Weigh Your Options

How can employers support the management of obesity within their organizations?

About This Program

Disclaimer

This program is sponsored by, and presented on behalf of, Lilly USA, LLC, and intended for population health and benefits decision makers.

Goal

The goal of this program is to review information pertinent to the topic and answer your questions.

Please see the QR code for access to the accompanying participant guide

Nicole:
An employee you might see in your organization who is living with obesity

- **Nicole is engaged at work and participates in employee resource groups and corporate events**
- She is dissatisfied with her weight and is trying to lose weight. She has committed to incorporating a reduced-calorie diet and increased physical activity into her lifestyle and **she regularly participates in well-being challenges**
- Despite her best efforts, Nicole is not seeing the results she wants and is looking for help

Obesity is defined as body mass index (BMI) ≥30 kg/m^2.

Employees Living With Obesity May Experience Weight Bias and Stigma[1]

Clear evidence supports that people with obesity can experience weight stigma and bias in various aspects of daily life[1]

Negative perceptions of people with obesity exist in the workplace: employers and coworkers may perceive employees with obesity as lazy, less competent, and lacking in self-discipline[1]

Weight bias has been identified in several employment areas[1]

- Hiring Preference
- Promotions
- Wage Inequities
- Employment Termination

Obesity is defined as BMI ≥30 kg/m^2.

1. Obesity Action Coalition. Understanding obesity stigma. https://www.obesityaction.org/get-educated/public-resources/brochures-guides/understanding-obesity-stigma-brochure/. Accessed August 15, 2023.

Impact of Living With Obesity on Employees at Work[1]

A real-world analysis showed that obesity was associated with higher loss of work productivity, as demonstrated by increased odds of disability events, increased odds of workers' compensation claims, and more workplace absence hours compared with normal BMI[1]

BMI and productivity correlation

Obesity classes I-III vs normal BMI were associated with lower productivity, reflected in higher costs*:

7%-14% higher costs due to absenteeism

32%-140% higher costs due to short-term disability

7%-95% higher costs due to long-term disability

33%-41% higher costs due to workers' compensation claims

More workplace absence hours

Obesity classes I-III vs normal BMI were associated with:

7%–14% more workplace absence hours

Increase in disability

Obesity classes I-III vs normal BMI were associated with†:

45%, 80%, and 188% higher odds of a short-term disability event for obesity classes I, II, and III, respectively

27% and 93% higher odds of a long-term disability event for obesity classes II and III, respectively, with no significant difference between obesity class I and normal BMI

26%, 36%, and 36% higher odds of a workers' compensation claim for obesity classes I, II, and III, respectively

Study Design and Study Limitations

Normal weight is BMI 19 to 24.9 kg/m^2, obesity class I is BMI 30 to 34.9 kg/m^2, obesity class II is BMI 35 to 39.9 kg/m^2, and obesity class III is BMI ≥40 kg/m^2.[1]

*Adjusted attributable productivity costs for absenteeism, short-term disability, long-term disability, and workers' compensation. Absenteeism costs were $6,993, $7,097, $7,438, and $6,547 for obesity classes I-III and normal BMI, respectively. Short-term disability costs were $587, $721, $1,069, and $445 for obesity classes I-III and normal BMI, respectively. Long-term disability costs were $46, $57, $84, and $43 for obesity classes I-III and normal BMI, respectively. Worker's compensation costs were $363, $387, $385, and $273 for obesity classes I-III and normal BMI, respectively.[1] †There were 45% (95% CI, 1.41-1.50), 80% (95% CI, 1.74-1.86), and 188% (95% CI, 2.79-2.98) higher odds of a short-term disability event for obesity classes I, II, and III, respectively, compared with normal BMI; 5% (95% CI, 0.92-1.20), 27% (95% CI, 1.10-1.46), and 93% (95% CI, 1.68-2.21) higher odds of a long-term disability event for obesity classes I, II, and III, respectively, compared with normal BMI; and 26% (95% CI, 1.19-1.34), 36% (95% CI, 1.28-1.45), and 36% (95% CI, 1.27-1.45) higher odds of a workers' compensation claim for obesity classes I, II, and III, respectively, compared with normal BMI.[1]

CI=confidence interval; ICD-9=International Classification of Diseases, Ninth Revision; ICD-10=International Classification of Diseases, Tenth Revision.

1. Shinde S, et al. Poster presented at: 105th Annual Meeting of the Endocrine Society; Chicago, IL; June 15-18, 2023.

Average Annual Health Spending in 2021 for Members of Large Employer Plans[1]

A diagnosis of obesity or overweight has been associated with increased annual healthcare spending when compared with spending among adults without these diagnoses[1]

2.7x

GREATER COSTS

Enrollees **without** obesity/overweight

Enrollees **with** obesity/overweight

Study design: From an analysis of claims for the years 2011 through 2021 from Merative MarketScan® Commercial Database, which includes insurance plans from large employers (representative of firms with ≥1000 workers). The database contains claims for over 13 million of the 85 million people within the large group market. Weights were applied to make data representative of large group plans. The study included adults <65 years old with at least 6 months of continuous enrollment in their plan. Annual spending, inpatient admission costs, and prescription costs were included if they were between $0 and the 99.5th percentile of cost. Total spending includes amounts paid by the insurer and the enrollee.

Overweight is defined as BMI 25.0 kg/m^2 to <30.0 kg/m^2. Obesity is defined as BMI ≥30 kg/m^2.

1. Telesford I, et al. How have costs associated with obesity changed over time? Peterson-KFF Health System Tracker. https://www.healthsystemtracker.org/chart-collection/how-have-costs-associated-withobesity-changed-over-time. Accessed June 17, 2023.

Real-World Example

Impact of Obesity and Overweight on Health-Related Costs[1-3,*]

An assessment of the impact of obesity and overweight on the states of Indiana[1,2] and New York[2,3] estimated that in:

	INDIANA[1,2]	NEW YORK[2,3]
2021		
Adults classified as having obesity	36.3%	29.1%
Adults classified as having overweight	33.3%	34.5%
2022		
Obesity led to higher absenteeism and health-related disability Annual health-related lost workdays and disability costs†	$901 million[1]	$3.2 billion[3]
Employees with obesity and overweight spent more on medical costs Additional healthcare spending by households with private insurance	$712 million[1]	$1.8 billion[3]
Obesity and overweight led to higher healthcare costs to employers Additional healthcare expenses by employers	$1.2 billion[1]	$3.0 billion[3]

*Overweight is defined as BMI 25.0 kg/m^2 to <30.0 kg/m^2. Obesity is defined as BMI ≥30 kg/m^2. †Data collected by the conversion of medical cost estimates and indirect economic cost estimates to 2022 dollars using, respectively, the medical component of the CPI and the overall CPI. National estimates were adjusted to Indiana using the Missouri Economic Research and Information Center state cost indices for medical care and overall cost of living and medical care. https://meric.mo.gov/data/cost-living-data-series.

CPI=Consumer Price Index.

1. GlobalData Plc. Obesity's Impact on Indiana's Economy and Labor Force. https://www.globaldata.com/health-economics/US/Indiana/Obesity-Impact-on-Indiana.pdf. Accessed August 28, 2023. 2. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity. Data, trends, and maps. https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html. Accessed October 20, 2023. 3. GlobalData Plc. Obesity's Impact on New York's Economy and Labor Force. https://www.globaldata.com/health-economics/US/NewYork/Obesity-Impact-on-NewYork.pdf. Accessed September 26, 2023.

Real-World Example

Impact of Obesity and Overweight on the Workforce[1-3,*]

An assessment of the impact of obesity and overweight on the states of Indiana[1,2] and New York[2,3] estimated that in:

	INDIANA[1,2]	NEW YORK[2,3]
2021		
Adults classified as having obesity	36.3%	29.1%
Adults classified as having overweight	33.3%	34.5%
2022		
Reduced labor force participation Reduced adults in the workforce due to obesity and overweight	69,400 fewer adults[1]	165,000 fewer adults[3]
Reduced earnings for employed women Women with obesity earning vs women with normal weight	9% less[1]	9% less[3]

*Normal weight is defined as BMI 18.5 kg/m^2 to <25.0 kg/m^2. Overweight is defined as BMI 25.0 kg/m^2 to <30.0 kg/m^2. Obesity is defined as BMI ≥30 kg/m^2.

1. GlobalData Plc. Obesity's Impact on Indiana's Economy and Labor Force. https://www.globaldata.com/health-economics/US/Indiana/Obesity-Impact-on-Indiana.pdf. Accessed August 28, 2023. 2. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity. Data, trends, and maps. https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html. Accessed October 20, 2023. 3. GlobalData Plc. Obesity's Impact on New York's Economy and Labor Force. https://www.globaldata.com/health-economics/US/NewYork/Obesity-Impact-on-NewYork.pdf. Accessed September 26, 2023.

Claims Data May Not Reflect Obesity Prevalence[1-3]

Is your organization seeing the full impact of obesity?

Because obesity does not often appear as a diagnosis code in claims data, insurance claims may not accurately reflect the full impact of obesity among employees[1-3]

Obesity is defined as BMI ≥30 kg/m^2.

Based on a retrospective, observational, descriptive analysis of linked EHR and claims data from an integrated healthcare system covering approximately 350,000 health plan enrollees aged ≥18 years from 2014-2019 (n=36,430)[1]; a retrospective, observational study of linked EHR and insurance claims data for surgical patients aged ≥20 years from 2014-2017 (n=17,217)[2]; and an epidemiological study of data from EHRs in a Medicare-linked database of Medicare patients aged ≥65 years (or younger patients with disabilities) from 2014 and 2016 (N=73,644).[3]

EHR=electronic health record.

1. Osterland A, et al. *Curr Med Res Opin*. 2022;38(1):83-89. 2. Ammann EM, et al. *Medicine (Baltimore)*. 2019;98(29):e16438. 3. Suissa K, et al. *Diabetes Obes Metab*. 2021;23(12):2623-2631.

Why is Nicole struggling to manage her obesity despite her participation in well-being programs?

Obesity is defined as BMI ≥30 kg/m^2.

Obesity Is a Disease That Can Be Driven By Factors Beyond an Individual's Control[1-5]

Weight Loss Efforts[1-3]

- Decrease in calories
- Increase in exercise

Body's Response to Weight Loss[1-3]

- Increase in hunger
- Decrease in fullness
- Increase in food intake

Some factors driving obesity include:
environmental, genetic, sociocultural, epigenetic, behavioral, and physiological[4,5]

Obesity is defined as BMI ≥30 kg/m^2.

1. Sumithran P, et al. *N Engl J Med*. 2011;365(17):1597-1604. 2. Benton D, et al. *Perspect Psychol Sci*. 2017;12(5):703-714. 3. MacLean PS, et al. *Am J Physiol Regul Integr Comp Physiol*. 2011;301(3):R581-R600. 4. Centers for Disease Control and Prevention. Causes of obesity. https://www.cdc.gov/obesity/basics/causes.html. Updated March 21, 2022. Accessed June 17, 2023. 5. Mahmoud AM. *Int J Mol Sci*. 2022;23(3):1341.

Lifestyle Modification Alone May Not Be Enough to Treat Employees With Obesity[1-5]

An energy-restricted diet and exercise can lead to **weight loss**[1-5]

As a response, **signals of energy and nutrient deprivation** are sent from periphery to the brain[1-5]

Communication from the brain leads to[1-5]:

- ↑ **Hunger**
- ↓ **Fullness**

Makes weight loss and maintenance of weight loss challenging[1-5]

The body may resist weight loss: When a person restricts calories in an attempt to lose weight, the body may compensate by altering appetite-regulating hormones and increasing desire to eat[4]

Obesity is defined as BMI ≥30 kg/m^2.

1. Melby CL, et al. *Nutrients*. 2017;9(5):468. 2. Sumithran P, et al. *N Engl J Med*. 2011;365(17):1597-1604. 3. Lien LF, et al. *OMICS*. 2009;13(1):21-35. 4. Apovian CM, et al. *J Clin Endocrinol Metab*. 2015;100(2):342-362.
5. Garvey WT, et al. *Endocr Pract*. 2016;22(suppl 3):1-203.

Knowing that obesity is a disease, how does your organization support employees with obesity?

Poll Question

Which of the following, if any, does your organization offer for obesity?

A. Gym membership
B. Well-being programs
C. Nutrition consultation
D. Anti-obesity medications
E. Endoscopic/bariatric surgery
F. Other

Obesity is defined as BMI ≥30 kg/m^2.

Are Workplace Well-Being Programs Doing Enough to Help Employees Living With Obesity?

A survey of large US employers found that 85% offered well-being programs as a part of their health benefits in 2022[1,*]

Recent studies have found that workplace well-being programs did not address many clinical health measures[2,3,†]

Employees in 2 studies across 2 industries showed changes in self-reported health behaviors with workplace well-being programs, including engaging in regular exercise, managing their weight, and having a primary care physician.[2,3] However, the programs did not lead to detectable effects on measures including:

Obesity[2,3]

Healthcare spending[2]

Healthcare utilization[2,3]

Additionally, there were no detectable effects on waist circumference,[3] lipids,[2,3] and blood pressure[2,3]

*Large employers (defined as those with 200+ employees) were included in a survey conducted between February and July 2022 by the Kaiser Family Foundation of 2188 employers, including 1140 large employers. Specific well-being programs included those addressing weight management and behavioral or lifestyle coaching.[1]

†The first of the 2 studies was a randomized trial of a multiyear, multicomponent workplace well-being program utilized by employees of a large US warehouse retail company between January 2015 and June 2016 (N=32,974). Twenty treatment sites were randomly selected, with the remaining sites acting as the control with no well-being program. The well-being program, designed and implemented by the well-being vendor Wellness Workdays, comprised 8 modules lasting 4 to 8 weeks each, implemented over 18 months by registered dietitians through individual and team-based activities, with modest incentives for participation.[2] The second study was a randomized controlled trial of a workplace well-being program for employees at the University of Illinois at Urbana-Champaign from August 2016 to April 2018 (N=4834). Employees were randomly assigned to the treatment or control groups. The treatment group was eligible to participate in a comprehensive workplace well-being program, iThrive, which was designed to be representative of typical programs offered by employers with 3 annual components: an on-site biometric screening and survey, an online health risk assessment, and a choice of well-being activities.[3]

Obesity is defined as BMI ≥30 kg/m^2.

1. Claxton G, et al. *Employer Health Benefits. 2022 Annual Survey*. Kaiser Family Foundation; 2022. https://files.kff.org/attachment/Report-Employer-Health-Benefits-2022-Annual-Survey.pdf. Accessed August 22, 2023.
2. Song ZS, et al. *JAMA*. 2019;321(15):1491-1501. 3. Reif J, et al. *JAMA Intern Med*. 2020;180(7):952-960.

Professional Society Recommendations for the Management of Obesity Regarding Pharmacological Intervention[1-3]

	AACE/ACE[1]	Endocrine Society[2]
Lifestyle Interventions Adjustments to diet, exercise, and behavior are the basis for treatment	For BMI ≥25 kg/m^2	For BMI ≥25 kg/m^2
Anti-Obesity Medications Adjunct to lifestyle modification as part of a comprehensive management strategy	For BMI ≥27 kg/m^2 with comorbidities; for BMI ≥30 kg/m^2 with or without comorbidities	For BMI ≥27 kg/m^2 with comorbidity; for BMI ≥30 kg/m^2 with or without comorbidity
Bariatric Surgery* Adjunct to lifestyle modification and AOMs as part of a comprehensive management strategy	For BMI ≥35 kg/m^2 with ≥1 severe obesity-related complication	For BMI ≥35 kg/m^2 with comorbidity or BMI ≥40 kg/m^2

More recent guidelines from 2022 by the ASMBS and IFSO recommend bariatric surgery for patients with a BMI of ≥35 kg/m^2, with or without comorbidities, and recommend considering bariatric surgery for patients with a BMI of 30 to 34.9 kg/m^2 and metabolic disease.[3]

*2016 AACE/ACE guidelines for obesity recommend bariatric surgery for patients with a BMI of ≥40 kg/m^2 without coexisting medical problems and for whom the procedure would not be associated with excessive risk, and they recommend considering a bariatric procedure for patients with a BMI of ≥35 kg/m^2 and 1 or more severe obesity-related complications. The guidelines also recommend considering a bariatric procedure for patients with a BMI of 30 kg/m^2 to 34.9 kg/m^2 who have diabetes or metabolic syndrome, but note that current evidence is limited by the number of patients studied and a lack of long-term data demonstrating net benefit.[1]

AACE=American Association of Clinical Endocrinology; ACE=American College of Endocrinology; AOM=anti-obesity medication; ASMBS=American Society of Metabolic and Bariatric Surgery; IFSO=International Federation for the Surgery of Obesity and Metabolic Disorders.

1. Garvey WT, et al. *Endocr Pract*. 2016;22(suppl 3):1-203. 2. Apovian CM, et al. *J Clin Endocrinol Metab*. 2015;100(2):342-362. 3. Eisenberg D, et al. *Surg Obes Relat Dis*. 2022;18(12):1345-1356.

BMI Reductions Were Associated With Predicted Decreases in Healthcare Expenditures Across Obesity-Related Complications[1,2]

Hyperlipidemia

Diabetes

Back pain

Mental health disorders

Hypertension

Pulmonary disorders

Arthritis

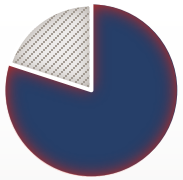
In a study of adults with obesity, achieving BMI reductions of 5%-20% was associated with decreases in healthcare expenditures across a variety of obesity-related complications

Statistically significant savings associated with 1 unit BMI weight loss were observed for 5 (diabetes, hypertension, mental health disorders, arthritis, back pain) of the 7 chronic conditions (not hyperlipidemia or pulmonary disease).

Study design: 2001–2015 Medical Expenditure Panel Survey (MEPS) data were used to estimate the effect of change in BMI from obesity (BMI ≥30) in year 1 (baseline) to overweight (BMI 25.9–30) in year 2 on health expenditures in 20,971 adults aged 24–64 years. MEPS cost data comprise healthcare payments made by insurance companies and out-of-pocket payments from the patient. Patient characteristics and comorbidities were taken from year 1. Health expenditures for 7 chronic conditions were calculated using a 2-stage model, which yielded the predicted changes in health expenditures at 4 levels of reduction in BMI—5%, 10%, 15%, or 20%—equal to the difference in the model-predicted expenditures associated with a reduced BMI and the model-predicted expenditures associated with actual BMI. Total health expenditures and condition-specific expenditures were taken from annual totals for each calendar year.[1,2]

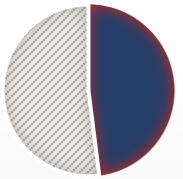
1. Thorpe K, et al. *J Occup Environ Med*. 2021;63(10):847-851. 2. Agency for Healthcare Research and Quality. https://meps.ahrq.gov/mepsweb/data_stats/MEPS_topics.jsp?topicid=5Z-1. Accessed December 9, 2022. Updated January 27, 2023.

How Can You Help Employees in Their Weight-Loss Journey?[1,2]



80%

of adults say health insurance should cover the cost of prescription weight loss drugs for adults who have been diagnosed with obesity or overweight[1,*]



48%

of large employers are covering branded anti-obesity medications[2,†]

*This KFF Health Tracking Poll was designed and analyzed by public opinion researchers at KFF. The survey was conducted online and by telephone among a nationally representative sample of 1327 US adults in English (1246) and in Spanish (81). 542 participants reported that, in the past 5 years, a health care provider diagnosed them with obesity or overweight.[1]

†Based on a 2023 survey of 109 employers with 5000 to 100,000+ US employees and 5.4 million covered lives. Respondents were asked if their organization provided insurance coverage for branded weight loss medications.[2]

KFF=Kaiser Family Foundation.

1. Kaiser Family Foundation. KFF Health Tracking Poll. July 2023. https://files.kff.org/attachment/Topline-KFF-Health-Tracking-Poll-July-2023.pdf. Accessed October 13, 2023. 2. Data on File. Lilly USA, LLC. DOF-ZP-US-0011.

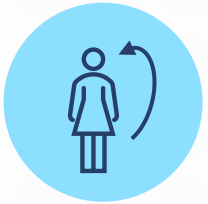
Because Obesity Is a Complex Disease[1,2]

Some People May Need a Comprehensive Approach to Treating Obesity That Includes Both Lifestyle Interventions* and Anti-Obesity Medications[1,2]

Find more information on obesity and treatments for obesity through the Obesity Medicine Association and The Obesity Society.

Acknowledge

Employees living with obesity may experience increased weight bias, greater annual medical expenses, and more absence hours compared to employees without obesity[3-5]



Recognize

The body may resist weight loss, making weight loss and maintenance of weight loss challenging[2]

Expand

Employee benefits to include anti-obesity medications as a complement to – not a substitute for – a reduced-calorie diet and increased physical activity

*A structured lifestyle intervention program for weight loss (or lifestyle therapy) includes a reduced-calorie healthy meal plan, physical activity, and behavioral interventions.
Obesity is defined as BMI ≥30 kg/m^2.

1. Garvey WT, et al. *Endocr Pract*. 2016;22(suppl 3):1-203. 2. Apovian CM, et al. *J Clin Endocrinol Metab*. 2015;100(2):342-362. 3. Obesity Action Coalition. Understanding obesity stigma. https://www.obesityaction.org/wpcontent/uploads/Understanding-Obesity-Stigma-Brochure20200313.pdf. Accessed August 15, 2023. 4. Telesford I, et al. How have costs associated with obesity changed over time? Peterson-KFF Health System Tracker. https://www.healthsystemtracker.org/chart-collection/how-have-costs-associated-with-obesity-changed-over-time/. Published March 24, 2023. Accessed October 11, 2023. 5. Shinde S, et al. Poster presented at: Annual Meeting of the Endocrine Society; June 15-18, 2023; Chicago, IL.

Thank you!

For additional questions, please contact Mike Olgin at michael.olgin@lilly.com

Appendix

Study design

Based on a retrospective cohort study using administrative claims data from Merative MarketScan®* Health and Productivity Management Databases for adult employees (aged ≥18 years) with ICD-9 or ICD-10 diagnosis codes for a BMI ≥19 kg/m^2 between January 1, 2015, and December 31, 2019 (N=719,482; final included population). Productivity outcomes were evaluated in the 12-months post-index, defined as the date of earliest claim with a BMI. Because not all employers reported all types of outcomes, the final sample for each outcome was: n=74,157 for absenteeism (absenteeism analysis was restricted to employees with ≥1 absence hour), n=594,301 for short-term disability, n=538,826 for long-term disability, and n=428,640 for workers' compensation. Two-part multivariable models were used to examine the association between BMI category and productivity outcomes (except absenteeism, which only required the second part of the model) after adjusting for age, sex, employer industry, and employment status. Costs associated with productivity loss were estimated by multiplying hours/days lost by a percentage of the 2020 median daily wage ($196.80/day) of full-time and salary workers. Percentages for each outcome were: 100% for workplace absence, 70% for short-term disability, 60% for long-term disability, and 67% for workers' compensation.[1,2]

Study limitations

Multivariable analysis adjusted for differences in baseline characteristics across BMI cohorts that were measurable in the databases and therefore did not account for other factors that may influence time away from work (ie, employer-specific allowances for time off). Because actual costs attributable to productivity loss were not available in the database, attributable productivity costs were estimated by multiplying the number of hours/days lost by an estimated hourly wage, and therefore the calculated cost estimates do not reflect the true cost to the employer. The MarketScan database may not be generalizable to small or mid-sized employers as the data are derived from a convenience sample of large employers.[1]

*Merative MarketScan® is a trademark of Merative US L.P.

1. Shinde S, et al. Poster presented at: 105th Annual Meeting of the Endocrine Society; Chicago, IL; June 15-18, 2023. 2. Household Data Annual Averages: 39. Median weekly earnings of full-time wage and salary workers by detailed occupation and sex. US Bureau of Labor Statistics; 2022. https://www.bls.gov/cps/aa2020/cpsaat39.pdf. Accessed September 20, 2023.

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