Flexible Body, Flexible Pen

Easy Ergonomics for the Wily Writer

The Write Word
Copywriting and Editing Services

I never knew so young a body with so old a head.
– Shakespeare, Merchant of Venice

No Pain, All Gain

Introduction

No Pain, All Gain

Just think: not only do you have to worry about seeing bad toupees on overpaid actors, the threat of alien invasion and whether eating chocolate induces psychosis or cosmic awareness, now you have to worry about whether using your computer is going to send you to the surgeon's office. Not only are the durned things exasperatingly complicated to learn and use, but they're gunning for us as well.

Relax—to an extent, it's less a matter of being targeted, but rather of putting yourself in the line of fire. Under certain circumstances, using your computer indeed can result in eyestrain, wrist strain, back strain and a medley of other maladies. Bad design of equipment and inappropriate or even harmful workspaces are a major source of physical ailments for computer users.

However, it's not always the intrinsically vicious nature of your computer that causes these conditions. Part of the problem—and a fixable part at that—may be your approach to or neglectful practice in computer use that brings that hurtful hammer down. Your behavior has a central influence in whether your computing is body-friendly or body-frightening. Comfortable computing begins with paying attention.

Note: Tricky guy that I am, I've aimed this ebook at writers, being one myself, but really, its advice is nice for any occupation that requires lots of keyboard klatterin', whether you're sending out sonnets or spreadsheets. For you writers that still work in longhand, I'll be putting out the "*What Does That Say? Easy Eye Exercises to Read Your Own Writing*" ebook next.

Attention!

This book is a primer on prevention: preventing as many of those computing situations that provoke bodily distress and chronic pain as possible. We'll look at how you set up, sit and survive at your computer, and how to maintain the best practices

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to head off pain at the pass. But before we get into any specifics about chairs, desks, keyboards, monitors and the like, we have to establish one maxim that guides the whole of safe computing practice: you must *pay attention.*

Whether it's noticing that your relaxed-but-upright posture has degenerated into a limp snail's tail in your chair, or being conscious that your computer is smoking like burnt toast, paying attention is key to safe computing practices. You have to be conscious of how you're sitting (or slumping) in your chair, how you're holding your hands above the keyboard, and whether you've got your neck cranked at some inhuman angle while you're talking on the phone and typing at the same time.

It does sound like a whole lotta work, this paying attention stuff—who wants to be constantly checking what direction your wrists are pointed when you need to shoot 99 missiles per second in some pleasant computer game that requires you to blow up several universes to win? We really aren't advocating a second-by-second accounting for all your bodily movements; the point here is that you should be aware of your posture and position so you can make corrections before it's too late.

Simple Steps, Strong Results

It's really pretty simple: be aware that

1. you need to take breaks,
2. if you're getting consistent pain somewhere after long computing sessions, you may be able to correct the problem, and
3. sitting on billowing pillows while you're typing up your latest novel might sound like luxury, but might result in agony.

Paying attention is just checking in with what you're doing now and then—it's good advice on many planes of this life we lead.

One proviso: be sure to consult with your personal physician if you are experiencing any type of chronic or sudden pain. Good ergonomic practice can prevent many problems, but sometimes if they are already established, only medical attention and rest will suffice. Don't try to be a tough guy.

Take a Break

This injunction deserves a heading of its own and bears reparting: take a break. It can be for as little as one minute, or for five minutes or more, but those moments can save you years of pain. The *repetitive* in RSI tells you what the problem is—the

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same motions, performed over and over. Your body's muscles, nerves and linking tissues don't recover well from constant, repetitive motion, such as carrying a tray of food, lifting heavy objects above your head—or typing at a computer while staring at its screen.

Refresh the Mind—the Body Will Follow

You need to consciously monitor your time at your computer, and intersperse the data-intensive actions with pauses and alternate movements, such as stretches. Take your hands away from the keys, raise your arms above your head, flex your fingers and wrists, stand up and gently arch your back, get up and look out the window—there are many ways to remove yourself from the tyranny of the machine, and they take but a moment. You can even get software that will nag you about break-taking, if you're the resistant type.

Experts recommend taking a stand-up-and-stretch break every 20–30 minutes. You might worry (or your boss might) that your productivity may suffer, but it's actually the opposite: those brief moments are refreshing for both mind and body, and let you recoup your focus so that you can take on your work challenges anew. Don't discount the simple power of brief rest—it can be a lifesaver.

There are a bundle of conditions and disabilities associated with un-ergonomic computer use, many of which fall under the category of Repetitive Stress/strain Injuries (RSI) or Work-Related Musculoskeletal Disorders (WMSD) diagnoses. For computer users, these conditions (such as tendonitis and carpal tunnel syndrome) are provoked by various computing habits that can have long-term, painful repercussions. Happily, if these conditions haven't reached a chronic stage, some of them can be arrested or reversed simply by altering your computing practices.

Don't Squawk at Your Doc

A strong note of caution (and again, something that bears repeating): if you are experiencing consistent or intermittent pain—whether you believe it's associated with computer use or not—see your personal physician. I don't profess to dispense professional medical advice (except for whiskey recommendations), and this chapter should not be taken as such. The information you'll read here is a digest of current thoughts on RSI and associated conditions, with some techniques that can ward off its onset. Don't attempt to use these exercises and information as a substitute for seeing your doctor—I wouldn't.

Summary Stuff: Basic Office Setup

Below you'll see info provided on positioning your chair, monitor, keyboard and mouse. Besides that, examine the other peripherals in your office with an eye to optimum use. The equipment that you use most often, such as your phone, should be closest at hand, and not require you to stretch or reach in awkward ways.

On the subject of phones, it's worth your while to invest in a good speakerphone, or even a headset, if your work requires a lot of telephone use. Clapping your phone to your ear by clamping it between your head and neck while you're keyboarding is an open invitation for a neck ache or backache. Good speakerphones and headsets (Bluetooth can take the bite out of wired constraints) let you freely type or roam around your office to get relevant materials without constraint.

Of course, since one of the best ways to avoid computing-related maladies is to not engage in prolonged, unwavering tasks, it does make sense, for various reasons, to have some items (your printer, fax machine (still got one?), paper supplies) positioned so you must get up out of your chair to reach and use them. Pauses, even short ones, are very helpful in preventing RSI.

There's a hunk o' links at the end of this doc that will merrily send you along to sites with comprehensive info on ergonomics fundamental, plus links categorized for chairs, monitors, keyboards and mice. Dive in (but dive safely).

Symptoms, then, are in reality nothing but a cry from suffering organs.
– Jean-Martin Charcot

Getting the Chair

Getting the Chair

(Or, Deliver Me from Devilish Computing Furniture and Devices)

Here we'll review how the objects in your computing world can be torture instruments or compliant slaves to your computing demands, never to sabotage your body through their use. (And in regards to obtaining the correct furnishings for your computing setup, most furniture and large office supply stores today are well aware of the booming home-office market, and will be very happy to show you merchandise of every stripe to suit your needs.)

Sittin' Pretty

We'll begin with where you park your person in front of your machine: your chair. (Yes'm, there are many laptop loungers out there who are chuckling from their couches, but we'll start with the old standards.) Your thrifty self might say that it's fine to use one of your spare dining-room chairs—or even a stool, God forbid!—at your computer, but your sensible self will have to intervene.

You just can't expect to use any old (or any new) chair at your computer without considering its suitability for the task. Good computer chairs don't have to be dizzyingly expensive, but they do require a number of adjustable features, and you aren't going to find a decent one—except used—for much less than $100. And truly good ones can be several times that much.

That said, you certainly don't have to spend $500 for your chair, though some of the nice Herman Miller and other designer chairs can go for considerably more than that. Let's go over what basics to look for in a computer chair.

Wheels

Wheels let you roll (country-songwriters: you can steal that line copyright-free)and it's good to have movement options. It's best to get a chair that uses casters, wheels that are mounted in a swiveling frame, for your chair. Chairs with five-point (five-armed) casters are more stable than four-point, and seem more common. You'll find that putting one of those plastic mats on the floor around your computer will

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make your movements back and forth in front and to the side of your machine much easier and less strained than those with a wheelless chair, or a wheeled chair without the mat. The spike-less ones protect hardwood floors and the spiked let you swing your bad self on the carpet.

(By the way, whoever invented those spiked plastic mats, with their eager plastic needles, was a bit of a sadist. It's a daunting chore to get them positioned just right under desks without jabbing them into your hands or legs. Make sure they're just where you want them when you let go.)

Swivel

It's pretty rare to find a wheeled chair with casters that doesn't swivel, but there are some. Don't get one of those. You need to be able to swing freely to the sides for easy range of motion.

Height Adjustment

The chair needs a height adjustment, so that you can put yourself in an optimum (we'll get to that) position in front of your keyboard, desk and monitor. Even though you can make adjustments to those things, it's much easier to get properly positioned with a chair's height adjuster.

Lumbar Adjustment

Backs are tricky, as most humans, doctors and HMOs know. Chairs that allow for the adjustment of their contact with and pressure on the low back (lumbar) area can make for vast improvements in computer ergonomics. You want to preserve the healthy lumbar curve that maintains a straight spine.

Seat Tilt Adjustment

Having the ability to tilt the chair's seat higher or lower can help to fine-tune your comfort.

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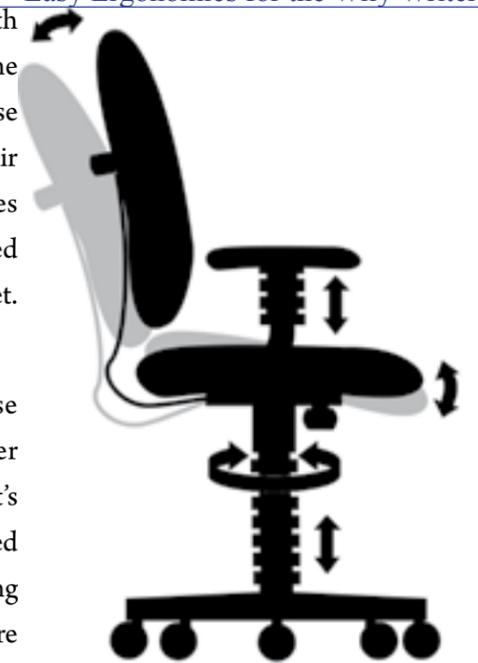
Seat Depth

The seat pan should be long enough so that you get support not simply at your buttocks but through some length of your leg as well. (The pan should reach to just a few inches from your knees.) You want to have your hips slightly lower than your knees, with your feet flat on the floor, or else elevated on an ergonomic cushion. It's easier to do that with a seat with increased depth. (And naturally, you'll want the seat's cushioning to be comfortable, but also firm and support-ive.)

Armrests

Armrest height should be adjusted to a position where the shoulders and neck feel the most relaxed when the arms are resting on the armrests. Don't type with your arms supported by the armrests if that causes your arms and wrists to be tilted, turned or otherwise directed out of their neutral position over the key-board.

Add-ons

There are a number of add-on products that can enhance your seated ergonom-ics. Various types of lumbar cushions are available that can be added to office chairs to keep your back aligned. Foot cushions or footrests can take the pressure off your legs and also help if you are short and have a high desk. Paper stands that keep hard-copy documents close to your monitor (and are sometimes attached to the monitor itself) in easy view are also very helpful in promoting positive posture. Some of the office-supply store links in this section sell such items.

In the Catbird Seat

Ideally, you should be sitting upright in your chair (see diagram), facing your monitor straight-on, with your feet flat on the floor (or elevated on a proper cushion), with your shoulders back, your head straight and your neck "neutral." And did we mention that you're supposed to be relaxed while you're doing this? (Notice that we've drawn an old-school fatback monitor here, just so you don't have to squint.) And don't worry, we're not going to ask you to do any push-ups.

Monitoring the Situation

Monitors

Monitoring the Situation

Monitors for Mind and Body

If you're going to be gazing at your monitor for more than a few minutes a day, it pays to get a decent one (which essentially means that you'll pay to get a decent one). By decent, I mean one that is bright and crisp, with adjustable resolutions and comprehensive—and comprehensible—display controls. Today's monitors are better than those of a few years' back, and like computers themselves, have come down in price.

Flat-panel displays—LCD and LED—have finally moved down from the pricing stratosphere, and now-costly OLED displays, with their even more remarkable thinness (and brightness and contrast) will follow suit. Compared to the old CRTs, flat panels are vastly lighter, thinner, more power-efficient, and emit far less heat and radiation than CRTs. And they have reduced flicker, so they're easier on the eyes.

Some of them will even let you pivot between landscape and portrait mode—will it be spreadsheets or a letter to the editor today? Their flat design lets you remove them from their bases and mount them on articulated arms or directly on your wall, your floor or your door. But if you decide to buy, say, a nice 30-incher and don't like it, mail it to me; I'll pay at least half of the shipping.

Monitors that now accompany the purchase of many computer systems are now often 19 inches (the screen's diagonal measure) or larger in size, an eye-welcoming change that is an ergonomic boon. Not only does the larger screen size afford more resolution options, but it can prevent endless scrolling and mousework to see onscreen documents and web pages in their entirety. Nineteen-inch monitors can feel absolutely luxurious after a 17-incher. Getting something like a 27-inch iMac can make you feel like you're a successful bank robber. That's visual real estate!

Today's monitors are all multisync, which means that you can adjust the resolution—the size and space between the pixels that produce what's seen on your

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screen—to suit your needs. Both Macintosh and Windows software have methods built into their operating systems for adjusting the display resolution, and for adjusting the size of type onscreen. Search in their online help systems under "display" and check out the "Adjusting Screen Text Size" section below. Also, most of the software that deals with type in any significant way (e.g., word processors and page-layout programs) have controls for text-size adjustments for both operating systems.

However, the current prevalence of LCD or LED monitors does change some resolution issues. Indeed, you can change resolution settings for many such screens; however, most LCD/LED screens have a "sweet spot" for resolution, a native setting that when altered can cause artifacts or distortion, depending on screen quality, refresh rates and other issues. Often you'll want to change other settings, such as the text size adjustments explained below, rather than adjust the native resolution of your flat-panel screen.

Ideally, your monitor should be between 20–28 inches away from your body; the top of the monitor's screen should be near eye level. It should always be directly in front of you. You need to be in a room that doesn't produce direct glare on the monitor's screen (often caused by overhead lighting), which can cause eyestrain. It might be necessary to use a glare filter if you can't position the display to avoid it. See the diagram for an illustration of proper monitor placement.

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Adjusting Screen Text Size

One of the most flexible—and confusing—things about today's computers is that they let you adjust the size of text on your screen in a number of different ways. It helps to know about the different ways, and how each one can be useful—or confusing.

The Default Setting

Both Windows and Macintosh computers let you set a default font type and font size for text displayed on the screen. This is probably the best place to start if you find the default text is hard for you to read. Experiment with the text-size settings in your most-used software to produce onscreen text that's readable without squinting or leaning in to the machine.

For Windows (and I'll just pretend here everyone in the world is still using XP, even though Windows 8 is already frolicking in the wild while Vista dies its brittle death), right-click on the desktop to open a little menu. From this menu, select Properties. This will open the Display Properties dialog box. Once this box is open, you can find places to adjust text size under both the Appearance and Settings tabs.
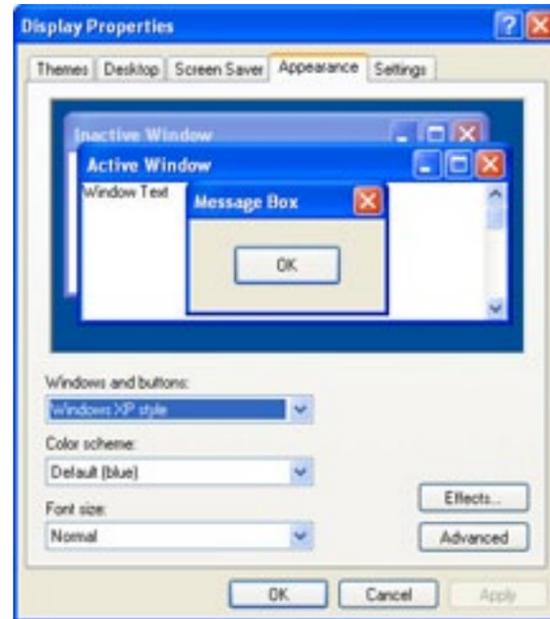
Under the Appearance tab, you can adjust the display font and size for menus, messages and just about everything else. There are a number of pre-defined "schemes" with different-sized text that you can try, or you can make your own scheme by adjusting each of the options one-by-one. You can smooth font edges using selections under the Effects... button.

Under the Settings tab, you can adjust the Screen Resolution—the number of dots displayed on the screen—which affects the size of the text. Also, if you click on the Advanced button, you can make some more overall adjustments. These adjustments vary depending on the type of graphics card you have, so take a look and see.

One caveat here: If you make your text a lot larger than the default size, many programs and dialog boxes will look misaligned, and some text may even be cut off. You may have to take some time and try different schemes and other adjustments to adjust the default text so it's easy to read.

For Macintosh (under OS X), while you're in the Finder, click on View under the main menu and select Show View Options. The drop-down menu under Text Size will let you select a default font size for menus, headings, lists andother screen font views; icon-size settings can also be set here. For font smoothing, open System Preferences

and click on the Appearance icon; controls for adjusting font smoothing are at the window's bottom. To change the screen's resolution, which also changes the displayed size of screen text, choose the Displays button in System Preferences. Choose a resolution that's comfortable on your eyes. The number of available resolutions is dependent on your monitor's size and display card. However, as mentioned before, many LCD/LED screens have a "sweet" spot that is a single resolution ratio; other selections can enlarge/decrease text size, at the expense of clarity.

Adjustments Within Programs

Within most word processors, page layout programs and other programs that make use of a lot of text, there are usually two different ways to adjust the size of the text. It pays to know which one you are using and when you might want to use each one.

Actual Text Size

In these programs, you can usually adjust the "actual" size of the text. You can make the text larger or smaller on the screen, and it will print out larger or smaller as well. This is very useful if you want to print large text. But if you just want to see the text larger on the screen without changing its size when you print, this isn't the adjustment to use.

Zoom, View or Percentage Size

This setting, which can be found in menus and on toolbars, will usually let you adjust by choosing a percentage (100%, 150%, 200%, 50%, etc.), which only adjusts how the text looks on the screen, without affecting the actual text when you print it out.

The Three-Eyed Computer User

There has been a lot of research into whether monitor radiation can be harmful; as of this writing there are conflicting studies and claims. Studies indicate that the bulk of whatever radiation is produced flows out of the rear of most CRT-based monitors, and that the rays that come from the front of the machine quickly lose intensity with distance (which is part of the "keep at arm's length" advice).

Most of the newer monitors, particularly LED/OLED do adhere to some established standards for low emissions (and low power use); check in their documentation before purchase. As with most health issues, it's best to be prudent. Don't get too affectionate with your monitor—keep your distance!

Look to the East, Look to the West

Consistency is one of those virtues that doesn't always translate in the computer world, at least regarding ergonomics. The advice to not remain in a fixed position when computing goes for your eyes as well. Don't remain staring with a fixed gaze at your monitor for long lengths of time. Look away at least every 15–20 minutes or so to give your eyes a rest. Some experts recommend looking away every 5–10 minutes. Look off at a distance, if possible, to let the muscles and lenses of your eyes stretch and contract. Blink, breathe and relax.

Handheld Neck-Cricks

Oh, I almost forgot: I haven't mentioned all of the hand-held devices, like Blackberrys, Kindles (and the amazements of e-ink), and now Apple's iPad that people squint at all day. The biggest ergonomic advice I have for those is this: if you are reading those while you are driving, it's not just your eyes that are headed for the dumpster.

The Key to Kind Keyboards

Keyboards

The Key to Kind Keyboards

The Keyboard

Human hands are miracles of engineering, and their capacity for complex tasks is amazing. Simply typing your name requires an elaborate host of signal sending and processing between your brain, your nervous system and the bones and muscles of your arms and hands. Keyboarding, especially for any length of time, can be a strain on associated sets of muscles, tendons, ligaments and nerves. Your keyboarding habits can promote good hand-health or provoke its opposite.

All keyboards are not alike—and often the things that make one person like a keyboard produce keyboard contempt in another. Some of the issues—how far the keys move when you press them, how much pressure needs to be put on them, if they clatter loosely or click nicely—can have an influence on whether their use provokes hand and wrist strain, but often those issues are more a matter of preference.

One of the first keyboards I used, for an IBM AT, had a very satisfying key action, with the perfect combination of positive touch and click sound. I couldn't say if its design was ergonomic in the least, but I wish I had it today. However, there are some issues of keyboard design and use that are fundamental to healthy keyboarding, and we'll look at those here.

Size

Though you often don't have a keyboard choice when you order a computer system, there are some things to look for. One is that the keyboard is large enough, with properly spaced keys, so that you're not always hitting the wrong key while you're typing or have to hold your hands and wrists in an awkward position while you type.

Larger keyboards also often have sets of function keys which can be programmed with available software to (among other things) store blocks of text that you often

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type, such as your address. Just hit the key once and your text is typed onscreen without you having to key it in letter by letter. These kinds of keystroke-saving macros can be a godsend for weary typists. Most laptops and some handhelds—think iPhone or iPad, or some other Crackberry or Android thing if you loathe that Apple stain—provide physical or onscreen keyboards of varying utility, from full-size to hopeless, though many users of these computing devices don't use them on a full-time basis, so their potentials for problems are lessened. Newer laptops often have keyboards that rival their desktop cousins, or you can use an external keyboard on your laptop, which is my choice.

Shape

Keyboards are no longer just longitudinal blocks. There are a number of keyboards that separate the two "banks" of keys into raised platforms or onto molded planes that purport to position the hands in a more natural typing position. Split keyboards like these are not for everyone, but they can help to relieve some hand and wrist tension. We've interviewed a number of people who use split keyboards, and the majority of them say that after a short adjustment time to get used to the shape, they felt a big benefit in their wrists and arms. It's worth giving them a try. Do an online search for "split" or "ergonomic" keyboards or consult your local computer dealer for a test-type.

Position

Desks specifically made for computing often have pull-out keyboard trays that raise or snap into position. They are particularly helpful if they are height-adjustable. Many keyboards have little tabs on their bottom that click out to raise the rear of the keyboard. Unfortunately, that's the opposite direction in which most ergonomic researchers suggest that the keyboard should be raised, since it tends to cause the typist to tilt their wrists up when typing. Don't raise the back of your keyboard with these tabs if you notice a telltale wrist-tilt.

Programming

There are software programs that can re-map your keyboard so that it doesn't adhere to the common "QWERTY" style of key layout. Repeated reaching for certain key combinations (such as those that often use a command or control key) can cause wrist strain. You can use such software to reprogram the key layout to eliminate such stresses.

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The most popular alternative keyboard layout is called the Dvorak keyboard layout. It was designed to minimize finger motion, and it's one of the oldest alternate keyboard layouts. But "most popular" in the world of alternate keyboard layouts doesn't mean much—it's still so non-standard that few people use it.

If you decide to experiment with an alternate keyboard layout, be sure you know what you're doing (or counsel with someone that does) before using any key-rearranging software. Such software could cause unforeseen problems and incompatibilities with your favorite programs.

The Keys to Keying

Here are a few keyboard fundamentals that you should practice for any periods of extended typing.

1. Your arms should extend from your elbows at approximately a 100-degree angle above the keys (your desk/chair should be high enough to make this a natural position)

2. Don't stretch your arms forward a great distance to type. You should be able to comfortably extend your arms from your sitting position to your keyboard without reaching.

3. Keep your arms close to your sides when typing.

4. Don't rest your wrists on wristpads while typing. You should just use them to remind you to keep your hands and wrists straight (neutral) above the keyboard when actively typing.

5. Don't hit the keys with hard, sharp strokes. A moderate stroke should suffice.

6. Keep upright, without craning your neck forward, slumping or hunching your shoulders

7. See the diagram above for visual keyboarding tips

Listen Up, Computer

Why bother with that pedestrian business of typing when you can just tell your computer what to do? Voice-recognition software (and hardware) has come a long way, though it's not quite to the point where it's a full-time substitute for a keyboard. Even the consumer-level software (such as Dragon Naturally Speaking, IBM's ViaVoice and Lernout and Hauspie's Voice Xpress) has progressed to the degree that you can use voice commands to fundamentally control many popular applications, including office suites and browsers.

It is necessary to "train" the software to your voice patterns and inflections by speaking fairly long passages of provided text, and corrections often have to be input by the keyboard, but they all work moderately well, and are sure to improve in the future. You do need a microphone-equipped PC with a decent sound card and a moderately powerful processor, all of which are pretty common with today's machines.

Many of the major manufacturers (such as Microsoft) produce keyboard alternatives; do an online search for them (try "ergonomic keyboards"), as well as for keyboard-mapping software. Programs such as QuicKeys or TypeIt4Me can be used to program your computer to automate tasks that otherwise would take a lot of keyboarding and mousing.

Body: A thing of shreds and patches, borrowed unequally from good and bad ancestors and a misfit from the start.
– Ralph Waldo Emerson

Make Mice *Nice!*

Mice

Make Mice *Nice*

The rodent (whether wired or not) near your keyboard isn't always as friendly as its name implies. Excessive and improper use of the mouse can give you a real pain in the wrist—and in combination with poor keyboarding habits, can set you up for the surgeon's scalpel. There—are you scared yet? (Anyone remember the mouse that Apple shipped with the first few million iMacs? A woeful 'lectronic toad—Steve, baby, what were you thinking? Actually, a passle of folks don't think a lot of Apple's newish Magic Mouse either, but it sure looks snazzy.)

Well, no need to order rat poison; you do have many options in the mousing world. And you don't necessarily have to replace your existing mouse to stay hand-healthy.

- First, keep your mouse close to your keyboard. You shouldn't have to stretch your arm to reach it.
- Don't grip it like a hundred-dollar bill you found in the street. You should just use a light touch in tackling your mouse, and your mouse movements should be spare, not sweeping gestures with rapid wrist flexings and motions.
- Don't click the mouse buttons like you're hitting a fire alarm; soft pressure should do.

Scroll wheels built into the mouse—so that you don't have to make a lot of wrist motions when you scroll—are definitely a good thing. You merely use a finger (usually your index finger) to spin the wheel to make a document page move to your bidding. Some of the software that comes with such mice allows you to click the wheel so that the page will scroll at a prescribed rate—look ma, no hands!

The scrolling wheel is the best, most-useful, improvement to the mouse since its invention. It really speeds up and simplifies just about any program you use, and saves a lot of mouse motion and clicks.

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Mice and Handedness

In an effort to make mice more ergonomic, and to fit the hand adaptively, many mice have been shaped to fit only one hand comfortably. If you're left-handed, be sure to get a mouse that fits the left hand. In that case, using one that's molded for a right hand can be very uncomfortable (and you might poke your eye out. Hey, your mom's not here—someone has to take care of you).

Mouse Alternatives

Many people that have to make constant use of their mice (graphic artists, for instance) choose a mouse alternative that better suits their computing pursuits—and is easier on the hands and wrists to boot. They can take some getting used to, but once a user is acclimated, can provide a good safe-computing option.

There are many styles of trackballs, which are devices that have a large ball (on a short platform) that can be spun with the fingers or thumb to move the mouse pointer on the screen. Trackballs eliminate all of the wrist skittering and arm flailing that can accompany certain computing work. They include large buttons for selecting and manipulating items just as a mouse does. There are some products that incorporate trackballs into regular mice to give you both options.

Graphic tablets can be a great boon to digital artists and non-artists as well. You can use a handheld—and in the better models, cordless—pen (also called a stylus) to draw on a flat electronic pad mapped to your computer screen. The pens are often pressure-sensitive so they're especially good for drawing on the computer, but can be programmed to do all the selection and "click-and-drag" functions of a standard mouse.

Trackpads, often found on laptops, can be attached to desktop machines as well. They are usually small, square pads that respond to finger taps and strokes to move your cursor over your screen, make selections, open and close windows and programs, etc.

Some laptop models still use pointing sticks to control the cursor on the screen. They are like tiny joysticks embedded into the keyboard that you can manipulate with one finger. Though sometimes they seem to be giving the finger right back at you.

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*A healthy body is a guest chamber for the soul;
a sick body is a prison.*

– Francis Bacon

Easy Livin' Through Ergonomic Exercises

Easy Livin' Through Ergonomic Exercises

The Exercises—Makin' Your Moves

Here are a number of exercises that can be great RSI-reducers. Doing several sets and combinations of these exercises takes just a few minutes; they are a good way to start your computing day, and a good way to end it as well. (And if your time in front of the screen is particularly demanding, you can do one or two at your desk throughout the day as well.) You can get much more information online at http://ergonomics.ucla.edu.

There are a number of companies that sell stretching or formal yoga exercises geared toward people who sit at their desks and/or work at a computer. The exercises let you focus on the hands, arms, spine, neck and other bodily areas tormented by long stretches in the chair. Search for "yoga software" or "stretching software" or the like.

WARNING!! The exercises below are presented for informational purposes only. If you have any movement-related pain or physical problems, see a doctor before doing any exercises. Don't strain or make sharp, quick movements while doing any of these exercises—and remember to breathe.

The Elevator

Link your fingers together, palms up. Bring your arms straight up over your head and hold for 10 seconds. Repeat 3 times.

The Sidewinder

Lift your arms above your head, with your hands holding the elbows of the opposite arms. Bend from the hips to each side, holding 10 seconds on each. Repeat 2 times.

Carrier Landing

While standing against a wall with your feet shoulder-width apart and your low back pressed against the wall, bring your arms up and down slowly in an arc over your head. Keep your elbows in contact with the wall. Repeat 5 times.

College Tuition

Bring your arms slowly up over your head; hold for a moment and bring them slowly down. Repeat 3 times.

The Sit and Rotate

While sitting in a chair, reach across your body and grab the back of the chair. Pull gently to stretch your back and hold for 5 seconds. Repeat 5 times for each side.

I'm a Bad Boy

While in a corner (or in an open doorway), place your forearms on opposite sides of the corner, with your feet one in front of the other. Lean gently in until you feel a stretch in your chest and hold for 10 seconds. Repeat 3 times.

You Have the Right to Remain Silent

Link your fingers behind your head and pull your shoulder blades together and hold for 5 seconds. Repeat 3 times.

The Rubberneck

Turn your chin toward one shoulder and hold for 5 seconds, then repeat for the other shoulder. Repeat 3 times.

Head and Shoulder

Draw the top of your head gently toward one shoulder and hold for 10 seconds. Do both sides. Repeat 3 times.

El Bow

Hold one arm above the elbow and push it gently up towards the other shoulder. Hold for 10 seconds; do both sides twice.

Airhead

Tilt your head sideways in one direction while you pull the opposing arm from behind your back in the same direction of the tilt. Hold for 10 seconds; do both sides.

The Handout

With your fingers linked, extend your arms with your palms facing out. Hold for 10 seconds. Repeat 3 times.

Nothing Up My Sleeve

Extend and straighten your fingers and hold for 10 seconds. Then bend your fingers at the knuckles and hold for 10 seconds. Relax and repeat both 3 times.

Stop in the Name of RSI

Extend your wrists with your fingers up, arms out in front and hold for 10 seconds. Then bend your wrists with the fingers downward and hold for 10 seconds. Repeat both 2 times.

Assume the Position

Link your fingers behind your back. Turn your elbows inward while straightening your arms. Hold 10 seconds. Repeat 2 times.

Protecting Yourself Summary

First of all, if you are experiencing consistent or intermittent pain—whether you believe it's associated with computer use or not—see your personal physician. Next, take a careful look at yourself—do you have any of these symptoms:

1. Sore wrists, fingers or elbows
2. Stiff or sore shoulders, back or neck
3. Eyestrain

Look closely (and honestly) at your posture:

- Are you sitting up straight? Is your posture "correct"? Or do you slouch, twist and slump?

Look at your workspace:

- Does your chair give you the support you need to sit up straight but comfortably?

- Is it adjustable in enough ways?
- Are your arms and wrists at the proper angle above the keyboard?
- Is your monitor at the right height?

Look at your equipment:

- Is your keyboard comfortable?
- Is your monitor crisp and clear?
- Is your mouse comfortable to use?

Look at your soul:

- Oops, wrong book!

Protecting Yourself Action Sheet

Here is a short list of things to do and remember to lessen your discomfort while computing and help avoid pain and injury:

1. Watch your posture!
2. Set up your workspace so that you can comfortably sit in the right position and posture.
3. If your chair, keyboard, mouse or monitor are causing you problems, look into the alternatives (moving them, rearranging them or replacing them).
4. Consider adjusting the default text size for your computer screen.
5. Remember to look away from the screen at least every 15 minutes, preferably more often.
6. Remember to take stand-up-and-stretch breaks every 20–30 minutes.
7. Consider doing some stretching exercises on a regular basis.
8. Explore a number of the links below to different sites that give more information on ergonomics, health, exercise and replacement computing products.

Feel good, write well, eat your oatmeal.

Life expectancy would grow by leaps and bounds if green vegetables smelled as good as bacon.
– Doug Larson

(You'll just have to indulge me here.)

Links, Hot to Go!

General Ergonomics Links

Here are some sites that provide specific advice about good ergonomic practices, as well as some general health sites with varying amounts of information on eyestrain, back strain, RSI and related ergonomic health information. Obviously, these are just a few instances; search the web (but type properly, or I'll nag you) for the vast repository of ergonomic info. Of course, try to be discerning about the information's source.

Stay healthy, stay happy.

http://ergonomics.ucla.edu/ – UCLA's ergonomics program

http://www.ergosci.com/faq.html – Ergonomic resources and product guide

http://www.pc.ibm.com/ww/healthycomputing/ –IBM's ergonomics info

http://www.hfes.org – Human Factors & Ergonomics Society page

http://www.ergoweb.com – Many ergonomic links and resources

http://www.ergobuyer.com – All things ergonomic: broad list of info/products

http://www.tifaq.com – Typing Injury FAQ

http://www.stretching.com – Stretching books/exercise products

http://www.ergostoreonline.com/ – Wide variety of ergnomic products

http://www.webmd.com – Large online medical information site

Chair and Furniture Links

Here are some links for online sources of office chairs and ancillary products.

http://ergonomic-chairs.net/ – Chair-selection overview; helpful links

http://www.kinesis-ergo.com/ – Chairs, keyboards, mice and other products

http://www.officeorganix.com – Range of ergonomic office products/resources

http://www.thegentrycollection.com/ – Deep chair selection

http://www.globaltotaloffice.com – Large office products site/ergonomic chairs

http://www.hermanmiller.com –High-quality office chairs and furniture

http://www.lizell.com – High-quality workstation furniture and accessories

http://www.levenger.com – High-quality workstation furniture and accessories

http://www.officedepot.com – Large office products site, with chairs

Monitor Links

http://www.ergodesign.com – Broad supply of ergonomic workstation products, some for monitors

http://www.office-ergo.com/ – General ergonomics site, with interesting advice on placement of the monitor lower than commonly advised, with references, plus lighting/distance advice

http://www.cnet.com – Lots of monitor reviews at this major technology site

http://www.samsung.com/us/consumer/office/monitors/index.idx?pagetype=type – Major monitor manufacturer

http://www.eizo.com/index.htm – Major monitor manufacturer

http://www.viewsonic.com/home-office/desktop-monitors/ – Major monitor manufacturer

http://www.mitsubishi-presentations.com/products/lcd_showroom.html – Major monitor manufacturer

http://www.dell.com – Major monitor manufacturer

http://www.lge.com/us/computer-products/monitors/index.jsp – Major monitor manufacturer

Keyboard and Mouse Links

http://www.kinesis-ergo.com – Ergonomic keyboards and more

http://www.ergopro.com – Keyboards and other ergonomic supplies

http://www.adesso.us/ – PC and Mac keyboards and other input devices

http://www.macally.com/EN/Product/inputkeymouse.asp – Keyboards, mice

http://www.logitech.com – Keyboards, mice and other computer peripherals

http://www.infogrip.com– One-hand keyboards, mice and more

http://www.goldtouch.com/ – Ergonomic keyboards and mice

http://www.footmouse.com/ – No-hands mouse: A mouse for your feet!

http://www.wacom.com – Writing tablets and mouse alternatives

http://www.kensington.com – Various mice, trackballs, keyboards

http://www.cirque.com – GlidePoint touchpads

http://www.mousetrak.com – Ergonomic and specialty mice

http://www.nuance.com/naturallyspeaking/products/editions/preferred.asp – Voice-activation software

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Thanks, Tom Bentley

(And may your sentences always be stirring, not shaking.)

This book is partially excerpted (and dedicatedly updated!) from my book, Safe Computing (UnTechnical Press). The illustrations are the handiwork of Jon "Bean" Hastings.