



**Reducing back pain while  
sitting in office chairs**

### **Essential office chair advice**

Sitting in office chairs for prolonged periods of time can definitely cause low back pain or worsen an existing back or neck problem. This is because sitting is a static posture that increases stress in the back, neck, shoulders, arms and legs, and in particular, can add large amounts of pressure to the back muscles and spinal discs. Moreover, when sitting in an office chair for a long period, the natural tendency for most people is to slouch over or slouch down in the chair, and this posture can overstretch the spinal ligaments and strain the discs and surrounding structures in the spine. Over time, incorrect sitting posture and workplace ergonomics can damage spinal structures and contribute to or exacerbate recurrent episodes of back pain. This article outlines several guidelines for setting up one's office chair and workstation to help prevent back strain and promote overall sound back health.

### **Top six guidelines for office chairs**

An ergonomic office chair is a tool that, when used properly, can help one maximize back support and maintain good posture while sitting. However, simply owning an ergonomic office chair is not enough—it is also necessary to adjust the office chair to the proportions of the individual's body to improve comfort and reduce aggravation to the low back and neck while sitting. Before adjusting an office chair, the user should first establish the desired height of his or her desk or workstation. This decision is determined primarily by the type of work to be done and by whether the person using the chair is unusually tall. The height of the workstation can vary greatly and will require different positioning of the chair, or a different type of chair altogether.

Once the workstation has been situated, then the user can adjust the office chair according to his or her physical proportions. Here are the most important guidelines—distilled into a quick checklist—to help make sure that your office chair and work area are as comfortable as possible and will cause the least amount of stress to your spine:

1. **Elbow measure**

First, begin by sitting comfortably as close as possible to your desk so that your upper arms are parallel to your spine. Rest your hands on your work surface (e.g. desktop, computer keyboard). If your elbows are not at a 90-degree angle, move your chair either up or down.

2. **Thigh measure**

Check that you can easily slide your fingers under your thigh at the leading edge of the chair. If it is too tight, you need to prop your feet up with an adjustable footrest. If you are unusually tall and there is more than a finger width between your thigh and the chair, you need to raise the desk/work surface so that you can raise your chair.

3. **Calf measure**

With your bottom against the chair back, try to pass your clenched fist between the back of your calf and the front of your chair. If you can't do that easily, the chair is too deep. You will need to adjust the backrest forward, insert a low back support (such as a lumbar support cushion, a pillow or rolled up towel), or get a new office chair.

4. **Low back support**

Your bottom should be pressed against the back of your

chair, and there should be a cushion that causes your lower back to arch slightly so that you don't slump forward or slouch down in the chair as you tire. This low back support in the office chair is essential to minimize the load (strain) on your back. Never slump or slouch in the chair, as that places extra stress on the structures in the low back, and in particular on the lumbar discs.

5. **Resting eye level**

Close your eyes while sitting comfortably with your head facing forward. Slowly open your eyes. Your gaze should be aimed at the center of your computer screen. If your computer screen is higher or lower than your gaze, you need to either raise or lower it to reduce neck strain.

6. **Armrest**

Adjust the armrest of the office chair so that it just slightly lifts your arms at the shoulders. Use of an armrest on your office chair is important to take some of the strain off your neck and shoulders, and it should make you less likely to slouch forward in your chair.

• **Elbow measure**

First, begin by sitting comfortably as close as possible to your desk so that your upper arms are parallel to your spine. Rest your hands on your work surface (e.g. desktop, computer keyboard). If your elbows are not at a 90-degree angle, move your chair either up or down.

• **Thigh measure**

Check that you can easily slide your fingers under your thigh at

the leading edge of the chair. If it is too tight, you need to prop your feet up with an adjustable footrest. If you are unusually tall and there is more than a finger width between your thigh and the chair, you need to raise the desk/work surface so that you can raise your chair.

• **Calf measure**

With your bottom against the chair back, try to pass your clenched fist between the back of your calf and the front of your chair. If you can't do that easily, the chair is too deep. You will need to adjust the backrest forward, insert a low back support (such as a lumbar support cushion, a pillow or rolled up towel), or get a new office chair.

• **Low back support**

Your bottom should be pressed against the back of your chair, and there should be a cushion that causes your lower back to arch slightly so that you don't slump forward or slouch down in the chair as you tire. This low back support in the office chair is essential to minimize the load (strain) on your back. Never slump or slouch in the chair, as that places extra stress on the structures in the low back, and in particular on the lumbar discs.

• **Resting eye level**

Close your eyes while sitting comfortably with your head facing forward. Slowly open your eyes. Your gaze should be aimed at the center of your computer screen. If your computer screen is higher or lower than your gaze, you need to either raise or lower it to reduce neck strain.

- **Armrest**

Adjust the armrest of the office chair so that it just slightly lifts your arms at the shoulders. Use of an armrest on your office chair is important to take some of the strain off your neck and shoulders, and it should make you less likely to slouch forward in your chair.

**Avoid static posture while sitting in office chairs**

Finally, no matter how comfortable you are in your office chair, prolonged, static posture is not good for your back and is a common contributor to back problems and muscle strain. Try to remember to stand, stretch and walk for at least a minute or two every half hour. Even a quick stretch or some minimal movement – such as walking to the water cooler or bathroom – will help. A twenty minute walk will help even more, promoting healthy blood flow that brings important nutrients to all the spinal structures. In general, moving about and stretching on a regular basis throughout the day will help keep your joints, ligaments, muscles and tendons loose, which in turn will help you feel more comfortable, more relaxed and more productive.

**Alternatives to a traditional office chair**

While this article is about traditional office chairs, some people prefer more active, ergonomic chairs, such as a Swedish kneeling chair or a Swiss exercise ball. The Swopper, a dynamic stool device, offers similar advantages. While traditional chairs are designed to provide complete support, a kneeling chair (or Swedish kneeling chair) promotes good posture without a back support, and an exercise ball (or Swiss ball) helps develop your abdominal and back muscles while

you sit. Both of these alternatives require more active use of one's muscles (e.g. for balance and to sit upright) than a traditional office chair. If you have an injured back or other health problems, it is advisable to first talk with your doctor prior to using one of these types of chairs.

There is not one type of office chair that is optimal for all patients, and patients should determine their individual preference for comfort while following the guidelines explained in this article to promote good posture and back support while sitting in an office chair.