

Standing Up

Redesigning the Workplace to Address Obesity

By Lance S. Perry

The Battle of the Bulge was one of the most arduous and costly offensives of World War II. Today, its name is often evoked when discussing a more modern challenge: the ongoing fight against obesity. The latest battleground is the American workplace.

One need only look around to see that people are getting heavier. According to National Center for Health Statistics, in the past few years, the combined percentage of overweight and obese in the adult U.S. population soared to more

than 60% (Ogden & Carroll, 2010). Sixty-eight percent of all Americans are overweight or obese—34% are considered overweight and 33.8% are obese (Flegal, Carroll, Ogden, et al., 2010). According to World Health Organization (WHO, 2005), the number of overweight and obese people worldwide will increase to 1.5 billion by 2015 if current trends continue.

Sources suggest that the extreme forms of obesity—severely, morbidly and super morbidly—are rising faster than the overall epidemic (International Obesity Task Force, 2010). The extreme forms have a significant effect on the female population. Overall, 6.3% of American women (1 of 16) are considered morbidly obese (approximately 100 lb over target weight) (International Obesity Task Force, 2010). In the U.S., the percentage of African-American women with a body mass index (BMI) greater than 40 has doubled in less than a decade to 15% (Blair & Buskirk, 1987). The U.S. tops the list

in the percentage of overweight and obese individuals

IN BRIEF

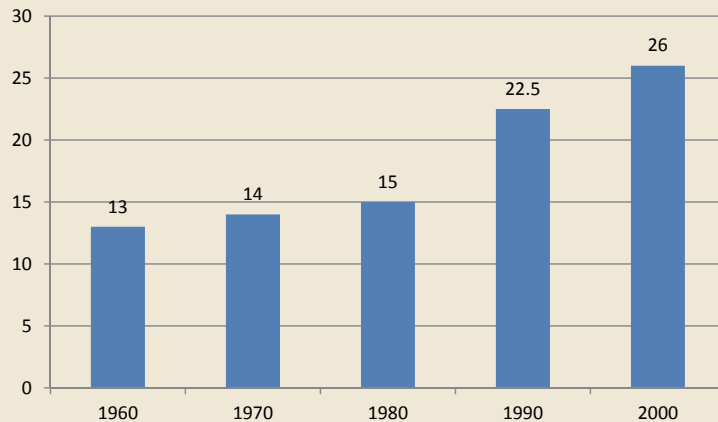
- Reports suggest that 1.5 billion people will be overweight or obese by 2015.
- The modern office encourages too much sitting and not enough movement.
- To combat obesity, people must find increase activities without depending on themselves to work out or diet. Increasing nonexercise activity thermogenesis is an effective, noninvasive way to encourage more standing and less sitting to burn excess calories.

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Figure 1

Percentage of Obesity in U.S. Adults vs. Time



Note. From *Could You Stand to Lose*, 2nd ed., by M. Benden, 2008, Trinity River Publishing.

as well as the rate at which those numbers are increasing (Ogden, Carroll, Kit, et al., 2012).

Health & Cost Impact

With obesity rising, the toll on health and bottom lines is great. From 1980 through 2010, CDC reports that the percentage of people with diagnosed diabetes increased by 200% for those age 0 to 44 (0.6% to 1.8%) and 124% (5.5% to 12.3%) for those age 45 to 64 years; 12% of the population has been diagnosed with heart disease; 30% of people under age 55 suffer from hypertension and 37.13% of adults in the U.S. have high cholesterol.

As health issues rise, workforce productivity and efficiency will naturally decline. Average time off, leave and absence are on the rise. The average absenteeism per employee for small firms is 6 days per year; for medium firms it is 8 days per year; and for large firms, it is 10 days per year. Back pain and stress, which are associated with obesity, contribute to these lost days.

As waist sizes grow, so does the cost to employers. In 2006, employer premiums increased 7.7% (Carpenter, 2006). According to a Duke University study, obese employees cost U.S. private employers approximately \$45 billion annually in medical expenditures and loss (Ostbye, Dement & Krause, 2007). These employees will lose 13 times more days of work from work-related injuries and illnesses; and obese employees file twice the number of workers' compensation claims and have seven times higher medical costs from those claims. Along with the health and business consequences, obesity can take a personal toll. It appears that obesity is now poised to overtake tobacco as the top threat to life, according to CDC. Obesity-related deaths in the U.S. have climbed to more than 400,000 each year. Tobacco-related deaths are more than 450,000 per year.

How Did We Get Here?

The obesity debate has raged, is raging and will continue to rage for years to come. Obesity has been linked to numerous social, dietary, technological and biogenetic causes. The fitness industry points to inactivity, lack of exercise and the couch-potato mentality, and produces videos encouraging people to exercise more. The medical industry blames poor eating habits, genetics and lack of exercise, and offers an array of expensive solutions; some effective, some not so effective (CDC, 2010; International Obesity Task Force, 2010; NIOSH, 2011; WHO, 2011).

Some blame companies for supersizing and some politicians want to tax bad behaviors, but these approaches ultimately will not solve the problem. The answer to this problem is complex. Every solution is individually driven and, ultimately, depends on the interrelationships of genetics, lifestyles, diets and food choices. However, obesity rates remained relatively flat until the mid-1980s, when they began to increase at an alarming rate.

So what happened in the 1980s? In the early-to-mid-1980s, the computer became a mainstay in the workplace. Technology allows for increased productivity—employees can work for hours at a time without interruption at an individual workstation. Computers established working conditions that have contributed to employees sitting at their workstations for 6 to 8 hours each day. As computer use increased, keyboard-hand interface increased as well. As arms and hands became tied to mice and keyboards, people also became tied to their work chairs. This shift in office technology and the subsequent change in tasks and activities increased productivity at the expense of employee health.

Studies show that the increase of computer usage corresponds directly with the increase in obesity (Figure 1). For example, Mummery, Schofield, Steele, et al. (2005), collected data from 1,579 Australian men and women in full-time jobs. They found that the more time a person spent sitting at a desk, the more likely s/he was to be overweight. The study found that workers averaged more than 3 hours per day sitting, and more than one-fourth of the study group averaged more than 6 hours per day seated.

Benden, Congleton and Fink (2011) studied 51 office workers and showed that the more overweight an individual is, the more likely s/he was to spend most of the day seated at a desk. The study also found that extremely obese employees (those with a BMI above 35) spent 20% more time seated per shift than those with a BMI below 35.

What Is Body Mass Index?

Body mass index (BMI) is the gold standard for measuring weight. The BMI measure is a weight-to-height ratio. The higher the BMI, the more obese the person. BMI is measured by dividing the body weight by height squared. For example, if a person weighs 225 lb and is 5 ft 10 in. tall (70 in.), the BMI calculations are as follows:

$$[225 \text{ lbs}/(70 \text{ in.})(70 \text{ in.})] \times 703^a = 32.28$$

BMI = 32.28

The BMI ranges below demonstrate the relationship between body mass and weight:

Weight vs. BMI	Weight
18.5 to 24.9	Acceptable
25.0 to 29.9	Overweight
30.0 to 34.9	Obese
35.0 to 39.9	Severely obese
40.0 to 49.9	Morbidly obese
50.0 or more	Super morbidly obese

Note. From Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults: The Evidence Report (Report No. 98-408), by National Institutes of Health (NIH), 1998, Bethesda, MD: NIH, National Heart, Lung and Blood Institute.

^a703 is a metric-to-English conversion factor.

As noted, too much sitting is not the only source for the obesity epidemic. Food quality, bioengineered foods, trans fats, food additives, growth hormones, artificial sweeteners, poor eating habits and sedentary lifestyles all have been associated with health and obesity concerns.

How Have We Responded?

No one questions the importance of computers and not many can envision the world without them. However, it is important to balance the value of increased productivity with the demonstrated consequences to employees' long-term health. Historically, companies have used the science of ergonomics to design the computer work environment to maximize employee safety, comfort and productivity.

With the advent of the computer, one common response has been to "build a better chair." Chair designers and manufacturers have responded swiftly and with significant results. Compared to chairs of the early 1980s, chairs today are anthropometrically correct, and they have adjustments and supportive features designed to maximize comfort, minimize pressures and accommodate almost anyone who wishes to sit. As the population's weight has increased, chair designers have responded with more adjustments and support features that allow a broader range of people to sit comfortably.

These advancements and the efforts of dedicated ergonomists have created office environments that are effective at reducing injuries and increasing productivity. A 13-year study conducted at Purdue University (Bidassie, McGlothlin, Goh, et al., 2010) found that workplace ergonomic interventions have proven worthwhile:

- Office cumulative trauma disorders (CTDs) and carpal tunnel syndrome (CTS) cases decreased more than 60%.

- Total days away decreased 44%.

- Lost-time case rate decreased 70%.

- Office-related CTS cases decreased nearly 50%.

The study also found that:

- Proper seating played a vital part in the study results.

- Ergonomics prevented office-related CTDs and CTS.

- Worker awareness and safety improved.

The overall conclusion was that effective ergonomics provides continuing returns on investment.

As designers and the office furniture industry have responded to accommodate employees and proactively address repetitive trauma and postural stress, they have increased the likelihood that employees can comfortably sit and work in

one spot without moving for longer periods. This is a catch-22: productivity increases, but the office area becomes a static, sedentary environment that evidence suggests is directly associated with the obesity epidemic. A compromise that maintains productivity and protects health is needed.

Sitting vs. Standing

The evolution of the office chair and the resulting shift from nonadjustable to adjustable features has allowed a wider range of accommodation, greater support and improved user comfort. These work chairs have benefited the human body to a point that they deny the body a key need—movement. Prolonged sitting has been associated with restricted blood flow, restricted range of breathing, restricted digestion, fatigue and musculoskeletal strains.

To better understand why chronic sitting has these effects, let's examine what happens to the body when sitting. When a person sits, the legs are repositioned in a more horizontal manner. When the legs are moved into this position, the hamstring in the back of the thigh pulls the lower aspect of the pelvic girdle forward. This pulling triggers a rotation of the pelvis, and this rotation shifts the alignment of the lumbar aspect of the spine. The spine loses its preferred lordotic curve and becomes straighter (Bendix & Biering-Sorenson, 1983).

The biomechanical changes that occur while sitting have direct consequences. This action changes intervertebral spacings of the spine, which causes low back disc pressures to rise significantly when seated. Depending on how a person sits, the disc pressures can be more severe. When sitting upright with no back support, the low back disc pressures are 140% of standing disc pressure. When sitting with a forward trunk lean, the low back disc pressures are 190% of standing disc pressure (Kroemer & Grandjean, 1997).

In addition to an increase in disc pressures, sitting increases ligament strains and places higher than normal loads on muscles and tendons. These changes increase the risk of pain, discomfort, strains, and injuries associated with postural stress disorders, joint compression and soft-tissue injuries. Chronic hip flexion, caused by sitting, also impairs vascular functions; it increases the risk of deep vein thrombosis, blood clots, pulmonary embolisms, capillary restriction, tissue edema and varicose veins (Benden, 2008).

Finally, as a person sits, the abdominal cavity is compressed. This restricts the range of motion of the diaphragm, decreases the depth of breathing, and restricts the esophagus, phrenic nerves, aorta, trachea, brachiocephalic vein and reduces the breathing volume (Benden, 2008). All of these changes combine to slow metabolism rates, increase cholesterol and lipids, increase cardiovascular disease, and increase risks of postural stress, joint and soft-tissue injuries.

Some research associates more dire outcomes with sitting. For example, a 14-year study conducted by the American Cancer Society found that the more Americans sit around, the shorter their average life span (Patel, Bernstein, Deka, et al., 2010). The study analyzed 123,216 questionnaires from people with no history of disease. It found that women who spent 6 hours a day sitting had a 37% greater risk of dying versus those who spent less than 3 hours a day sitting. For men, the increased risk was 17%. People who sat much of the day and did not exercise or stay active had an even higher mortality risk: 94% for women and 48% for men (Patel, et al., 2010).

According to Patel, et al. (2010), burgeoning literature is evolving around "inactivity physiology." When muscles, especially those in the legs, are "sitting," they stimulate or suppress various hormones which then affect triglycerides, cholesterol and other markers for heart and other diseases (Gardner, 2010). Gardner (2010) also interviewed Jay Brooks, chair of hematology/oncology at Ochsner Health System in Baton Rouge, LA, who says, "It is just one more reason to 'get up and walk.' The message here is like everything in life. People need to recognize that the things you do every day have consequences. And if you are in a job that does require sitting, that's fine, but any time you can expend energy is good. That's the key."

Standing presents its own concerns, primarily related to jobs that require full-time standing without the option to sit down. Current productivity and ergonomics research suggests several productivity and fatigue effects from jobs dominated by chronic static standing (Benden, 2008). Research on 11,986 workers found that of those who stood for their jobs, only one in six were able to sit whenever they wanted (Tissot, Messing & Stock, 2005). Most jobs that are typically studied for standing concerns are physically demanding jobs in environmentally demanding conditions—not office work—and these biases give standing a bad reputation (Benden, 2008).

Another study found that sitting for even a small part of the day appeared to be protective with respect to preventing discomfort in the feet, an early indicator of potential adverse health effects (Laperriere, Ngomo, Thibault, et al., 2006). In short, it does not take much sitting to make standing tolerable.

Simply put, too much of a good thing can be too much. The seated office workstation design paradigm is self-perpetuating. Too much sitting is physically harmful, increases disc pressures, decreases blood flow, impinges nerves and promotes obesity. Vercruyssen and Simonton (1994) stated, "It has been shown that decision making is optimal in an erect posture and performance suffers as one becomes more reclined and comfortable." This paradigm must change. More aggressive approaches are needed to move American workers to standing postures even as comfy chairs are increasingly available (Davidson, 1988). Bottom line: People work better on their feet than on their seat. To improve employee health, how people work must change fundamentally.

What Can Be Done?

So, what can be done? Consider these options.

1) Continue to buy adjustable and supportive chairs and furniture to accommodate workers in a comfortable, yet static posture. This strategy makes several assumptions:

- Employers will care enough to provide this furniture.
- Employees will remember to make the proper adjustments.
- Employees will be trained properly to utilize the furniture correctly.
- Employees will be monitored to make adjustments regularly, as needed.

This strategy ignores basic human tendencies of apathy and lack of caring that may surface depending on personality, motivation and other factors, as well as a lack of education to the necessities or benefits (Benden, 2008). Although often preferred, this approach encourages sedentary and static work, which promotes obesity.

2) Design work, workstations and the workplace with motion in mind. The body is not designed for static postures over sustained periods of time. Viscerally, humans are designed to walk around, climb trees, hunt for food and club things on the head (metaphorically speaking, of course). People are not designed to sit in a chair and stare at a monitor all day. The body needs movement. As Jerome Congleton, P.E., CPE, of Texas A&M University, often states, "Your best seated posture is your next one." People must find ways to interject movement into each day.

If obesity is a driving force behind the healthcare crisis, then companies can be proactive by helping workers lose weight. Pills, diet fads, half-hearted exercise programs and quick-fix surgeries are not a solution. A better approach is to help employees lose weight in a way that does not involve a major change in their lifestyles or daily habits.

A NEAT Idea

NEAT stands for nonexercise activity thermogenesis; it is the energy expenditure of all physical activities other than volitional sports or exercise. NEAT burns fat and calories without structured exercise. A structured exercise routine may consist of a weight-lifting regimen or some other activity undertaken specifically to expend energy or aid in physical development; NEAT activity burns fat and is usually classified as necessary labor, not exercise. As its name implies, NEAT is nonexercise activity that burns calories.

Physical activities classified as NEAT include shoveling snow, taking the stairs, standing and washing dishes. Mayo Clinic researchers theorize that Americans gain weight because modern society has eliminated a large number of such manual labors (Levine, Vander Weg, Hill, et al., 2006). Levine, et al. also reported that obese individuals appear to exhibit an innate tendency to be seated for 2.5 more hours per day than their sedentary lean counterparts; and they found that NEAT activities account for “100 to 200 kcal/day (kcal is the same as calorie); a caloric deficit that potentially could account for the entire obesity epidemic.”

Vaccariello (2010) listed fidgeting as a first tip among seven for losing weight. She pointed to the Levine, et al. (2006) research into how everyday movement affects metabolism and their findings that “people who tap their feet, prefer standing to sitting and generally move around a lot burn up to 350 more calories a day than those who sit still. That adds up to nearly 37 lb a year.”

Since NEAT encourages the thermogenic process, weight loss will follow, which creates a domino effect on other health markers. According to CDC (2010), the major benefits of weight loss include:

- decreased cardiovascular risk;
- decreased glucose and insulin levels;
- decreased Type 2 diabetes;
- decreased blood pressure;
- decreased LDL and triglycerides, and increased HDL;
- decrease in sleep apnea severity;
- decreased risk of certain cancers;
- decreased risk of strokes;
- reduced symptoms of degenerative joint disease;
- improved gynecological conditions;
- increased longevity (adults who were obese at age 40 lived 6 to 7 years less than their normal-weight counterparts).

NEAT vs. Exercise

Since weight loss is a goal, let's examine what it takes to lose 1 lb. A person must burn 3,500 calories to lose 1 lb. Benden (2008) reported these activities are what it takes to expend 3,500 calories:

- walk 3 to 5 mph for 10 hours or 1 hour/day for 10 days;
- bicycle at 10 mph for 10 hours or 1 hour/day for 10 days;
- use a rowing machine for 4 to 6 hours or 30 minutes/day for 10 days;

- use a stair machine for 6 to 8 hours or 42 minutes/day for 10 days;
- stand at your desk for 2.5 hours each day for 10 days.

Which activity best fits into today's busy schedules?

Research has shown that standing burns 30% to 40% more calories than sitting. According to Congleton (2010), actively standing 2.5 hours more each day will burn up to an additional 350 calories. Ten days of 350 calories per day equals 1 lb of weight loss. At 250 working days per year, the potential is 25 lb of weight loss per year. To put this value into perspective, following are several 350-calorie equivalent activities:

- Running: 5 mph = 22.81 minutes;
- Bicycling: 12 to 13.9 mph = 22.81 minutes;
- Walking: 3.5 mph = 46.38 minutes;
- Stair stepping: General = 30.88 minutes;
- Aerobics: Low impact = 33.75 minutes;
- Mowing: Push/power: 41.25 minutes;
- Housekeeping: General = 53.00 minutes.

According to Levine, et al. (2006), 90% of Americans do not exercise regularly and half of workers sit in front of a computer most of the day. To combat obesity, people must find a way to increase activities without depending on themselves to exercise or diet. Increasing NEAT is an effective, nonintrusive way. The goal is straightforward: Encourage more standing and less sitting to burn excess calories.

Workplace Design & Corporate Strategies

Opportunities for changes include individual workstation designs, common area designs, facility and property designs, behavior modification and employee wellness.

Individual Workstation Designs

Traditional computer workstations feature a seated design, with static, nonadjustable work surfaces and chairs. Employees generally do not stand throughout the day when working on their computers, nor do such workstations provide the option to do so, at least not without some creativity.

One common alternative is sit-to-stand workstations. These workstations have adjustable keyboard platforms and monitor arms that allow an employee to raise the monitor and the keyboard so they can stand rather than sit while working. In the author's experience, however, few employees use this approach, and those who do only stand for a short time each day. This is largely because most stations are designed for sitting, with the option to stand, rather than designed for standing, with the option to sit. Studies have found that employees who use these types of workstations increase their productivity and appreciate the ability to adjust their workstations. Similar studies have found that the average number of times an employee actually adjusted to standing is 3.6 times per day; the average employee spent 23% of the time standing and 77% of the time sitting (Hendrick, 1994; Nerhood & Thompson, 1994; O'Neill, 1994).

Stand-to-sit workstations allow the employee

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to stand predominately and sit occasionally. These systems are relatively new to the marketplace, and little data are available on their efficacy. However, any system that encourages more standing throughout the day should have a higher success rate in increasing NEAT associated with standing when working on the computer.

Common Area Designs

Meetings rooms, cafeterias, utility rooms and mailrooms are common areas that can influence employees' NEAT. Designing these spaces to facilitate and encourage standing, either full-time or part-time, can increase the amount of time employees stand each day. Many restaurants have areas where patrons can stand at a counter to eat rather than sit at a table. Company cafeterias can incorporate this option for employees who take short breaks or who desire to stand when eating. Meeting rooms can be designed to have stand-up meetings, especially for brief meetings (e.g., 45 minutes or less).

In waiting areas, such as lobbies, vestibules, offices and areas where people sit casually, consider removing unnecessary chairs.

Shared printers, which required employees to leave their desks to retrieve printed items, were once common. Today, it's more common to find individual printers on personal workstations, which reduces an employee's amount of walking. For some jobs, a desktop printer is critical, but for many it is more of a convenience than a necessity—a convenience that works against NEAT objectives.

Facility & Property Designs

Facility and property designs also can influence the amount of NEAT in an employee's day. Facil-

ity and property layout directly affect walk times. The location of parking lots relative to the building can encourage additional walking. Location of shared common areas such as cafeterias, vending machines, break and meeting rooms, exercise facilities, common printers and other items relative to where employees principally reside also can increase NEAT. Extra time spent walking to these common areas can have a positive effect.

Behavior Modification

Educating and encouraging employees to modify work habits and individual behaviors can prompt them to change daily habits. Following are several simple activities that employees can be encouraged to do throughout the day:

- 1) Walk during lunch breaks and during down times.
- 2) Conduct face-to-face conversations with other employees rather than texting or calling.
- 3) Stand when receiving and making phone calls. (Consider locating phones on a higher shelf that requires standing to use.)
- 4) For secondary work, such as reading and writing, provide secondary work surfaces (40 to 42 in.) so employees can perform these tasks while standing.
- 5) Remove redundant shared resources (e.g., policy manuals, reference books, procurement catalogues, phone books) from individual workstations and locate them in common resource areas.
- 6) Take stairs, rather than the elevator for short jaunts.
- 7) Have walking meetings rather than sit-down meetings.

Will these strategies work? Table 1 lists the caloric expenditures for several of these suggestions versus their traditional counterparts.

Table 1
Traditional Activities vs. NEAT

Typical activities	Calories burned	A NEATer Idea	Calories burned
Park by building, take elevator to your floor	15	Park five blocks from building; take stairs to your floor	80-120
Make phone calls for an hour at desk	15	Take calls standing up and pacing	100-130
Seated 45-minute lunch	25	Walk 30-minutes at lunch; eat for 15 minutes	100-130
Seated 1-hour meeting	25	1-hour walking meeting	150-200
Take elevator to ground floor; walk to car; drive home	15	Take stairs out of building, walk to car	80-100
Total	85	Total	510-680

Note. From Move a Little, Lose a Lot, J.A. Levine and S. Yeager, 2009, New York, NY: Random House.

Wellness Programs

In addition to workplace design strategies, participation in wellness programs has been shown to increase job satisfaction and decrease absenteeism (Parks & Steelman, 2008). Wellness programs have been shown to have positive returns on investment as well. According to Terry (2010), for every dollar spent on wellness programs, companies saved \$4 in healthcare costs and \$5 in reduced absenteeism, and payback has occurred within 3 to 5 years.

A bill to amend the IRS code of 1986 to provide tax credits to employers for the costs of implementing wellness programs, and to allow 50% tax credit for the costs of providing employees with a qualified wellness program was proposed in 2009. Although the bill has not been

passed, the concept is promising. Several companies have proactively pursued wellness programs and have made a difference in their workplaces and their employees' lives (Congleton, 2010).

PepsiCo

- pilates, yoga and spinning classes for workers;
- free laundry services to wash gym clothes;
- smoking cessation program.

Glaxo-SmithKline

- health and wellness contract;
- annual savings of \$613 per participant.

Johnson & Johnson

•Estimated savings of \$1.9 million annually through lower medical costs; less sick leave; increased productivity; lower hospitalization costs (by 40%); and lower absenteeism (by 18%).

Coors Brewing Co.

•Estimated savings between \$440,000 and \$1.8 million, and a reported ROI of \$2.38 for every \$1 spent.

Wheeler Interests

•Small company (\$13 to 15 million) turned office into small gym, and launched a smoking cessation program (only 2 of 34 employees currently smoke).

Conclusion

Obese employees are at a higher risk of injuries, higher medical costs, higher lost time and lost productivity. In addition, an obese employee will lose 13 times more days of work than nonobese counterparts, and will not recover as fast. Obesity accounts for 36% of excess productivity loss, due to absences, presenteeism and disabilities (Benden, 2008).

Studies have shown that office ergonomics, standing more, increasing NEAT and wellness programs are effective controls for safety, injuries, illnesses and obesity. Although ergonomics and wellness programs are the most common corporate strategies, NEAT has a viable place in today's workplaces. Standing and walking are obvious NEAT activities that can be integrated into workplace design. Modifying individual workstations, common areas, facility and property designs, and behavior modification also can influence on the amount of time that employees stand and walk throughout the day.

Standing for 2.5 hours each day can result in up to 25 lb of weight loss per year. NIOSH's (2011) Total Worker Health program reports increasing evidence shows the work environment and workers' overall safety, health and well-being are strongly connected. Companies need to recognize that obesity is a real and imminent problem. Both employers and employees have vested interests in finding solutions.

The challenge is to understand how this epidemic came about and what can be done to address it. Creating a safe, productive work environment that

takes into account the design and cultural factors contributing to obesity can make a difference.

Obesity should be everyone's concern. The question is, What are you willing to do? Are you willing to stand up against obesity? If so, others will likely follow your lead and stand up, too. **PS**

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Key Facts About Obesity

- At least one in two people is now overweight or obese in more than half of Organization for Economic Cooperation and Development (OECD) countries. Rates are projected to increase and in some countries two out of three people will be obese within 10 years.
- The latest data show a slowdown of the epidemic in several countries, with stable rates in Korea, Switzerland, Italy, Hungary and England over the past 10 years, and mild increases in France and Spain. Larger increases were recorded in Ireland, Canada and the U.S.
- An obese person incurs 25% higher health expenditures than a person of normal weight in any given year. Obesity is responsible for 1% to 3% of total health expenditures in most OECD countries (5% to 10% in the U.S.).

Note. From Obesity Update 2012, by OECD, 2012, Paris, France. Retrieved from www.oecd.org/dataoecd/1/61/49716427.pdf.

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Author's Note

In 2010, *PS* published my article, "The Aging Workforce: Using Ergonomics to Improve the Workplace." In that article, I discussed the impending silver tsunami which is approaching U.S. workplaces and will affect companies that do not prepare.

As urgent as the aging workforce is, obesity is an even larger and potentially more dire concern. The obesity epidemic is here and is projected to get worse. Immediate attention is needed to reverse the trend. For the record, I am no fitness guru. I am 5 ft 10 in., 228 lb; according to the obesity calculator, I am in the obese category for weight—and I always thought I was just a few pounds overweight. Research and reading have opened my eyes to a new approach to weight loss and health management beyond exercise. I made a commitment to design and implement new strategies in my own office, and it is my hope that many others will do the same.