## Miller, Diane M. (CDC/NIOSH/EID)

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26-35Jan2006.pdf (339 KB)

NIOSH WorkLife Resource.doc (3...

**Attached is a cover letter with and the lead article that was published in the American Society of Safety Engineers' "Professional Safety" that supports 19 of 20 essential elements in the WorkLife initiative.**

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# Integrating Employee Safety & Fitness

## *A model for meeting NIOSH's Steps to a Healthier U.S. Workforce challenge*

**By Fred S. Drennan, James D. Ramsay and David Richey**

ON JUNE 20, 2002, President George W. Bush signed an executive order to promote personal fitness among the general public. The president's concern was the number of Americans suffering from lack of physical activity and poor dietary habits, and the failure of current practices to motivate the general public to improve. NIOSH took the lead in this initiative and later unveiled the Steps to a Healthier U.S. Workforce campaign to encourage workplace safety and health programs that focus on preventing work-related illness, injury and disability, and onpromoting healthier living and lifestyles to reduce and prevent chronic disease.

NIOSH held the first Steps symposium in October 2004. It brought together a small group of occupational safety and health practitioners and leaders from the health promotion community to look at the science, policy, practice and economics of integrating injury prevention and health promotion programs in the workplace. Although the benefits of integrated safety and health have been demonstrated by some forward-looking organizations, official endorsement of best practices by NIOSH will only occur as the result of demonstration projects and empirical study. As of this writing, NIOSH has invited requests for applications for up to $2 million for demonstration projects. In the long term, these will provide employers with validated direction in the area of integrated safety and wellness. But what can be done now to meet this challenge?

This article describes how one organization integrated a physical conditioning program into the daily safety routine in order to prevent injuries and motivate lifestyle change; compares the integrated approach with traditional programs; and describes a model for effective integration that has proven successful in the workplace. In addition, the article shares what members of ASSE's Steps Task Force believe NIOSH must do to successfully transition research to practice and offers suggestions on what actions SH&E practitioners can take to begin the integration process.

### The Healthcare Crisis & Productivity

According to the Office of the Surgeon General, 60 percent of adults are overweight and out of shape and do not exercise enough to maintain basic health. While being overweight, for example, is not the only indicator of poor health, having a high body mass index (BMI) (or fat-to-weight ratio) increases the risk factors

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for many chronic diseases. Common conditions related to being overweight and obese include cardiovascular disease, high blood pressure, osteoarthritis, some cancers and diabetes (Surgeon General).

As BMI increases, the health risks increase (CDC). For example, a person with a BMI of 40 or higher (obese) is seven times more likely to be diagnosed with diabetes. This person is six times more likely to have high blood pressure and four times more likely to have arthritis, compared to those with normal body weights (Mercola; Mokdad, et al). Lack of physical activity is a major contributor to increased BMI.

According to presenters at the Steps symposium, by the year 2013, more than one of four dollars of personal consumption will be spent on healthcare, causing a major impact on the country's economy. In his keynote address, NIOSH Director John Howard, M.D., said that these costs are "unsustainable." At a conference in Utah, Comptroller General David Walker of the Government Accountability Office said health spending will "break the economy" and the financial situation is "worse than advertised."

In a white paper prepared for the Steps symposium, Goetzel showed that the costs to American industry in lost productivity (due to workers' compensation injuries, healthcare costs and low output) when bundled together were more than $16,000 per employee for 2002. Using this model, this means that 60 percent of the 138 million workers in the U.S. are costing about $1.5 trillion in lost productivity. In a global marketplace, this high cost of unhealthy workers and lost productivity will diminish the competitiveness of American industry (Goetzel).

### Aging Workforce & Soft-Tissue Injuries

With baby boomers entering their 50s—and there are currently 76.9 million baby boomers in the U.S.—employers are feeling the impact of an aging workforce. As people age, they become less active. A natural process of aging is reduced flexibility and strength, which increases risk for injuries to backs, knees, shoulders and necks. These and other soft-tissue injuries are primarily the result of "wear and tear" and are influenced by a lack of basic fitness and health.

Workers who lack basic fitness are also prime candidates to experience musculoskeletal disorders (MSDs). Excess weight and lack of abdominal strength stress the low back. For example, when an overweight person bends to lift a load, the forces created in the spine are greater than they would be for a person of normal weight (Waters and MacDonald). It has also been found that obese people have three to five times the incident rate for carpal tunnel syndrome (CTS) compared to slim individuals (Nathan and Keniston). According to National Council on Compensation Insurance (NCCI), although recent analysis confirms that CTS injuries continue to account for a relatively modest two percent of total lost-time claims, CTS ranks second—behind back injuries—as the leading lost-time diagnosis.

### Low Participation in Wellness Programs

Efforts to help employees improve their health often originate in the human resources department. In the authors' experience, these efforts are often relatively passive and may include distributing brochures, hosting an annual health fair or providing Internet access to evaluate personal health factors. While such approaches have value, they rarely lead to behavior change. The programs are usually voluntary and reside outside of the management process, resulting in low participation rates, no measurement processes and negligible lifestyle changes. It should also be noted that safety efforts focused on regulatory compliance and employee behavior are narrowly focused on unsafe acts and conditions. As a result, they do not effectively address the lack of general fitness or the issue of aging and their impact on healthcare and related costs.

### Blurring of Occupational & Nonoccupational Injuries

Goetzel's white paper highlighted the current emphasis on work-related chronic conditions such as low back pain. It is considerably more difficult to determine the workplace causality of chronic conditions compared to acute trauma such as a slip or fall. The causality issue has helped to blur the distinction between occupational and nonoccupational injuries. Despite the reluctance to consider the two issues jointly, the changing nature of work and the workplace environment in the U.S. has begun to erode the justifications for keeping them separate (Seabury, et al).

### SH&E & Health Promotion Are Often Separate

In most organizations, SH&E and worksite health promotion (WHP) are separate entities, competing for the same resources. Working separately, SH&E and WHP have been unable to optimize worker health. It is believed that working together SH&E and WHP can better identify and mitigate both modifiable life risks and occupational risks. Their integration is warranted, logical and efficient because 1) they have the same mission; 2) they have the same clientele; 3) they have the same challenges and goals; and 4) they have similar training. Integrating the two fields can only help raise the value of both professions by combining resources to target employee safety and fitness, leading to new levels of excellence (Ramsay).

### Key Elements of an Integrated Safety & Fitness Program

These significant challenges can be overcome through well-designed, measurable, integrated systems. What does integration mean? To some, integration means reorganizing safety and occupational health departments under one umbrella. To others, it means providing employees more information about safety and health at home as well as at work. Many integration models, however, are little more than pinning a new name and face on the same approach.

Based on the authors' experience, it takes more than pamphlets, health fairs, combined departments and budgets, and subsidized gym memberships to motivate the general workforce toward fitness and

*According to the Office of the Surgeon General, 60 percent of adults are overweight and out of shape and do not exercise enough to maintain basic health.*

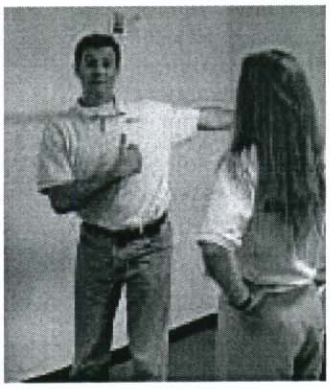


**Photo 1 (top): Sit and reach test measures hamstring flexibility.**

**Photo 2 (middle): Shoulder rotation measures shoulder flexibility essential to prevent strains and injuries.**

**Photo 3 (bottom): Mid-body rotation measures trunk flexibility essential to prevent strains to the torso.**

health. Only truly integrated systems —those that engage the first-line supervisor and individuals in daily, on-the-job activity—will produce the kind of lasting lifestyle change which will keep them healthy and productive throughout their working lives. Successful integrated programs share several key elements.

### *Senior Management Initiates Culture Change*

Senior management must set the priority, provide the training and systems, and support program integration. When management firmly links fitness and safety into training, systems and the operating culture, participation rates can reach 100 percent.

### *Supervisors Are Key*

Employees tend to adopt the supervisor's attitude about safety and health (Grazier). If the supervisor is enthusiastic and supports a daily safety/fitness program, employees will embrace it; if the supervisor is disinterested, the program will fail. This is especially true for the integrated approach. To achieve 100-percent participation, supervisor participation must be guaranteed. In other words, the supervisor must be held accountable for performance.

### *Successfully Integrated Systems Are Team-Based*

Strong workgroups (teams) typically outperform traditional command management systems (NIST). The nationally recognized Malcolm Baldrige Quality Award includes criteria for team development as a core requirement. Organizations such as Motorola, Ford, 3M and General Electric have made self-managing worker teams a centerpiece of their organizations' approach (Katzenbah and Smith). Integrated safety, fitness and leadership create dynamic, high-performance teams from natural workgroups.

### *Teams Are Created from Natural Workgroups*

Teams formed from natural workgroups generate team power. Strong teams share several common elements.

- Team members develop common goals.
- Team members face common hazards, risks and challenges.
- Teams require full participation.
- Teams already have formal or informal team leaders (supervisor).
- Teams help individuals to achieve more.
- Progress can be measured and tracked at the team level.
- Teams improve communication for daily safety and health activities.
- Team members can provide positive recognition to each other.
- True teams hold members accountable.

### *Daily Strength & Flexibility Exercise Training Is Mandated*

Lack of flexibility and strength is a primary risk factor for MSDs (Bernard). An effective safety program is not complete unless it addresses physical conditioning as prevention for MSDs [Drennan(b)]. Basic flexibility, strength and knowledge about fitness and health are important safety assets—they are the first defenses against muscle strain and injury. Just as workers know that wearing eye protection lowers their risk of eye injury, they should know that maintaining flexibility of their hamstrings can lower their risk factors for low back pain and injury; that excess weight can increase stress on their knees and spine; and that their poor fitness level has a financial impact on the organization.

Each of these fitness-related safety risks can be reduced. Management must educate employees about the importance of flexibility and strength in preserving their fitness and include daily physical conditioning as part of the daily safety routine. To reduce injury rates and incidents, management must create the mandate for daily participation.

### *The Daily Fitness Routine Builds Strong Teams*

Bringing the natural workgroup together for a daily strength and fitness exercise (SAFE) routine is a powerful team-building tool, a feature lacking in many safety programs (Quick). Bringing employees together for exercise builds camaraderie and trust, and takes advantage of positive peer pressure. Without this, workers often fear backlash for reporting unsafe acts, near-hits and similar events.

In addition, team building fosters good morale, cohesiveness, communication and productivity. In a team-based environment, members support each other and care about their safety and health. Work observations at the team level become shared opportunities to improve the team's safety, not just to increase the number of observations performed. In surveys, employees consistently report that daily stretching with their team builds stronger teams [Drennan(a)]. The case study that begins on page 31 illustrates this principle at work.

### *The Exercise Program Targets the General Worker Population*

In the authors' opinion, programs such as yoga and calisthenics are not a good choice for the average worker. To get maximum participation in an integrated fitness and safety initiative, organizations must adopt a program that most employees can perform without strain or pain. The exercises must address all major muscle groups, not just shoulders

**Figure 1**

## Sample Audit/Coaching Sheet

Frequent auditing and coaching ensures program durability.

### PHASE I

### AUDIT/COACHING SESSION 1
### Safety, Fitness, Leadership

| | |
|---|---|
| Supervisor: | Date: |
| Team: | TSI Consul.: |

| LEADERSHIP SKILLS | | |
|---|---|---|
| **Category** | **Score** | **Discussed with Team Leader** |
| Supervisor as Trainer | | |
| Giving Positive Recognition | | |
| Scorekeeping for Attendance | | |
| Teambuilding | | |
| Tolerance Levels | | |
| Constructive Feedback | | |
| **SAFETY SYSTEMS** | | |
| **Category** | **Score** | **Discussed with Team Leader** |
| Near Miss | | |
| Unsafe Conditions | | |
| Unsafe Acts | | |
| Attendance for Fitness | | |

| FITNESS | | |
|---|---|---|
| **Category** | **Score** | **Discussed with Team Leader** |
| Overall Technique | | |
| Proper Timing | | |
| Participation | | |
| | | |

| TOTAL SCORE | | | |
|---|---|---|---|
| **Possible Score: 28** | **Score:** | **Percent** | **/28 =** |

and hands or backs. Most individuals will tolerate a gradual introduction to stretching and strengthening moves. These moves can be performed in regular clothes without getting on the floor. Because stretching feels good, employees feel the benefits almost immediately.

#### *Exercises Change Over Time*

The biggest problem with most exercise programs is the high dropout rate. Studies show that about 50 percent of exercisers drop out after six months and about 90 percent drop out after one year (McElroy). Boredom is a major reason. To counteract this, the authors have found that the exercises need to be replaced with more progressive exercises every three months. Most employees look forward to the new exercises and the challenge they present.

#### *Progress in Personal Fitness Is Measured*

Regular flexibility testing gives employees feedback on improvement and motivates long-term participation. It also provides many opportunities to give positive recognition at the individual and team level. Key measures include hamstring, shoulder rotation and mid-body rotation. Photos 1, 2 and 3 show key measures for flexibility improvement in these areas.

#### *Supervisors & Teams Are Audited & Coached*

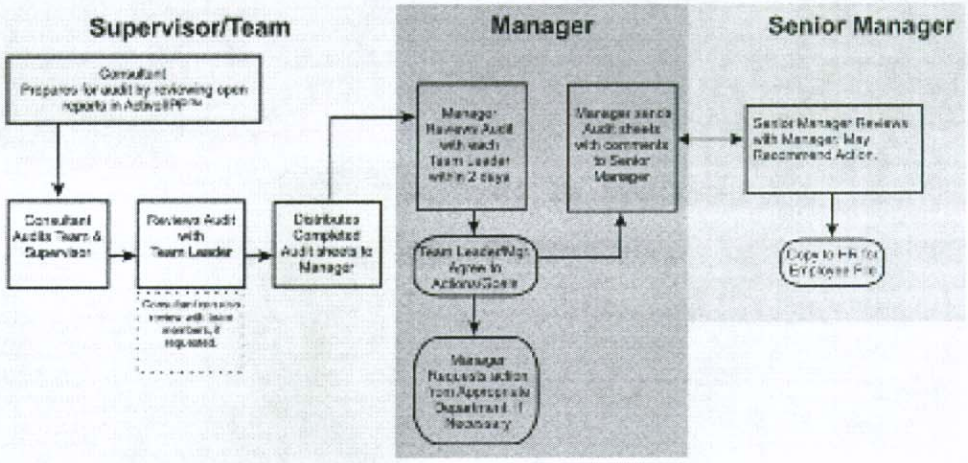
Training has no value unless it is applied on the job. To ensure success, the supervisor and the team

*Employees will adopt the supervisor's attitude about safety and health. If the supervisor supports a daily safety/fitness program, employees will embrace it as well.*

**Figure 2**

## Supervisor/Team Safety & Health Performance Review Process

This flow chart shows how management reviews safety and health performance metrics derived from the supervisor/team audit/coaching process.




must be audited and coached frequently to ensure that they apply what they have learned. At a minimum, supervisors and the team should be audited/coached monthly during the first year of implementation to provide feedback and ensure that the new behaviors become ingrained. The audit process should measure the skills and systems included in the training. Figure 1 presents a sample audit/coaching sheet (Team Safety). Using such a sheet, the auditor/coach can observe and measure the supervisor's on-the-job application of leadership skills and safety systems during the fitness routine.

In addition to observing the supervisor and team performance, the auditor/coach reviews the team's safety performance log for unsafe acts, near-hits and unsafe conditions. The auditor/coach also notes the percentage of corrective actions taken. The performance indicators shown on the scoresheet were compiled from six years of implementation in various work environments. The list has been refined using customer feedback and input from dozens of field personnel. It represents the elements needed to qualify supervisors for leadership certification. High marks in these elements also correlate well with findings supported by the research of Gallup as indicators for high quality and productivity (Buckingham and Coffman).

### *Participants Are Recognized*

Recognition is an integral element of organization success. Positive recognition helps to create productive, motivating and fulfilling work environments. When recognition is inconsistent or lacking, workplace performance drops because employees perceive that the organization does not care.

A management-supported recognition plan should be in place at program startup so supervisors know in advance what is expected and what is in it for them. Rewards and recognition must be fairly awarded to supervisors who demonstrate mastery of the leadership skills. Ignoring low performance will have a negative effect on the entire effort. Supervisors who fail to meet the minimum requirements must hear from management if they fail to comply with the safety requirements. Depending on the organization, this may range from an informal discussion to written notice. Ultimately, accountability for safety and health performance should extend to a supervisor's annual performance review.

### *Safety Training Is Delivered During the Fitness Routine*

A core process of the integrated approach is to deliver focused safety training, such as hazard awareness and reporting, during the fitness routine. This link is a powerful justification for total participation. Organizations use this time to deliver short, scripted safety messages.

### Engaging Senior Management

Many SH&E professionals struggle with the lack of senior management support (Petersen). Safety competes with productivity, sales, profits, globalization, rising healthcare costs and many other issues that affect a company's ability to survive. As long as accident statistics and workers' compensation costs fall within acceptable levels, senior management is likely to focus on other areas perceived to need immediate action. It is also true that SH&E professionals are often unclear about what they want senior executives to do. They typically send senior managers statistics about lost workdays, recordable injuries and costs, hoping to stimulate some type of action. But what kind of action?

Corporate mission statements often state "senior

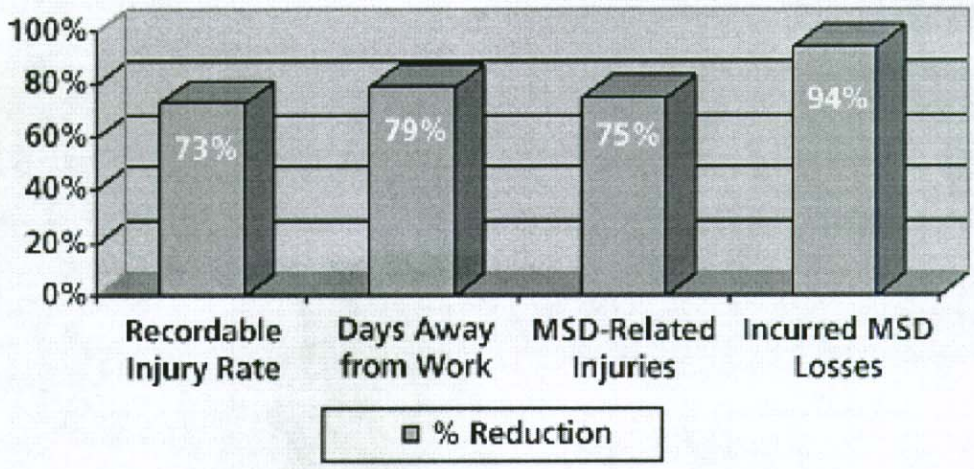
management shall 'visibly' support the safety program." In many cases, this means only that a manager will attend the quarterly safety meeting; participate in an annual safety inspection; or practice safety management by "walking around." While these methods show "visible support" for the safety program, they are not effective in the continuous improvement process nor do they fully optimize the manager's time.

Field study and practice have shown that senior managers who focus on measurable performance indicators (behaviors) of first-line supervisors achieve the best results (Drennan and Richey). When managers review audit/coaching results with supervisors, the supervisors receive the feedback and recognition needed to sustain behavior change. This is active participation by upper management. The supervisor receives immediate feedback so s/he can apply the lessons learned to improve safety and health communication and support to his/her natural workgroup. Figure 2 illustrates a supervisor/team safety and health performance review process.

**Figure 3**

**Injury & Loss Reduction**

Results show reductions in critical areas within one year in an integrated program.




### *Objective Performance Measurement*

Performance measurement is essential to promoting behavior change. Without measurement, how does one know whether progress is being made? Most performance evaluations are subjective. For example, a desired behavior would be to have a supervisor give positive recognition to employees for identifying a safety hazard, or reporting a near-hit or unsafe act. A typical measurement system uses terms such as excellent, good, average or poor to describe job performance—subjective terms that may cause tension between those involved. What constitutes excellent performance? How poor is poor?

A better strategy is to use a scoring system based on behavioral terms that anyone can be trained to use. For example, using a scoring range from 0 to 4, consider the following definitions:

0 = No Activity
1 = Attempted
2 = Accomplished
3 = Skilled
4 = Mastered

An auditor/coach could use this method in the following scenario: A supervisor is to give positive recognition to employees in the form of verbal praise, which he has been instructed to provide in a positive, specific, timely and sincere manner. The auditor/coach could easily recognize the elements. If the supervisor does nothing, the score is zero. If the supervisor simply says, "Thanks, Sally," he would score a 1 for attempting. If the supervisor says, "Thank you, Sally, for turning in the report on the missing guard for the drum rotator today," he has been positive, specific, timely and sincere, and would score 4. The benefits are multiplied because 1) the supervisor has learned a new skill that can be applied in many areas; 2) the employee who receives the public praise is likely to repeat the behavior; 3) the employees who witnessed the event will want to participate as well; and 4) management has a clear basis on which to evaluate the supervisor's performance of a training element.

After the manager reviews the audit/coaching report with the supervisor, they can then set mutually agreed-upon action and goals for which they are accountable. Both parties sign the report, which is routed accordingly (Figure 2). This approach ensures a two-way commitment between supervisors and managers.

This system of management engagement has a profound effect on a company's culture. The leadership behaviors exhibited by the supervisor are objectively scored and immediately reviewed by managers and senior executives. Managers and senior executives feel comfortable with these new tools and use them like those they use to measure quality, productivity or customer satisfaction. This new methodology is truly integrated into the management process and provides an opportunity to objectively discuss safety and health engagement face-to-face with supervisors. Following is a case study that shows how this method works in practice.

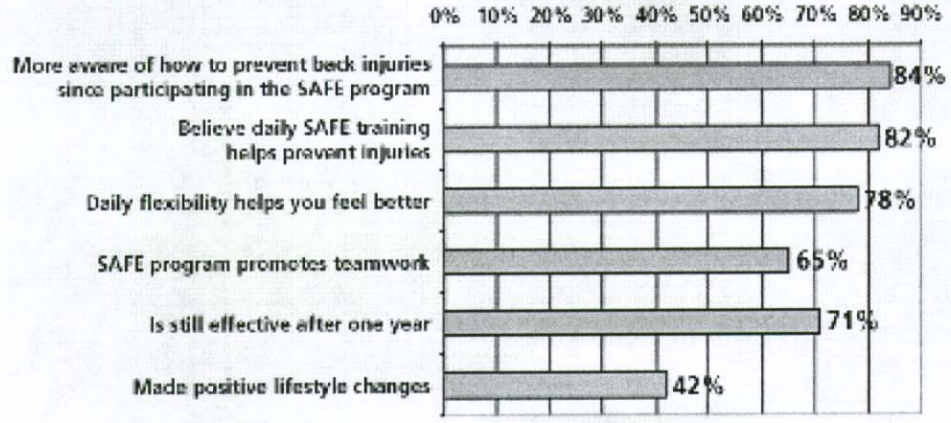
### Case Study: 3M Manufacturing Facility

An integrated safety, fitness and supervisor leadership program helped this plant improve from fourth-poorest safety performer to first among 40 plants nationwide. The site continues to sustain a daily safety and fitness program under its own management.

**Figure 4**

## Employee Satisfaction Survey Results

One-year employee satisfaction surveys showed 42 percent of participants made positive lifestyle changes as a result of the integrated program.




## Participant Testimony

"When we started the daily SAFE program in January 2003, it was the first time I had ever done any regular fitness routine," says Linda, an office staff member at a large manufacturing plant. It was new and a little difficult, but she persisted, learned the routine and improved her flexibility at the first test cycle. In May, her doctor gave her the bad news: she would have to do more than stretch every day if she wanted to reverse chronic high blood pressure, high cholesterol and borderline diabetes, all the result of being overweight. A complete lifestyle change was needed.

"It was a huge challenge for me," says Linda, "but since participating in the program, I knew that exercising every day with my team paid off, and that motivated me to take charge of my health the way I should. It changed my life, and I'm still doing it after three years in the program."

During the first year, Linda lost 82 pounds and is no longer required to take blood pressure medications. How did she do it? Daily flexibility and strength training with her team at work, a healthier diet, individual effort, including walking three miles a day, and daily sit ups. "When I started those sit ups, I could only do two; now, I do 50 every day."

### *Background*

The plant's injury rate was fourth-worst among 40 manufacturing plants in the U.S. The safety staff and senior managers wanted to improve to "best-in-class" and wanted to participate in OSHA's Voluntary Protection Programs, but did not qualify in several areas. The site had tried a behavior-based safety process with little success. Six sigma studies had identified MSDs and an aging workforce as the key drivers of workers' compensation costs and injuries. The average age of workers was 47. The plant operated around the clock. Recent layoffs left the supervisory staff spread thin and they relied on lead persons with little supervisory training. Management feared employees would never participate when the safety manager proposed an integrated safety, fitness and supervisor leadership approach to help reduce injuries and workers' compensation losses.

### *Implementation*

Supervisors and team leaders were trained in six basic leadership skills. They participated in four half-day training classes spread throughout the program year to learn and role-play key skills: supervisor as trainer, scorekeeping, positive recognition, team building, tolerance levels and constructive feedback.

All employees, including office staff, were grouped into 35 teams (natural workgroups) of six to 12 employees each. Each day started with a 10-minute "safety meeting" that integrated a strength and fitness exercise routine and scripted safety training that prompted leaders to apply their skills and solicit safety concerns.

At least monthly, supervisors and teams were audited/coached to see how well they applied the skills they learned in the classroom on the job. The auditors/coaches observed the flexibility and strength training to ensure that workers performed the routine safely and received its benefits, and they observed and scored supervisors based on application of leadership skills. Supervisors who accumulated 75 percent or higher total points throughout the year were certified in safety leadership.

### *Results*

Within a year, the safety scorekeeping systems revealed the impact of this combination of safety leadership and employee participation. Through the daily fitness routine, employee flexibility improved 88.7 percent. In addition, the plant moved into the top third of the corporation's 40 plants in safety performance and reported no MSDs for the entire year. Figure 3 depicts the significant reductions in workers' compensation costs, recordable injuries, days away from work, and injuries and losses incurred as a result of MSDs.

Executive management called the plant's initiatives "best practices" in safety among all plants. More than 70 percent of the employees participated in the strength and fitness routine every day. According to a year-end satisfaction survey, employees reported that the routine helped prevent injuries and promote teamwork, and also made them feel better—in fact, it became a catalyst for positive lifestyle change for 42 percent of participants. Figure 4 shows how employees responded to the daily program after one year of participation. Photo 4 shows employees performing a flexibility exercise. Reported changes included weight loss, smoking cessation, additional exercise on personal time, fam-

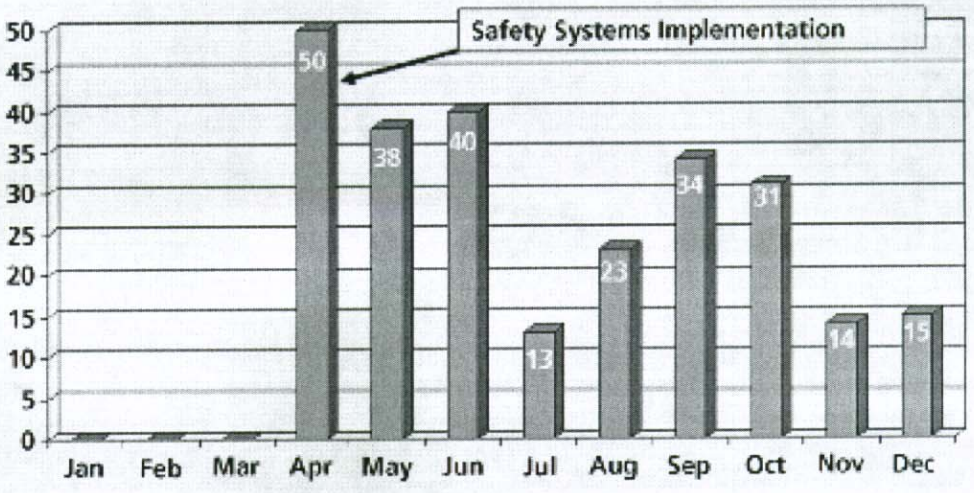
ily involvement in healthier lifestyles, diet and exercise—all of which will have a positive impact on the site's overall healthcare costs as well.

A significant culture change occurred as a result of the integrated approach. It took the daily safety meetings, strength and flexibility exercises, a team-based approach and supervisor leadership training to begin to produce results. Some three years later, the plant has transitioned to a self-managed program with continued mandatory daily safety and health meetings.

**Figure 5**

**Effects of a Postive Psychosocial Climate**

Employees are more likely to report hazards, unsafe conditions and acts, and make safety suggestions when they work in a positive psychosocial climate.




### *What Employees Have Said*

Participants received testimonial cards at the beginning of the program. The following comments were received throughout the year:

- Exercising at work and at home.
- Lift better automatically from habit formed in exercise routine.
- Move better, feel better.
- Lost 15 pounds.
- Joined Weight Watchers.
- Rest better, walk better.
- Climb basement stairs more easily.
- Walk three miles a day now.
- Watching what I eat.
- Lost 50 pounds, blood pressure down, off blood pressure medication.
- Notice better strength in everyday tasks.
- Legs are stronger and feel less stress on low back when lifting.
- Stress level has decreased.
- Started a regular workout program on my own.
- More flexible, better posture.
- No more headaches.
- Quit smoking.
- No more back pain in the morning.

### *Positive Results*

This case example demonstrated that providing a physical conditioning routine—on the clock—in the workplace can produce significant improvements both in injury prevention and personal fitness, and lead to positive lifestyle change. These improvements complement each other and contribute to happier, healthier employees. Key elements of supervisor involvement and management focus kept the program running where similar programs had failed. Because management endorsed the program, provided work time for performance, and recognized progress of individuals, supervisors and teams, the program achieved high participation.

The most profound effect was the creation of a positive psychosocial climate. As Figure 5 shows, before this program, the plant received zero reports about near-hits, unsafe acts or conditions although employees had been trained to do so. By providing strong supervisory leadership and giving employees constant positive recognition (in the form of verbal praise and ball caps), employees felt free to report safety hazards without fear of reprisal. In the authors' opinion, this element had the greatest impact on the plant's injury reduction.

**Photo 4: The worksite is tailor-made to motivate daily exercise.**

## The Next Steps to Meet NIOSH's Challenge

The Steps symposium was a critical first step in bringing together professionals from wellness and safety fields. The expertise and clientele of these professions overlap, yet rarely do they engage in dialogue, share conferences or publish in each other's journals. Issues common to these professionals are rarely discussed or evaluated in venues where shared expertise and insights can be brought to bear and boundary-spanning solutions devised.

### *CDC/NIOSH*

Following are some suggestions—from the SH&E professional's point of view—for CDC/NIOSH as it takes the lead in fostering action in these areas.

- Engage safety professionals and health professionals to develop a more coherent and consistent definition for—and operating model of—an "integrated" worksite safety and health program.
- Continue to hold annual national symposia. Attendees should include practitioners and managers from associations that represent worksite health promotion (such as WELCOA), occupational safety (such as ASSE), industrial hygiene (such as AIHA) and environmental health (such as NAEM). Presentations should focus on practical and theoretical applications of integrating safety and health, present models of the

## Engaging Supervisors in the Integrated Process

Supervisors and employees must understand how their personal risk factors for safety and health impact the survivability of the organization. To stay competitive, supervisors must learn and train new strategies for safety and health, leadership and teamwork that include keeping themselves and their team members healthy and productive.

**Supervisors must:**

- Learn six basic leadership skills: supervisor as trainer, scorekeeping, giving positive recognition, team building, setting tolerance levels and giving constructive feedback.
- Provide a daily forum for safety activity. A strength and flexibility exercise routine is an effective way to assemble the team.
- Use a daily "script" for leadership skills application.
- Be evaluated through frequent audits and coaching, and strive to apply feedback provided on application of the leadership skills and deployment of the safety systems.

**Senior managers must:**

- Review supervisor audits with the supervisor regularly to demonstrate management commitment and support supervisor efforts.
- Use scorecards or dashboards to measure supervisor engagement and certify your supervisors in on-the-job application of the six basic leadership skills.
- Set supervisor performance standards and hold supervisors accountable for their team's safety performance.
- Publicly display team safety performance data.
- Reward supervisors, frequently, for leadership excellence.
- Make the safety leadership certification program part of the supervisor's performance evaluation.

government's role in integration and outline models of economic evaluation of integrated programs.

- Fund development and evaluation-based research on how to best indicate the economic value delivered by worksite safety and health programs. These should be specific R-01 grant RFPs with required evaluation of standard occupational safety programs as well as standard worksite health promotion programs. Projects should go beyond literature review to active demonstration projects.
- Consider and fund research to show how NIOSH or OSHA might better function as a repository of consulting expertise (for little to no cost to the organization) as well as a library of model programs that illustrate how successful organizations design, implement and evaluate integrated worksite safety and health programs.
- Develop a repository of best practices including free materials and economic evaluation schemes.
- Continue to publicize the benefits of integrated worksite safety and health programs. Many organizations are searching for ways to improve the health of their employees. For example, in March 2005, NASA launched its Healthier NASA campaign.

### *Safety Practitioners*

Safety practitioners have a long history of bringing about positive behavioral and cultural changes in organizations. These skills, knowledge and experience can help the Steps initiative succeed.

As noted, several Steps symposium presenters are predicting the collapse of the U.S. healthcare system. After many years and many dollars, the medical and public health fields have been unable to effect positive change in America's health. Collaboration between safety and health is, in the authors' opinion, the only solution.

As a first step, SH&E professionals must educate themselves about integrating health and fitness into their safety programs. Current professional safety degrees and certifications do not provide all the knowledge one needs to successfully integrate fitness into a safety program. The SH&E professional interested in pursuing integrated safety and fitness should develop a strong knowledge base in several areas.

- Seek out publications that provide detailed information about biomechanics, ergonomics and MSDs. Consult with experts in these fields regarding the specific tasks and needs of the workforce. Communicate this information to workers as part of the integration process.
- Stretching and flexibility may be the least understood components of personal fitness. Many programs implemented at work are inappropriate for the environment or ineffective for the tasks being performed. Even programs customized for a given workplace can lack the elements needed to prevent injury. One needs a clear understanding about flexibility and biomechanics and how they relate to MSDs in order to select a program that meets a site's needs.
- Learn ways to communicate this information effectively to workers. They will be much more willing to perform the exercises if they understand the purpose and the benefits of each one.
- Recognize that a good ergonomics program may not resolve problems created by the lack of basic strength and muscle imbalance common in a sedentary workforce. Exercises that focus on "balanced strength" are necessary to counter the effects of cumulative trauma. An excellent source of information in this area is the publisher Human Kinetics (www.humankinetics.com). Key topics include physical activity, biomechanics of musculoskeletal injury, resistance to exercise, and balance and mobility.
- Seek physical therapists and sports medicine chiropractors as an educational resource.

Accompany injured workers to the clinic and learn what exercises they can do to prevent further injury. These exercises may be beneficial to the healthy workers who perform the same tasks as well. Most physical conditioning programs, including the one described here, have many components of those used in physical rehabilitation clinics.

• Work with a degreed professional in the physical therapy, exercise physiology, biomechanics, kinesiology or similar field when implementing and maintaining a flexibility program in the workplace. This will help protect the safety of employees. In the authors' experience, 15 to 30 percent of an employee population will have pre-existing conditions that may prevent their full participation. A qualified, experienced professional will be able to determine which exercises should be modified or eliminated from their routine. Once the exercise program has been established for some time and employees have gained confidence in their abilities, the professional may be needed only to introduce new exercises.

• Develop solid knowledge of team building. The strongest component of integrated safety and fitness is team building and supervisor involvement. The authors' experience has shown that even where teams have stopped exercising at work, they continue to achieve excellent safety performance using the team processes and supervisor leadership skills established during the daily fitness routine.

## Conclusion

An aging and out-of-shape workforce has become a key driver of high workers' compensation and healthcare costs. Integrating physical conditioning and health activity into the daily safety routine can help reverse this trend. The workplace is an excellent place to get people to exercise and focus on safety and health. Such activity has a profound affect on attitudes and behaviors, and the results ultimately lead to positive lifestyle change.

In *The Participation Factor,* Geller states, "The key to preventing more work-related injuries is to get more people involved in programs and processes designed to improve occupational safety. This is not profound; it's obvious" (Geller). Integrating the various elements described here—daily exercise; reporting of near-hits, unsafe acts and conditions; having supervisors lead their natural workgroups to higher levels of safety and health performance; having middle and senior management monitor supervisor engagement; and providing positive and negative consequences for performance—ensures maximum participation in safety and health. This makes it possible for any organization to achieve world-class safety performance while keeping employees safe, healthy and productive. ■

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## Steps Video

As part of the ongoing effort to raise awareness of the benefits of an integrated approach to injury and illness prevention in the workplace, a Steps video has been produced. It includes interviews with program participants and NIOSH's John Howard, as well as Michael W. Thompson, ASSE's Senior Vice President. The video can be viewed at www.asse.org.

# NIOSH WorkLife Resource

ABSTRACT

It is a well accepted fact that obesity and lack of exercise are the leading drivers of health care and workers compensation costs. This lead article published in the American Society of Safety Engineers' (ASSE) *Professional Safety* summarizes a case study at a 3M facility that integrated a physical conditioning program into the daily safety routine.

This article will help provide guidance and direction for those wishing to implement a workplace program for improving worker health and safety. The model program describes how 19 of the 20 "Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing" were effectively deployed at 3M.