



SONOGRAPHERS' COMMUNICATION

Working to Prevent Work-related Musculoskeletal Disorders

- Nine out of 10 sonographers suffer from Repetitive Strain Injury (RSI) Syndrome.
- At least 20% of these injuries are career ending.
- Over 90% of sonographers show symptoms in the scan arm region. Over 20% in the non-scan arm region.

My name is Doug Wuebben BA, AS, RDCS (Adult and Pediatric). I have been a sonographer for 17 years. Within two years of starting my career, I developed bilateral shoulder pain as a result of RSI from doing my job. My pain was debilitating and kept me from doing my job at a high level. I was terrified. I knew I had only two options: find a solution to my problem or find another career. I went with option #2 and found a solution to my problem. The solution completely eliminated my work-related shoulder pain, even up to this day.

First, we need to understand that muscles and tendons are designed for regular use. When the workload is too frequent or too long a duration, the muscles and tendons cannot adapt. Inflammation occurs, then degeneration. The result is small micro tears followed by scar tissue formation.

When a tendon injury occurs, the muscle to which it is attached compensates by increasing workload to further support the extremity and joint. This increased demand on the muscle results in fatigue and strain. Work pace, lack of recovery time, the high level of muscular effort, and the amount of transducer time a sonographer puts in, particularly when performing the same type of examinations repeatedly, are all contributors.

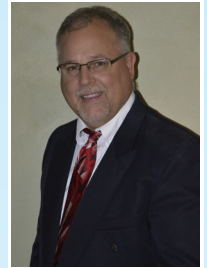
Muscles need oxygen supply to work properly. The process occurs as oxygen is pumped into the muscle. Normal contraction of the muscle in the process of dynamic movement removes waste materials. Static postures prevent this process, resulting in less oxygen to the muscles and a buildup of lactic acid, followed by fatigue and potential injury.¹ The best treatment for work-related musculoskeletal disorders is prevention.²

This is how I found a solution. I reached out to a strength and conditioning specialist who among others, works with professional athletes helping keep them at the top of their game. Taking in the details of my plight, he did three key things;

1. He looked at the bio-mechanics and correct movement patterns that my job as a sonographer required.
2. He educated me on doing stretching and exercises the *proper* way.
3. He gave me hope by explaining that if I put in the effort, I would see the desired results. I could train my body to withstand the rigors of my job. A short time after doing what he said, my shoulder pain went away. His training philosophy involves training body "movement," and not just "muscle." Movement allows you to train world class athletes as well as sonographers, nurses, hairdressers, and any other professionals.

This training is based on correcting our body posture, body movement, and body alignment. Corrective movements help to counteract the repetitive "bad" movements and patterns we do to ourselves through sports, training, and repetitive movements at work and life in general.

Corrective movements can be as simple as doing some exercises for glutes and low back to counteract all the sitting we do. It can mean stretching one side of a joint and strengthening the other side to make it function better—we say to "lengthen and strengthen" certain body parts that work together when we move. Reversing repetitive movements is corrective exercise.



Doug Wuebben,
BA, AS, RDCS

The path we look at for getting "right" is to:

1. CLEAN UP MOVEMENT PATTERNS: Reestablish functional range of motion first.
2. MAKE SURE BODY IS STABLE DURING MOVEMENT: Once functional range of motion is reestablished, adding stability becomes the next step.
3. ADD PROPER PROGRESSION: Once the joints, muscles, and movement patterns have sound stability, both static and dynamic, next will be to add in loading the joints, muscles, and movement patterns.
4. ADD A PLAN: Once the joints, muscles, and movement patterns can produce strength and power gains, we can now successfully add in specific work activity to the program.

I hope that by sharing this information, those of you who find yourselves a part of the statistics at the top of this column may become a "non-statistic."

REFERENCES

1. Kroemer KHE, Grandjean E. *Fitting the Task to the Human*. 5th ed. Philadelphia, PA: Taylor Francis, Inc; 2000.
2. Melhorn JM. Cumulative trauma disorders and repetitive strain injuries. *The future*. Clin Orthop Relat Res 1998;351:107-26.

Doug Wuebben, BA, AS, RDCS is a registered echocardiographer, a consultant, international presenter, and author of e-books in the areas of ergonomics, exercise and pain, and injury correction for sonographers. He has also been published on the topics of telemedicine and achieving lab accreditation.