

Ergonomics Made Easy

1. What is ergonomics?

Ergonomics is the branch of science dealing with the interaction between man and machine. In the Computer Age, ergonomics most often refers to the set-up of a computer workstation. Ergonomics has become a garbage pail term referring to any product that is intended to relieve some of the physical stresses associated with working at a computer. So, an "ergonomic mouse" is one that helps prevent CTS (Carpal Tunnel Syndrome) by supporting the wrist in a proper position for moving and clicking.

2. Do ergonomic products prevent repetitive stress injuries such as carpal tunnel syndrome, low back pain, and neck pain ?

Yes, many products on the market are helpful at preventing repetitive stress injuries.. However, even the best ergonomic keyboard will not automatically prevent carpal tunnel syndrome. Other steps necessary for preventing injuries are Proper Computer Workstation good sitting posture, taking regular rest breaks, and performing exercises regularly.

3. Why do my hands hurt from typing at a computer?

Typing and using a mouse involve repetitive movement at the wrists and hands. During any repetitive movement there is an increased work demand on your muscles resulting in the accumulation of irritating waste products. After a period of constant work there is a resultant decreased blood supply to the muscles of your hands and wrists, causing them to cramp. This can eventually lead to CTD.

4. How can I tell if I have CTS ?

A sure sign of CTD is pain, tingling and numbness in the thumb, index and middle fingers of the hand. You will also experience weakness and swelling in the wrist and hand. If you experience these symptoms you should consult your Physician or Physical Therapist.

5. I'm okay when I start work. As the day progresses, my wrists and hands start to swell. Why is that?

After typing all day, irritating waste products accumulate in the wrists and hands causing swelling to occur. Typically, the muscles of the wrists and hands get enough blood supply to get rid of the waste products that accumulate. However, the repetitive motion of typing all day decreases the amount of blood flow. This reduces the rate of repair, causing the wrists and hands to swell. It is important to take rest breaks and perform stretching exercise This allows the blood flow necessary for repair to occur to return to the wrists and hands.



6. My job description is solely to sit in front of a computer and type all day. What can I do to avoid Repetitive Stress Injuries to my wrists and hands?

There are some jobs where repetitive motion at the wrist and hand is unavoidable. However, you can avoid injury by performing certain stretching and strengthening exercises throughout the day which are neither time consuming nor conspicuous. These exercises will restore blood flow to the working muscles.

7. Why does my Thumb bother me when I tap the space bar on the computer keyboard?

By constantly tapping the space bar with your thumb you are stressing the tendons of the thumb which could cause De Quervain's Disease. Every hour you should switch the thumb you use to tap the space bar, allowing the tendons time to rest. For further information please read our section on De Quervain's Disease.

8. Is it important to have your arms properly supported while typing?

Your arms and hands get just enough blood supply to allow the muscles to work. Working with your arms unsupported against gravity will cause the muscles to demand a greater blood supply. Think of blood as fuel for your muscles. If you use up too much fuel early in the day, your muscles will run out of gas and fatigue. It is important to minimize the energy needed to work by providing upper extremity support while typing at a computer. A chair with armrests provides a sufficient amount of support. Tennis elbow is one of many problems that can result from a lack of upper extremity support while typing.

9. My head and shoulders are usually slouched forward. Could this be the reason why I get neck and shoulder pain?

Forward head posture causes a decreased blood supply to the postural muscles of the neck resulting in a build up of irritating waste products. In effect, this posture increases the weight of the head on the postural muscles of the neck threefold. The postural muscles elongate, causing possible nerve impingement. Rounded shoulders posture compresses the tendons in the front of the shoulder, causing pain in the shoulder and arm.

10. I used to only have neck pain. Now I am experiencing pain down my arms. Why is this happening?

The nerves that exit the spine in the neck travel all the way down your arms to your fingertips. Any neck problems can result in subsequent pain down your arm. This is not a good sign. It is an indication that the symptoms are getting worse. You should consult your Physician or Physical Therapist.



11. I frequently experience headaches during and after working at my computer. Why does this occur?

Forward head posture will cause the postural muscles of your neck to tighten, potentially compressing the nerves that enter the head, causing pain. This poor posture habit can be the result of the computer monitor being placed too far away. As a result, the computer user moves their head forward over their neck to see the screen. Visual glare from a computer monitor can also cause headaches.

12. Is it okay to have my computer monitor off to my left side?

Having the monitor off to the left will cause the postural muscles on the left side of your neck to tighten and on the right side to elongate. This muscular imbalance will eventually lead to difficulty turning your head to the right. Pain and discomfort may also result if a nerve impingement ensues.

13. If I maintain perfect posture all day will my aches and pains go away?

Even perfect posture is not good if it is maintained all day. Sustained posture although perfect, will cause the postural muscles to fatigue because the muscles never receive a break from posturing the body all day. If you sit all day, occasionally stand or adjust your seat or desk height ever so slightly to change the postural position of the body.

14. Why is good posture important during work?

Good posture during work puts the least amount of stress on the working muscles and allows you to work longer with less fatigue.

15. I have the perfect chair to sit in, yet I still get muscle aches and pains. How should I sit while working?

The most perfect chair is useless if you do not sit in that chair properly. Always try to sit tall with a slight arc in your low back and your chin tucked in. Do not slouch nor round your shoulders and head forward.

16. I just started sitting with better posture and my muscles now hurt. Why is this?

Do not be alarmed. Whenever muscles work in a different fashion it takes time for the specific muscles to adapt to a different work demand. Pain and soreness may occur initially. However, once the muscles get used to sitting with your improved posture the pain and soreness will go away.

17. What can I do to prevent my back from hurting after sitting for long periods of time?



Sustained sitting puts undo stress on the lower back. You should never sit for greater than one hour at a time. After each hour you should stand for a minute and perform Skywatcher exercise. This exercise will reverse the stress placed on the discs in the lower back during sitting.

18. I tend to slouch when I sit. Can this posture hurt my lower back?

Sitting, particularly for long periods applies a stress to the lower back. Slouching, which is a poor postural habit will only multiply that stress.

19. What is the best way to relax the muscles of my lower back after a long, hard day's work?

The least stressful position for the body is laying on your back with your hips and knees bent at a ninety degree angle. Lay on the floor with your calves and feet on the seat of a chair. This is a great way to reduce the stress of a long, hard day.

20. After looking at a computer screen my eyes start to hurt. What can I do to prevent this pain?

You can either place a protective screen over your computer or periodically change the monitor angle to reduce glare.

21. Why is proper computer workstation set-up important for preventing work injuries?

Poor work station design could cause undo stress to the working muscles. Studies have shown that approximately twenty percent of all computer work station injuries are due to set-up.

22. My body is not in any great pain after working at a computer for the last five years. Why should I change my work habits now?

Many injuries that develop at a computer are Microtrauma injuries. This type of injury is the result of repeated small stresses over a period of time. Suddenly, the day comes when you're in a lot of pain. This type of injury is not like a broken arm or leg which happen suddenly. You might not feel any pain now but you could easily be on your way to a repetitive stress injury. It is important to realize this and change your work habits now before it is too late.



23. Are exercises important during a workday?

If you take just sixty seconds every hour to perform some very simple stretching exercises, the likelihood of you feeling pain at the end of the day greatly decreases. Exercise helps restore blood flow to working tissues, allowing the muscle greater endurance to perform the work at hand.

24. I don't have time to go to the gym. Are there any exercises I can perform at work?

There are many stretching and strengthening exercises you can perform at the computer workstation. These exercises are neither conspicuous nor time consuming.

25. Is proper nutrition important to avoid aches and pains?

If you eat a proper diet your blood flow will be rich with the necessary vitamins, minerals and nutrients to take away the irritating waste products that accumulate and help repair any damaged muscle. If your diet is filled with fatty foods the blood supply will no longer be like the supreme gas you fuel your car with. The cheap unleaded gas will now fuel you. Use the good stuff. It will improve the effectiveness and efficiency of your blood supply.

26. I smoke frequently. Can this affect the endurance of my muscles?

Smoking places poisonous carbon monoxide in your blood stream, decreasing the ability of your body to supply an adequate amount of blood to your muscles. Smoking also decreases the strength of the connective tissue in muscles, increasing the chance for muscle injury.

27. I find computer work very stressful. Can this be causing the muscle knots in my neck?

You could do absolutely nothing physical all day with the exception of thinking stressful thoughts and the likelihood of you obtaining a muscle knot in your neck is just as great as if you work in front of a computer all day. Combine the two together and you have big problems. Stress decreases the blood flow to your muscles causing irritating waste products to accumulate. If the stress is not stopped, the muscle has no time to rest and repair.

29. Why do my muscles occasionally go into muscle spasm?

A muscle spasm is a protective mechanism your body employs to prevent an injury from occurring. A spasm is caused by an insufficient blood flow to the working muscles. It is your body's way of telling you to slow down or stop what you are doing in order to rest the muscle.

