

Peaking Interests

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of Apex Physical Therapy

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Ergonomics

The science of fitting worker and workplace

By John Weiss, DPT, CEAS

Why does your elbow hurt after a round of golf or a game of tennis? Why do some car seats leave you aching after a long drive? Why do some computer workstations cause eyestrain and neck pain?

The answer to all these questions is simple: bad ergonomic design.

Many of you may have heard the term "ergonomics" before. Some may think it has to do with proper seating or design of workspaces. Some may believe it's a study of the way humans interact with their environments. Both are correct.

In fact, the International Ergonomics Association adopted the following definition to describe the term: "Ergonomics," they said, "is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession applying theory, principles, data and methods to design in order to optimize human well-being and overall system performance."

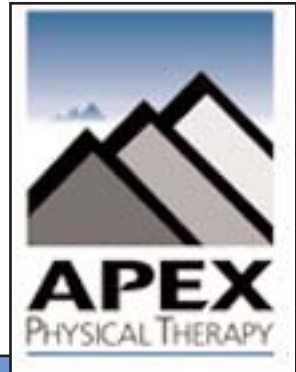
To put it simply: Ergonomics is about designing the job or activity to fit the individual, not forcing the

individual to fit that activity or job. Thus, ergonomics – both good and bad – factor into every aspect of our daily lives, from our work environments to our places of play.

From a medical standpoint, bad ergonomics can lead to a variety of injuries, often grouped under catch-all terms like Cumulative Trauma Disorders (CTDs), Musculoskeletal Disorders (MSDs) or Repetitive Stress/Strain Injuries (RSIs). In fact, according to the U.S. Bureau of Labor Statistics, more than 60 percent of workplace injuries reported each year are associated with or can be classified as CTD/MSD/RDIs.

Essentially, these umbrella terms describe muscle, tendon and nerve ailments that result from long periods of tension through, for instance, poor posture or repetitive motions. Some well-known diagnoses that fall under these categories include carpal tunnel syndrome, tennis elbow, golfer's elbow and various forms of tendonitis. Thus, one can see these injuries are not limited to work, but can also result from hobbies, such as playing an instrument, gardening, woodworking or knit-

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www.apex-pt.com

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Harmony between humans and their environment

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ting; sports and exercising; or chores around the home.

These painful conditions, however, are not an inevitable part of life. The application of good ergonomics – that is, a series of simple and inexpensive changes in equipment and behaviors – can help to both ease and prevent these overuse injuries.

In order to demonstrate how good ergonomics can be applied in daily life, we'll use an example with which most individuals are familiar: the computer workstation. As technology continues to advance, more and more people find themselves behind a computer for some, if not most, of their workday. In addition, computer-savvy children and teens also spend countless hours at their computers for both schoolwork and leisure time.

Numerous studies have highlighted three factors – force (related to posturing), duration and repetition of motions – that contribute to ergonomic afflictions. If carried out improperly on their own, these factors can create problems. However, the combination of all three performed in error, which often occurs at computer workstations, poses the most significant risk of injury.

Incorrect posturing can place unusual or excessive force on the body. For instance, the failure to place your keyboard and monitor in the proper position can create stresses at the wrists, shoulders, and neck. Neglecting to situate yourself at a distance from the screen where you can see without straining can also place undue stress on the body. These are just a few reasons an ergonomically sound workstation design is important (see the "Do It Right" section for a helpful diagram).

Long periods of static positioning can also increase the likelihood of both localized and general fatigue in the body. Motions repeated every few seconds or more – like the click-

ing of a mouse – can also contribute to strain on the body. Thus, in addition to good workstation design, it's important to take breaks or change tasks approximately every 30 minutes during the day in order to provide muscles and tendons time to "recover" to their normal, unstressed state. It can also be valuable to use position aides, such as foot rests, document holders, adjustable chairs and keyboard trays, in order to minimize fatigue of muscle groups not directly involved in the computer activity.

Overall, it's most important to listen to the signals your body gives you. If you have pain in your wrists, hands, shoulders or neck after a long day of typing, examine your work area and behaviors to see if they may be causing the problem. Sometimes, even the smallest adjustments to tasks, posture, habits or workstation design can make a big difference in the way you feel at the end of a day.

If you feel your work environment is a source of daily aches and pains, but you are having difficulty identifying the ergonomical-

ly-related risk factors, seek the advice of a professional. At Apex Physical Therapy, our therapists are experienced in identifying factors that can lead to Musculoskeletal Disorders. Also, if you are already receiving treatment for such an injury, we can prescribe the proper exercises to alleviate your symptoms and prevent your condition from worsening or occurring again in the future.

In addition, we can provide on-site ergonomics assessment services compliant with the U.S. Department of Labor's Occupational Safety and Health Administration, providing recommendations to improve your workstation in both office and industrial work settings.

By utilizing our expertise in order to better understand basic ergonomic principles and how they affect your job, you can prevent injuries to yourself; work more efficiently and comfortably; and promote your long-term health.

Ergonomics is about designing the job or activity to fit the individual, not forcing the individual to fit that activity or job.

Get Certified!

Apex Physical Therapy will be hosting a **FREE** CPR certification in our Blue Bell office in September 2006. Training will be presented by instructors from Cardiac Care and Safety. Participants will be



able to meet some of our physical therapists, and snacks will be served. If you would like to attend, please call Kam at 610-270-0370. The deadline for registration is August 15, 2006. Due to space limitations, participation will be limited to the first 20 people who call.



Our mission is your recovery!

FREE 30-minute screening and consultation

Thank you for taking time to read the Apex Physical Therapy newsletter! To show our appreciation, we're offering you this coupon. Bring it to us or give it to a friend to receive a FREE screening by one of our top-notch therapists. You will learn about cutting-edge techniques to relieve pain and receive recommendations to help you on your journey to better health and wellness. *Please call to set up your screening.*

Your name: _____

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Are you currently a patient at Apex? yes no

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Welcome to our new staff members

Apex would like to recognize and extend a warm welcome to some of our newest staff members. They include:

- Ian Dzienisiewski, DPT, physical therapist in Royersford
- Jennifer O'Gara, MPT, physical therapist in Blue Bell
- Peggy Blank, receptionist in Royersford
- Nicole Dobbs, receptionist in Blue Bell

Another delivery from the stork

Apex would like to congratulate Royersford therapist Seth Rosencrance and his wife, Dana, on the arrival of their first child, Cecelia Grace. Cecelia was born on June 19. She weighed 6 lbs., 9 oz. and was 19 inches long. All members of the Rosencrance family are doing well.

Staff achievements

Blue Bell therapist and Managing Director Brian Warenus received his doctorate of Physical Therapy from Daemen College in Amherst, New York, in April.

Chalfont therapist John Weiss, author of this quarter's feature article, received his certification as an Ergonomics Assessment Specialist for industrial and office workspaces from the Back School of Atlanta in March.

Apex is proud of all of our therapist's accomplishments in continuing education. Congratulations Brian and John!

Relay for Life results

In May, Apex took part in the American Cancer Society's annual Relay for Life at Pottsgrove High School in Pottstown. The event, designed to celebrate cancer survivorship, was a great success. With a total of 20 participants, our team, Beth's Bumblebees, raised a total of \$5,819.30 for cancer research. Overall, the event brought in more than \$694,000.

Treat_(ment) for your Tummy



Hot Dog Chili

An old family recipe from one of Apex's owners, this is one we're sure will become a favorite for your family as well. As it's name implies, this dish is intended for hot dogs. However, if you serve it at your next BBQ, don't be surprised to see it used as a condiment for burgers, a dip for chips or even a hearty topping for a summer salad.

Ingredients

- 3 lbs lean ground beef
- 3 tbs coarse ground black pepper
- 1 tbs salt
- 1 tbs oregano
- 1 tbs minced garlic
- 1 tbs red pepper

- 3 tbs minced onion
- 2 tbs ground cumin
- 3 tbs chili powder
- 1/4 cup ketchup
- 4 cups water

Prep/cook time: 1 hour, 10 mins
Servings: Plenty

1. Brown beef in saucepan, stirring with a large, metal spoon to break up meat into a fine consistency.
2. Drain fat from meat.
3. Add remaining ingredients and stir to blend.
4. Bring mixture to a boil
5. Reduce heat and allow mixture to simmer for approximately one hour or until the liquid is almost gone.
6. Serve over a hot dog in a bun, using a slotted spoon to drain any remaining liquid
7. Garnish with grated cheddar cheese, chopped onions and your favorite condiments.

Note: Chili is spicy. To reduce spice, cut back on red and black pepper.

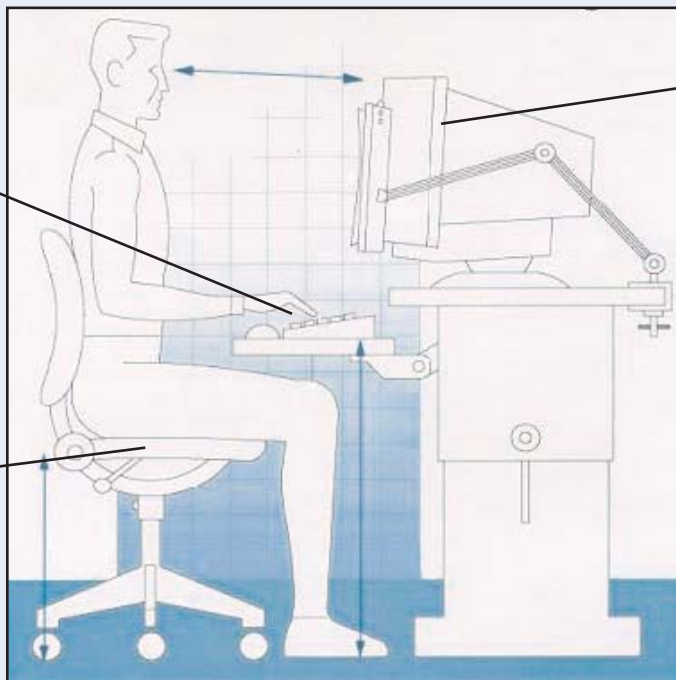
Do it Right: An Ergonomically Sound Workspace

Keyboard tips

1. Use an adjustable keyboard/mouse tray, tilted slightly up, so your wrists stay in a neutral (straight) position.
2. Position your keyboard just above the level of your lap, so your elbows stay at an open (90 degree) angle.
3. Keep your shoulders relaxed and your elbows at your side.
4. Use an arm or wristrest only when taking breaks, not while typing.
5. Use the minimum amount of force necessary when typing.

Chair tips

1. Adjust your chair's height, so the backs of your knees are at open angles and your thighs parallel to the floor.
2. Sit back in your chair and adjust your lumbar support to provide bracing and comfort for your lower back.
3. Recline your chair slightly in order to relieve lower back tension.
4. Rest your feet flat on the floor or on a foot rest if your feet don't reach.
5. Avoid pressure points.
6. Keep the ground clear of obstacles.



Monitor tips

1. Center your monitor so that it is directly in front of you.
2. Sit about arms' length away.
3. Position the top of your screen at the level of your eyes.
4. Tilt your monitor slightly upward.
5. Use a document holder placed directly next to your screen.
6. Avoid eye strain by balancing the brightness of your monitor to your surroundings and adjusting font size and color.

Additional tips

1. Take short, frequent pauses that incorporate exercises, stretching or some form of movement.
2. Refocus the eyes periodically by looking away from the monitor at something in the distance.

Measurement tips – distance from:

- eyes to monitor: 18 to 39 inches
- keyboard to floor: 23 to 28 inches
- chair to floor: 15 to 21 inches

Photo courtesy of University of Illinois McKinley Health Center Web site

Achieving the Apex

What real patients are saying about their successes with our clinics

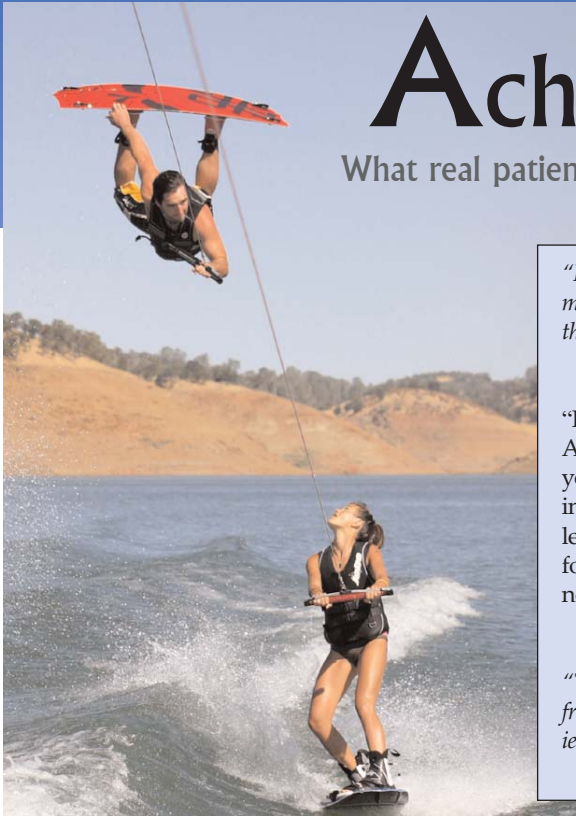


Photo courtesy of West Coast Wakeboard Camps

"I started my therapy in a fair amount of pain and discomfort. At the end of the treatments, I experience no pain and only a slight tingle in the arm in question. My sincere thanks to the staff at Apex. My therapist's professionalism and treatment were A+."

– John B.

"I want to express my gratitude for the excellent professional care I received at Apex Physical Therapy following my shoulder surgery. From my first visit on, your staff made me feel comfortable and provided all the necessary help for insurance purposes and setting up appointments. My therapist provided excellent care from day one. He managed to meet or exceed all the time and performance goals set by my surgeon. I am currently returning to many of my normal activities thanks to the commitment of your team."

– Thomas Q.

"The staff at Apex made my PT experience comfortable and successful. Everyone was friendly, helpful and genuinely interested in taking care of me. Your facility is convenient and well-maintained. Thank you all for your excellent care!"

– Rita R.



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