

Office Ergonomics

Office Ergonomics - Eye Discomfort in the Office

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What is eye discomfort in an office?

Eye discomfort is a general term which can include some or many symptoms. It may be part of “computer vision syndrome” which includes:

- eyestrain,
- dry eyes,
- blurred vision,
- red or pink eyes,
- burning,
- light sensitivity,
- headaches, and
- pain in the shoulders, neck and back.

What causes eye discomfort?

Eye discomfort symptoms may be caused by:

- poor lighting
- glare on a computer or tablet screen
- poor quality computer or tablet screen (e.g., poor resolution, blurry image, etc.)
- improper viewing distances
- poor seating posture
- uncorrected vision problems
- dry air
- air movement, or
- a combination of these factors

If you are experiencing eye discomfort, have your eyes examined by an eye specialist or medical professional.

Why look at indoor air quality issues?

[Indoor air quality](#) (IAQ) problems result from interactions between building materials and furnishing, activities within the building, climate, and building occupants. IAQ problems may arise from one or more of the following causes:

- Indoor environment - inadequate temperature, humidity, poor air circulation, ventilation system issues.
- Indoor air contaminants - chemicals, dusts, moulds or fungi, bacteria, gases, vapours, odours.
- Insufficient outdoor air intake.

Many people may play a role in helping to resolve an IAQ problem including the building owner, employer, property manager, and occupants. Who conducts your investigation will depend on your workplace, but in general, you should have one person who is the leader, and perhaps a small team, including a representative from the health and safety committee, or the union, if appropriate. The expertise of many other people such as health and safety or building maintenance personnel, and the experience of everyone in the workplace will all be important in finding the root cause of your IAQ problem.

What is the significance of good lighting?

Many issues can be resolved with good lighting.

Office work is visually demanding and requires good lighting for maximum comfort and productivity. "Good" lighting means providing enough illumination so that people can see printed, handwritten or displayed documents clearly but are not blinded by excessively high light levels (a cause of glare).

What are other OSH Answers about lighting and office ergonomics?

Please also see:

- [Lighting Ergonomics - General](#)
 - [Lighting Ergonomics - Checklist](#)
 - [Lighting Ergonomics - Light Flicker](#)
 - [Lighting Ergonomics - Survey and Solutions](#)
 - [Computer Glasses](#)
 - [Computer Monitors and Display Colours](#)
 - [Positioning the Monitor](#)
 - [Ergonomic Chair](#)
 - [Working in a Sitting Position - Good Body Position](#)
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What are signs of poor lighting?

Poor lighting affects not only the ocular system but can also contribute to stiff necks and aches in shoulder area. These problems can occur when people adopt poor or awkward postures when trying to read something under poor lighting conditions.

A good visual environment will:

- have sufficient light, coming from the right direction and not cause obscuring shadows,
 - provide good (but not excessive) contrast between the task and the background,
 - limit glare and extreme contrasts, and
 - provide the right type of light.
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Why do computers create a challenge for lighting designers?

The monitor itself is a source of light. As such, it does not require additional illumination from other sources. In fact, the screen itself can cause glare if the brightness and contrast controls are not properly adjusted.

An additional challenge occurs because most office work involves using the monitor and paper documents at the same time. Paper documents require a higher light level than the monitor. A desk lamp (any type of soft task light) can be used to illuminate documents while avoiding excessive light near the monitor. Glare can also result from an improper match or excessive contrast in light levels between the monitor screen and the paper.

The monitor also acts as a mirror. Reflections of objects, shiny walls, and any light source (specifically windows and overhead lighting) all cause glare. Eye discomfort can result but glare also forces the user into an awkward position as they try to avoid having the glare in their eyes. These positions lead to aches and pains in the upper body that, in turn, can also aggravate eye strain.

The quality of the images on the monitor or tablet is another important factor. Reading and interpreting blurred, fuzzy, tiny, or otherwise illegible characters for hours a day can strain the operators' eyes.

What else in the computerized office contributes to the eye discomfort?

Other examples of work-related risk factors that contribute to eye discomfort are:

- maintaining a fixed and close visual distance for a long time,
- glare from the unshaded or un-diffused lighting fixtures,
- poor lighting, involving unchanged (and unchangeable) levels of illumination,
- unsuitable workstations (dimensions and arrangement),
- low ambient humidity,
- uncorrected vision problems, and
- lack of colour variety in one's surroundings.

Are there any non-visual effects of poor lighting?

When people are exposed to glare or have uncorrected vision problems, they tend to lean forward or backward in an attempt to compensate. An awkward body position leads to eye strain and accelerates postural fatigue that, in turn, contributes to musculoskeletal injuries (MSI).

How can eye discomfort be reduced?

Overhead lighting

- Use filters to diffuse overhead lighting.
- Dim overhead lights.
- Keep in mind that recommended level of light in offices 300 - 500 lux **is not a must**. It applies in the situation where there is no task lamp in use.

Windows and walls

- Cover windows with adjustable blinds.
- Use matte finishes on walls, floors and furniture.

Monitor

- Adjust the brightness and contrast according to your preference.
- Use a light colour for the background.
- Place the monitor parallel (not directly below) with overhead lights.
- Angle the monitor away from lights and windows.
- Make sure that the task lamp illuminates the document and not the monitor.

Should anti-glare screens be used?

In general, anything between the operator and screen compromises the quality of the image. It is far better to control glare by proper lighting design and placement of the monitor than by use of an anti-glare screen. Many monitors currently available are already equipped with low-reflective screens.

What can you do to reduce eye strain?

The ability to focus on objects at various distances decreases with age (presbyopia). Commonly, by their forties people cannot clearly see objects at close range with the naked eye. This change is gradual and is an important component in designing visual environments, particularly when the job involves computer work. Uncorrected vision may be an additional source of eye discomfort. It may have further consequences resulting in aches and pains because of awkward postures or positions adopted to "see better".

- Check your vision every one or two years, as recommended by your eye specialist.
- Provide your eye examiner with information about your job.
- Consider using task-specific computer glasses.
- Make sure your [monitor is correctly set up](#).

Depending on the amount of time you work at a keyboard, the kind of vision correction needed, and your personal preferences, your eye specialist may recommend bifocals, trifocals or a separate pair of glasses for computer work.

Focusing your eyes on objects at the same distance and angle for prolonged periods of time can also contribute to eye strain. Eye specialists recommend the "20-20-20 rule". At least every 20 minutes, take a 20-second break and look at something 6 metres (20 feet) away.

- Every few minutes, look away from the screen for a few seconds.
- Look around.
- Focus your vision on distant objects.
- Blink several times.

Frequently "stretching" your eyes will prevent feelings of fatigue from accumulating.

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