

Obesity in the Workplace Is It Getting Any Better?

By
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Highlights:

- Obesity, as measured by a BMI of 30 or more, appears to be leveling off at around 35% of the workforce.
- However, there is a substantial increase in the severe and morbid obese categories since 2002.
 - Severe (BMI 35-39) and morbid (BMI 40 or more) obesity has nearly doubled since 2002.
 - Severe and morbid obesity is rampant across all age groups – as young as 20 years of age.
- A strong connection exists between severe and morbid obesity with increased healthcare and absenteeism cost.
 - The severe obese worker costs a company nearly \$7,500 more.
- A strong connection exists between severe and morbid obesity and increased injury frequency and severity of claim costs.
- Is There a Solution? Yes there is. But the solution is not quick nor is it easy. But it is not expensive either when you consider the costs associated with severe and morbid obesity. Education does work but it takes time and a consistent message. Programs that focus on achieving a healthy body weight work and should be inclusive of all individuals. Changing a worker's behavior/attitude toward eating more nutritiously and becoming more physically active will take 24 to 36 months to succeed. Programs need to address the entire family not just the worker since a company's healthcare costs also include dependents.

Overview:

Information about the obesity epidemic in the United States is growing more specific in terms of its economic burden on industry and how obesity impacts other aspects of doing business such as absenteeism, presenteeism and work related injuries. The research is better defined with larger population studies and thus more meaningful and applied information.

This paper will bring together the most recent research for companies to better understand the economical impact obesity is having on a company's ability to do business and what companies can do to better control for obesity related costs.

Even though the prevalence of obesity seems to be leveling off, the number of morbidly obese workers continues to increase. The research shows that the number of obese workers in the workplace is about 35%. Our own data collected from doing physical capability strength evaluations for nearly 25,000 new hire applicants in 2008 shows that 39% of the 21,509 male applicants were obese and 35% of the 3,491 female applicants were obese. Obesity was measured using the universal criteria of a body mass index (BMI) of 30 or greater. There will be more discussion on this data later in the paper.

A Word of Caution About Body Mass Index (BMI)

Body mass index is used to determine obesity in the workplace. There are numerous websites that can be searched on the Internet to calculate BMI. Body mass index uses a person’s body weight and height and when inserted into a formula an index number is computed. The following table shows the various categories used to determine if a person has a normal body weight or obese body weight.

Category	Range
Underweight	<18.5
Normal Weight	18.5 – 24.9
Overweight	25.0 – 29.9
Obese Level 1	30.0 – 35.4
Obese Level 2 – Severe	35.5 – 39.9
Obese Level 3 – Morbid	>39.9

There is a growing concern about using BMI as the sole indicator of body fatness or obesity. Some companies use BMI to determine if an employee is obese and if so the obese worker’s health benefits may be impacted negatively. The best example to demonstrate the concern about using a BMI of 30 or more to determine obesity is that more than half of the active National Basketball Association (NBA) players would be considered obese using a BMI of 30 or more. This certainly is not the case, but they are heavily muscled and very tall, which skews the results. Frame size and muscle weight is very important when trying to determine one’s body composition.

It is suggested that when using BMI to determine obesity, it should be done in conjunction with taking a waist circumference. If the waist circumference is greater than 40 inches for males or greater than 35 inches for females along with a BMI of 30 or more, than more than likely the person is obese.

One can expect that as the obesity crisis continues, newer more accurate and inexpensive methods will become available to determine a person’s degree of obesity.

The Economic Burden Continues To Grow

A number of research studies were published in late 2007 and early 2008 reporting on the added healthcare and worker's compensation costs for obese workers compared to non-obese workers. In addition, studies were published that shows the obese worker cost more in terms of absenteeism and presenteeism when compared to the normal weight worker.

In September 2008, an article written by Dr. Durden and others was published in the Journal of Occupational Environmental Medicine. The title of the article is *Economic Costs of Obesity to Self-Insured Employers*. This study looked at data obtained retrospectively on medical and pharmacy benefits from MarketScan Research databases for the period of 2003-2005. The study population consisted of 88,984 workers.

This is one of the first studies to report on the healthcare and absenteeism cost of obesity based on the degree of obesity. The authors looked at their data divided into 5 BMI categories – Underweight (BMI < 18.5), Normal Weight (BMI 18.5 to <25), Overweight (BMI 25 to <30), Obese (BMI 30 to <35), Severely Obese (BMI 35 or more).

- The average Medical Care Costs per year for a normal weight individual was \$3,248 compared to the severely obese worker of \$5,629 or 73% more for the severely obese worker.
- The Absence/Paid Time Off per year for the normal weight worker was \$3,488 compared to \$8,433 for the severely obese worker or 142% more for the severely obese worker.
- *When combining the medical care cost with the absence/paid time off, the severely obese worker costs \$7,326 more than the normal weight worker.*
- It should be noted that nearly 10% of the 88,984 employees were severely obese compared with 34% having a normal weight.

When comparing the prevalence of musculoskeletal injury (injuries to the body including soft tissue strains and sprains) in the same study, the severely obese worker had a prevalence of .39 compared to .26 for the normal weight. In other words, the severely obese worker had a 50% greater chance of having a musculoskeletal injury.

The injury data supports the research reported by Ostbye in April of 2007. His study reported on the cost of worker's compensation claims for morbidly obese workers (BMI 40 or more) for the Duke Healthcare System compared to normal weight workers. Ostbye reported the following:

- The morbidly obese hospital worker has twice as many workers' compensation claims.
- The morbidly obese worker average claim cost was \$51,091 compared with \$7,503 for the normal weight hospital worker.
- The morbidly obese hospital worker has 13 times more lost work day.

Physical Work Capability

With the continued increase in obesity in the workplace, companies not only need to be concerned about increased medical and absenteeism costs, but also increases in workers' compensation costs. Until recently, companies have not had good information to make the connection between obesity, especially severe and morbid obesity, with increases in injury frequency and average claim costs. The research is becoming clearer that this is true.

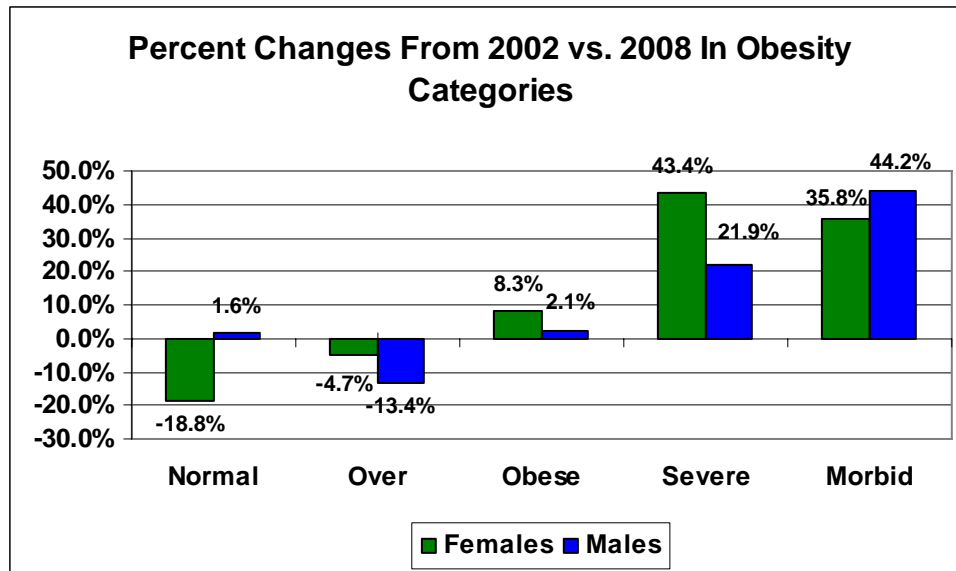
Industrial Physical Capability Services (IPCS) performs physical capability evaluations on new hires throughout the United States and portions of Canada. Since height and weight are collected, body mass index is calculated after the new hire data as been interpreted. Since 2002, nearly 162,000 BMI's for the new hire applicants have been computed.

When investigating a worker's physical capability relative to body mass index and age, the results further supports that the obese worker has difficulty generating enough strength to support his/her body weight which hinders his/her ability to achieve a physically demanding job rating and safely perform the essential functions of the job. Further the results show that severe and morbid obese worker can be found across all age groups as young as 20 years of age.

2002 vs. 2008 Changes:

Chart 1 shows the percent change in the various BMI categories from 2002 to 2008 for male and female workers.

Chart 1



Although the pattern of the data between the two genders appears to be different, a substantial increase in the prevalence of severe and morbid obesity for both genders can be observed.

- It is interesting to note that there was a 1.6% increase in the number of normal weight male workers along with a 13.4% decrease in overweight workers between 2002 and 2008. Unfortunately, the number of severe and morbid male new hire applicants increased by 21.9% and 44.2%, respectively.
- The female data shows that there were 18.8% fewer normal weight individuals in 2008 compared to 2002. The female data also shows that there was a substantial increase in severe and morbid female new hire applicants (43.4% and 35.8%, respectively).

Age Group Changes:

Chart 2 shows the percent increases in female new hire applicants between 2002 and 2008 by age group. Because of smaller sample sizes for those applicants over the age of 50 or older, the data could not be used.

The data shows that for each age group there has been a significant increase in the number of severe and morbid obese female applicants between 2002 and 2008. It is interesting to note that increase in the 20-29 age group shows that the percent increase doubled for both the severe and morbid obese categories.

Chart 2

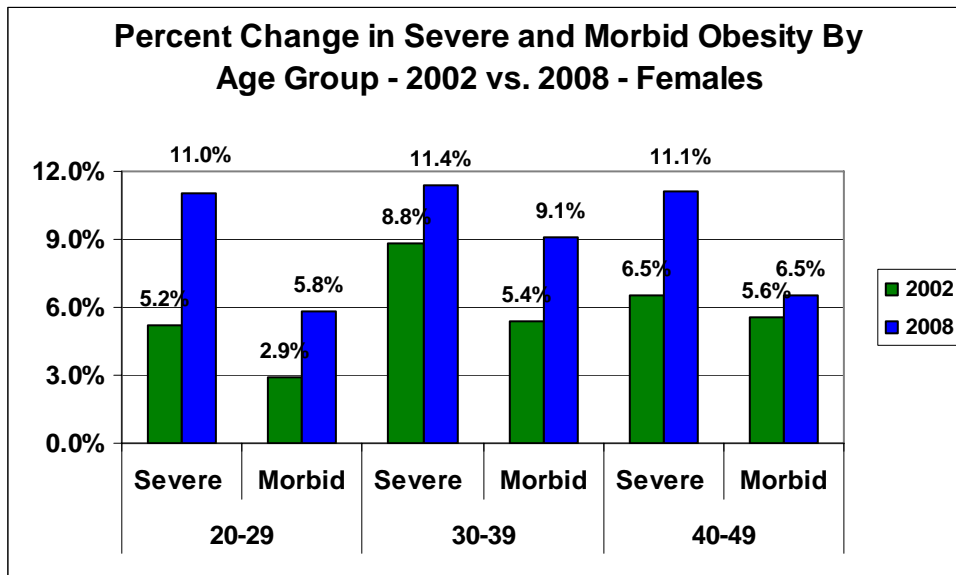
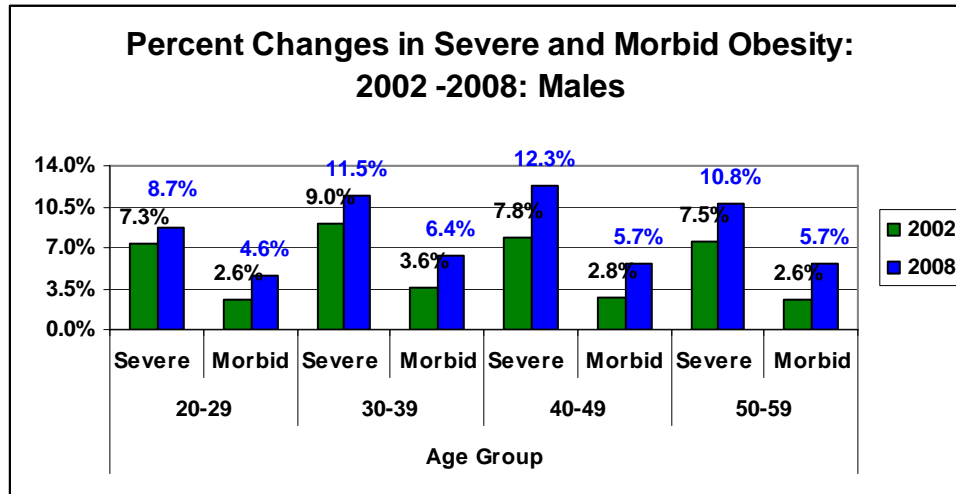


Chart 3 (on the next page) shows the results of the male new hire applicants according to age group and BMI category. As with the female data, the number of severe and morbid obese applicants increased significantly for each age group between 2002 and 2008.

Because of larger sample sizes, data is included for the age group between 50 and 59. It is interesting to note that even the 20-29 age groups showed increases. In fact, the increase for the morbid category for the 20-29 age group nearly doubled.

Chart 3



It is clear that as the degree of obesity increases (i.e. severe and morbid), the more healthcare, absenteeism and injury costs rise. **It is also clear from the IPCS new hire database that it makes no difference whether a worker is in the youngest or oldest age group, the number of new hire applicants in the severe and morbidly obese categories increased from 2002 to 2008.**

When combining the severe and morbid obese categories for the males across age groups in Chart 3, the results shows that in 2002 10.7% of the applicants had severe and morbid obesity compared with 15.2% in 2008. **This is a 30% increase between 2002 and 2008.**

The female combined results across age groups (Chart 2) show that in 2002 10.9% of the applicants had severe and morbid obesity compared with 17.3% in 2008. **This is a 59% increase between 2002 and 2008 for the female population.**

Strength vs. Body Mass Index:

The next two charts (Charts 4 and 5) shows what happens to a worker's strength as body mass index increases. It appears that a worker's strength shows a direct relationship with BMI up to 35. That is as BMI increases so does strength.

However, for both the female and male worker, once the BMI reaches 35 (Severe Obesity) strength plateaus and even shows a slight decrease after a BMI of 40 (Morbid Obesity). In other words, strength no longer parallels increases in body weight. **This could explain why severe and obese workers have more workers' compensation claims and more severe injuries as measured by average claim costs because the**

morbidly obese worker's strength does not continue to increase as his/her body weight increases. This puts the severe and morbidly obese worker at greater risk for injury as supported by the research studies of Durden and Ostbye.

Chart 4

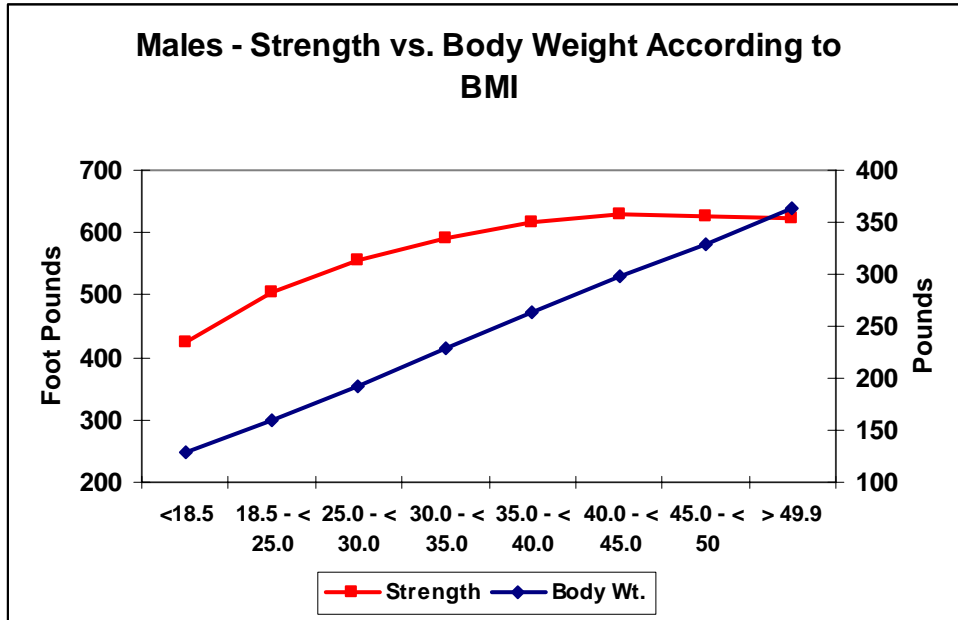
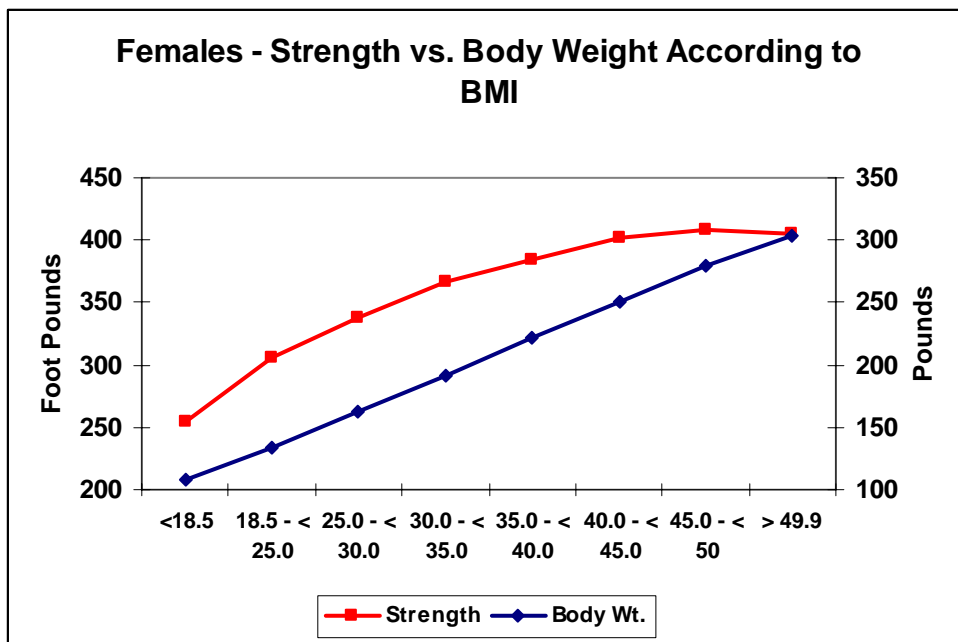


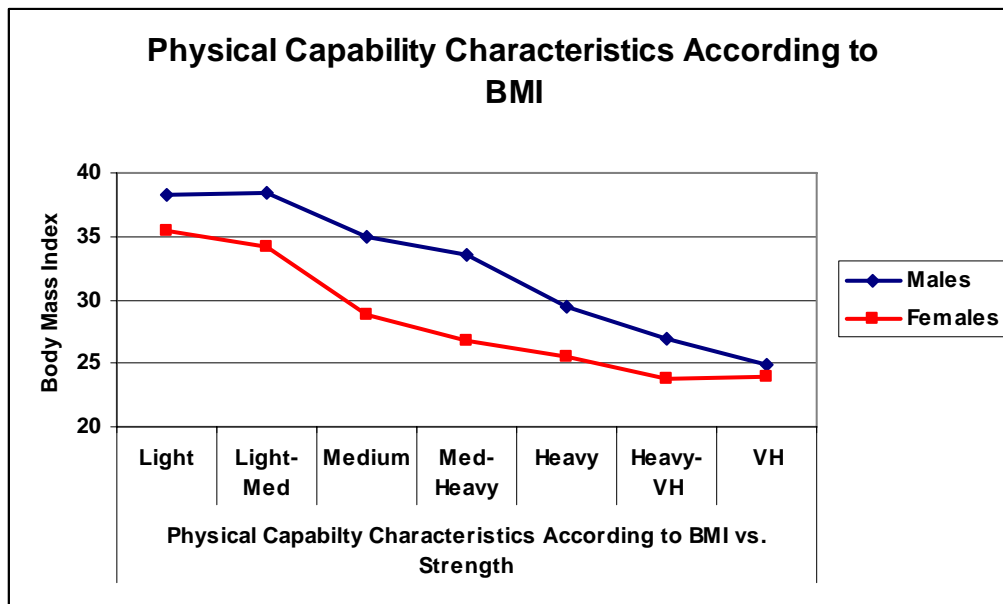
Chart 5



When the relationship between work level achieved and body mass index is analyzed, Chart 6 clearly shows that the worker achieving a greater physical capability (Heavy or greater) as measured and defined by the Department of Labor Strength Definitions also had the lower BMI's. The opposite was true for those with higher BMI scores for male and female new hire applicants. This means that the leaner worker is more physically able and should be able to safely perform the essential functions of a physically demanding job with less risk for injury.

This finding would also help explain why those who have normal or overweight BMI ratings tend to be injured less according to Durden and Ostbye.

Chart 6



Cost Reality Check

Now that you have read and studied the latest cost information and obesity prevalence data in the workplace, what is obesity costing your company? If your manufacturing or transportation company has 200 employees, your company is spending about \$400,000 more each year in added healthcare costs, absenteeism and work related injury costs for those severe and morbid obese workers.

Here is how the cost estimate is computed:

- 200 employees (100 males, 100 females) – using the IPCS data source
 - In 2008, 15.2% males have severe or morbid obesity: 15 male workers
 - In 2008, 17.3% females have severe or morbid obesity: 17 female workers

- Average cost per claim for severe and morbidly obese workers to include medical and absenteeism is \$7,326 (using Durden's research) more compared to normal weight or overweight worker.
 - \$7,326 times 32 severe or morbidly obese workers is \$234,432.
- Assume an incident rate of injury is 5% (this could be higher or lower).
 - The incident rate is twice as high for severe and morbidly obese workers.
 - 10% of the 32 severe and morbidly obese workers is 3 injuries.
 - Average cost per claim is \$51,091 (using Ostbye's research)
 - Total cost for injury claims is \$153,273 (3 injuries times \$51,091)
- Total medical/absenteeism cost and injury cost is \$387,705.

Your company's numbers may vary but certainly from this example it becomes very clear that severe and morbid obesity in the work place is costly.

As a side note, this calculation is for only the worker. This number increases even greater when dependents are built into the equation.

Is There a Solution?

Yes there is. But the solution is not quick nor is it easy. But it is not expensive either when you consider the costs associated with severe and morbid obesity.

Government is getting more involved with the obesity epidemic. Their approach is to pass legislation to fix the problem. Legislation can't fix the problem unless it addresses modifying or changing a person's attitude and behavior toward managing their health. Teaching individuals that their health is their responsibility and choosing healthy lifestyles is one way to manage their health. Starting with body weight makes sense because everyone has a body weight and, furthermore, most diseases, illnesses, injuries and disorders have direct link to body weight.

Keep in mind the obesity problem in the workplace did not occur overnight. It took years for it to occur as workers eating habits became more unhealthy and physical activity habits became more sedentary. Now it will take years to educate workers and their dependents on how to make slow, subtle changes regarding eating more nutritiously and increasing their level of physical activity.

Education does work but it takes time and a consistent message. Programs that focus on achieving a healthy body weight work and should be inclusive of all individuals. There is so much misinformation about physical activity and nutrition via various media programs that confuse workers between what is right or wrong. Most programs designed to bring quick results fail in the long run. **Changing a worker's behavior/attitude toward eating more nutritiously and becoming more physically active will take 24 to 36 months to succeed and should do the following:**

- **Provides an ongoing stream of education and motivation.**
- **Provides repetition and reinforcement which is, after all, the key to lifestyle change – which, in turn, is the key to long-term weight management.**
- **Present a consistent and managed message based on research about managing body weight succeed.**

Finally, programs need to address the entire family not just the worker since a company's healthcare costs also include dependents.

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