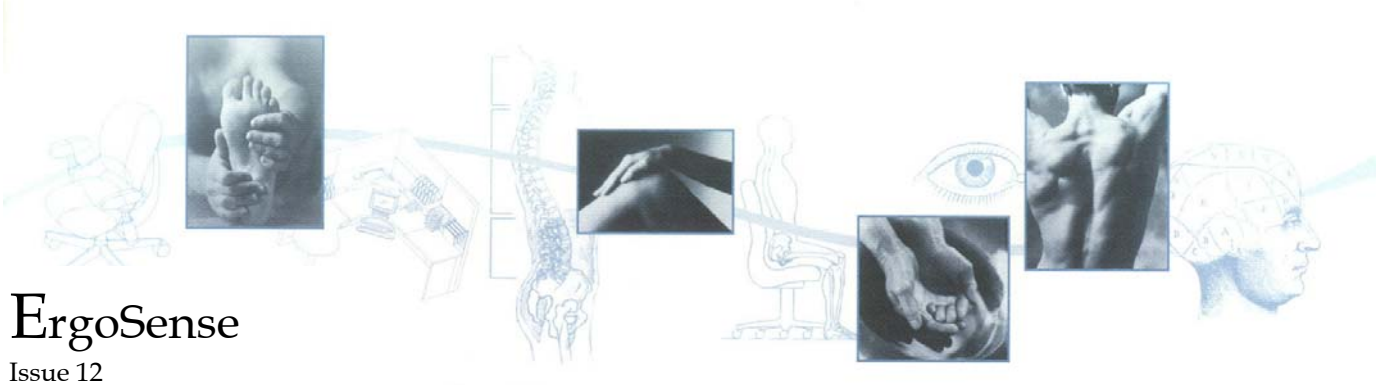

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Wrist Rests For Keyboards

The term *wrist rest* or *palm rest* refers to a keyboard accessory that extends the front edge of a computer keyboard (i.e., the edge closest to the user.) The length of a keyboard wrist rest of typically about 20 inches. The width of a narrow wrist rest may be less than 2 inches, while the width of a wide wrist rest may be 4 inches or more. Heights vary from about ½ inch to about 1 ¾ inches. Some models have a height adjustment feature.

Wrist rests may be used to reduce wrist extension (bending the wrist up and back). Some experts believe that chronic wrist extension increases one's risk for developing carpal tunnel syndrome (CTS). Other potential benefits include:

- ✓ A reduction in static effort for the muscles of the arm and shoulder which may reduce fatigue

- ✓ Prevention of wrist abrasion or other injury that may be associated with prolonged resting the wrist on the front edge of the computer desk or other surface supporting the keyboard when a wrist is not used.

Characteristics of a Good Wrist Rest

An ideal keyboard wrist rest is wide enough to support the heel of the palm but narrow enough to prevent the user from resting the wrist and forearm on its surface. In addition, the covering should be cleanable to replaceable.

Wrist rests should be well padded and have no sharp edges. This may be achieved by using a soft padding material such as foam or a gel filling.

The height of a wrist rest should be no lower than the top of the front edge of the keyboard and no higher than the space bar. Some height adjustability is highly desirable.

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Appropriate Use of a Wrist Rest
A wrist rest may be appropriately used to support the heels of the palms when the user is NOT typing or entering data, i.e., during brief pauses and mini-breaks. When the user is typing or entering data, the palms and wrists should not rest on anything. Although this does require an increase in effort to some muscles, it reduces the tendency to excessively deviate the wrists from the neutral position to reach some of the keys and reduces the overall amount of finger movement. It is also possible to obtain better keying performance when the hands "float" over the keyboard.

The Controversy
Not all ergonomists recommend widespread use of wrist rests because there is a strong tendency to use them inappropriately. For example,

- ✓ If a wrist rest is too high (significantly higher than the space bar), it may cause wrist flexion (bending the wrist down towards the palm). Some experts believe that chronic wrist flexion increases one's risk for developing carpal tunnel syndrome (CTD).

- ✓ If the wrists and forearm are continuously in contact with a wrist rest (as shown in many advertisements), blood vessels near the wrist will be compressed. This reduces circulation and may contribute to a variety of disorders. Similarly, continuous contact may cause neural irritation.

- ✓ If the palm or wrist is in continuous contact with a wrist rest, the amount of wrist deviation (wrist twist) is significantly increased when reaching for some keys. Some experts believe that chronic wrist deviation increases one's risk for developing carpal tunnel syndrome (CTS).

In addition,

- ✓ Productivity may decrease when a wrist rest is used improperly.

- ✓ There are no data showing that use of a wrist rest reduces one's risk for developing carpal tunnel syndrome (CTS) or other cumulative trauma disorders.

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- ✓ At least one-third of all computer users prefer not to use wrist rests (Grandjean, et al., 1983). In one large study only 10% of the users reported any benefit, while almost 20% reported that use of wrist rests increased discomfort (Parsons, 1991).

Recommendations

The controversy surrounding use of wrist rests will probably continue for some time. More research is needed. Nevertheless, it is possible to make a number of recommendations based on the data and other information that are currently available. These recommendations are as follows:

- ✓ Purchase wrist rests that are consistent with the guidelines given above. Buy several models and conduct tests to find out which ones are more effective for specific keyboards and tasks.

- ✓ Make wrist rests available to those who wish to try them. Users that dislike wrist rests should not be required to use them.

- ✓ All persons that use wrist rests should be taught how to use them appropriately. The training should also cover potential risks and other problems when used improperly.

- ✓ Use of a wrist rest should be discontinued if it causes discomfort.

- ✓ Computer users that do not use a wrist rest should align the front edge of the keyboard with the front edge of the computer desk or other keyboard supporting surface. This will prevent the computer user from resting the palms or wrists when typing and entering data.

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