



Hughston Health Alert



6262 Veterans Parkway P.O. Box 9517 Columbus GA 31908-9517

VOLUME 16, NUMBER 3

www.hughston.com

SUMMER, 2004

When an Employee is Injured...

Time is of the essence

Multiple studies have shown that the chances of returning an injured employee to work are directly related to the length of time he or she has been out of the workplace. The US Bureau of Labor Statistics indicates that workers absent for more than 6 months because of work-related injury have approximately a 50% probability of returning to work, and those absent for more than 1 year have a 25% probability of return. Employees absent for more than 2 years have virtually no chance of returning to work. On the other hand, patients who miss no days from work have the best chance of a full recovery from an on-the-job injury.¹

The timeliness of treatment is the single most important consideration in rehabilitating an injured



employee. Early intervention, injury management, appropriate rehabilitation, and attention to safety and wellness can reduce the negative consequences of work-related injuries.

Rest is not always best

For a musculoskeletal injury, bed rest does not always help the recovery process or facilitate an early return to work. Actually, bed rest often has a negative effect on the employee's ability to return to work. Inactivity quickly leads to muscle and joint stiffness, which can become a

cycle of inactivity, thereby worsening the musculoskeletal injury. Within days of inactivity, muscle mass, tendon strength, and bone mass typically decline, and as inactivity continues, muscle atrophy, or loss of muscle strength and size can become a problem (Fig. 1, pg. 2). Activity, even limited motion, can help an injured employee prevent muscle atrophy.

Keep the daily routine

Returning to work minimizes the psychologic effects that can occur when an employee is away from his

Inside This Issue:

- The Role of the Occupational and Environmental Health Nurse
- The Worker and Low Back Pain
- The Injured Employee
- Common Sources of Stress
- Ergonomics

FOR A HEALTHIER LIFESTYLE

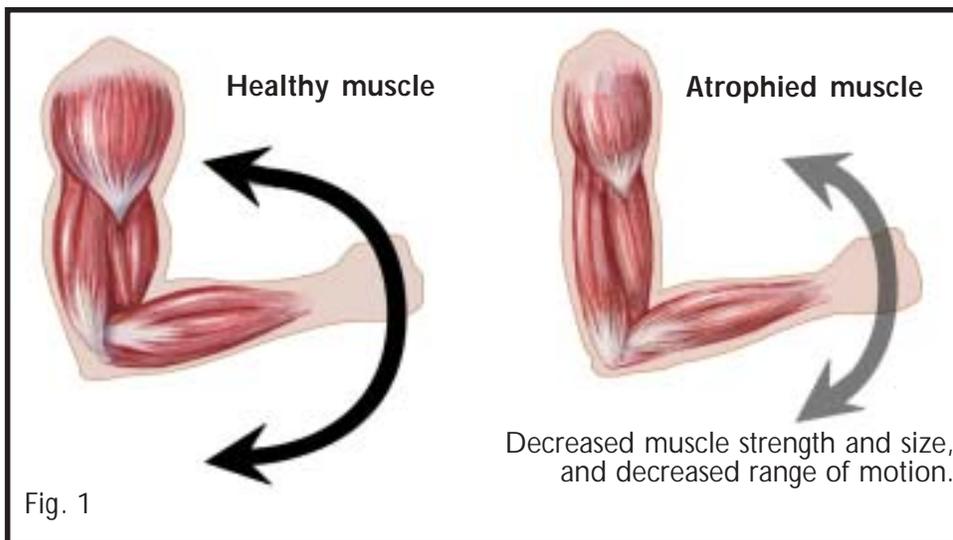


Fig. 1

coworkers and peers for an extended period of time. Returning to work also reestablishes a daily routine and helps prevent depression. Unfortunately, it is very easy to become accustomed to staying at home every day. When this happens, depression can become a major factor; therefore, treatment of depression is an important component in helping physically injured workers resume gainful employment. Because this “disability syndrome” is both mental and physical, it can be extremely difficult to break, the longer it lasts. Most individuals feel better about themselves when they are actively working.

Work-Hardening Program

Returning an injured employee to the work place as early as possible often reduces healing time. Physicians now treat injured workers as “industrial athletes,” which means starting rehabilitation as soon after the injury as possible. A work-hardening program allows the employee to return to work at a part-time position or in a modified-duty program. A work-hardening program can halt the effects of atrophy and the psychological effects of depression that negatively

impact an employee's successful return to work.

A work-hardening program focuses on reconditioning, improving endurance, and flexibility to prevent re-injury and allows the employee to tolerate production-pace-work activities. Therapy is aimed at the specific job demands and focuses on the employee's abilities rather than restrictions.

Many companies offer on-site physical therapists to aid in treating and rehabilitating injured employees. Employees who recognize the company's concern for them often view on-site therapists as a positive benefit. As a result, employees are often more willing to report problems earlier.

A work-hardening program is an effective approach to bridging the gap from rehabilitation to a functional level of productivity and return to regular duty work. It is defined as a “highly structured, goal-oriented, individualized treatment program designed to maximize the individual's ability to return to work. Programs use conditioning tasks that are graded to progressively improve the biomechanical, neuromuscular, cardiovascular, and psychological functions with real or simulated work activities.”²

A motivated employee with the desire to return to work and a specifically identified job or job classification are necessary if a work-hardening program is to be successful. The inability to cope with symptoms, use of narcotics or major sedatives, severe deconditioning, or severe depression can be indicators that an employee may not be successful in a work-hardening program. To keep the employee motivated, specific goals and objectives of the work-hardening program should be established. Work-hardening programs are often done in a work-like setting to reinforce the “worker's role” rather than the “injured employee's role.” Work-hardening programs can be successful both on and off site if conducted properly with definite goals and time frames. Maintaining the atmosphere of a job environment and simulation of work tasks are key.

The benefits

Employers benefit in many ways from an early return-to-work program. Employers begin to experience at least some productivity from the returning employee. They can reduce the overtime that can result from the extra burden put on the remaining employees. The need to hire temporary workers is also diminished. Generally, it is more cost effective to have an injured worker on-site even if productivity is reduced, than to pay replacement costs as well as disability payments.

The philosophy and policies of an employer can impede or facilitate an injured employee's return to work. An employer can ensure the availability of the injured worker's position, provide retraining when needed, make a modified-duty program available, and can convey support to the employee for returning to work after an injury.

Time is of the essence for both the employee and employer because

efforts toward early return to work can prevent the possibility that a temporary impairment develops into a permanent disability.

*David C. Rehak, MD
Columbus, Georgia*

References

1. US Department of Labor. *Industry Injury and Illness Data 2002*. www.bls.gov/iif/oshsum.htm. Accessed June 9, 2004.
2. Killian MJ. Reducing workers' compensation costs. *J Health Care Benefits*. 1994;3(5): 26-31.

The Role of the Occupational and Environmental Health Nurse

Occupational and Environmental Health Nursing is a specialty that provides health and safety programs to workers and community groups. An Occupational Health Nurse (OHN) focuses on promotion and restoration of health, prevention of illness and injury, and protection from work-related and environmental hazards. Occupational and environmental health nursing began in the United States in 1888, when a nurse named Betty Moulder cared for Pennsylvania coal miners and their families. Since then, the profession has evolved into a health-care industry that includes health promotion, case management, environmental health, counseling, legal and regulatory compliance, and detection of workplace hazards.

OHNs make independent nursing judgments and are capable of designing and delivering health care to employee-based populations. According to a survey conducted by the American Association of Occupational Health Nurses in 1992, approximately 50% of nurses are sole health-care providers at the worksite.

Their position requires a broad scope of knowledge and skills in many areas. The nurse provides emergency care and follow-up case management for job-related injuries and illnesses, providing the most efficient and effective care for the injured worker. The goal is to return the injured worker to his or her job as soon as possible. Early intervention by the nurse reduces workers' compensation costs and also gets the employee back to work. The nurse acts as a counselor and also recommends referrals to the company's employee-assistance program and other community resources.

OHNs develop health promotion programs for employees and teach them the skills needed to become responsible for their own health. Most health services offer smoking-cessation programs, exercise and fitness, nutrition, and weight-control programs. If necessary, the OHN can educate an employee in the control of chronic illness and can provide information needed to direct them to effective health-care resources. Health education and prevention programs are effective in the early detection of symptoms that can lead to long-term catastrophic illness.

There are numerous regulations that protect today's worker, and the OHN must work with employees and employers on compliance with the many regulations and laws affecting the workplace. The OHN must have knowledge of the following laws and regulations: Occupational Safety and Health Administration (OSHA), Family Medical Leave Act (FMLA), The Americans with Disabilities Act (ADA), Workers' Compensation Act, and the Health Information Portability and Accountability Act (HIPPA).

The role of the nurse will continue to expand as more nurses are hired by businesses to manage and operate occupational health services. Employers pay about \$1 trillion

annually for employee health, so business executives are looking to OHNs to maximize employee productivity and to decrease cost through lowered disability claims, reduction of on-the-job injuries, and improvement in absentee rates.

OHNs are registered nurses (RNs), licensed to practice in the states in which they are employed. Typically, nurses entering the field have a baccalaureate degree in nursing and experience in community health, ambulatory care, critical care, or emergency nursing.

Certification in Occupational and Environmental Health Nursing is highly recommended. Criteria for certification requires 4,000 hours of work experience in the field within 5 years, 50 contact hours of continuing education in the specialty, and successful completion of a national examination.

The OHN's role ranges from clinician to case manager, health educator, manager, policy maker, consultant, and program evaluator. While it's challenging to be all things to everyone, the occupational health service affords the OHN a great opportunity for providing excellence in the delivery of health care while it provides an excellent career opportunity.

As the workplace continues to change, nurses must be prepared to handle the challenges and opportunities as employers look to OHNs to be cost-effective providers of work place health care. The most fundamental goal of any organization is to earn a profit while providing a safe and healthy working environment for its employees. The occupational health service exists to support that goal.

*Pat McKay, BS, RN, COHNS/CM
Occupational Health Nurse
Columbus, Georgia*

The Worker and Low Back Pain

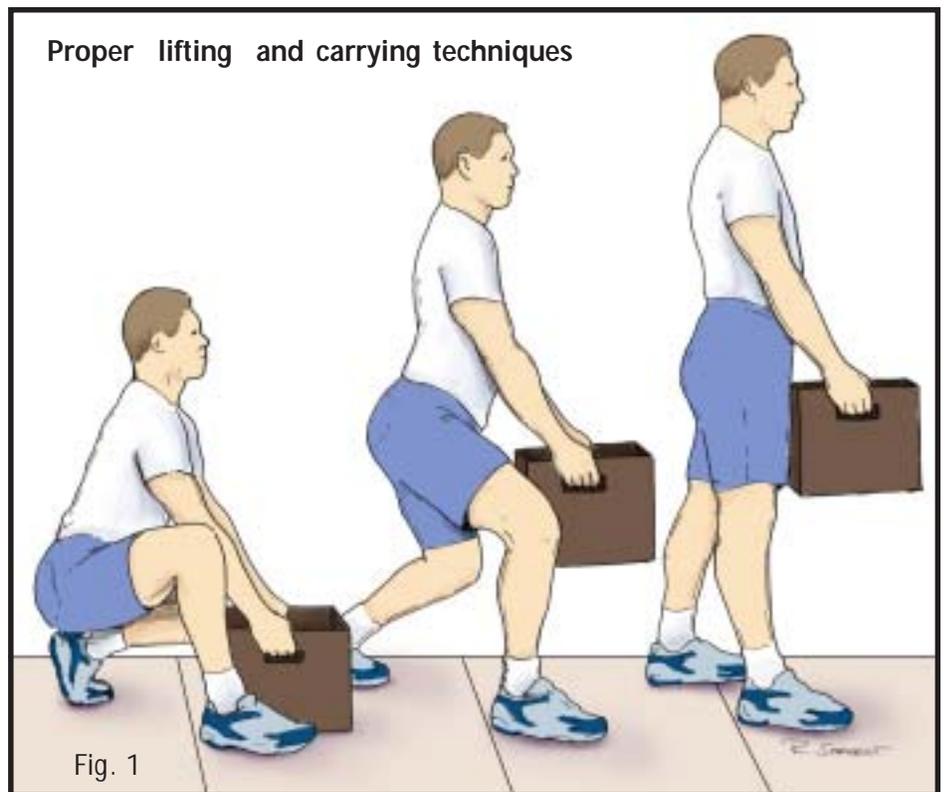
Low back pain does not discriminate. In fact, 4 out of 5 adults will experience low back pain during their lifetime. The back pain experienced can range from having difficulty attaining a restful night's sleep or trouble standing up from a seated position to actually missing work for a day or more. Whatever the experience, low back pain is the most costly health-care problem and the second leading reason for missed days of work other than the common cold for the 20- to 50-year-old age group.

Causes of Low Back Pain

Low back sprain and strain or the effects of aging can cause low back pain in the worker. The muscles of the lower back provide strength and support for standing, walking and lifting. A strain of the muscles in the lower back can occur when the muscle is poorly conditioned or overworked. A sprain in the lower back can occur when the ligaments, which interconnect the bones for structural support and stability, undergo a sudden and forceful movement. The effects of aging are part of a natural process in which the strength and elasticity of the muscles and ligaments gradually decrease. Other factors that can contribute to low back injury are improper body mechanics, obesity, smoking, osteoporosis, and poor physical conditioning.

Preventing Back Pain/Injuries: Help Yourself at Work

If an individual already has low back pain, the most important step is to visit their physician to get properly diagnosed and receive appropriate treatment. If the individual does not have low back pain, the risk of injury can be reduced by using proper lifting

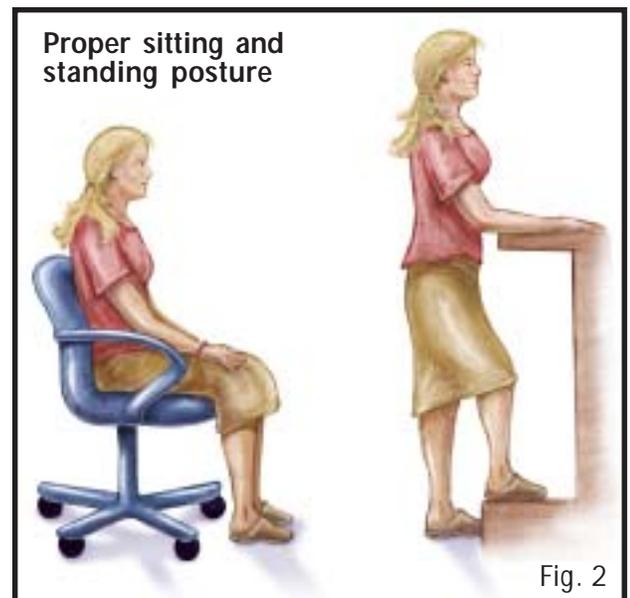


techniques, avoiding prolonged static postures, such as sitting and standing in one position for a long period of time, and doing exercises for strengthening and conditioning.

Figure 1 illustrates proper lifting and carrying techniques. The diagonal lift (note position of the feet) provides for a wide base of support for better stability. This puts less strain on your back, allows for the large muscle groups to provide the force needed to lift properly, and reduces the load and strain otherwise placed on the back with poor lifting techniques. Another important aspect of proper lifting and carrying is to carry the object close to your body, thus reducing strain on the back, as well.

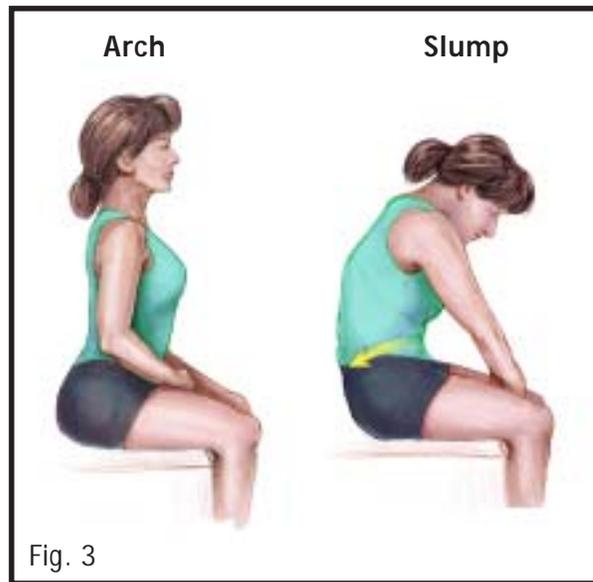
Standing or sitting in one position for prolonged periods of time can lead to back pain as well. Several simple steps can be taken to reduce the possibility of

back pain. Figure 2 illustrates the importance of good support and balance for the lower back when standing or sitting. By simply placing either foot on an elevated surface, i.e., small box, step stool, or low wooden platform, standing posture can be improved. Likewise, when sitting, good back support with the hips and knees positioned correctly is important. This measure helps reduce



load forces on the back. Figure 3 illustrates a simple low back exercise that can be done frequently throughout the day for individuals who must be seated for long periods. The arch/slump exercise helps to reduce strain on the lower back. It is also important to maintain good back support and change positions frequently (every 30 to 45 minutes).

Last, poor conditioning and obesity are other factors that contribute to



back injury. It is important to maintain an exercise program that includes strengthening, stretching, and aerobic conditioning. Maintaining a healthy lifestyle along with an exercise program and using appropriate lifting techniques will reduce the chance of injuring the lower back. No one can totally prevent accidents; however, having a back care exercise program will help to keep your back healthier at home and at work. Remember, always check with your physician before beginning any new exercise program.

*Eric Kuhlenberg, PT
Columbus, Georgia*

The Injured Employee

When an employee is injured on the job, there are a variety of treatment options available. Typically, an emergency room physician or company physician will examine the injured employee initially and then, if needed, refer the employee to the appropriate specialist, such as an orthopaedist.

If a musculoskeletal injury is sustained, the orthopaedist can schedule tests such as x-rays, and magnetic resonance imaging (MRI) (a test that shows the bones, muscles, tendons, and ligaments). Based on the findings, the orthopaedist will decide if the employee needs to be treated conservatively (without surgery) or if there is a need for surgery. An employee can be treated conservatively with a brace, splint, anti-inflammatory medication, such as aspirin or ibuprofen, and rehabilitation (physical or occupational therapy). Usually, when treated conservatively, the employee can continue to work, but at light or modified duty. If surgery is determined to be appropriate, the employee will go through a rehabilitation program before returning to work.

Rehabilitation

After an employee plateaus (stops improving) with rehabilitation, he or she may still be unable to return to work because of functional deficits and/or because of being physically deconditioned. If the physician feels that the client can benefit from additional rehabilitation with a more aggressive approach, the employee may be referred to a work-simulation program for example work hardening or work conditioning. Work-

simulation programs are designed specifically for each employee and address the body as a whole versus addressing the injured body part only. For example, the employee is treated with a combination of flexibility, cardiovascular endurance, core-strengthening, circuit training, and job-specific functional activities. The frequency and duration of the work-simulation program typically lasts for 3 hours a day, 5 days a week, for 4 to 6 weeks.

Functional Capacity Evaluation

Normally, after completion of the work-simulation program the physician refers the employee for a functional capacity evaluation (FCE) or an impairment rating or both.

An FCE is a test that determines the maximum function of an employee based on the performance of musculoskeletal tests and work-related activities. According to Isernhagen,¹ maximum function is defined as the greatest safe ability of an employee, either in repetitions or weight capacities. Maximum function is determined by observing physical efforts at low levels, medium levels, and high levels of activity.

An FCE consists of a history, musculoskeletal assessment, and functional testing. The history should be comprehensive and accurate. It should include a very thorough chart review, a functional job description, and a consultation with the employee's rehabilitation case manager or rehabilitation nurse to find out what are the options for case resolution.

Four options for Case Resolution

- same job -- same employer
- modified job -- same employer
- new job -- same employer
- new job -- new employer

The musculoskeletal assessment should include, but not be limited to, vital signs (blood pressure and pulse), gait, posture, coordination, movement characteristics, range-of-motion measurements, muscle strength testing, atrophy or edema, girth measurements, muscle tone or spasms, neurological testing and sensation, reflexes, and balance.

Testing

Tests are given over either one day or two days, depending on the body part to be tested. One-day, or modified, tests are for the upper extremity, i.e., finger, hand, wrist, elbow, and shoulder. A one-day test assesses lifts (Fig. 1), push-pull (Fig. 2), carries, elevated work, and hand activities (Fig. 3). Two-day, or standard, tests are for the lower extremities and spine, i.e., neck, back, hip, knee, ankle, foot, and toe. Two-day tests include the above mentioned one-day activities with the addition of positional activities, walking, stair and ladder climbing (Fig. 4), balance, and repeat of lifts on day two. On the second day the examiner assesses consistency and the response to that of day-one testing.

FCE reports include the physical examination, FCE grid, consistency checklist, and summary report. The summary report includes, but is not limited to, effort, cooperation, pain report, safety, quality of movement, significant abilities, significant deficits, and recommendations. In order for the FCE to be purposeful, the examiner must have a functional job

description (FJD) of the client's job, which includes a physical demand level and specific critical demands. It is imperative that the physical therapist or occupational therapist receive an FJD when performing an FCE, so that the appropriate recommendations or job modifications can be made.

In conclusion, when and why do you perform an FCE? An FCE should be performed when an employee has suffered a work-related injury, after completion of rehabilitation, and when beginning or ending a work simulation program. The

reasons an FCE should be performed are as follows: to define what an employee can do, to set job modifications (limitations or restrictions) if needed, and ultimately, for case resolution—that is for the employee to return to work.

*J. Benjamin Belle, PT
Columbus, Georgia*

References

1. Isernhagen S. *Functional Capacity Evaluation*. In: Isernhagen SJ, editor, *Work Injury Management: Management and Prevention*. Maryland: Aspen; 1988.
2. Matheson R. et al. *Work Hardening and Work Conditioning*. Keene (NEED PUBLISHER), NH; 1988.



Fig. 1: **Waist to overhead lift**



Fig. 3: **Hand grip**



Fig. 2: **Dynamic push/pull**



Fig. 4: **Step ladder climbing**

Ergonomics

It's your job

Ergonomics is an applied science that deals with the interaction between people and their workplace. Ergonomics examines the employee's physical abilities, the workplace environment, and the task to be completed and applies this information to the design of tools, equipment, and the work methods needed to safely complete a task.

Each employee has a personal responsibility to know for themselves and their employer to focus on a safe work environment. The goal of an ergonomic program is for work to be completed with the least amount of stress on the body possible. This requires a 50-50 team effort between the employer and you, the employee. You are ultimately responsible for your own health and safety by doing what you can to perform the job correctly and safely.

Job risk factors

For almost any job, no matter what it is, there are factors that can cause injury. Risk factors can include force (the amount of exertion needed to accomplish a task) such as pushing, pulling, gripping, and lifting; repetition (the number of times a movement is repeated); vibration or pressure on the palm of the hand; and exposure to heat or cold. An employee's posture can also affect the risk of injury. For example, injury can occur if an employee's head and neck are bent forward, backward, or to the side for an extended period of time; if the work is above shoulder level (Fig. 1), if the work requires the wrists to be bent or causes the elbow to be pushed out from the body; if the work requires bending, twisting, or reaching; or if the job requires squatting or kneeling for an extended

periods.

Although the risk factors seem abundant, making some simple engineering changes can greatly reduce the risk of injury. Physical changes, such as layout (changing the design of the workstation) and adding or adjusting tools and equipment can greatly reduce the risks (Fig.2).

Your employer's part

Employers can do their part by teaching the employee how to do the job the right way. They can also use ramp in conditioning, which allows an employee to gradually adjust to a new job by allowing breaks in the conditioning period. Other ergonomic techniques that can help to reduce injury include, making sure that jobs are performed using correct work posture and position, and reducing repetition by expanding the number of tasks performed by one individual. Training an employee on many different jobs with different risk factors and then rotating him or her among these jobs can also reduce injuries caused by repetitive movement.

Your company's future depends on continuous improvement in quality

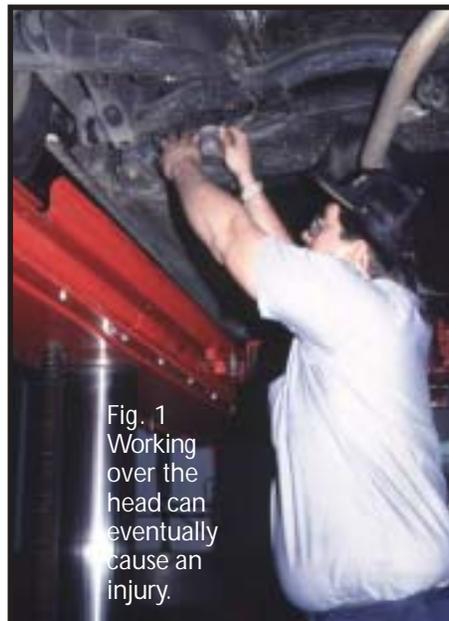


Fig. 1 Working over the head can eventually cause an injury.



Fig. 2 Adjusting your workstation can reduce the risk of injury.

and efficiency so it can stay ahead of the competition. Maintaining a healthy workforce is an essential part of this challenge. Your employer needs your personal expertise to make these changes work, so become involved, and become a part of the ergonomic solution. After all, it's your job they want to improve.

*William C. Etchison, MS
Columbus, Georgia*

Common Sources of Stress

- Overload – too much or too difficult
- Time pressure
- Underload – boredom or monotony
- Repetitive work
- Lack of job decision latitude
- Lack of security
- Lack of sense of belonging
- Distracting or constant high noise level
- Lack of space / privacy
- Role ambiguity – not sure what you're supposed to do
- Role conflict – different people have different ideas of what you're suppose to do

David C. Rehak, MD, graduated from Bucknell University with a degree in engineering. He earned his medical degree at the University of Pittsburgh School of Medicine. He completed his orthopaedic surgery residency at the University of Pittsburgh Medical Center and completed a fellowship in hand and upper extremity surgery at Allegheny General Hospital in Pittsburgh, Pennsylvania.



Dr. Rehak is board certified by the American Board of Orthopaedic Surgery. He specializes in surgery of the hand, wrist, elbow, and upper extremity, and he has additional certification and qualifications in surgery of the hand.

Dr. Rehak is the head of the hand and upper extremity service at The Hughston Clinic. He is a member of the American Society for Surgery of the Hand, American Association for Surgery of the Hand, American Foundation of Surgery of the Hand, American Board of Orthopaedic Surgery, American Academy of Orthopaedic Surgeons, and Muscogee County Medical Society. He is also the current editor of the *Hughston Health Alert*.

Dr. Rehak and his wife, Heidi, have four sons, Alex, Christopher, Jake, and Ben. They enjoy outdoor activities such as running, fishing, hunting, hiking, and boating.

The *Hughston Health Alert* is a quarterly publication of the Hughston Sports Medicine Foundation, Inc. The Foundation's mission is to help people of all ages attain the highest possible standards of musculoskeletal health, fitness, and athletic prowess. Information in the *Hughston Health Alert* reflects the experience and training of physicians at The Hughston Clinic, PC, of physical therapists and athletic trainers at Hughston Rehabilitation, of physicians who trained as residents and fellows under the auspices of the Hughston Sports Medicine Foundation, Inc., and of research scientists and other professional staff at the Foundation. The information in the *Hughston Health Alert* is intended to supplement the advice of your personal physician and should not be relied on for the treatment of an individual's specific medical problems.

Special written permission is required to reproduce, by any manner, in whole or in part, the material herein contained. **Send inquiries** to Medical Writing, Hughston Sports Medicine Foundation, Inc., P.O. Box 9517, 6262 Veterans Parkway, Columbus GA 31908-9517 USA.

Copyright 2004, Hughston Sports Medicine Foundation, Inc. ISSN# 1070-7778

Editor

David C. Rehak, MD

Managing Editor

Dennise Brogdon, BA

Art Director

Mary Kate Carlton, MSMI

Editorial Board

Donald R. Avery, FACHE
Mark A. Baker, PT
Thomas N. Bernard, Jr., MD
Carol M. Binns, MA
Carol M. Capers, MSMI, CMI
William C. Etchison, MS
Bruce A. Getz, ATC
Steven M. Haywood
Sharon T. Johnson, RN
David L. Keese, PT
Cholly P. Minton, BA

For complete articles from the *Hughston Health Alert* or for information about the Hughston campus visit www.hughston.com.



6262 Veterans Parkway
P.O. Box 9517
Columbus GA 31908-9517

Hours of Operation:
M-F 8:30-5:30

Appointments:
706-494-3121
1-800-331-2910

www.hughston.com



Hughston Health Alert

P.O. Box 9517
Columbus GA 31908-9517



U.S.
POSTAGE PAID
COLUMBUS, GA
PERMIT NO. 99
NONPROFIT ORG.