



Healthy Computing

The best way to stay healthy at your computer is to stay relaxed. Many of us tense up around computers. Cultivating calmness will make your body feel good.

Equally important is choosing the right equipment and positioning it to fit your body. Your keyboard, mouse, monitor, and chair should be set up to cause minimal strain.

Voice care is also vital. Radio announcers and disc jockeys depend on their voices for their livelihood. Using speech recognition, you're also depending on your voice.

Equipment

Creating a comfortable work station is well worth an investment of time and money. You probably already have a chair, keyboard, and mouse—but do they help or hurt your body? Equipment

choices are quite personal. What one person likes another will find unusable. Try several devices—over a few days, if possible—and choose based on comfort. For more information on the products listed here, see Chapter 20, “Resources.”

Chairs

A comfortable, adjustable office chair lasts many years and can prevent or lessen back pain. Look for a chair that adjusts in height and swivels, and that has a tilting back and seat. Adjustments let you vary your posture as you work, so you're not stuck in a fixed position all the time. The back of the chair should extend high enough to support the upper part of your back and low enough to support your lower back.

Keyboards

Several alternative keyboards are available that offer different shapes and key configurations. Manufacturers claim that typing on their keyboards strain the hands less than the traditional flat keyboard. Many speech recognition users find that they type relatively little, however, and do fine with standard keyboards. If you are considering buying an alternative keyboard, be sure to try it out before purchase.

Mice and Other Pointing Devices

If you prefer a traditional mouse, find one that requires a light touch on its mouse buttons. Many users report that pressing the mouse button causes more discomfort than either moving the mouse or typing. Other pointing devices available include:

- ▶ **Trackballs.** Most trackballs feature a ball the size of a pool ball set in a recessed box. To move the pointer, roll the ball with your fingertips or palm. To click, press buttons, like a mouse. Kensington makes a popular trackball of this type. Another manufacturer, Logitech, makes trackballs with a walnut-sized ball you roll with your thumb. The Microsoft EasyBall, designed for children, is a bright yellow trackball a bit larger than a grapefruit. Some adults with limited hand use prefer this device.
- ▶ **Touch pads.** Touch pads, pressure-sensitive rectangles, are found on many laptops. They are available as external

pointing devices for desktops as well. Slide one finger on the pad to move the pointer. Click by gently tapping your finger on the pad. This is the only type of pointing device that doesn't require pressing buttons to click—instead you tap on the pad with a very light touch. Glidepoint pads from Cirque, such as their Power Cat model, work especially well.

- ▶ **Foot mouse.** To use the No-Hands Mouse from Hunter Digital, rest your feet atop its two oval pedals. Swivel one foot to move the pointer, and use your other foot to click. This pointing device is a viable option for people with little or no hand use. People who are able to use a hand-operated device tend to find the foot mouse cumbersome.
- ▶ **Foot control pedals.** Step-On-It pedals from Bilbo Innovations let you press keys, enter key sequences, or click the mouse by pressing one of three pedals. You still need a mouse or other pointing device to move the cursor.

Ergonomics and Posture

Good ergonomics—setting up your equipment to properly fit your body—are essential for healthy computing. Adjusting your monitor or keyboard even an inch or two can make a big difference by reducing tension in your neck, shoulders, and hands. If you're already experiencing pain or discomfort while typing, consult a qualified health professional.

When adjusting your workstation, comfort should be your main guide. The suggestions that follow work for most people. However, it's your body that ultimately signals the best arrangement for your workstation.

A good ergonomic setup for speech recognition is the same as a good setup for typing. Set your chair height so that your feet are flat on the ground and your hips are an inch or two above your knees. If the chair is the proper height, your body weight will be supported partly by your feet and partly by the chair seat.

If the keyboard is at the ideal height, the angle of your elbows while typing should be slightly more open than 90 degrees. The mouse or other pointing device should be at the same height as the keyboard.

Place the monitor so that the top of the screen is an inch or two above eye level. With this positioning, you can look straight ahead to see the first line of type in your document and read the

rest of the screen by moving your eyes down—moving the whole head is not necessary.

Also make sure that no light sources are reflected in the monitor. If there are windows in the same room as the computer, it's usually best to place the monitor at a right angle to the windows.

Problems and Solutions

If your monitor and keyboard are both sitting on the desktop, the keyboard is probably way too high and the monitor too low. A variety of monitor stands are available from office supply stores and catalogs. For a low-cost solution, stack reams of copy paper under the monitor.

Lowering the height of the keyboard usually requires installing a keyboard tray. Fully adjustable keyboard trays can run \$200 or more. Less expensive, less adjustable models from Rubbermaid and other manufacturers are available from office supply stores. Look for a tray with room for the mouse as well as the keyboard. Most models attach with screws to the underside of the desk. Though expensive, a good keyboard tray can make a big difference in comfort and preventing injury. In the meantime, try typing with the keyboard on your lap.

Even for people who use speech recognition, keyboard height is important. Most speech recognition users find themselves typing at times.

If your desk cannot accommodate a keyboard tray, the best solution is raising your chair height so that your elbow angle is a bit more open than 90 degrees. At this chair height, your feet may dangle off the ground—you'll need a foot rest so you can place your feet on a flat surface. Adjustable foot rests are available, but a sturdy box of the right height works well too. If you raise your chair height, of course, raise your monitor height also.

Laptop computers, unmodified, are ergonomically terrible. Placed on a table or desk, the keyboard is too high, the monitor is too low, and the pointing devices are small and awkward to use. Have an external monitor, keyboard, and mouse at each location you use the computer frequently (say, home and office). If this is not possible, at least have an external keyboard at each location. Standard keyboards cost \$25 or less. Put the laptop on a monitor stand, box, or stack of paper so that the top of the laptop screen

is at eye level. Use the external keyboard and an external mouse in a keyboard tray. If you don't have a keyboard tray, try using the keyboard on your lap.

Maintaining Good Vocal Health

Some people experience vocal strain when using speech recognition software. Like an athlete stretching before a run, you can take preventative measures to maintain good vocal health.

Speak Normally, with These Guidelines

- ▶ Speak in a relaxed matter, approximating your normal flow of speech.
- ▶ Use pitch and inflection. There's no need to speak in a monotone. You'll put much more energy into your voice this way, which is healthier for you and makes Naturally-Speaking more accurate.
- ▶ Speaking well has an open feeling to it, like the feeling inside right before a yawn. This open sense, which has been described as an "inner smile," makes for sound, comfortable speaking.
- ▶ Breathe with the diaphragm, rather than more shallowly, in the chest, to better support your voice.

Notice Your Breathing

Put your hand on your belly. If you're breathing through your diaphragm, your hand will rise (your belly will expand) as you inhale. As you exhale, your hand will fall. Breathing this way may take some practice, but it's well worth getting into the habit.

If you're breathing from the chest, your chest will rise and fall instead of your belly.

Ease and Comfort

- ▶ If you typically make hand gestures as you speak to other people in person, go ahead and make those gestures at the computer. Your voice will have more energy, and speaking will be more relaxed and comfortable.
- ▶ Vary your posture. Don't just sit and dictate—stand up at your computer, or pace around (as your microphone cord allows). Wireless microphones can give you even more pacing room. One of the benefits of speech recognition is

that you're not stuck in a frozen, rigid posture at the keyboard.

Taking Care of Yourself

- ▶ Ease into it. Start using NaturallySpeaking for 30 minutes a day, gradually increasing to several hours a day over the course of two to three weeks. This gives your body the opportunity to adapt gradually to speaking to the computer.
- ▶ When dictating, take frequent breaks—at least 10 minutes each hour is best. This is excellent advice for typing as well.
- ▶ Vary your work. Don't dictate for eight hours straight. If you can, vary your work—perhaps two hours of dictation in the morning, then two in the afternoon, with paperwork, phone calls, and typing in the middle.
- ▶ Avoid dictating to NaturallySpeaking when you're tired. This strains your voice and makes it difficult to get good recognition.

Your Vocal Folds

As you speak, your vocal folds vibrate and rub against each other. A layer of mucus liberates them and keeps them from getting irritated.

- ▶ Drink lots of water. Room temperature water is best. Drinking water creates more mucus on your vocal folds (and that's a good thing). The water you drink now will take about four hours to create more mucus—start drinking early in the day.
- ▶ Caffeine and alcohol dehydrate your body, so they're not good for your voice.
- ▶ Certain vocal exercises, similar to the ones that singers use, can help warm up your voice. They are difficult to demonstrate on paper, however. Contact a vocal coach or singing teacher for instruction.

Voice Problems

Occasionally speech recognition users find that the increased use of their voice creates hoarseness or other voice trouble. If this happens to you routinely, give your voice and software a rest and consult a speech therapist or other qualified professional. Consulting with a speech therapist is typically effective in these cases and often leads people to discover and solve general problems in using their voices. The best way to find a qualified professional in your area is through personal recommendations—from physicians, friends, associates, or a local voice software vendor.

Happily, speaking in a way that is good for your voice will also bring you the highest recognition accuracy. This feeds back on itself. Speaking in a clear, relaxed way will bring more accuracy, which brings less frustration, which helps you relax.

Pay attention to what conditions are present when your speech is transcribed well and when NaturallySpeaking makes many errors. This feedback from the computer can encourage you to be more relaxed and more articulate.