

WHY CAN'T WE

# Solve

THE SOFT-TISSUE INJURY DILEMMA?

By DONALD J. ECKENFELDER

**T**hat's a good question. My answer is: Safety professionals have failed to adequately define the problem. The keynote presentation by Assistant Secretary of Labor for OSH Charles Jeffress at ASSE's 1999 Professional Development Conference in Baltimore provides evidence to support this thesis. In essence, Jeffress said that approval of the proposed ergonomics standards would, in large part, solve the soft-tissue injury problem.

In my opinion, that mindset—coupled with the prevalence of a quick-fix mentality—is the primary reason for the repeated failures (over the last decade) to reduce the pain and suffering (not to mention cost) related to musculoskeletal injuries. Although the effectiveness of a holistic approach was demonstrated almost two decades ago, it has largely gone unheeded.

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#### WHY WE MISS THE POINT

The safety profession is burdened with a history of looking for *the* cause of accidents—despite the knowledge that most losses are the result of multiple causes. Nowhere is this oversight more obvious—and more costly—than in the case of soft-tissue injuries.

For example, typical investigations of back injuries require that a specific time of the “accident” be recorded in the accident report. In my experience, back injuries are almost always the result of repeated strain, often occurring over years.

For many years, loss prevention was seen as a technical problem. Then, behavioral scientists advanced the theory that accident prevention was a behavioral problem. Certainly, technology can reduce risk, just as shaping behaviors with soon, certain, positive reinforcement can reduce exposures.

However, these elements are only two ingredients in loss-resistant environments—they are not at the heart of the matter. Attitudes are: they reflect organizational culture, which is shaped by what the workforce believes and values.

Several myths cloud efforts to abate soft-tissue injuries.

- Jobs can be designed to limit physical stress and eliminate these injuries.
- Employees will not participate in an exercise program.
- No good model exists for successfully dealing with soft-tissue injuries.
- Many employees are malingerers.
- Traditional medicine, if practiced well, can “heal” soft-tissue injuries.
- Better application of traditional loss prevention strategies is the solution.
- Workers’ compensation (WC) laws are the problem; if they were less liberal, the problem would disappear.
- If employers would select and place the right people in the right job, soft-tissue injuries could be avoided.

#### CASE HISTORY I

In the early 1980s (before these injuries became widespread and when few were familiar with ergonomics), G.H. Bass and Co., a Maine-based shoe manufacturer, and Healthtex, a Rhode Island-based children’s apparel manufacturer, experienced a surge in micro-cumulative trauma injuries. The result: annual WC costs above \$10 million for a few thousand employees.

Initial efforts sought to change state law. When this failed, the focus turned to accident prevention. Considerable resources were spent to create a world-class ergonomics process. These efforts resulted in greatly improved workstation design, yet the improvement in costs and losses was not dramatic.

Then, a comprehensive approach that featured enlightened return-to-work programs, early intervention, employee and

management education, and aggressive claims handling was initiated. Within two years, costs fell below \$1 million per year.

At the time, it appeared the approach and its various elements had produced the improvement. Upon reflection, however, it is clear that what actually facilitated the improvement was an attitude change. Managers and supervisors came to realize that the injuries were not fabricated. Workers understood the etiology of the injuries, and accepted and applied engineering solutions and embraced exercise programs. Not only did they accept these solutions, they also clearly understood the value of their participation in the prevention and rehabilitation process.

I believe the same result would have been achieved earlier had beliefs and values that led to organizational culture and employee attitudes been addressed earlier and more forthrightly. The programs implemented would still have been needed, but the programs would have worked sooner because employees would have greeted them with acceptance rather than skepticism and resistance.

#### CASE HISTORY II

A major international manufacturer of small composite metal/chemical items—often handled in tote boxes—noted a growing number of soft-tissue injury disabilities among its employee. Although the workforce was aging, the site had a history of excellent safety performance.

In response, the company instituted an ergonomics effort. Job safety analysis was applied rigorously and all accidents were investigated. In other words, all traditional safety elements were in place. The problem abated for a short period, but injury totals soon began to climb again.

The company then took a deeper look at the root cause of the problem. Subsequently, the facility implemented a more-comprehensive approach to prevention that included onsite therapy, work hardening and employee education concerning soft-tissue injuries. The situation improved.

In this case, the correct culture was present, but it was not tailored to the unique aspects of soft-tissue injuries. Once this was recognized, the culture was modified and success achieved in a matter of months. The new programs were the force instruments that facilitated improvement; the culture adjustment was the driver that caused application of the instruments to be effective.

#### JOB REDESIGN ALONE DOES NOT WORK

The more one reduces stress, the more one reduces the body’s ability to cope with stress. Therefore, the effect is not to reduce the probability of injury, only the stress level at which musculoskeletal injury will occur.

For example, in the early 1980s, shoe and apparel workers began to report repeated strain injuries. To execute their tasks, these workers performed rapid movements while working at unnatural angles and often with significant force (particularly in the shoe industry).

Why had such injuries not emerged sooner? One can cite many reasons, including worker fitness and increased physical demands (both due to machinery and output demands), as well as the fact that years ago, workers who “broke down” simply left—they did not become statistics. Another consideration is the psychological overlay problem, which was not so prevalent years ago—or at least was not recognized and labeled.

And, why did the problem manifest itself years later in less-physically demanding jobs such as keyboarding? The answers are the same, but lower physical demands delayed the onset.

So, the question remains. Will reducing physical demands stop soft-tissue injuries? In my opinion, no—unless the many other factors contributing to the malady are addressed concurrently, and the psychological factors are understood and factored into any solution.

Soft-tissue injuries involve significant psychological elements, which are often ignored. Delayed recovery occurs in every injury and illness—and it is found far more frequently in soft-tissue injuries than in traumatic injuries. Why? “Delayed Recovery in the Patient with a Work Compensable Injury,” an article in the November 1983 issue of *Journal of Occupational Medicine*, provides some insight (Derebery and Tullis).

Delayed recovery occurs in soft-tissue injuries because of their insidious nature, coupled with the often-inappropriate treatment that focuses on rest, pain killers and surgery rather than on more-productive—and less-invasive—strategies such as manipulation, stretching and exercise.

Rest causes atrophy; painkillers mask the real problem and often lead to re-injury (and perhaps addiction and chronic pain); surgery often repairs some soft tissue at the expense of other soft tissue. My experience—which includes feedback from a consulting occupational physician who had conducted extensive medical records analysis—leads me to conclude that in chronic cases, surgery often does more harm than good. Conservative treatment should be exhausted before turning to more drastic measures such as surgery.

The true solution, therefore, begins with recognizing the psychological components. This requires knowledge of high-risk factors involved (Derebery and Tullis). Then, the injury must be accurately diagnosed using ranges of motion, palpation and strength testing to replicate pain and accurately define both the site of the prob-

lem and the etiology of the injury. The diagnostician must understand the work performed and record a comprehensive medical history that identifies off-the-job hobbies and activities, which are often components in the affliction.

Then, treatment must be prepared to address neurosis, depression and malingering (although, in my experience, the latter is rarely a factor). Treatment must also include vocational, activation, narcotic cessation and relaxation components. Early return to appropriate work is essential. Bed rest and use of painkillers should be minimized, and the use of hot packs, massage, ultrasound and other passive forms of therapy avoided. Since psychological stress—both on and off the job—are often precipitating factors in soft-tissue injuries, in my experience, relaxation therapy combined with awareness training is often beneficial. As this discussion shows, treatment of delayed recovery is not a well-defined science but rather an intuitive art.

#### PRECIPITATING FACTORS

Identical jobs in similar environments with comparable worker demographics can and do produce dramatically different frequency of soft-tissue injury disability and, in turn, different incidences of delayed recovery. Why?

Based on my experience, common reasons include:

- plant closing or major downsizing;
- liberalized WC legislation or advertisements soliciting claims;
- aggressive legal community specializing in WC;
- erosion of company loyalty (e.g., family-owned company sold or work stoppages);
- increase in psychological stress due to factors such as depressed economic conditions;
- magnified physical stress due to aggressive incentive programs, increased overtime or reduced job rotation;
- deterioration of employee and/or community relations;
- unenlightened healthcare providers;
- increased awareness of hazards associated with tasks such as keyboarding.

One or more of these factors can trigger a rash of injury complaints. Several occurring at once, coupled with jobs that have significant inherent physical stress, can produce an avalanche of claims, particularly among an aging workforce.

#### CHARACTERISTICS OF AN ENVIRONMENT RESISTANT TO SOFT-TISSUE INJURIES

The onset and proliferation of soft-tissue injuries is more often related to the characteristics or culture of the work environment than to the actual physical exposures, profile of the workforce or other easily quantifiable factors.

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Companies that deal effectively with neuromusculoskeletal exposures:

- Recognize the complexity of causation.
- Appreciate unique aspects of onset.
- View work as para-athletic and see workers as athletes.
- Consider/employ creative solutions.
- Feel comfortable with the application of exercise to warm-up, relieve stress and strengthen the body.
- Employ appropriate diagnostic procedures and techniques.
- Make therapy and consultation available on a timely basis for all workers.
- Utilize enlightened claims handling.
- Maintain intelligent return-to-work programs.
- Acknowledge the high incidence of delayed recovery in soft-tissue injuries.
- Select/place workers appropriately.
- Recognize and value the skills employees bring to the job.
- Understand the close relationship between low-back injuries and other soft-tissue injuries.

As this list of attributes suggests, dealing with soft-tissue injuries is more a cultural problem than a technical problem. Organizations that exhibit these attributes:

- Believe workers are basically honest.
- Understand that prevention and healing are a joint effort in which employees and employer must be partners.
- Enlist *all* employees in the prevention and healing process.
- Have leaders who set good examples; state correct precepts; and provide ongoing education on all aspects of prevention and treatment.
- Strive to protect honest employees from those who seek to abuse the system.
- Believe employees are entitled to the best healthcare available.
- Acknowledge that soft-tissue injuries are as real as lacerations, contusions and broken bones.
- Understand that soft-tissue injury prevention is unique and does not lend itself to traditional techniques.
- Recognize that back injuries are a category of soft-tissue injury and should be treated as such.

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•Believe that job rotation and job enrichment are good for many reasons.

•Understand that ergonomics is only one of many methods that must be applied to abate these injuries.

As a result of these beliefs, successful organizations value all employees; skilled caregivers; comprehensive education and those who provide it; accurate diagnosis and those who can provide it; aggressive claims handling and those who execute it; good employee and community relations and those who orchestrate them. The right culture based on correct beliefs and values predict organizational characteristics that not only lead to the right programs and processes, but also nurture and sustain them. An enduring effort is the only type that will work.

#### SUMMARY & CONCLUSIONS

Soft-tissue injuries are not the result of a technical shortfall. Therefore, technology will not—by itself—solve the problem. This problem is multi-causal and, therefore, abatement requires a multi-faceted approach carefully orchestrated based on the circumstances and culture of the affected workforce and its leadership.

Eventually, this culture will need to change. If such change comes as a result of programmatic effects, the process will take longer than if the culture is deliberately altered *first*, then programs instituted. By addressing culture first, new programs will be met with less resistance and will achieve results sooner. In addition, corrective measures are more likely to endure.

When asked, "How can we achieve the greatest impact quickly with the least expense?" my answer is "Provide an in-house trainer"—someone with a background in chiropractic, physical therapy or sports medicine. This trainer must be credible; like and understand the work environment and workers; and have solid knowledge of biomechanics and some background in ergonomics. A good trainer facilitates early intervention, which is key to preventing soft-tissue injuries.

My experience suggests that the right person will provide more than 50 percent of the solution for less than 10 percent of the cost (compared to ergonomic solutions that often cost more than 50 percent of the total approach and provide less than 10 percent of the solution).

The best model of this process is professional sports teams, which hire strength coaches and provide elaborate

exercise equipment to their employees. Worker athletes will respond in much the same way professional athletes do. The injuries employees incur are often similar to those athletes suffer—and they respond to care and treatment in the same way as the athlete. An athlete returns from injury gradually in order to build strength and avoid re-injury; the same process works for the worker athlete. If a highly paid professional athlete incurs a minor injury, s/he is not asked to play through it; rather, s/he is immediately cared for. The same approach should be used for the worker athlete.

Until employers begin to treat worker injuries like those suffered by professional athletes—and recognize the futility of one-size-fits-all ergonomic solutions—failures will continue and only incremental improvements will be achieved, punctuated by regression and frustration as well as high capital costs. ■

#### REFERENCES

- Derebery, V.J. and W.H. Tullis. "Delayed Recovery in the Patient with a Work Compensable Injury." *Journal of Occupational Medicine*. Nov. 1983.
- Eckenfelder, D.J. "It's the Culture, Stupid." *Occupational Hazards*. June 1997: 41-44.
- Eckenfelder, D.J. "Professional Prosperity: The Narrowing Road." *Professional Safety*. June 1998: 32-35.
- Eckenfelder, D.J. "Safety Culture Enrichment: Why Take the Circle Route?" *Professional Safety*. May 2000: 42-43.
- Eckenfelder, D.J. *Values-Driven Safety*. Rockville, MD: Government Institutes Inc., 1996.

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