

Office Ergonomics

Many people don't realize that a poorly designed computer workstation and/or bad work habits can result in serious health problems. Common symptoms associated with poor design or habits include discomfort in the back, neck and shoulders, hands and wrists, as well as headaches and eyestrain. If you experience any of these symptoms while working, contact your supervisor to fill out an incident report and possibly seek medical attention.

Fortunately, the solution can be quite simple. Proper workstation setup and work practices can eliminate discomfort and even prevent it from occurring in the first place. Simple adjustments to office equipment can work wonders, making work more comfortable and more productive.

What to Look For In a Chair

Starting from the bottom and moving upwards:

Base:

The chair should have at least 5 castors at the base to ensure stability. Chairs with five castors are more stable than four castor chairs. Four castor chairs are easier to tip over.

Seat:

The seat should be able to adjust until your thighs are parallel to the ground. Shorter/taller users may need different height cylinders. If you are unable to adjust your chair height properly, contact Environmental Health and Safety for a replacement cylinder.

Adjusting the chair too high places more pressure than necessary on the backs of the legs, reducing circulation. If the chair is too low, a smaller portion of the legs is in contact with the chair and the pressure on that area is correspondingly greater.

- The seat pan depth should be adjustable to provide a fist-width to three-finger gap between the back of the calf and front edge of the seat pan. If the seat pan is too shallow, all the pressure from sitting is placed on a small part of the thighs, which may lead to discomfort. If the seat pan is too deep, it will either be difficult to use the backrest or the front of the seat will put pressure on the back of the nerves and tendons at the backs of the knees.
- The seat pan should be able to tilt backwards and forwards. Changing your posture throughout the day is positive because when you change postures, the loads of sitting shift to different parts of the body, allowing your body to recover from extended static postures.
- The seat pan should have a waterfall (rounded) front edge. Sharp corners, even when they're made of padding, increase the pressure on the backs of the thighs. A rounded front edge distributes the pressure over a larger area.

Backrest

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The backrest height should be adjustable so the lumbar support can be fitted into the low back. The backrest should mirror the shape of your back to provide support. The weight of the upper body is supported by the spinal vertebrae at the bottom of the lumbar curve (curve at the small of your back). These same vertebrae are the most common origins of back pain. Using the backrest to support the lumbar curve relieves some of the pressure on the frequently injured vertebrae.

- The backrest should be able to recline independently of the seat pan and be set at a fixed reclined angle. It is acceptable to sit upright or recline slightly in your chair as long as the backrest is designed for reclined seating. A slightly reclined posture opens up the angle between the hips and trunk, which decreases the stress placed on the low back.

Armrests

Armrests are optional. Even with the range of adjustments found in many of today's armrests, there are some places where armrests will interfere with work.

- The armrests should be adjustable in height. If the armrests are too high, you might have to shrug your shoulders in order to use them, which could fatigue your shoulders and back. Conversely, if they are too low, then you might end up leaning on one armrest.
- They should be rounded on the edges. Sharp corners, even when they're made of padding, increase the pressure on the arms. A rounded edge distributes the pressure over a larger area.

Setting Up Your Chair

Start out adjusting a chair from the ground up. Start with the height and move up from there. While adjusting the chair, worry first about getting the chair adjusted to fit you. Afterwards, look at things like the height of the desk, keyboard, etc. Too often, people adjust a chair too high so they can reach the keyboard rather than properly adjusting the chair and adding a keyboard tray to move the keyboard to the correct height.

Seat Height

Start by adjusting the height until your thighs are parallel to the floor. Stand in front of the chair and adjust the height until the top of the seat pan is at the height of the bottom of your kneecap. Then, sit in the chair and make small height adjustments until your thighs are parallel to the ground. Sit in this position for a while before making any further changes in seat height. When you have become accustomed to this height, adjust the chair height up/down 1-3 inches until you find a location that is comfortable for you while seated (don't worry about that keyboard height yet).

Seat Depth

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Adjust the seat pan until you have about three fingers to a fist's width of room between the back of your calf and the front edge of the chair when your back is touching the backrest. If the seat pan is not adjustable and the pan is too deep, add padding to the backrest (a towel over the backrest of the chair or a backrest cushion) to shift you forward in the seat while maintaining contact with the backrest. If the seat pan is too shallow, start looking for a new chair.

Seat Angle

There are three basic postures. The standard posture calls for a level seat pan so it is not necessary to adjust the tilt for this posture. Likewise, the reclined posture can have the seat flat as well. However, some people prefer to have a very slight backward tilt on the seat pan to help keep them in the seat. In the forward tilt posture, the seat pan is tilted forward 5-10 deg. Start by raising the overall height of the chair a few inches and then tilt the seat pan forward.

Backrest Height

The lumbar curve on the backrest should fit into the small of your back. Start by raising the chair back as high as possible and then move the backrest downward in small steps until it feels most comfortable. If the chair doesn't have enough lumbar support, consider adding a lumbar pad to the chair. Make sure the extra pad doesn't make the seat pan too short.

Backrest Angle

In the standard posture and forward tilt postures, the backrest should be straight up. If it feels as though the chair is pushing you forward, adjust the backrest back until you reel upright. In the reclined posture, the backrest should be reclined slightly. When seated, the angle between the thighs and back should be more than 90 deg.

Armrests

As previously mentioned, armrests can sometimes interfere with work. If they prevent you from pulling up to your desk or reaching for the mouse, either lower them until they are out of the way and don't use them, or have them removed. Armrests are rests not supports. Typing with the arms constantly on the armrests is not recommended.

Armrest Height

Sit in the chair with your arm bent 90 deg. and raise the armrest until it is directly under your elbow. Repeat the process with the other arm and then check that the armrests are the same height.