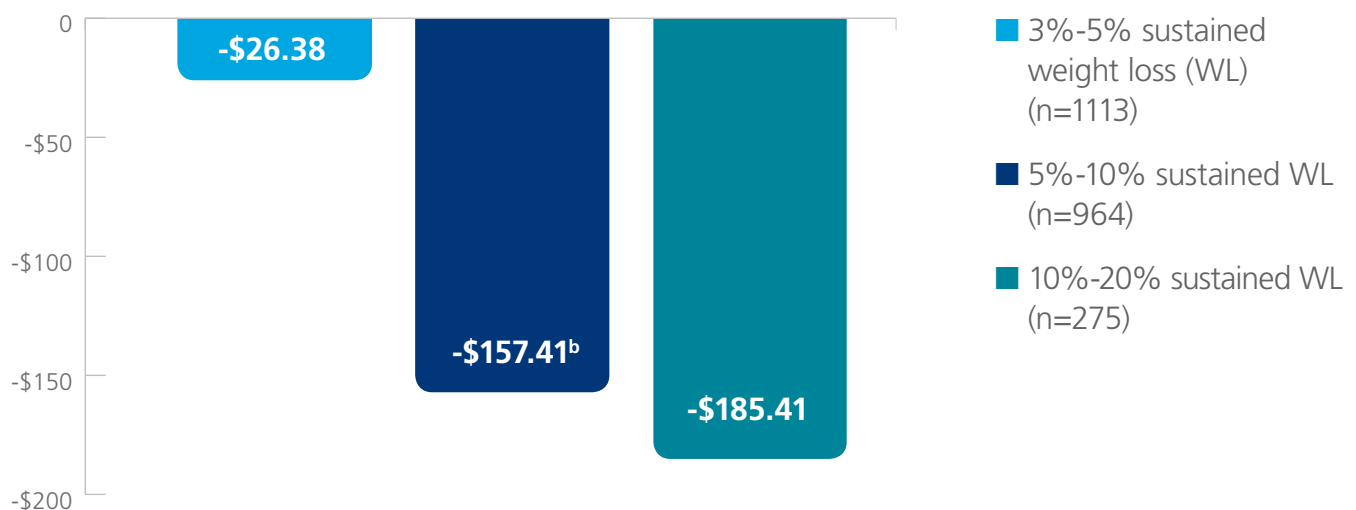


In another study, patients with obesity who were treated with AOMs demonstrated sustained weight loss associated with **decreased rates of incident diabetes of 54% to 76%** when compared with placebo.^{32,c}

^cPlacebo-controlled, double-blind, 52-week extension study evaluating the long-term efficacy and safety of an AOM, phentermine/topiramate, in patients with overweight and obesity with cardiometabolic disease and risk factors. The decrease in diabetes incidence was a secondary endpoint of the study. Annualized incidence rates for progression to type 2 diabetes were 0.9%, 1.7%, and 3.7% for 15 mg phentermine/92 mg controlled-release topiramate, 7.5 mg phentermine/46 mg controlled-release topiramate, and placebo, respectively. Data represent subjects without type 2 diabetes at baseline for up to 108 weeks.³²

Healthcare costs were lower for individuals with obesity who had a larger magnitude of weight loss

In a real-world study, adjusted mean PMPM total healthcare cost was significantly reduced in all sustained weight loss groups compared with no weight change.^{33,a}



^aData derived from Truven MarketScan EMR Database. Patients had BMI ≥ 30 kg/m² on the first instance ("index date") of BMI between January 1, 2012, and June 30, 2014. Adjusted PMPM healthcare cost difference was assessed between baseline and Year 2 of follow-up.³³

How can managing obesity help your organization?

Sustaining a 5% to 10% weight loss can help curb the economic impact of costly comorbidities⁴

The economic benefits of sustained weight loss are contingent upon the appropriate weight management approach being available for all obesity classifications. Below is the estimated impact per each case avoided in the United States over 10 years^{33,34}:

Coronary heart disease and stroke

3.3 million cases avoided
~\$2.97 PMPM associated savings



Diabetes

4.1 million cases avoided
~\$2.08 PMPM associated savings

Hypertension

3.6 million cases avoided
~\$0.41 PMPM associated savings



Arthritis

1.9 million cases avoided
~\$0.55 PMPM associated savings

A study found that, with a given percent reduction in BMI, savings are^{8,c}

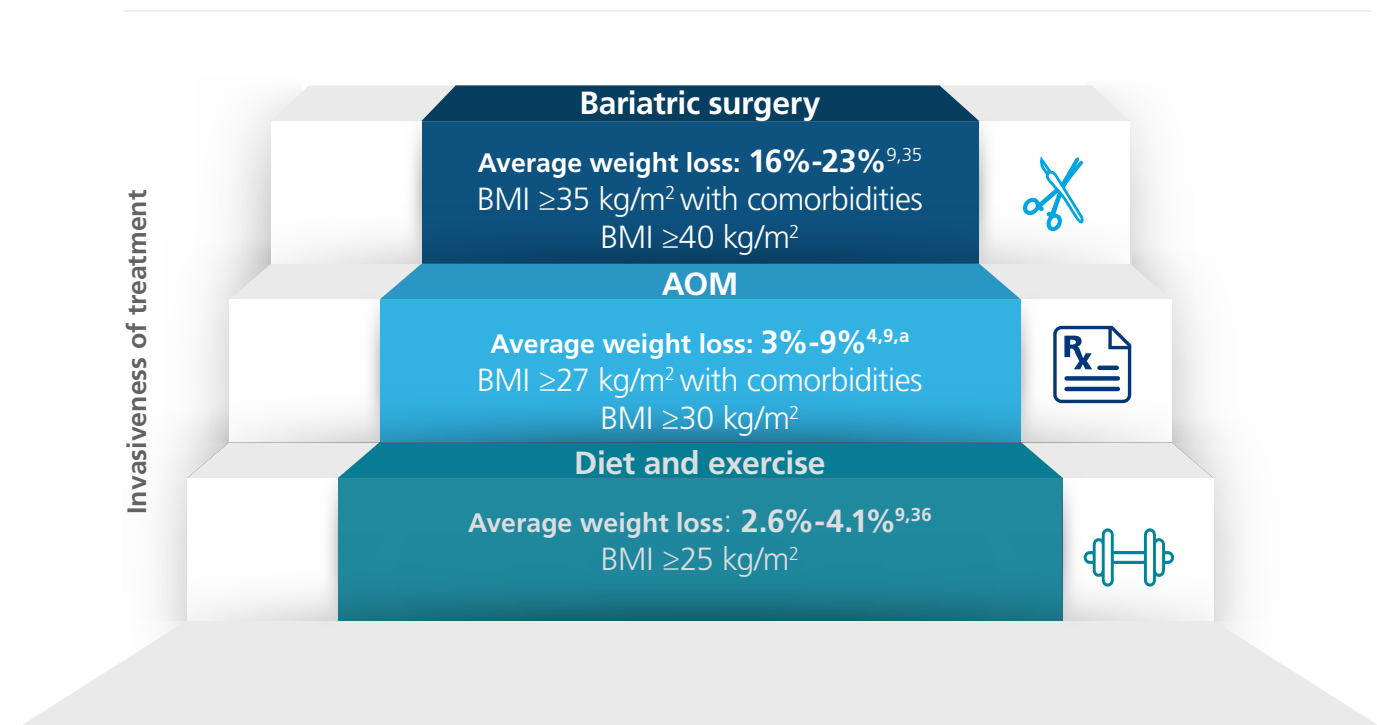
- Greater for individuals with higher BMI
- Greater for those with diabetes than for those without diabetes

^cUsing data from the Medical Expenditure Panel Survey for 2000–2010, 2-part models of instrumental variables were estimated. Models were estimated for all adults as well as separately for those with and without diabetes. Study investigators calculated the causal impact of changes in BMI on medical care expenditures, cost savings for specific changes in BMI, and total excess medical care expenditures caused by obesity.⁸

How can managing obesity help your organization? (cont'd)

Adding AOMs to your benefits offering may support your employees with obesity

AOMs are noninvasive and FDA-approved therapies that may be beneficial for those with a BMI ≥ 27 kg/m² with weight-related comorbidities or with a BMI ≥ 30 kg/m² as an adjunct to lifestyle modification.^{4,9}



- According to AACE/ACE guidelines, a 5% to 15% weight loss may be necessary to achieve targeted improvements in A1C, blood pressure, and other comorbid conditions⁴
 - Although lifestyle therapy must be a part of obesity management, it may not be adequate to achieve this level of weight loss⁹

Talk to your employee benefits consultant about AOMs for your weight management program.

FDA=US Food and Drug Administration.

^aPatients receiving AOMs should incorporate comprehensive lifestyle interventions, including dietary changes and added physical activity, in conjunction with medication.⁹

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