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What is Ergonomics?

Ergonomics (say "er-guh-NOM-iks") is the study of the kind of work you do, the environment you work in, and the tools you use to do your job. It encompasses the design of tools, machines, systems, tasks, jobs, and environments for safe, comfortable and effective human use. The goal of office ergonomics is to set up your office work space so that it fits you and the job you are doing.

Please consult a Physical Therapist or Occupational Therapist if you have any questions when setting up your home office work area.

Setting Up Your Workstation

Follow these steps if you are using a standard nonadjustable desk

1. ***Assess monitor height and distance***
    a. The monitor shoulder be positioned straight in front of you
    b. Adjust seat height so that you line of site if looking straight ahead so that you are looking at the top of the monitor (This allows you to have a slight gaze down when using the computer)
    c. The monitor should be an arm's length away
2. ***Chair***
    a. Back support angle can be between fully upright to a **SLIGHLTY** reclined position (90-120-degree angle at the hips)
    b. Sitting with your back to the backrest in the seat with about 2-3 finger distance from the end of the seat and the back of your knees
    c. Adjust arm rests so that your elbows and forearms can rest comfortably on them without them causing your shoulders to shrug to your ears or having to reach down to rest on them
        i. Arm rests should be in line with the height of the desk to make a smooth transition to the keyboard and mouse
        ii. Elbows should be at 90 degrees
    d. You can place a footrest or something under your feet so that they can be in contact with a surface and not allowing your legs to dangle
        i. If you are interested in other types of chairs, please refer to area of the handout with regards to Types of Chairs and consult a Physical Therapist or Occupational Therapist for recommendations.
3. ***Keyboard***
    a. This should be placed so that it is in line with the yourself and the monitor
    b. The angle of the keyboard should allow your wrist to stay straight (no increased creases on the back of your wrists)
        i. **If you are unsure if your keyboard is an appropriate option for you, please review the options further in the handout and consult a Physical Therapist or Occupational Therapist**
4. ***Mouse***
    a. Should be placed as close to line of shoulder as possible

   i. **If you are unsure if your mouse is an appropriate option for you, please review the options further in the handout and consult a Physical Therapist or Occupational Therapist**

5. ***You can add an adjustable desk height converter on top of your desk.***
   a. If you choose this option, refer to steps 1-4 to realign yourself for better ergonomics
6. ***If using an adjustable height desk. Make sure to set up your chair first in Step 2 and when sitting, bring the desk down to your already adjusted chair position***
   a. Try changing positions every 20-40 minutes from sitting to standing to taking a 3-5 minute break to walk

Things to Consider When Assessing Your Ergonomics

- **Monitor** – consider using a large monitor that is placed directly in front of you
- **Desk** – refer to desk options later in the handout for the 3 types of options
- **Chair** – refer to the chair section further in the handout for options and review the steps for setting up appropriately
- **Keyboard** – refer to the Keyboard section in the handout for options
- **Mouse** – refer to the mouse section in the handout for options
- **Noise level** – No greater than 55 decibels (no louder than an air conditioner unit, refrigerator, normal conversation level, moderate to heavy rainfall)
  a. Consider sound reverberation (echo type vibration) – sound absorbing material on walls, ceilings, having curtains or soft flooring
- **Brightness** – 250-600 lumens (too low light level decreases concentration and difficulty seeing and bright can be distracting and cause glare)
  a. 3 types of glare to consider
     - Direct is when there are bright light sources directly in the operators field of view such as a window or a lamp
     - Indirect – light from windows or overhead lighting is reflected off shiny surfaces in the field of view such as terminal screens, desks, and other office equipment
     - Masking glare – light directly overhead causes masking glare on screen
- **Temperature** – 20-27 degrees Celsius
- **Humidity** – 50-60% humidity

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Office Equipment to Improve Ergonomics

Type of Desk

Type	Purpose	Image
Standard desk	Universal Style Desk	
Adjustable height desks	Ability to change heights to adapt to sitting environment or transition from sitting to standing	
Adjustable height desk converter	Able to convert standard desk to adjustable height desk	

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Type of Mouse

Type	Purpose	Image
Traditional mouse	Basic Cursor functions	
Trackball mouse	Limits wrist movement for people with wrist pain or lateral epicondylitis	
Vertical mouse	Reduces the pressure at the wrist since your palm is not facing down as much as a traditional mouse and good for Carpal Tunnel Syndrome	
Pen and Stylus Mouse	Simulates using a pen and can benefit individuals with carpal tunnel	
Joystick Mouse	Can help people with significant deficits such as cerebral palsy, stroke, etc and severe carpal tunnel	
Finger Mouse	Good for people with severe hand arthritis, carpal tunnel, elbow and/or shoulder pain	

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Type of work chair

Type	Purpose	Image
Standard chair	Universal chair	
Big and Tall chair	For individuals with bigger frames Can support weights of >300 pounds	
Petite chairs	For individuals with smaller frames	
Kneeling chair	To help prevent slouching back into a back rest	

Balance ball chairs	Helps to provide unstable surface for hip and trunk muscle activation	
Saddle chairs	Helps to engage hip and trunk muscles	
Active sitting chairs	Improves stabilizing muscles of the trunk	
Sit stand chairs	Allows for adjustment at differing sitting heights that does to allow for full sitting. In between sitting and full standing.	

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Type of keyboard

Type	Purpose	Image
Standard Flat	Basic keyboard design	
Split	separates the keyboard in half so each hand can be positioned more comfortably	
Contoured	places the keys in depressions to contour the shape of the hand	
Handheld	similar to a game controller and can come with a trackball mouse	
Angle split	similar to the spit keyboard but the middle is elevated	

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Type of Headset/Phones

Type	Purpose	Image
Wired/Wireless Headsets	Hands free to allow for neutral neck position. Helps to reduce environmental noise	
Wired/Wireless Earbuds	Hands free and less bulky than headsets. Able to hear things going on in the environment if necessary	
Phones with Speaker option	Allows ability to convert from regular phone to speaker phone if needed for calls with multiple individuals in the near vicinity.	

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Screen Filter

- Anti-glare screen filter
    - Polarized Anti-glare Filters would be optimal

References:

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