A Quick Look at Input Options for Persons with Ergonomic or Physical Access Needs

Please Note: ergonomic seating and keyboard height must be considered first…

Sticky Keys: Sticky Keys is a free software program which tells the computer to hold the shift key, or any other modifier key down for one keystroke after it is pressed. It enables a one-handed typist to depress 2 or more keys sequentially instead of at the same time. For persons who are not able to stretch their fingers between the shift key and the number keys, Sticky Keys provides access to symbols above the numbers such as $ or ! (the Caps Lock key will not provide access to those symbols). Sticky Keys also saves keystrokes when typing capital letters as it automatically unshifts after a single following letter is pressed. **Sticky Keys** is a utility program available for all computer operating systems.

DVORAK Keyboards: DVORAK typing was designed to increase typing speed for secretaries performing the task of data input. Using DVORAK, the keyboard is rearranged with the most frequently used keys in the home row. DVORAK keyboards have been designed for two-handed, right handed or left handed DVORAK typing. Many computer operating systems have DVORAK keyboard options built in, or it may be downloaded for free. Simply select the keyboard arrangement you wish to use, then label the keys appropriately using keyboard stickers. If DVORAK is not readily available on your system, there are commercial software programs designed to re-define standard keys. It is also possible to purchase an alternative keyboard already labeled and configured in the DVORAK arrangement.

Chord Keyboards: Chord keyboards generally have from 5 to 10 keys in all and use simultaneous or sequential key presses done within a certain frame of time to represent all of the standard keys on the keyboard. Braille input to the computer and court transcription are examples of chord keyboard systems. In recent years, chord keyboard applications have been developed to increase typing speed for one handed typists. Chord keyboards may be combined with software to increase typing speed and/or provide visual prompts which give the user on-screen cues to identify the chords.

Mini or Small Alternative Keyboards: As the name implies, "mini keyboards" represent all of the keys on the keyboard as single individual keystrokes, but the design of the keyboard may be smaller with re-arranged keys for more efficient or more accurate typing. Some mini or other alternative keyboards require additional hardware to interface with the computer.

Large Alternative Keyboards: Each individual key on a large alternative keyboard is significantly larger than a key on a standard keyboard. Large alternative keyboards may be arranged in QWERTY keyboard layout or an alternative keyboard layout like DVORAK or ABC layout.

"Wave" style Ergonomic Keyboards: "Wave" style ergonomic keyboards are the most familiar of ergonomic keyboards. These devices use the typical QWERTY keyboard layout but positions the left and right sides of the keyboard toward the user's elbows at a slight slope. When the person is properly seated in their chair at an appropriate desk height, the design allows the user to retain a more neutral position for the wrists and elbows.

Mouse Access and On-Screen ("virtual") Keyboards: In addition to having a difficult time accessing the keyboard, many one-handed typists, or particularly one finger or head/mouth stick typists have a difficult time accessing the mouse. There are many alternative mouse devices, only a few of which will be covered here. However, if the individual is able to access a standard mouse,

trackball or other pointing device, then software can be added to the computer which represents all of the keys from the keyboard on the screen. The user can then point and select letters and/or words using the pointing device that is most efficient for their use.

Mouse Keys: Mouse Keys is a free utility program that comes with the same software program that contains "Sticky Keys". Mouse Keys turns the numeric keypad on the standard keyboard into directional keys to control mouse movements and functions. One particularly handy utility is "click lock" which will lock the click button down allowing the user to "click and drag" with ease. Head/mouthstick users also find Mouse Keys to be very handy.

Track Balls: Track Balls may be purchased through standard computer stores or mail order catalogs. Unlike a mouse, a track ball does not need to be lifted and repositioned on the table for calibration with the computer screen. To use a track ball, however, your hand and/or arm must have adequate rotational range of motion to control the pointer. Some trackballs have a built in "click lock" feature so that one finger typists can perform click and drag functions.

Speech Input: Many individuals who have bi-lateral (both) hand impairment or who only use of one hand, avoid keyboarding altogether by using speech input as an access solution. Speech input combines hardware (a soundcard and microphone) with speech recognition software to allow the individual to input both commands and text into the computer using speech. The cost of speech input is comparable to the cost of many of the other access solutions. The user, hopefully with the support of a motor specialist (PT or OT) and a technology specialist, must determine the most functional and efficient access solution to fill the expressed needs from options such as those listed in this handout.

Morse Code: A final option to consider for adapted computer input is Morse Code. Software/hardware may be purchased which allows for one, two or three switch Morse Code input. Adaptive switches may then be positioned wherever the person can achieve maximum control with minimum fatigue. Again, a physical motor therapist (occupational therapist or physical therapist) should be consulted to determine appropriate switch sites.