



**Computer pain...
it's a matter of choices.**

Bill Godkin

What Do I Mean By “Computer Pain?”

- You may suffer from headaches, back pain, stiff neck, rotator cuff problems, tennis elbow, tingling fingers and Carpal Tunnel Syndrome!
- If you spend more than 4 hours per day working at a computer workstation/desk, then your chances of having pain or discomfort as a result are greatly increased! Sometimes, it only takes an hour or two a day working at a desk poorly configured!
- These problems can be prevented and resolved through training, assessment and education.

Why Do I Hurt From Sending Email?

- How many of you here have experienced some discomfort after being on a computer even for just a brief amount of time? Ever wonder why?
- Static position! Humans are creatures that are born to be physical and active. Sitting all day in one position can be more harmful than actually working and moving around. That is why you need to change postures and stretch frequently while you are on the computer.
- Repetition! Every time you “hit” a key, that is a repetitive movement. Ever get sore, tired muscles from some other activity that was repetitive like housework, knitting, painting, woodworking? It is the same concept as using a keyboard or especially a mouse.

What Is A Good VS. Bad Setup?

- When looking at someone's workstation, I use the 90° rule of thumb.
- Heels on the floor, lower legs and upper legs close to 90° with the thighs being slightly higher.
- Upper legs and torso at 90°, arms running down the seem of your shirt with forearms and hands at 90°.
- Hands floating over the keyboard and mouse. Anyone ever take piano lessons? Same philosophy applies here.
- Monitor screen arm's length away with the top of the viewing area at or slightly below your line of sight. Those using bifocals will need their monitor even lower. Improper height leads to severe neck strain, almost 300% the normal amount of torque!



Good posture and set up.

Chairs

- Your computer chair should have 5 legs and be on castors.
- If you have a chair with only 4 castors, it is unsafe to use!
- Provide good lumbar support. Roll up a towel if need be.
- Seat height & pan must be adjustable.
- If it has armrests, they should be adjustable too.
- Comfort is the key, after all, you are the one sitting on it.



Monitor Issues

- Monitor height, the top of the monitor's screen should be 0 to 15 degrees below your line of sight.
- Your setup must be centered!
- This setup is too low and off center which will cause pain problems. Notice how I reach for my mouse.
- Use a document holder and place it in front of or beside the monitor and at the same height of the monitor.
- Ensure adequate working space.



LCD vs. CRT Monitors

- Flat screen monitors have many advantages over regular monitors.
- CRT's give off heat causing dry, tired eyes, fatigue and headaches.
- LCD'S use less power.
- More easily adjustable, lighter, glare resistant.
- Can be mounted on adjustable arms.



No glare on this screen!

LCD vs. CRT Monitors

- Ideal for office use as most office furniture manufacturers are making thinner workstations to allow more desks per office. This makes it difficult to fit the CRT monitors on them.
- The CRT monitors still have excellent quality and are great for home use.
- If you can afford to upgrade your IT systems), I suggest you go with an LCD monitor. If you can't afford to upgrade, then there are some "penny wise" solutions to the problems with CRT monitors.
- The older CRT monitors contain 5-7 pounds of lead, cadmium and mercury! It is illegal in Europe to "dump" them. The EPA has programs in place to facilitate recycling. Check out their website for further information.

“Penny Wise” Solutions

- For some of your glare issues, install blinds on windows and adjust the brightness of the monitor.
- Try to align your monitor so you won't have to turn your head to look at it.
- If your desk is not very wide, install a height adjustable keyboard tray and move back to the proper distance.
- Put plants in your office to offset the dry air from your monitor.
- Stretch your neck, upper body and eyes frequently!
- Place CPU's on the floor versus desktop to prevent dry air from flowing into your face or a co-workers' face.

Lighting



Note: Have an area lighting specialist tour your facility with a light meter and get their recommendations for improved lighting.

- Having inadequate or harsh lighting can give you headaches and cause vision problems. You need 75 foot candles of light for working at a desk/computer. A lamp with a 60 watt soft white bulb provides that.
- Use “soft” lighting along with or instead of overhead lighting.
- Place additional lighting at or below eye level.
- As we get older, we need more lighting for our eyes, up to 100 foot candles!

More Vision Issues

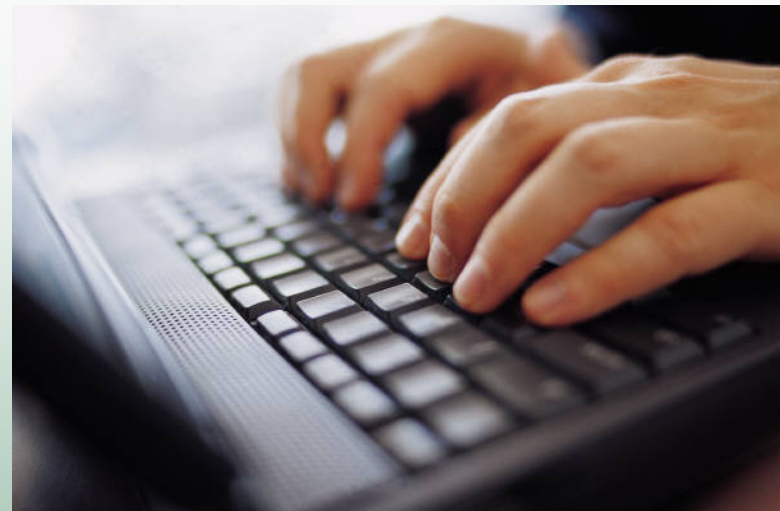
- Check for glare on your monitor from various sources. To check for glare, simply turn off your monitor. If you can see your reflection, then you have a glare problem.
- Overhead lighting, shiny surfaces, windows nearby.
- Stretch your eyes & get them checked regularly.
- Bifocals...lower monitor as needed.

Desks

- The keyboard tray should slide in and out.
- You may have to clip it in place.
- Height adjustable.
- If not, adjust the chair.
- You may have to use a footrest if the user is “vertically challenged”.

Keyboarding

- Most people tend to apply 4 times the pressure needed when keyboarding. Men especially!
- Your hands and wrists should *float* over the keyboard like playing a piano.
- Do NOT rest your arms on the wrist pad,
- This restricts the blood flow to your hands.



Wrist Pads & Arm Rests

- These are to be used for resting on ONLY.
- Don't use them while keyboarding.
- If you don't have these, use your lap to rest your arms on when you are not keyboarding.
- You can place a mouse pad between your arm and desk if you are doing a lot of writing. (I.E. Memos, letters)
This reduces the contact stress between your arm and the desk's hard surface.

Man or Mouse?



Left hand mousing is one way of reducing strain for those who use the numeric keypad frequently. Go to Control Panel, Mouse and click to set for Left Hand mousing. This will enable you to click with your left digit finger.

- Using a mouse for over 20 hours a week increases your chances of getting Carpal Tunnel Syndrome like symptoms.
- Position of the mouse is very important.
- It should be right beside the keyboard.
- Why use your left hand?
- When Mousing, move your hand and arm, not your wrist.
- Use your “big” muscles.
- Don’t extend your arm!

More Mice

- Palm the mouse or look at other styles of mice.
- Find one that fits *your* hand.
- You may have to buy more than one mouse if there are multiple users of a workstation.
- When you aren't using your mouse, bring your hand down and rest it to ease blood flow to your wrist/hand/arm.



Laptops

- Posture is key. Laptop environments (classrooms, cars and planes) are seldom designed for work and can place the body in awkward positions.
- When working on a table, make sure the laptop screen is high enough so that you don't have to tilt your head down to view the screen.
- When working at a desk you may need to sit on a telephone book or pillow to allow your forearms, wrists and hands to work in the desired position - parallel to the floor.
- Minimize glare by shielding outside light or by tilting the screen of your computer. Give your eyes a break every 15-20 minutes by closing them or looking off in the distance.

Laptops - Continued

- **BREAKS ARE ESSENTIAL.** Frequent breaks should be a high priority for laptop users. Stretching relaxes muscles and promotes blood flow. Every 15-20 minutes get up and move around or do stretching exercises while remaining seated, such as; shake out hands and arms, spread fingers, turn neck from side to side, roll shoulders forward and then backward several times.
- **EASE HAND AND FINGER TENSION.** Attach a full-size mouse and keyboard whenever possible to avoid using the small input devices on most laptops. Avoid pounding on the keys when typing.
- **LIGHTEN THE LOAD.** A final risk is the hazard associated with carrying the weight of the computer. We often load ourselves down with unnecessary computer equipment, battery chargers and other devices. Carry only what is essential and utilize carts or backpacks with wheels whenever possible.

Stress

- STRESS unfortunately, is part of everyday life.
- We need to learn how to control stress.
- And then how to reduce it! Don't let stress be your master.

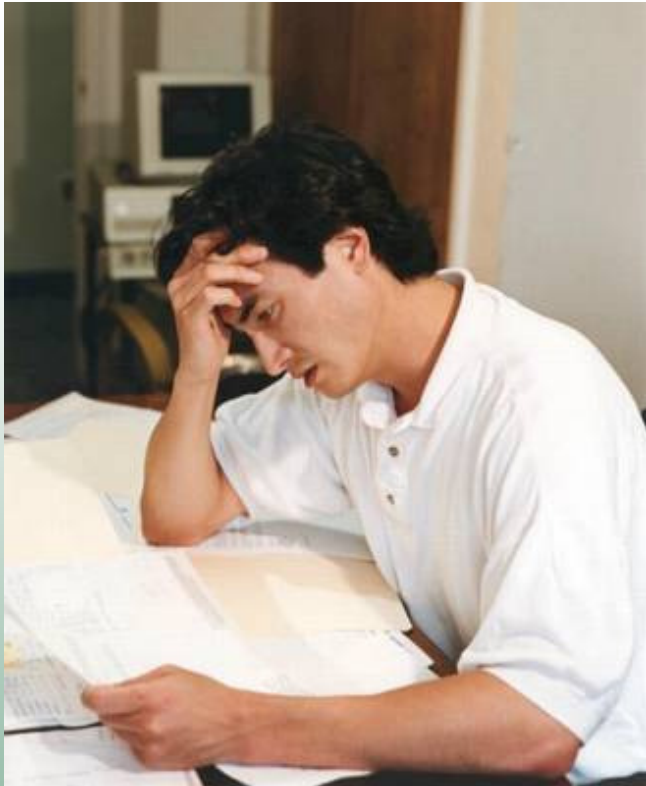
Controlling Stress

- Exercise regularly
- Avoid false guilt
- Set realistic goals and priorities
- Avoid perfectionism
- Talk it out
- Hang loose
- Avoid overindulgences
- Find the REAL cause of your stress
- Think positively
- Keep a sense of humor

Cut Down On Stress

- Plan idle time daily
- Listen without interrupting
- Read books that stimulate your mind
- Savor your food
- Have your own “quiet” place at home
- Avoid TYPE A people
- Plan leisurely, unstructured vacations
- Focus on enriching yourself
- Live for the day not by the stopwatch
- Concentrate on one task at a time

Working Too Long & Hard?



- It is easy to get caught up in your work.
- Use the 30/30 rule.
- Every 30 minutes, take at least a 30 second break.
- Stretch, get up and move around.
- Look at something other than your monitor.
- Plan breaks into your day.

Pain & Discomfort



- If you are suffering with pain or discomfort, get medical treatment right away. Take control of your health!!
- Changing & rearranging your computer parts, desk & chair won't make your pain go away!

Thank You!

- I want to thank you for your time, attention and I hope you learned some valuable ergonomic information today.
- Please contact me anytime if you have any questions as to this presentation.
- This information is for the use of your business and it's employees only!
- Please let me know if other local businesses could use my services.
- Thank you for allowing me to improve the Ergonomics, safety, morale and productivity for you and your co-workers.
- Bill Godkin
- www.CEsafety.com

