**GUIDELINES FOR SELECTING AN APPROPRIATE CHAIR AND WORKSTATION**

**CHAIRS**

Start with a chair.

* **Chairs come in different shapes and sizes*.***
* One size does not fit all.

All adjustment mechanisms should be within easy reach, and require minimal effort to operate.

Options commonly included on ergonomic chairs include:

* Height adjustable
* Adjustable angle seat pan
* Adjustable height and angle back rest
* Arm rests
* Rolling casters. Five wheels give more stability than four.

*Proper Seating Posture*

One method of determining a person’s general seating needs is to observe them while they are occupied with a task. People tend to move into habitual postures while they are distracted with their work. Look for clues that indicate seating posture. Examples are:

* Items stored under a desk interfere with leg space. Worn edges of boxes may indicate they are used as footrests.
* Feet propped on a trash can or in a drawer
* Feet supported on chair casters
* “Perching” on the edge of a chair
* Worn armrests
* Improperly installed devices (e.g., backrest)

Suggested postural goal: 90 degrees at hip, knee and ankle

* Discomfort in the corrected position is often a result of habitually sitting incorrectly and getting accustomed to the poor posture.
* People vary as to their seating needs and desires. A position comfortable for one person may be difficult for another to achieve and maintain. Not all people are comfortable at a true 90-degree angle, so slight variations are possible.

*When choosing a chair:*

* The chair should be chosen to fit the user, not the décor.
* Multiple features are available within each chair line. Many features are available as standard within each price range. Unusual features, such as an oversized seat pan for an overweight person, may not be available on lower quality chairs. Evaluate several different chair styles, if possible. Most vendors have access to multiple chair styles with varying features from the individual companies they represent. Evaluation chairs should include those features that will be needed by the user.
* Borrow or lease chairs prior to purchase. Each chair should be given a minimum trial period, if possible, of a couple of days.

*Positioning Do’s and Don’ts*

* The seating goal is to adjust the chair so that the user is most comfortable.
* When the user is firmly seated, there should be at least two finger-widths of space between the front of the seat and the back of the knees.
* If there is less space, the seat pan is too deep and will contribute to a slouched posture or a tendency to "perch" at the front of the seat. One method of rectifying this condition is to attach a contoured back support to the backrest.
* If there is more space, the seat pan is too short and will not properly support the body, contributing to general discomfort and feelings of fatigue.
* The seat pan should have sufficient width between the armrests to accommodate the user’s hips.
* If the seat is contoured, the user's hips and buttocks should be cradled in the contoured area.
* If the contoured area is too small or too deep, one hip will be skewed higher than the other.
* If the contoured area is too big or too flat, the user can freely shift about in the space.
* A poorly fitting seat pan contributes to poor posture and should be replaced.
* The seat pan should be angled so that user is slightly inclined while seated. If the chair has a locking feature, this angle may be locked in place, or the seat left as free floating. The user should choose whatever option is most comfortable for his/her specific needs.
* Seat-to-back angle should be adjusted to an approximately 90-degree angle. A slightly greater angle ultimately may be more comfortable.
* When the person is seated, the elbows should come in contact with the armrests without bending or twisting the trunk or raising the shoulders. In order to be useful, the armrests should be set to support elbows without causing the shoulders to be unduly raised or lowered.
* Too-short armrests promote leaning of the body in order to use them. This leaning is not posturally correct and can lead to discomfort and pain. Too-short armrests should be raised, built-up or removed to encourage better posture.
* Too-tall armrests cause elevation of the shoulders during use, and can lead to fatigue. Elevated shoulders can also contribute to poor posture from leaning, or neck and shoulder discomfort.
* Chair height should be adjusted to a comfortable configuration with adjacent work surface.

Once properly seated in the chair, the user should be able to sit squarely in front of the work area.

*Work Surface*

* Work surface should be of sufficient size to accommodate work tasks.
* Work surface height should facilitate proper positioning of users body.
* Too high a surface can place stress on shoulder and wrists.
* Too low a surface can impede user’s legs.

**POSITIONING OF ITEMS IN WORK SPACE**

*General*

* Items purchased should be used over a period of several days to weeks to allow for physical accommodation on the part of the user.
* For manual use, the telephone should be placed on the side nearest to the hand that generally reaches for it.

*Computers*

* The computer monitor should be placed directly in front of the keyboard, so that there is no need to turn the head to either side in order to view the screen.
* The monitor should be positioned so the top third of the screen is at eye level.
* If the monitor is too high, the user may:
* Move the computer from beneath it, or
* Raise the chair height, or
* Lower the desk.
* If the monitor too low, the user may choose a solution:
* Stack items such as scratch paper or old phone books beneath it until a desirable height is achieved.
* Purchase a commercial support.
* Purchase and install adjustable height monitor support arm.
* If it is necessary to adjust the chair so the feet do not contact the floor, the height difference between feet and floor should be compensated using a footrest.
* The footrest encourages proper use of the chair by facilitating leaning back into the seat and backrest.
* Shorter people may require a taller-than-average footrest.
* A footrest that has an adjustable angle will promote better posture.
* A footrest should be purchased for each work area, rather than move a single footrest between areas.
* Keyboards
* If there is inadequate space on the work space in front of the system for the keyboard, purchase and install an adjustable keyboard shelf.
* Purchase a "soft-touch" keyboard to help decrease any tendency user might have of hitting the computer keyboard keys with excessive force.
* Angle keyboard. Many keyboards come with “feet” that facilitate angle adjustment, or an angle can be achieved by use of the adjustable keyboard shelf, or by stacking spacers beneath the back side of the keyboard. Balls of aluminum foil are ideal for temporary or long-term modification as they can be readily shaped to fit and are easily adjusted.
* Positioning requirements may be altered if a person wears bifocal or trifocal glasses.
* The monitor, or orientation to it, may need to be adjusted so that the screen may be viewed through the lower “reading” portion of the glasses. This may necessitate raising the chair height to allow a person to look downward at the screen, or lowering the screen. Some computer tables have the monitor mounted so the user must look down, and such a table would be appropriate for a person who wears bifocals or trifocals.
* Purchase of “computer glasses,” (glasses with single focus lenses of proper reading strength for use only with the computer) is generally recommended.

*Reading*

* Items that must be viewed should be positioned to avoid postural distortions.
* When printed work must be read:
* Position materials using a secretary stand or book stand. Place work materials on the stand, rather than flat on the table surface.
* Multiple stands can be used, each at a different work area.
* When bound materials must be read:
* They can be copied to allow single sheets of the materials to be placed on the secretary stand. This allows easier manipulation of materials without the need to "fight" against the book binding in order for items to stay on the stand.
* Remove binding so book can be pulled apart into single sheets and positioned as described above.

*Wrist Support*

* Wrist rests. These are not intended for full-time wrist support, rather they are meant as a comfortable spot to lean against briefly. Several choices in style and construction materials may be needed to determine the one best suited for the user’s needs.
* Foam. Soft foam will compress to a harder mass that may not support the wrists. Foam structure may break down with use, or if foreign materials are absorbed into the foam, and require regular replacement. Open-cell foams (sponge-like) must be covered with some material so that liquids or oily substances will not be absorbed into the foam. Rough texture of foam or covering may irritate the skin of users. Foam is available in a wide variety of densities and styles, and at reasonable cost.
* Gel. Gel is soft, and does not compress. Actual gel material is smooth, though is generally encased in a covering that may be of a texture that could irritate the skin of users. Limited styles are available, and it is generally more costly than foam.
* Hard plastic must be of appropriate shape to be comfortable to user, may irritate the skin of user, and may cause pressure points if improperly used. It is durable, and reasonably priced.

*Peripheral Devices*

* Mouse – These come in many different styles and shapes; some have two buttons, some have three buttons. Choose one that meets the functional needs of the user. The mouse should fit comfortably into the palm of the user’s hand so that fingers easily reach buttons and can grasp mouse sides to move it about. It should be used with a mouse pad, and wrist supports available for use with mouse.
* Trackball – These also are available in many different styles, shapes, and sizes. Larger balls require less fine motor function to use. Placement of the ball may affect stresses placed upon fingers, i.e., a ball intended for use with the thumb may cause the thumb to be overstressed. A trackball can be positioned in just about any way except upside down (the ball falls out of the device), making trackballs suitable for use with devices such as mouth sticks.

**General Principles of Break Time**

Even with adaptive equipment, the human body tires. People who use their voices to input data to their computers can stress and tire their vocal cords. To rejuvenate the body, people should take short breaks on a regular basis.

* In general, pace work throughout each day to avoid extreme fluctuations in levels of activity. Activity fluctuations are stressful on the body, and result in fatigue.
* A warm up routine may be helpful for preparing the body for lengthy computer work. This may involve physical stretching or exercise, or vocal warm up such as singing scales.
* Regular breaks are recommended. Breaks need not be lengthy, even a minute or two at a time is effective, but should be taken on a strictly regulated schedule.
* One short break each half hour, or if feeling discomfort but prior to feeling pain, is suggested, interrupting tasks in progress as necessary.
* A kitchen timer is recommended as an auditory reminder to immediately stop all work tasks and take a short break.
* In a job setting, supervisor support will be helpful in implementing and enforcing this recommendation.