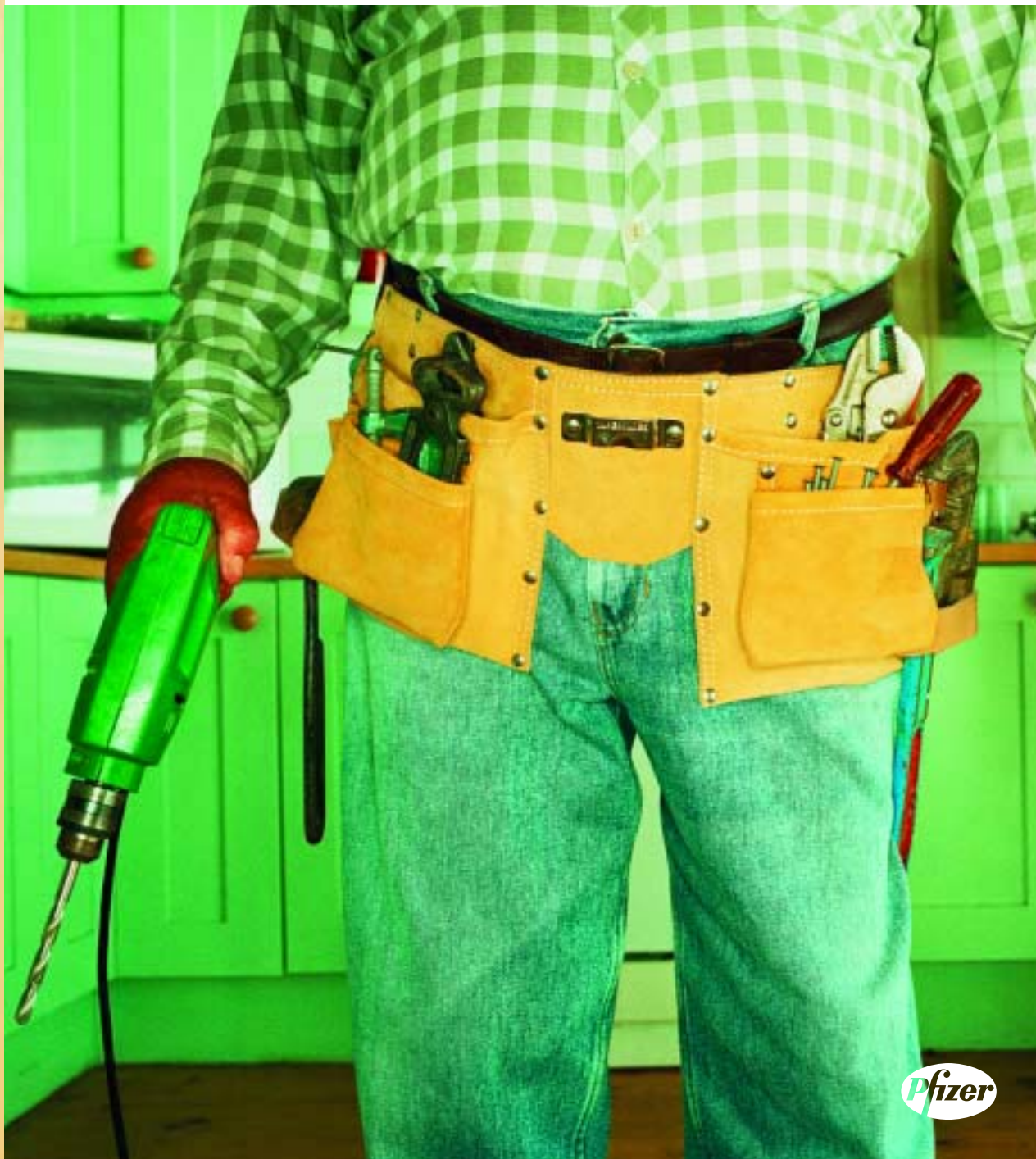


Obesity in the United States Workforce

Findings from the National Health
and Nutrition Examination Surveys
(NHANES) III and 1999-2000



Obesity in The United States Workforce

One hundred forty million persons aged 20 and older are currently employed in the United States. Twenty-nine percent of them are obese, up from 20% a decade ago. With obesity comes an increased rate of work limitation, along with significantly increased rates of hypertension, dyslipidemia, type 2 diabetes, the metabolic syndrome, and arthritis. This issue of Pfizer Facts presents new analyses of national databases to gain insight into the obesity crisis faced by working Americans. We present comparisons of the National Health and Nutrition Examination Surveys (NHANES) III (1988-1994) and NHANES 1999-2000, and data from the 2002 National Health Interview Survey (NHIS) to explore issues and encourage dialogue about the problems and the solutions.

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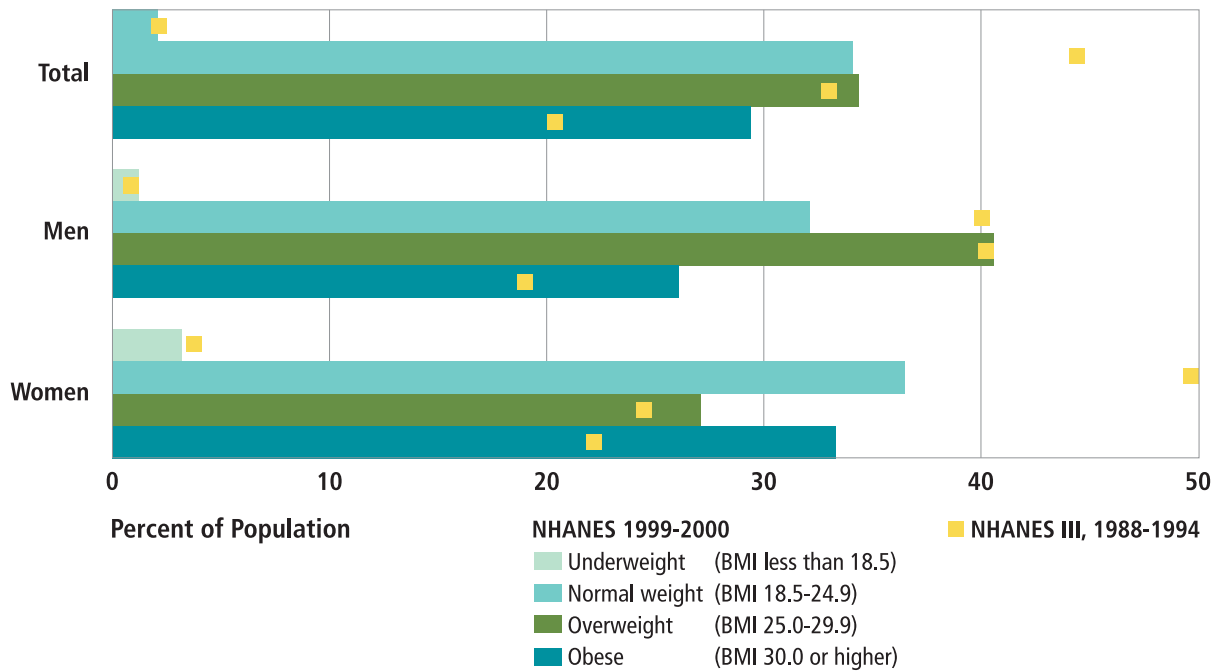
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American workers are gaining girth

In the late 1980s/early 1990s, 44% of American workers were classified as normal weight based on body mass index (BMI), 33% were overweight, and 20% were obese. Now, only 34% are classified as normal weight, and 29% are classified as obese. Both men and women are affected. Both have experienced significant increases in obesity over time, growing from 19% to 26% among men, and from 22% to 33% among women.

Prevalence of Underweight, Normal Weight, Overweight, and Obesity Among the US Workforce

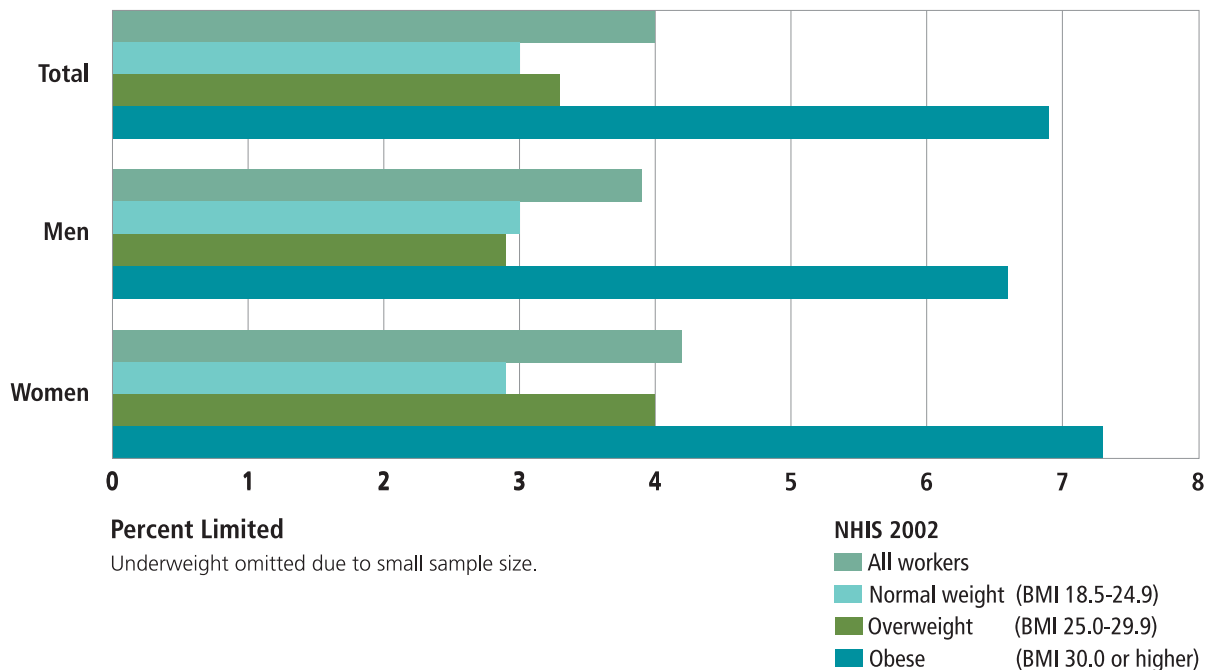


Obesity impacts the ability to work

Four percent of American workers reported that they were limited in the amount or kind of work they do, or that they were unable to work at the time of the NHIS survey. Obese men, and both overweight and obese women, regardless of age, were more likely to report limitations:

- 7% of obese workers have work limitations, versus 3% of normal-weight or overweight workers.
- 7% of obese women, 4% of overweight women, and 3% of normal-weight women have work limitations.

Work Limitations by BMI Category

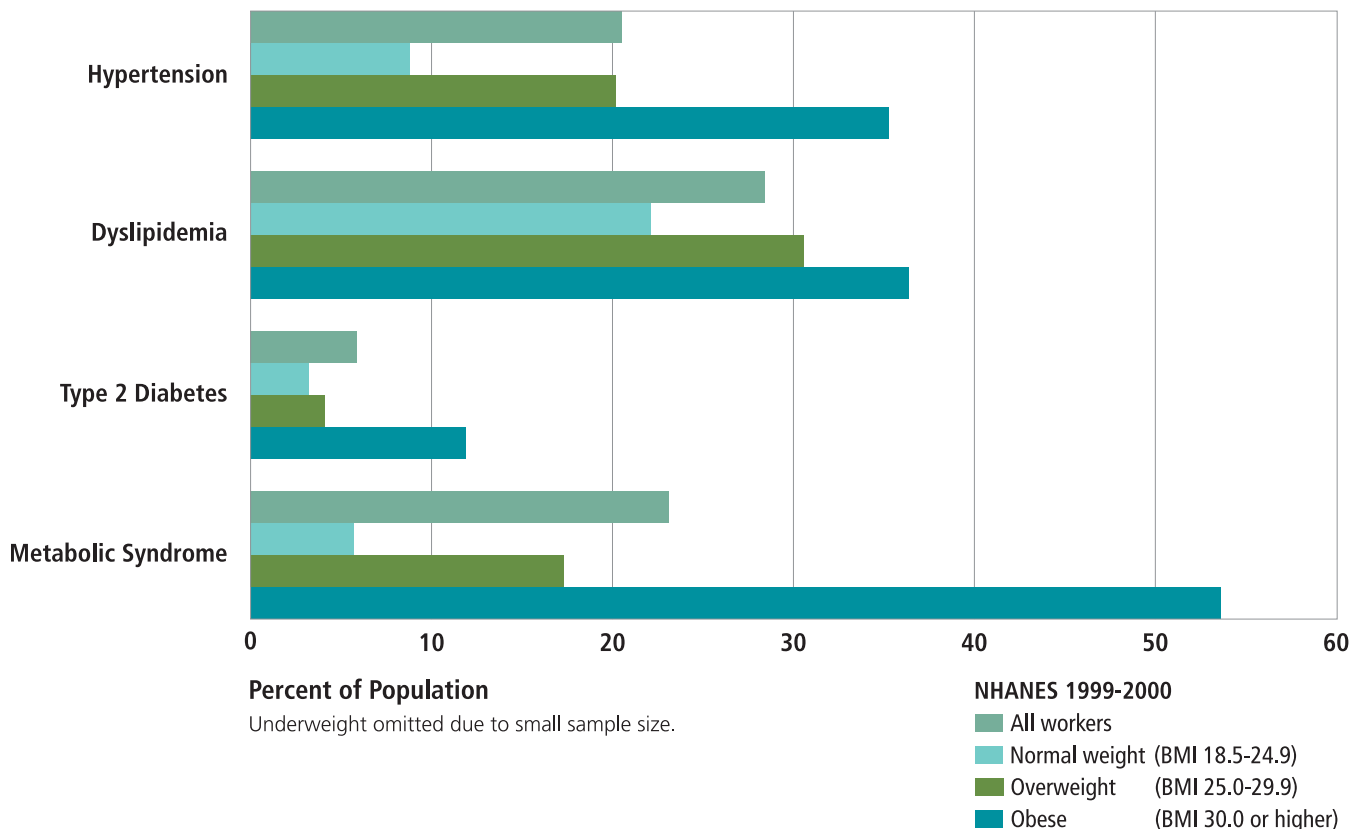


Cardiovascular risk factors are prevalent among overweight and obese workers

As weight increases, the prevalence of hypertension, dyslipidemia, and the metabolic syndrome increase. Hypertension affects 20% and 35% of overweight and obese workers, respectively. Dyslipidemia affects 31% and 36% of overweight and obese workers, respectively. The prevalence of the metabolic syndrome increases dramatically as the population moves from overweight to obese, affecting 17% and 54% of workers, respectively. The prevalence of type 2 diabetes is 12% among obese workers, but the rates are similar among normal-weight and overweight workers, 3% and 4%, respectively.

These relationships between weight and cardiovascular risk factors remain whether the worker is young, middle-aged, or older.

Prevalence of Hypertension, Dyslipidemia, Type 2 Diabetes, and the Metabolic Syndrome Among the US Workforce



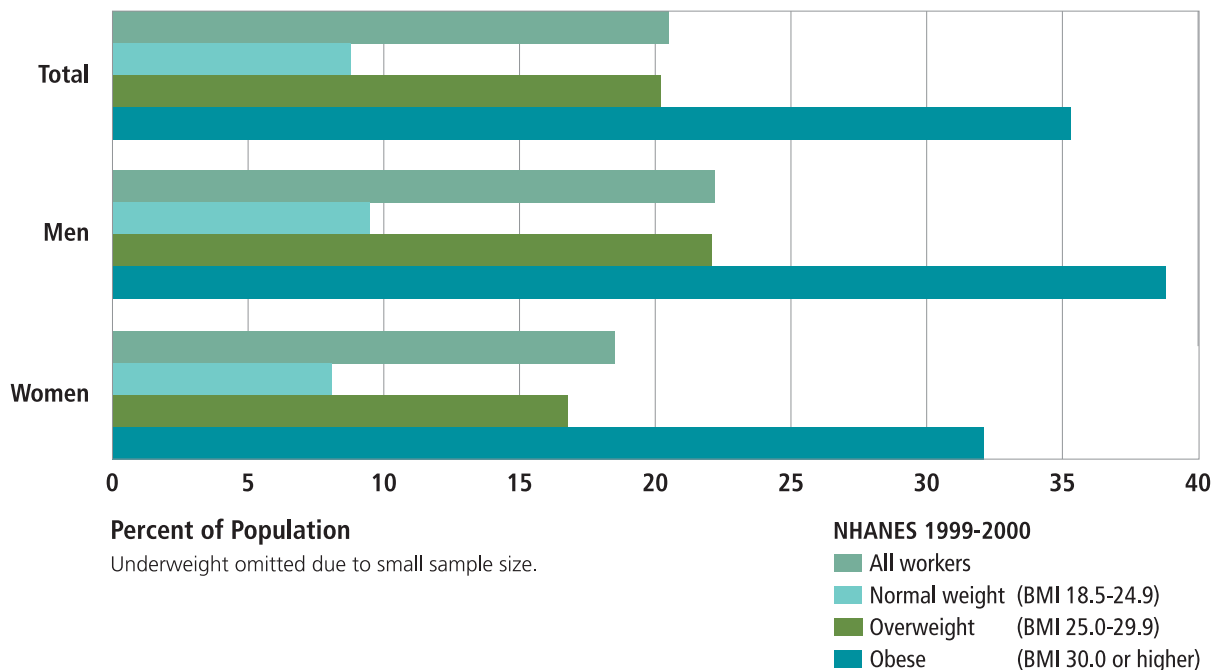
Hypertension goes up as weight goes up

Twenty percent of American workers – 22% of working men and 18% of working women – test positive for hypertension. The relationship between weight category and hypertension prevalence is linear:

- 9% of normal-weight workers test positive for hypertension.
- Overweight employees have twice the prevalence of hypertension compared with normal-weight employees.
- Obese employees have almost four times the prevalence of hypertension compared with normal-weight employees.

The increase in prevalence by weight category, and the magnitude of increase, is evident in both men and women.

Prevalence of Hypertension Among the US Workforce

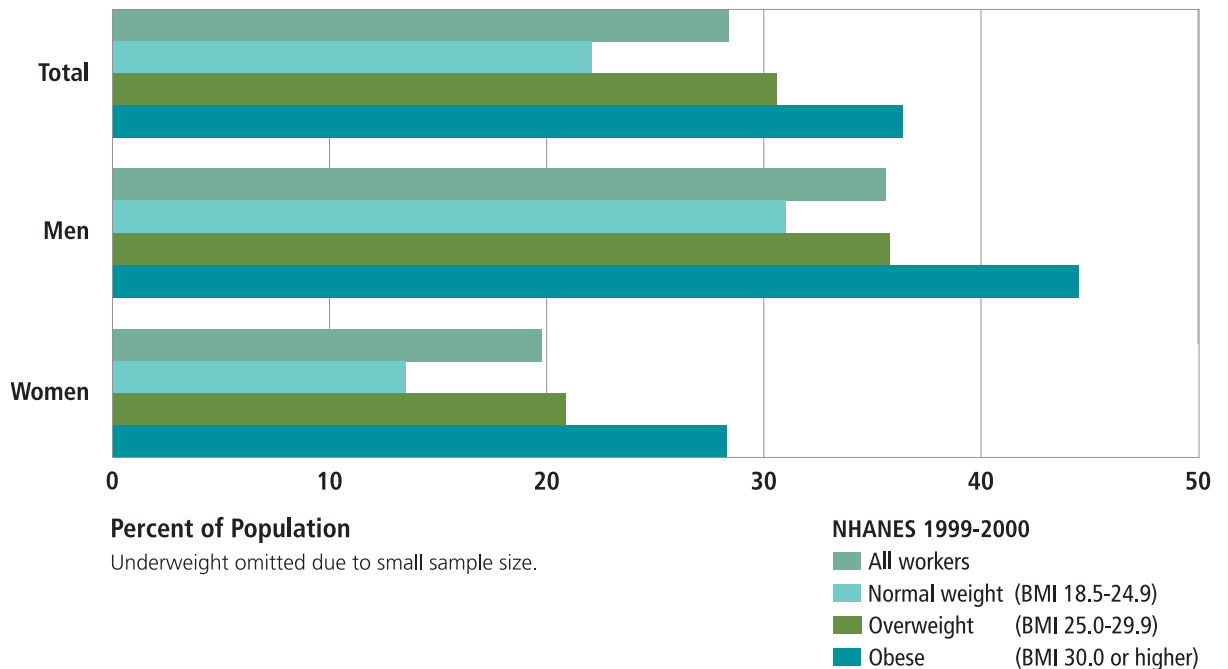


Dyslipidemia affects 44% of obese men and 28% of obese women

Dyslipidemia – high LDL cholesterol – affects 28% of working Americans: 36% of working men and 20% of working women test positive. As weight increases, prevalence increases.

- Among men, prevalence increases from 31% to 36% to 44% as weight goes from normal to overweight to obese.
- Among women, prevalence increases from 14% to 21% to 28%.

Prevalence of Dyslipidemia Among the US Workforce

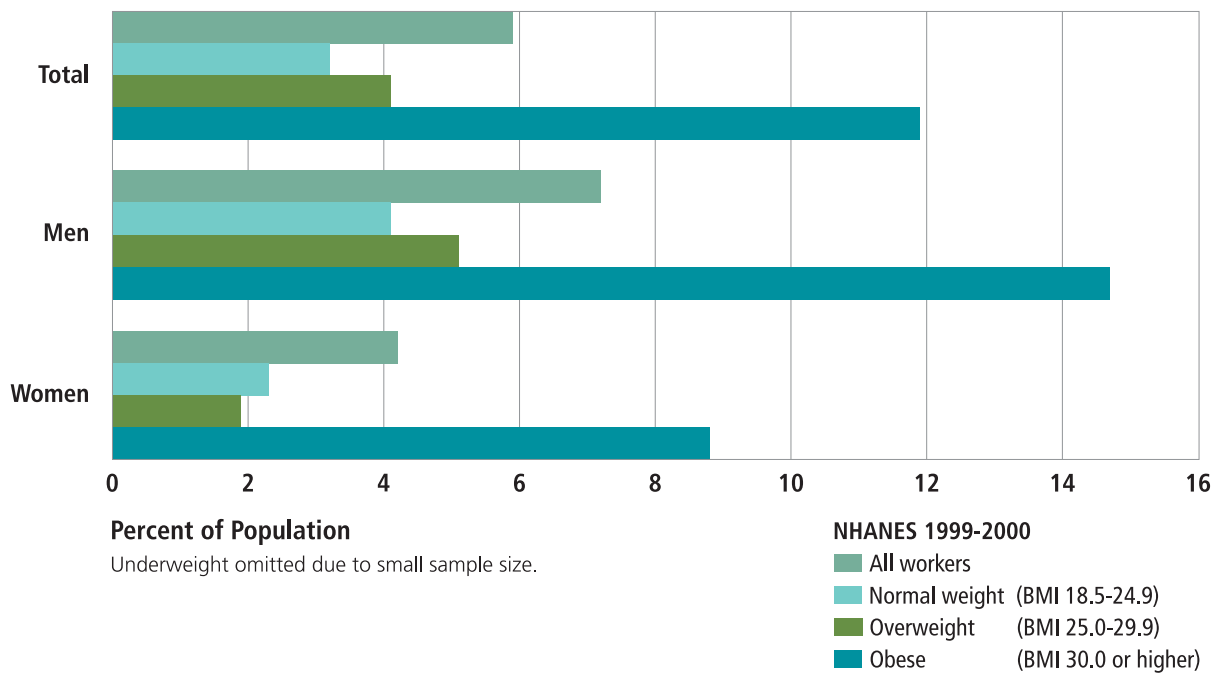


Obese workers have a threefold increased risk of diabetes

Six percent of American workers have type 2 diabetes, with 7% of working men and 4% of working women testing positive. Although overweight workers are no more likely than normal-weight workers to have diabetes, there is a strong association between diabetes and obesity:

- 15% of obese men have diabetes, compared with 4% of normal-weight men.
- 9% of obese women have diabetes, compared with 2% of normal-weight women.

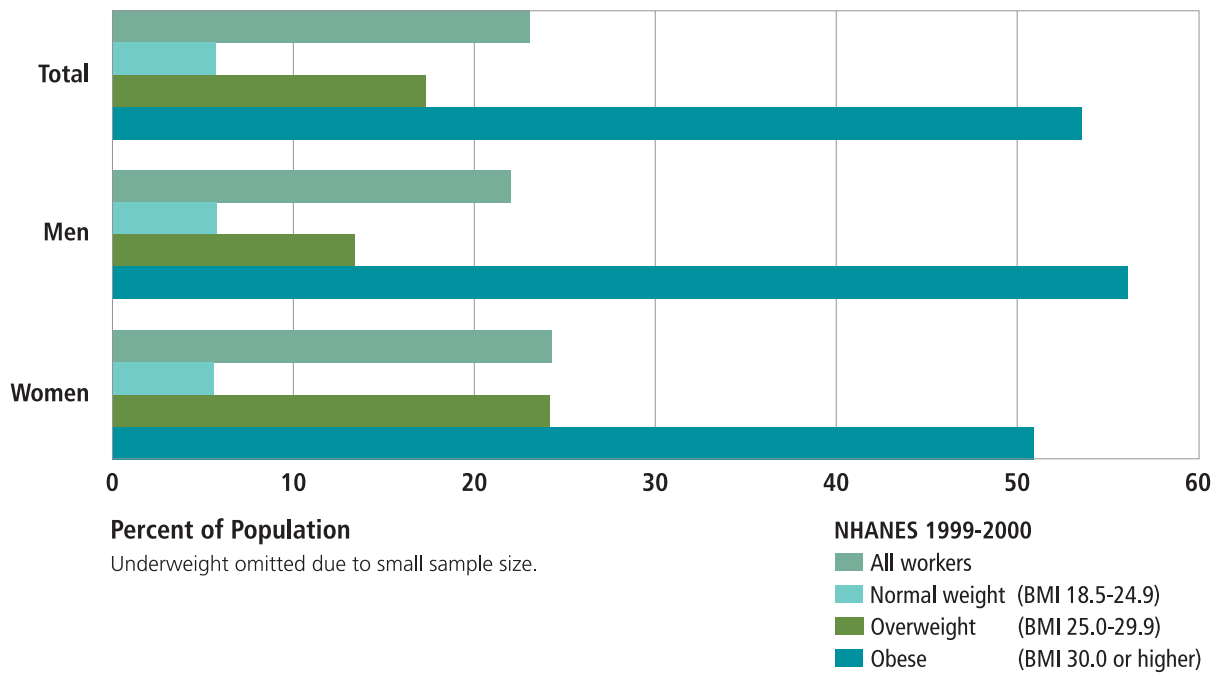
Prevalence of Type 2 Diabetes Among the US Workforce



The metabolic syndrome affects 23% of the workforce, and 54% of obese workers

The metabolic syndrome—a combination of medical conditions characterized by a large waist circumference, high triglycerides, low HDL cholesterol, borderline high or higher blood pressure, and/or borderline high or higher fasting glucose—is common in the American workforce. As weight category goes from normal to overweight to obese, the prevalence of the metabolic syndrome grows from 6% to 17% to 54%.

Prevalence of the Metabolic Syndrome Among the US Workforce

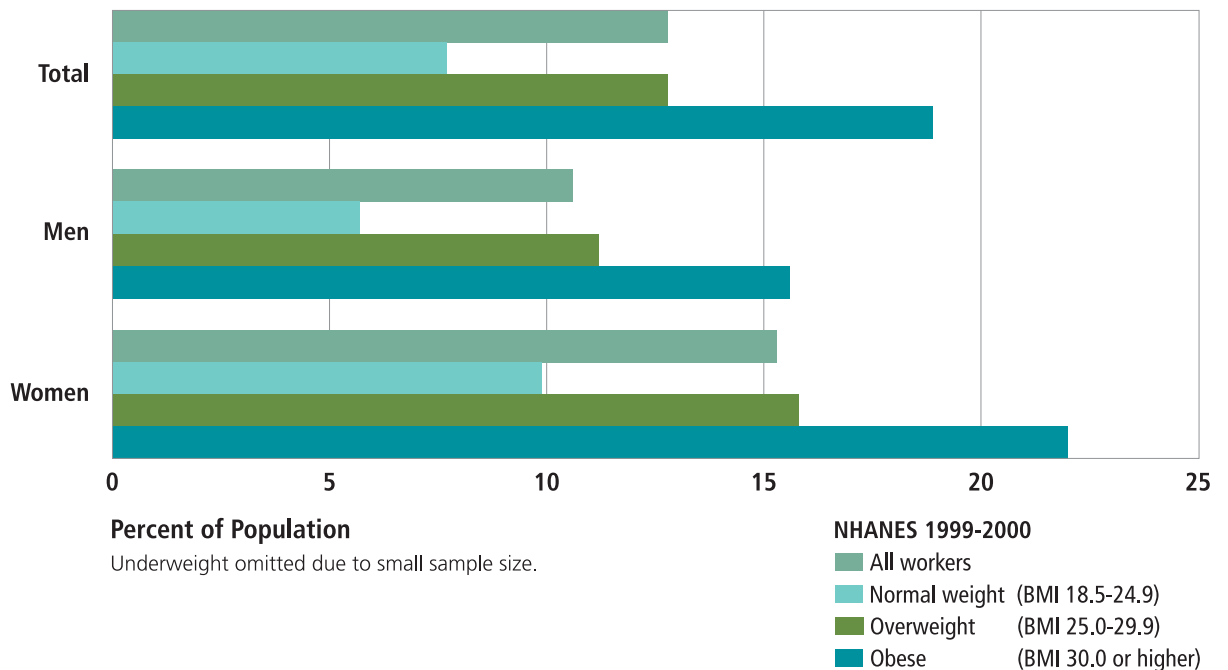


Arthritis is also associated with overweight and obesity

Thirteen percent of workers report having arthritis. The prevalence rates among men and women, respectively, are 11% and 15%. With increases in weight, come increases in prevalence.

- Among men, prevalence increases from 6% to 11% to 16% as weight goes from normal to overweight to obese.
- Among women, prevalence increases from 10% to 16% to 22%.

Prevalence of Arthritis Among the US Workforce





Appendix I: Methods

Data Sources

National Health and Nutrition Examination Survey (NHANES)

US Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Health Statistics

NHANES III, 1988-1994

NHANES III is a sample survey of approximately 34,000 persons, designed to obtain nationally representative information on the health and nutritional status of the non-institutionalized population of the United States through interviews, laboratory tests and physical examination. The NHANES subset used in these analyses was restricted to working adults age 20 or older. Sample size = 9,636; 5,155 men; 4,481 women. Morning subset sample size = 4,570; 2,426 men; 2,144 women.

NHANES 1999-2000

NHANES 1999-2000 is based on a nationally representative sample of approximately 10,000 persons, 5,000 age 20 and older. Working adults age 20 and older were selected for these analyses. Sample size = 2,381; 1,256 men; 1,125 women. Morning subset sample size = 1,188; 617 men; 571 women.

National Health Interview Survey (NHIS)

US Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Health Statistics

NHIS 2002

NHIS 2002 is a nationally representative interview survey based on a sample of the non-institutionalized US population, including approximately 30,000 persons age 20 and older. Working adults age 20 and older were selected for these analyses. Sample size = 17,952; 9,021 men; 8,931 women.

Definitions

Weight Definitions

Body Mass Index (BMI): BMI was calculated as weight in kilograms divided by the square of height in meters. The study participants were classified into the following four weight levels according to the National Heart, Lung, and Blood Institute (NHLBI) BMI criteria:

Underweight: A person was classified as underweight if his/her BMI was less than 18.5.

Normal weight: A person was classified as normal weight if his/her BMI was greater than or equal to 18.5 and less than 25.

Overweight: A person was classified as overweight if his/her BMI was greater than or equal to 25 and less than 30.

Obese: A person was classified as obese if his/her BMI was greater than or equal to 30.

Disease Definitions

Arthritis: Persons were classified as having arthritis if they reported that a doctor ever told them that they had arthritis.

Diabetes: Persons were classified as having diabetes if they reported in the NHANES interview having been told by a physician they have diabetes, or if their fasting plasma glucose was greater than or equal to 126 mg/dL. The morning examination subset of the NHANES sample was used to ensure the validity of the fasting plasma glucose test data. A diabetic person was considered to have type 2 diabetes if he/she was (1) at least 30 years old at onset; or (2) was between 19 and 29 years old at onset and not taking insulin; or (3) was between 19 and 29 years old at onset and currently taking insulin, but had not begun taking insulin for at least 12 months after disease onset; or (4) did not have gestational diabetes only.

Dyslipidemia: NHANES respondents were classified as having dyslipidemia if they reported taking an antihyperlipidemic drug, or if their LDL cholesterol exceeded the appropriate risk-based threshold established in the National Cholesterol Education Program (NCEP) Adult Treatment Panel (ATP III) guidelines.

Hypertension: Persons were classified as having hypertension if their average of multiple measurements of blood pressure at the time of the NHANES examination was elevated (greater than or equal to 140 mm Hg systolic, or greater than or equal to 90 mm Hg diastolic) or they reported taking antihypertensive medication. The elevated blood pressure threshold for diabetic persons was systolic greater than or equal to 130 mm Hg, or diastolic greater than or equal to 80 mm Hg.

Metabolic Syndrome: According to ATP III criteria, the metabolic syndrome was identified by the presence of three or more of these components: central obesity as measured by waist circumference (men greater than 40 inches, women greater than 35 inches); triglycerides greater than or equal to 150 mg/dL; HDL cholesterol (men less than 40 mg/dL, women less than 50 mg/dL); blood pressure greater than or equal to 130/85 mm Hg; fasting glucose greater than or equal to 110 mg/dL.

Other definitions

Employee/Worker: Persons were classified as employees/workers if they reported working at a job or business during the last week, or they reported having a job or business but were not at work during the last week.

Prevalence percentage: Persons with the disease or condition (diagnosed plus undiagnosed) as a percentage of the population.

Work limitations: Persons who reported being limited in the kind or amount of work they could do because of a physical, mental or emotional problem.

Reference

Hertz RP, Unger AN, McDonald M, Lustik MB, Biddulph-Krentar J. The Impact of Obesity on Work Limitations and Cardiovascular Risk Factors in the U.S. Workforce. *Journal of Occupational and Environmental Medicine*. 2004;46:1196–1203.



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