

ERGOMATES BENEFIT EMPLOYEES AND EMPLOYERS

Each year hundreds of new products geared to the working population are brought to market. The majority of these products, however, rarely have a significant personal impact on the user. Many are designed to serve the employer's needs, and others only partially meet the user's expectations. *ErgoMates*, an innovative mobile anti-fatigue matting system, have been designed to save employers money and dramatically improve the health, safety, and comfort of employees.

THE PROBLEM: Pain, Fatigue, and Injury

The average person takes 8,000 steps per day, but for workers in industries like manufacturing, health care, and retail, that number is much higher.¹ Studies have shown that up to half of the manufacturing and service industry workforce spends 4 or more hours a day standing or walking.²

There are many health risks associated with extended periods of standing and walking on the job, such as:

Musculoskeletal injuries: Injuries or disorders of the muscles, tendons, ligaments, nerves, joints, or bones caused by prolonged or sustained repetitive motions, awkward postures, forceful exertions, and/or limitations in motion or action. These injuries can range in severity from mild periodic symptoms to chronic and debilitating conditions.³

Repetitive strain injuries: Injuries that affect the muscles, tendons, and nerves, and are caused by overuse, repetition, and awkward or static postures. Primary factors include ergonomically unsound workstations, prolonged periods of work without adequate breaks, and sustained overuse from too much repetitive movement.⁴

Impact shock: The repetitive striking of the heel against the floor sends shock waves equal to two times a person's body weight upward through the body, affecting the feet, knees, hips, and lower back. Impact shock can cause long-term damage and pain which may limit activity and, in some cases, require joint replacement.⁵

Pain and fatigue: Being farthest from the heart, the feet generally have poorer circulation. Blood can pool in the feet, causing leg muscles to constrict and fluid to trap. At the end of the day, muscles are tired from holding a standing position, and feet and ankles are often swollen.

Slips and falls: Slips and falls are the second leading cause of injury in the workplace. Hazards include worn or wet flooring, soles that are worn out, and items placed where they may be tripped over.⁶

THE IMPLICATION: Effect on Business

Employees who are tired, injured, or in pain can become a liability in the workplace in a number of ways:

- Diminished mental acuity, dexterity, and physical agility, causing workers to make costly mistakes

- Decreased attention to detail resulting in reduced productivity and quality of work
- Increased incidence of injury
- Increased absenteeism (sick days, time off for medical appointments or treatments, long and/or short-term disability, or simply not showing up for work)
- Decreased employee morale

All of these issues have significant consequences to the employer, costing them additional profit and the competitive edge. A company's image is negatively affected when their employees are frequently injured and in pain. Productivity is decreased when an employee is absent from work, and the company may have to pay replacement workers. Mistakes, poor quality work, and low productivity resulting from diminished mental acuity and physical stamina cost the company money in paying to have the work redone. When employees injure themselves and others, the company absorbs the cost of health care and worker compensation claims, as well as the cost of hiring and training replacement workers. Employees who experience pain and injury want to leave the workforce sooner, an issue that is especially serious in light of the critical skilled labor shortage anticipated in the near future as the boomers retire.

THE TRADITIONAL SOLUTION: Ergonomic Intervention

Ergonomics is defined as “the science of designing the workplace and the job to fit the worker...to ensure employees are not injured or made unusually uncomfortable when working.”⁷ Implementing ergonomic innovations in the workplace can help to reduce injuries, compensation claims, and absenteeism, and increase productivity and employee morale. Ergonomic intervention is a powerful incentive to keep valuable employees in the workforce longer. These strategies provide a competitive advantage and are an exceptional return on investment.

Redesigning the workplace

Workers should change position as often as possible to avoid fatigue and injury. Options for a standing and mobile workforce could include a combination of standing and sitting, or standing and walking. Using a foot bar or foot rest also helps alleviate pressure on the legs and lower back.

Footwear

The feet act as the body's foundation, stabilizing and maintaining balance while walking or standing. Footwear must be chosen carefully and provide proper comfort, cushioning, support, stability, traction and slip-resistance, and shock and vibration absorption.⁸

Footwear should be replaced as soon as the support and structure break down or they begin to wear on pressure points (usually 6-12 months).

Insoles

Insoles can help make footwear more comfortable by restoring structure and support, reducing impact shock and vibration, and increasing cushion. Insoles and orthotics should be chosen carefully with the assistance of a trained professional as some inserts can reduce or eliminate the effectiveness of safety footwear.

Anti-fatigue matting

A study conducted at the University of Pittsburgh concluded that anti-fatigue matting can reduce fatigue by as much as 50%.⁹ The mats are made of various materials including rubber, vinyl, or carpeting. They have been found to successfully alleviate pressure, stimulate blood circulation, decrease impact shock, and dramatically reduce stress to the lower back, leg joints, and major muscle groups.

Limitations of the traditional solutions

While these ergonomic interventions are helpful, none of them offer a complete solution to the problems facing the standing and mobile worker.

- A combination of standing, sitting, and/or walking, or the use of a foot rest, is not possible in every work environment.
- Most footwear is chosen on the basis of fashion instead of function, and often fit improperly. Insoles can help to increase the comfort of footwear, but are usually made of large-cell foam which deteriorates quickly with heat and moisture from the body.¹⁰ Insoles can reduce or eliminate the effectiveness of the safety toe cap on safety footwear, and provide limited relief from shock, vibration, and fatigue due to thickness restrictions.
- The effectiveness of anti-fatigue matting is limited in workplaces where employees do a lot of walking. Unless the entire floor is covered with matting, workers are exposed to walking and standing on hard surfaces. However, it is incredibly expensive and impractical to cover the entire floor with matting. Only small portions of the mats are used at one time, and moving equipment cannot maneuver over or around them. The mat edges pose a trip hazard for mobile workers, and their weight and bulk make them difficult to clean.

THE COMFORTABLE SOLUTION: *ErgoMates*

ErgoMates provide a comfortable solution to the problems of pain, fatigue, and injury in the workplace. The same factors that motivate companies to purchase anti-fatigue matting apply to *ErgoMates* as well, with the added benefit of mobility and slip-resistance. *ErgoMates* can be used on their own or as a complement to an existing anti-fatigue matting system. They are recommended for use in workplaces where employees are mobile or where traditional mats are ineffective or inefficient due to moving equipment, space constraints, or sheer size. *ErgoMates* are the only product to exceed employer and employee expectations for comfort and safety.

How *ErgoMates* work

ErgoMates have a U.S. patent as the world's first and only mobile anti-fatigue matting system. By strapping *ErgoMates* onto existing footwear, employees take the mat with them. When work is finished, *ErgoMates* are simply removed and stored for their next use. *ErgoMates* are not a replacement to existing footwear, but have been designed to prolong the life of shoes and boots while maintaining all CSA safety warranties.

ErgoMates' innovative 2-ply sole successfully reduces fatigue by as much as 50%. Wearing *ErgoMates* while standing or walking causes muscles to expand and contract, which increases blood flow and dramatically reduces fatigue. The cushioned outsole absorbs impact shock and vibration, and insulates the feet from cold shop floors.

ErgoMates also reduce slips and falls. Precision Testing Laboratory, an independent testing lab in Nashville, found *ErgoMates* to be significantly more slip-resistant than most slip-resistant footwear.¹¹ *ErgoMates*' unique strapping system makes the product "one" with the shoe or boot. When the correct size is worn, there is no additional risk of slipping, tripping, or falling.

Return on investment

There is neither an insole nor outsole on the market that can duplicate *ErgoMates*' ability to reduce pain, fatigue, and impact shock. Employees who use *ErgoMates* enjoy greater vitality, mental acuity, dexterity, physical agility, and job satisfaction. As a result, employers benefit from increased productivity and quality of work, and decreased absenteeism, compensation claims, and incidence of costly mistakes. *ErgoMates* give companies the competitive advantage and provide a strategy for maintaining valuable workers.

ErgoMates are cost-effective for an employer to supply or an employee to purchase. Each pair has an average lifespan of three to nine months, depending on the weight and usage of the person wearing them. For a cost that varies between 3 and 10 cents per hour, employees gain energy and vitality, and employers gain additional profit.

A recent U.S. study found that common pain conditions (back pain, arthritis, and musculoskeletal disorders) among active workers cost approximately \$61.2 billion per year in lost productivity. Those suffering from back and musculoskeletal pain lose an average of 5.5 hours per week in productive time.¹² For a worker in the manufacturing industry, whose average wage is \$28/hour,¹³ the cost of lost productivity to the employer is \$8000 per year (based on a 40-hour work week). At \$0.03/hour (\$62/year), *ErgoMates* provide a 129:1 return on investment (or 38:1 based on \$0.10/hour). The cost of ignoring the issues of pain and fatigue in the workplace is far greater than the cost of a proactive approach.

Where *ErgoMates* are used

Industries that use *ErgoMates* include postal service, assembly lines, manufacturing plants, machine shops, retail, health care, and food processing. *ErgoMates* are so effective that six of the top ten Fortune 100 companies have purchased them for their employees, giving them the competitive advantage. Companies that use *ErgoMates* include Boeing, Lockheed Martin, U.S.P.S., U.S. Air Force, U.S. Navy, U.S. Army, Toyota, General Motors, Ford, General Electric, Exxon, Chevron, Delta Faucet, La-Z-Boy, and Hallmarks Cards.

Availability

ErgoMates are available in two colors (black or white) and five sizes for both men and women. They easily strap on to any street or safety footwear, and can be washed in the washing machine or dishwasher and air-dried. *ErgoMates* can be purchased at various work-supply stores in the United States, Europe, and Canada, or through the company website at www.ergosusa.com or www.ergos.ca.

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- ⁴ “Repetitive Strain Injury,” *Repetitive Strain Injury Association*. Available from <http://www.rsi.org.uk/-headerpage1.asp>.
- ⁵ “Working On Your Feet,” *OHCOW*.
- ⁶ Stephen G. Minter, “Underestimating Slips and Falls,” *Occupational Hazards*, July 10, 2004. Available from http://www.occupationalhazards.com/safety_zones/37/article.php?id=12462.
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- ⁸ *Canadian Centre for Occupational Health & Safety*, Nov. 26, 1997. Available from <http://www.ccohs.ca/oshanswers/ergonomics/mats.html>.
- ⁹ R. Cham and M.S. Redfern, “The Influence of Flooring on Standing Comfort and Fatigue,” *Human Factors: Journal of the Human Factors and Ergonomics Society*, Volume 43, 2001.
- ¹⁰ Sharon Taylor, “The Human Factor—Sole Survivor,” *Canadian Occupational Safety Magazine*, July 2005. Available from <http://www.industrialsourcebook.com/cgi-bin/archive.pl?id=916>.
- ¹¹ Slip Resistance Test ASTM F1677: Quarry Tile Surface. Tested by Richard Hannon of Precision Testing Laboratories, Nashville, TN.
- ¹² Walter F. Stewart et al, “Lost Productive Time and Cost Due to Common Pain Conditions in the US Workforce,” *Journal of the American Medical Association* 290 (Nov. 2003). Available from <http://jama.ama-assn.org/cgi/content/abstract/290/18/2443>.
- ¹³ “November 2004 National Industry-Specific Occupational Employment and Wage Estimates,” *Bureau of Labor Statistics*. Available from http://www.bls.gov/oes/current/naics4_336400.htm.