

## **Maintaining Employee Productivity: Why An Employee Maintenance Center Works!**

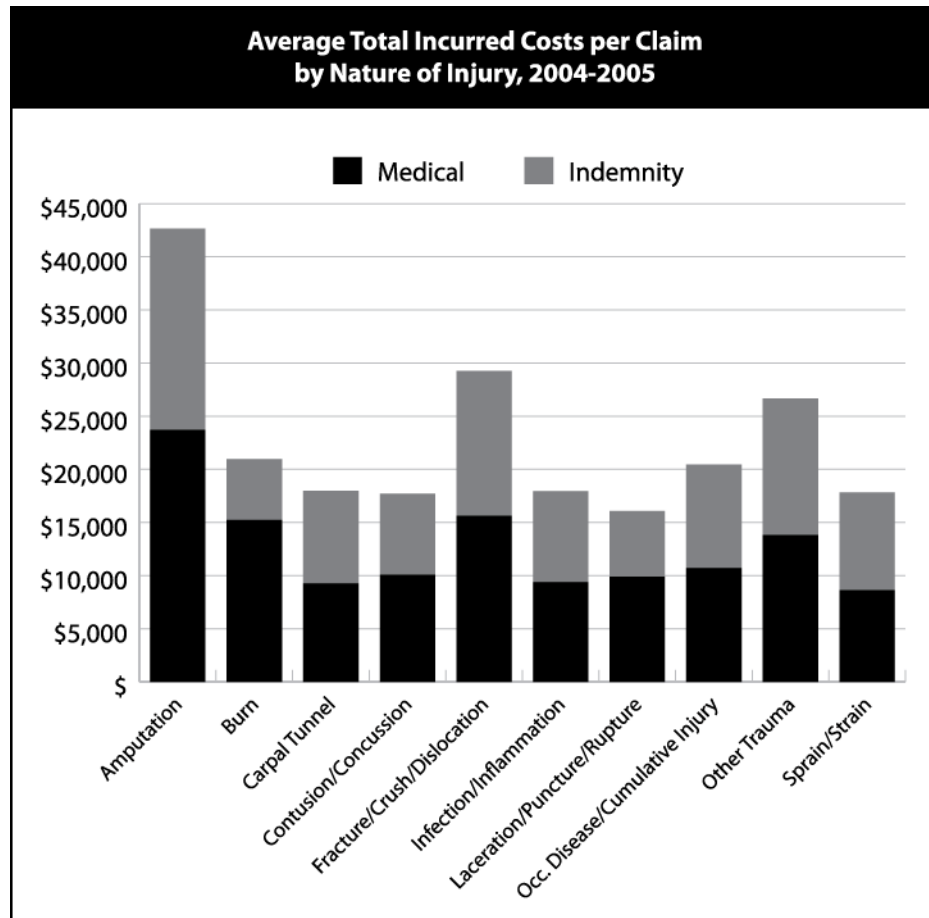
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### **Introduction**

Workplace injuries are a considerable encumbrance to business today. They are costly in terms of economics, productivity, morale and competitiveness. What used to often be considered a cost of doing business has become the kind of problem that can no longer be overlooked. The stakes are simply too high. For every workers' compensation claim opened, there are both hard and soft costs. Hard costs, also called direct costs, are those that are able to be measured directly, such as medical and lost-time expenditures. These costs are typically paid for by workers' compensation insurance. To get an idea of the scope of the problem at hand, the National Safety Council (NSC) indicates that, in 2005, \$55.3 billion was paid out in direct costs for workers' compensation claims.<sup>1</sup> Soft, or indirect costs, are those that are less easily measured but very often of much greater impact than the hard costs themselves. Soft costs include those expenses associated with overtime, worker replacement, decreased productivity, investigations, lower morale, increased absenteeism, administration, and claims management. Whereas hard costs are often covered by workers' compensation insurance, soft costs are absorbed by the company directly, typically at the local or site level. According to the Liberty Mutual 2001 Executive Survey of Workplace Safety, for every one dollar spent on injury-related direct costs, three to five dollars was spent on indirect costs.<sup>2</sup> In many industries, the hard cost multiplier is estimated to be far greater than three-to-five dollar example referenced here. In any case, the economic impact of the work-related injuries is abundantly clear. Exhibit 1 illustrates the medical and indemnity costs associated with claims by types of injury for 2004—2005.

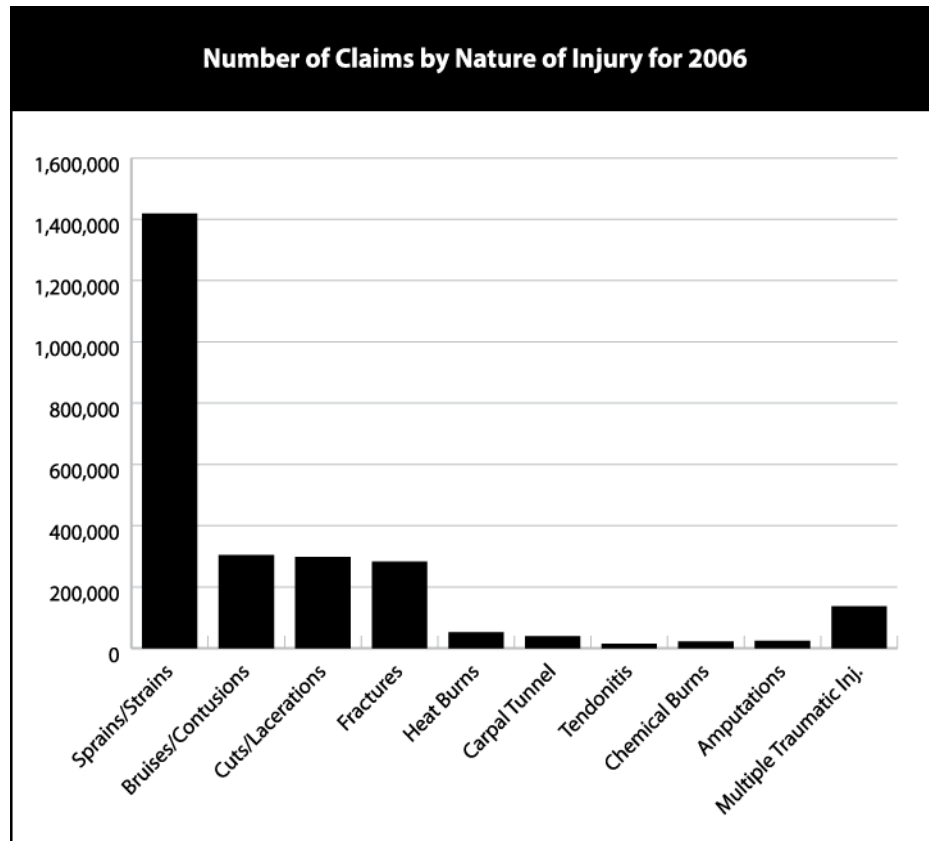


Source: National Safety Council Injury Facts 2008 Edition

**Exhibit 1. This graph details costs per claim by nature of injury.**  
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Exhibit 2 details the number of claims by type of injury for 2006. Exhibit 3 lists total claims, average cost per claim, and total costs for claims by injury type using 2004, 2005 and 2006 data.

Aside from the economic costs, work-related injuries have a human cost as well. For the injured worker, there is a reduction in wage, as well as the reduced ability to provide for his or her family. Psycho-social strain and, in some cases, “fear-avoidance behavior” can also be consequences of the work-related injury. Fear avoidance is the concept whereby the injured worker, unable to work for a period of time following injury, develops concern or fear about returning to work. This fear, founded or unfounded, will often influence the pace at which the injured worker transitions back to the job after injury; in some instances, the worker never returns to the job. The greater the worker’s apprehension and concern, the longer the delay in returning to work will be. The longer the delay, the greater the costs associated with the claim will be.



Source: Bureau of Labor Statistics

**Exhibit 2. This graph details the number of claims by nature of injury.**  
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### Estimated Total Medical Cost by Nature of Injury

	Total Claims	Avg. Cost per Claim	Total
Sprains/Strains	1,418,210	\$17,893	\$25,376,031,530
Bruises/Contusions	303,770	\$17,690	\$5,373,691,300
Cuts/Lacerations	298,360	\$16,081	\$4,797,927,160
Fractures	282,330	\$29,250	\$8,258,152,500
Heat Burns	52,310	\$20,971	\$1,096,993,010
Carpal Tunnel	39,020	\$17,971	\$701,228,420
Tendonitis	14,260	\$20,449	\$291,602,740
Chemical Burns	22,470	\$20,971	\$471,218,370
Amputations	23,970	\$42,637	\$1,022,008,890
Multiple Traumatic Inj.	136,690	\$26,649	\$3,642,651,810

Note: These results were obtained by multiplying the costs per claim by nature of injury for 2004-2005 from the National Safety Council times the number of claims by nature of injury for 2006 from the Bureau of Labor Statistics.

**Exhibit 3. This table details claims costs by nature of injury.**  
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## Why Do Injuries Occur?

There are two basic types of injuries that occur in the workplace: macro-traumas and micro-traumas. Examples of macro-traumas include cuts, fractures, contusions, amputations, foreign bodies, and burns, all of which are associated with readily identifiable causative incidents leading to onset. Examples of micro-traumas, also referred to as musculoskeletal disorders (MSDs), are carpal tunnel syndrome, tendonitis, overexertion, repetitive stress, overuse injuries, and the slow onset variety of sprains and strains. The Bureau of Labor Statistics (BLS) report for 2006 indicated the primary type of injury and illness across all sectors of industry was sprains and strains.<sup>3</sup> Also, according to the BLS, the median number of days away from work relating to MSDs was nine, two days longer than the median number for all cases where lost time was involved.<sup>4</sup> With macro-traumas, it is often a failure to observe and follow existing safety practices and protocols that leads to these types of injuries. Micro-traumas, on the other hand, can be quite confounding. These injuries do not typically have identifiable incidents of onset and are therefore less easily prevented through safety training, adherence to OSHA standards, and the use of personal protective equipment (PPE). The causes of these injuries are also particularly difficult to pinpoint, which makes it a challenge to try to engineer the work environment to reduce these types of injuries.

It is this author's experience that all workplace injuries are ultimately the result of a breakdown or inconsistency in one or more of four key areas: bio-physics, ergonomics, education, and awareness. Bio-physics is the primary area on which this paper will focus, particularly as it relates to the micro-trauma injury, but the other three areas are worthy of mention. Ergonomics is the science that considers how the human being interacts with and functions in the work environment such that the environment is designed and engineered to allow for safety and efficiency in the workplace. Education pertains to whether or not employees possess the know-how to do their jobs, and use their tools and facilities safely and efficiently. Finally, awareness is the collective consciousness that projects safety as an always-present feature of an overall business culture.

Historically, it is in the areas of ergonomics, education and awareness that a majority of safety program and safety engineering efforts have been focused. These efforts have remarkable benefits, clearly reduce work place risk, and help to prevent injuries. But why do injuries continue to occur? Why have organizations, despite allocation of tremendous resources for safety, not been able to develop better immunity to the micro-trauma injury?

Currently, when employees bring attention to aches and pains that are provoked by job tasks, there are few options available to the supervisor, company OHN and EHS professional to try to help. Many organizations have a "first report" documenting system that, among other functions, enables employees and supervisors to go on record when job-related pain is occurring. First reporting is often the process that occurs when there is a safety issue or "near miss" that needs to be investigated, but that does not result in an injury or the opening of a claim. While the first report can prompt an investigation into the specifics of the job that cause employees' pain, the report process too often fails to yield a solution. The result is that employees maintain stoicism, continue to work in pain, and often do so until the symptoms become intolerable and reach injury status.

In today's economy, this scenario can be especially prevalent as there are number of factors that will influence employees' decision to remain silent when in pain. Most significantly, workers in all sectors recognize when their employers are facing hard times. Whether it is loyalty to the company or interest in preserving one's job, these are certainly variables that may motivate employees to remain silent

when in pain. Alternatively, there is another variable that is having an impact on work injuries: our healthcare system. After more than a decade of rapidly escalating healthcare premiums, employees, as well as employers, are feeling the financial impact. Gone are the days of the \$5 to \$10 dollar insurance co-pay and the \$200 insurance deductible. The increased cost of health insurance is shouldered by employers and employees alike. Today, we commonly have insurance co-pays ranging from \$15 to \$30 dollars, with some as high as \$50 dollars. Insurance deductibles are even more daunting, commonly ranging from \$1500 to \$3000. With the inflated, out-of-pocket costs consumers must come up with before insurance benefits can be accessed, utilizing the healthcare system for services is far less palatable. Thus, it is no longer a stretch of the imagination to consider that many non-work-related conditions, employees' aches and pains in particular, can become the burden of employers. When forced to choose between an expensive healthcare service and an otherwise no-cost workers' comp claim, employees' choices in these situations can certainly impact the company. When the first report system discussed above is not a viable solution, the other currently available option, opening a claim, is chosen.

What if there were another option? What if employees had access to an effective solution that went beyond first reporting but stopped short of having to open a costly claim?

## **Employee Maintenance: Prevention for the Industrial Athlete**

A nascent concept in workplace safety is "employee maintenance." Companies spend tremendous sums of money and allocate extensive resources to maintain their equipment and facilities with the expectation that these investments will result in fewer interruptions in business, increased productivity, increased efficiency and a healthier bottom line. What about employees? Should they not also be maintained? Are they not as valuable an asset as the company's equipment and facilities? Would maintaining employees not yield the same benefits discussed above?

### Getting to Employees in Pain Quickly

One area at which we can look to answer the above questions is professional athletics. Whether discussing team or individual sports, there are always commonalities among professional athletes. One such commonality is that when the athlete develops aches and pains, from strenuous practice or competition for instance, great efforts are made to alleviate these symptoms quickly. The intention is to prevent the symptoms from escalating to the extent that they negatively impact the athlete's ability to practice and perform optimally, and to prevent them from intensifying to the point of injury. Modalities employed in this capacity run the gamut and include ice, heat, stretching, and massage to name a few. Though a rapid response to symptoms and its preventative value are routinely accepted as standard practice in high-level sports, curiously this concept has not yet transcended the world of athletics.

For the "industrial athlete" too there is very often a period of time between the initial onset of pain and the point at which the condition reaches injury status. It is within this period of time that a significant and, as of yet, unexploited opportunity for prevention lies. Specifically, the opportunity for prevention involves addressing employees' pain quickly, as part of an overall employee maintenance strategy. When set up correctly, an employee maintenance program provides, among other benefits, an effective solution to employees' pain. Such a program also eliminates the barriers that dissuade employees who are stoic about their pain from seeking care for their symptoms. Alternatively, it gives employees considering a workers' comp claim as a solution for non-work-related symptoms an ethical, more palatable option for addressing them.

### Bio-physics and the Industrial Athlete

Revisiting the model of professional athletics, another commonality among all high-level athletes is that their physical attributes are maintained at peak levels so they can perform at the highest level while minimizing the chances of injury. Specifically, their physical conditioning— strength, flexibility and endurance—is maintained at an optimum level. Maintenance and conditioning of the sports athlete is also specific to the sport in which the athlete must perform. Additionally, if and when less serious injuries are incurred, the superior conditioning of professional athletes enables them to return to the playing field in comparatively short order. Just as professional athletes are maintained for peak performance on the field, so too should industrial athletes be maintained for peak performance on the job.

In the industrial world, one area of prevention that has been overlooked is employees' bio-physics. Bio-physics pertains to the physical attributes that employees must possess to be able to perform their jobs comfortably, efficiently and safely. Bio-physical characteristics include strength, flexibility, joint range of motion, and endurance. When considering these variables, it is clear that it is difficult for traditional safety engineering to directly impact them directly. The problem is that when employees lack adequate levels of one or more of these attributes, they will have less tolerance for the physical stresses of their jobs. When the physical stresses of the job exceed employees' physical capacity to tolerate them, the onset of pain, if not injury, occurs.

As such, another primary focus of an effective employee maintenance program should be enhancing employees' bio-physics. Like the high-level sports athlete, the industrial athlete also requires ongoing maintenance in the form of conditioning. Conditioning, strengthening, and flexibility primarily can be joint-specific but should also be job-task specific, just as the sports athlete's conditioning is often sport-specific. The stronger and more flexible the industrial athlete, the better able to tolerate physical stresses he or she will be.

To this end, many companies have made efforts at improving employees' bio-physics. These efforts have included offering corporate-sponsored memberships at local health clubs and providing corporate wellness programs; some organizations have even constructed full-scale fitness facilities on the jobsite. While well-intentioned, these endeavors have very often missed the target of reducing injuries by improving employees' fitness. Perhaps the biggest reason why these offerings have not worked is because the people that need them the most, the most at-risk employees, tend not to use them. Many of today's most at-risk workers are those who have never embraced fitness as a lifestyle choice to begin with. These are the employees that are often already in pain and that are not likely to view a health club or fitness facility as a solution. Additionally, for these folks the health club can be a particularly intimidating or demeaning environment. With little to no experience around exercise equipment and a negative body image, these are not the people reaping the benefits of the employer-sponsored health and fitness facilities. There are certainly employees that cherish and benefit from these offerings but the reality of these costly investments is that they too often fail to prevent injuries.

## **The Employee Maintenance Center: Why it Works**

An Employee Maintenance Center, or EMC, is an at-the-jobsite facility that specifically focuses on injury prevention by addressing employees' pain and bio-physics. It is staffed with skilled healthcare professionals and equipped with the tools and technology to reduce symptoms and produce measurable changes in muscular-skeletal health. An EMC is the cornerstone of an effective employee maintenance program.

An EMC works because it effectively bridges the gap between healthcare and health club. It takes best practices from orthopedic physical therapy and professional sports and combines them to meet the specific needs of industry and the industrial athlete. Finally, an EMC removes many of the barriers that get in the way of employees taking personal responsibility for their health.

### Helping Employees in Pain

As part of an injury prevention strategy that focuses on bio-physics, ergonomics, education and awareness, an EMC works for a multitude of reasons. First, it provides at-risk employees with a viable solution for their symptoms, work-related or not. As was previously discussed, the sooner employees' symptoms are addressed after initial onset, the greater the opportunity to prevent aches and pains from becoming costly micro-trauma injuries. In response to employees' pain complaints, an EMC does what a first reporting system cannot and, very often, prevents claims from opening at all. With the ability to reduce and, in many cases, eliminate pain, the EMC staff solidifies relationships with workers such that the space for a coaching relationship around fitness and conditioning can be created.

### Convenience

An EMC provides a number of conveniences that make it easy for workers to be proactive about their health and bio-physical conditioning. Because an EMC is located at the jobsite, the barrier of traveling to and accessing a fitness facility is eliminated. Offered at low- or no cost to employees, an EMC removes the economic barriers that dissuade the use of the healthcare system when pain symptoms arise. An EMC also provides an alternative to medical provider visits that result in the dispensing of prescription medication. Consumers' perceptions about the benefits and safety of medication are increasingly skeptical, and they often seek solutions that address the underlying cause of their pain, not simply their outward symptoms.

Other conveniences are that employees can access the EMC during break times, before or after shifts, and on days when not on shift. The model of care delivery in an EMC is unlike that which is seen in our healthcare system, so individual encounters at the center are brief in nature, adding further appeal to the EMC as a solution. Additionally, while pain is often the motivating factor that prompts one to access the EMC, one does not need to have symptoms to be able to use it. In a best-case prevention scenario, the very purpose of an EMC is for workers to use its services before pain arises. In the absence of pain or injury, the conveniences discussed above provide reason enough to utilize it.

### Relationship and Coaching

An EMC has coaches for the industrial athlete. Unlike the potentially intimidating health club environment, where the novice is essentially on his or her own to exercise in an unfamiliar setting, the EMC staff act as personal coaches who take the time to educate and to make safe the prospect of exercising to improve bio-physical health. The result is that individuals who may never have considered fitness as a lifestyle choice for themselves often become open to the possibility of exercise as a mechanism to reduce pain and prevent injury. Adding to the concept that an EMC is a "safe" environment is the fact that it is confidential. Names of EMC participants, the conditions for which they seek help, and the services rendered to them are all considered protected health information under HIPAA guidelines, and are therefore not shared with the employer except as legally permissible.

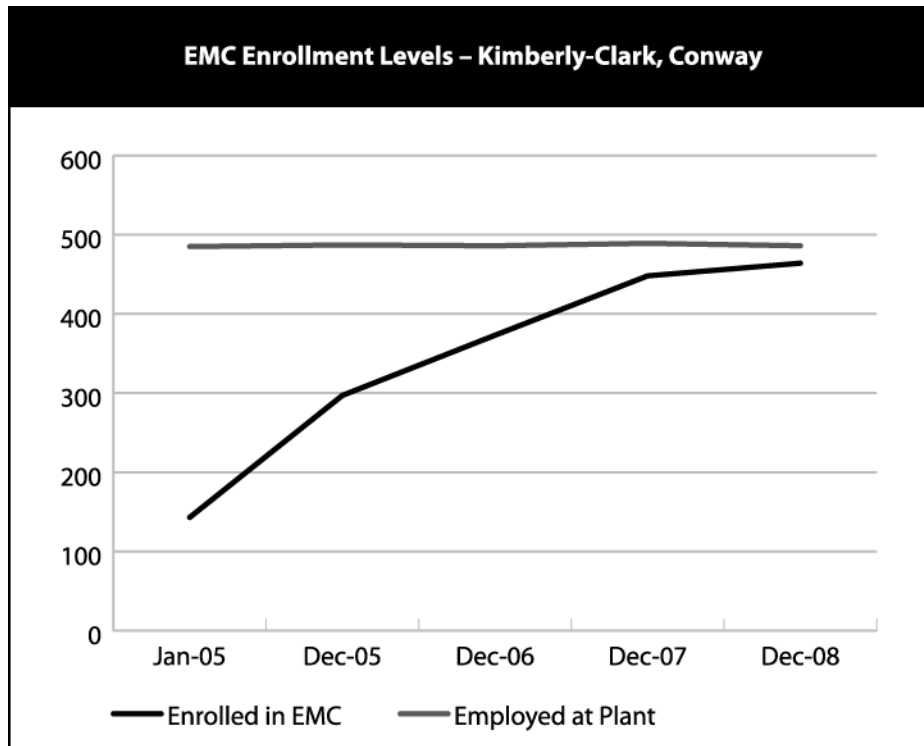
### Measurable Results

When set up correctly, an EMC has the tools and technology in it to produce measurable improvements in bio-physical health. When participants are presented with objective evidence demonstrating increases in

joint-specific strength, joint range of motion and flexibility, it serves as the powerful feedback and coaching tool that keeps them engaged and participating. EMC utilization remains high, yielding a more robust return on investment for the company.

### Return on Investment

As it relates to return on investment (ROI), let us look at a case study involving the use of an EMC in a manufacturing facility. In late 2004, Kimberly-Clark's Conway, Arkansas, facility contracted with a vendor that provided workplace risk reduction and injury prevention services, including Employee Maintenance Centers. Kimberly-Clark (K-C) is a Fortune 200 corporation operating manufacturing facilities in North America. A primary reason for the 2004 implementation of an EMC in the Conway location was this plant's substantial increase in the number of claims, particularly those of the micro-trauma variety. Under the supervision of the facility's safety department, the EMC began full operation in January 2005. As reported in the article, "Breaking Through the Musculoskeletal Injury Plateau," published in the *Journal of Workers Compensation*, by the end of the first year, 297 of the 480 employees, 62%, accessed the EMC's services.<sup>5</sup> There was also a substantial reduction in claims costs associated with both micro and macro-trauma injuries.<sup>6</sup> Claims costs for micro-traumas alone decreased from over \$250,000 in 2004 to around \$150,000 in 2005, and total medical costs for injuries decreased from nearly \$350,000 to between \$150,000 and \$200,000 in the same time period.<sup>7</sup> By the end of the EMC program's second year, 70% of the K-C employees had accessed the EMC and an even greater reduction in injury claims costs were observed.<sup>8</sup> In 2006, claims costs associated with micro-traumas were effectively eliminated altogether, and total medical costs for claims were reduced to approximately \$125,000.<sup>9</sup> Thus, in two years, total medical claims costs were decreased by 64% percent. By December 2008, 88% of the plant's population had accessed the EMC's services.<sup>10</sup> Exhibit 4 shows the EMC four-year participation trend.



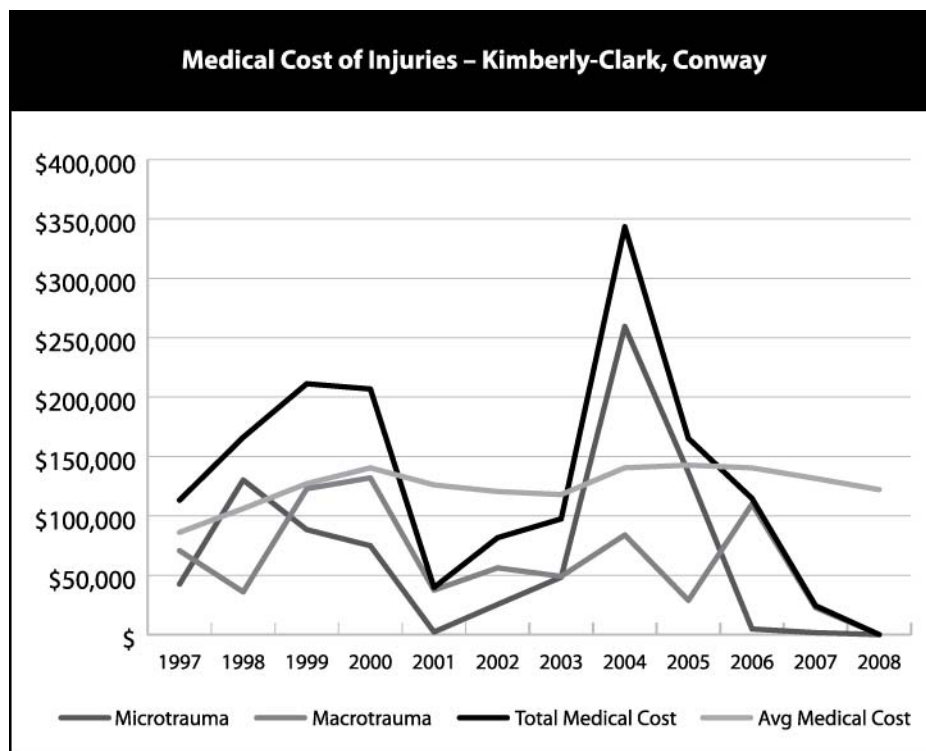
**Exhibit 4. This graph shows a five-year participation rate of an EMC.**  
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At the time this *Journal of Workers Compensation* article was published in 2008, K-C's Conway plant had not incurred any claims costs relating to micro-traumas between 2006 and 2008; macro-traumas had also seen a continuous decline; and total medical claims costs had decreased to nearly \$0. Exhibit 5 illustrates the cost trends for injuries at this location before and after the EMC implementation.

#### Work Injuries and Return to Work

Another value an EMC provides is that it can minimize the costs of injuries when they occur. First, an EMC can be staffed and equipped comparably to an outside physical therapy clinic. The EMC can ultimately function as the rehab center for the injured employee. If the employee is injured but still working, the onsite convenience of the EMC precludes the need to travel to the outside rehab provider. Thus, productivity is maintained, and the worker receives the necessary rehab services. Whether the employee is off work due to injury or not, having the rehab services done in-house provides a clear savings on medical expenditures. When considering that typical physical therapy protocols involve a visit frequency of one to three times per week, the benefit of the in-house service adds up quickly as far maintaining productivity and reducing medical costs.



**Exhibit 5. This graph shows a claims cost trend at a manufacturing plant that installed an EMC in 2005.**  
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Additionally, as the injured employee returns to the job, an EMC also functions as a bridge between the end of rehabilitative healthcare and the resumption of work. For example, should the injured worker use an outside physical therapy center for injury rehabilitation, the EMC ensures that the employee maximizes the benefit of the outside rehab program. Joint range of motion, flexibility, strength and conditioning gains are all maintained, and the EMC serves as a means of quelling any symptom exacerbations that may occur as work is resumed. The return-to-work function of the EMC is essentially to ensure that the returning employee can tolerate the physical stresses of the job and avoid re-injury.

## Conclusion

Workplace safety has made tremendous strides towards reducing risk and decreasing injuries. However, there remain unique opportunities to further impact injuries, increase worker productivity, and improve companies' bottom lines. These opportunities exist within the burgeoning arena of employee maintenance. By addressing employees' pain quickly and by enhancing their bio-physical attributes, an Employee Maintenance Program can deliver a tremendous return on investment in the form of fewer injuries and claims. Finally, an EMC can add a new facet to existing safety programs and safety departments that are committed to every worker's returning home from work uninjured every day.

## Endnotes

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5. Shuford, T., Nelson, D., and Siegel, J. "Breaking Through the Musculoskeletal Injury Plateau: A Report." *The Journal of Workers Compensation* 17 (2008): 9-28.
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10. Ibid.