It’s a normal day on the jobsite. Workers lug large, bulky sheets of drywall weighing 50 to 100 pounds each from the storage area to the work area. Here, the drywaller holds the sheet flat against the frame while fastening it down with screws. Day in and day out at hundreds of jobsites every day around the country, they hoist and hold these sheets, often times overhead.

These are the people who may enter the carpentry ‘trade when they are 18 years old and work five, 10, 20 or more years. They build our homes, our offices and our stores. They work through the tired, sore back and shoulders, not realizing that somewhere down the road they just may be out of work due to a serious injury—just from doing the same thing the same way they have always done it.

It’s a classic case of cumulative trauma disorder, where potentially very serious injuries can happen little by little, just by repeatedly putting stress and strain on one part of the body, such as the shoulder. After 10 years, many workers are finding that they are no longer able to do the work they once could due to debilitating shoulder pain or restricted movement.

**THE STATISTICS**

Today, approximately 60 percent of all work-related illnesses are CTDs, accounting for more than $16 billion per year spent on worker’s compensation. CTDs are not fatigue. The symptoms do not go away after a night of rest and do not interfere significantly with work or daily activities.

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As the workforce ages, cumulative trauma disorders are becoming an increasing problem. In 1992, the average age of the worker was 34 years old, but in 1998, it was 40. It is becoming more difficult to entice younger workers to enter the trades when high-tech jobs offer higher salaries.

Shoulder injuries are primarily being seen in the drywall, plastering, ceiling and acoustical tiling sectors. “Neck, back and shoulder injuries account for 25 percent to 35 percent of the injuries, sometimes higher,” says Dick Mettler, safety/loss control consultant with the Northwest Wall and Ceiling Industry Contractor’s Association. Although these issues are beginning to be addressed in other industries, the construction industry continues to lag behind.

**Focus on the Shoulder**

The most common shoulder injury is called rotator cuff syndrome. The rotator cuff is a group of muscles and tendons that help to hold the head of the humerus (the ball at the top of the upper arm bone) in the socket of the shoulder. Rotator cuff injuries can be caused by a fall or by overuse of the shoulder. The most common symptom is pain in the shoulder, especially when reaching over the head or behind the back. Other symptoms include weakness, numbness, or difficulty moving the arm.

Anti-inflammatory medication may reduce pain and swelling, but it is only a short-term solution. Long-term management of rotator cuff injuries may involve physical therapy, medication, or surgery. It is important to seek medical attention if you suspect you have a rotator cuff injury to prevent further damage to the shoulder.

**Anti-inflammatory medication may reduce pain and swelling, but it is only a short-term solution.**
The rotator cuff consists of a group of muscles and tendons that hold the shoulder joint in place and provide an incredible, almost 360-degree range of motion. It is this unique anatomy of the shoulder that puts it at special risk. Through repeated stress, strain and overuse, the tendons can become compressed due to inflammation and, in some cases, may even tear.

Pain and stiffness in the shoulder or difficulty rotating the arm in all the normal positions may be the first symptom. Although anti-inflammatory medication may reduce pain and swelling, it is only a short-term solution. Ignoring the pain and continuing to aggravate the condition can lead to more serious injury. Early detection and treatment is key.

Surgery can be used to repair some of the damage, but it is an invasive surgery with only about a 50 percent success rate. Because rest is so crucial to allow the inflammation to subside, typically a worker will be out of work for three to four months following shoulder surgery. Then there will be physical therapy sessions to attend, the possibility of scar tissue formation that may restrict shoulder movement, and the possibility of work restrictions, Mettler says. Work restrictions may involve no overhead lifting of more than 50 pounds, meaning that the worker would always need a partner.

Besides the human cost of a shoulder injury, there are the costs to the employer. “The average shoulder injury costs $34,000 in medical costs alone,” Mettler says. Then there are the worker’s compensation costs, time off to attend physical therapy sessions and increased insurance costs. According to the Occupational Safety and Health Administration and the Bureau of
Labor Statistics, the carpentry and floor work sector already accounts for 12.2 injuries per 100 full-time workers, or an average of 5.8 lost workdays per 100 full-time employees due to on-the-job injuries.

**WHAT CAN BE DONE?**

So, what can be done to prevent shoulder injuries before they occur? First of all, employees and employers must begin to recognize that cumulative trauma disorders are very real injuries that will affect both their health and their bottom-line down the road. Education and training can raise awareness, but Mettler says, employers feel that safety training is “forced” on them by OSHA and may be reluctant to comply.

Basically, the industry has to switch to a more common-sense approach. “We’ve got to overcome this macho attitude or the ‘I’m invincible’ attitude of the younger worker,” Mettler says. Employer attitudes will also have to change. “Employers want guaranteed savings. But because the benefits are often indirect, they can’t always be quantified,” Mettler explains.

Administrative controls and work practice changes can be very effective in preventing injuries. For example, using smaller 4’ x 10’ sheets that weigh only 80 pounds might help reduce strain. “Smaller sheets may require an extra joint to tape, but they can be handled more easily and quickly,” Mettler says. Simple work practices, such as storing drywall and plywood sheets closer to where they will be used, and working in teams of two are also effective options. More significant changes might include job rotation and cross-training workers, for example, in metal framing. Even a good stretching and strengthening program done each day prior to starting work may reduce the chances of acquiring a shoulder injury. Some sample exercises recommended by the American Academy of Orthopedic Surgeons are in the sidebar on page 48.

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Administrative controls are one approach, but not everyone agrees. “We have found that when workers are stressed and trying to complete a project on schedule, often the first things to go are the administrative controls, such as work practices and stretching exercises. That’s why we have chosen to focus on engineering solutions,” says Gary Mirka, Ph.D., assistant professor of industrial engineering at North Carolina State University. In an ongoing, federally funded research study, Mirka and colleagues are focusing on drywall hangers, framers and masons and identifying specific tasks that require intervention. Their study focuses on small contractors because they often don’t have access to the latest information or products. “That’s where we come in.

EMployees and employers must begin to recognize that CTDs are very real injuries.

We go out and either purchase or develop new lift-assist and other tools to try to demonstrate the cost-effectiveness of these tools to the workers,” Mirka says. If the workers are able to drywall a house, for example, in 75 percent of the time it normally would require using a drywall jack or other tool, they may be convinced that there is a significant cost savings for them, he says.

A number of tools designed to reduce shoulder and back strain are already on the market. These include wallboard lifts, adjustable work platforms, drywall carts and handles to help in the lifting of large, heavy sheets. Dana Young, vice president of marketing for Telpro Inc., the manufacturer of the Panellift line of lifts and carts, says that the biggest obstacle to overcome is simple human nature. “We have to help people to
**SHOULDER EXERCISES**

Source: American Academy of Orthopedic Surgeons

**Basic Shoulder Strengthening Exercise**
Attach elastic tubing to a doorknob at home. Gently pull the elastic tubing toward your body. Hold for a count of five. Repeat five times with each arm. Perform twice a day.

**Wall Push-Up**
Stand facing a wall with your hands on the wall and your feet shoulder-width apart. Slowly perform a push-up. Repeat five times. Hold for a count of five. Perform twice a day.

**Shoulder Press-Up Exercise**
Sit upright on a chair with armrests with your feet touching the floor. Use your arms to slowly rise off the chair. Hold for a count of five. Repeat five times. Perform twice a day.

**Shoulder Rehabilitation**
Each of these exercises should be done 50 times, three times a day. Allow a one- to two-minute minute break between exercises.


**Shoulder Stretching**
Hold for 10 to 15 seconds each for two to three sets. Stretching should not cause pain or discomfort. Gentle stretch only.

**Tricep Stretch**
With the arm in front of the chest, pull the arm across with opposite hand at elbow.

**Overhead Tricep Stretch**
Same as cross-chest stretch except pressure is to the rear.

**Over and Under Stretch**
Drop a towel behind your head. With your upper arm bent, reach up with your arm to hold on to the end of the towel. Gradually, move your hand up on the towel, pulling your upper arm down, until your hands are touching.

**Pectoral/Deltoid Stretch**
Lift your arms up behind you until you feel a stretch in the arms, shoulders or chest. Hold an easy stretch for five to 15 seconds.
change their ingrained work patterns. There are better ways of doing things,” he says.

“Most of our clients are the smaller companies or independent contractors. Their first experience with these lift-assist devices may be through renting them,” Young says. During a rush period, they may rent a drywall jack and find that it not only makes the job easier and less stressful physically, but it also increases productivity. Once workers have been trained in its use and have begun to change their ingrained work habits, contractors may be able to use fewer people per job. Instead of having six people on a job, contractors can spread the workers out to cover two different projects at different sites.

Faced with the prospect of escalating workers’ compensation costs, many employers are having to rethink re-equip and rearrange work areas for employees. Education, training administrative controls and new and better tools and work practices all have their place, Mettler says. Helping workers do their job easier, faster and in a safer way makes good sense, both in terms of keeping your best workers healthy and the difference it will make in your overall bottom line by reducing workers’ compensation claims and the costs associated with hiring and training new workers.

“From the worker perspective, a shoulder injury may be career-ending,” Mettler says. “These are good people who have worked hard their whole lives and are forced to take desk jobs earning $10 to $12 per hour, at a loss of more than one-third their previous income.” Overall, workers may be the best source of information. Listen to them and use their suggestions because workplace injuries are increasingly becoming a problem that neither workers nor employers can afford to ignore.  

About the Author
Katherine Hasal is an occupational health and safety writer and director of SciMed Communications in Parsippany, N.J.