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Computer Vision Syndrome

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Introduction

The complex of eye and vision problems related to near work experienced during computer use for two or more hours a day is known as computer vision syndrome.. If you spend more than 2 hours daily in front of computer you have 90% chance to develop computer vision syndrome.

Common manifestations of computer vision syndrome

Eyestrain, headaches, watering of eyes, redness of eyes, itching, burning of eyes, blurred vision, photo phobia, dry eyes, neck and shoulder pain etc.

Underlying causes

Long hours of computer use, poor lighting in work place, glare on the computer screen, improper viewing distances, poor seating posture, inadvertent less blinking, uncorrected vision problems and/or combination of these factors.

Underlying eye conditions responsible for computer vision syndrome

Hypermetropia, astigmatism, presbyopia, heterophoria, heterotropia, convergence insufficiency etc.

Reading a computer screen is similar to reading a book ?

Print images are made of solid lines of equal brightness and very easy to read. Computer images are made of dots (pixels) of brighter center and ill-defined edges difficult to focus and put lots of strain on eyes.

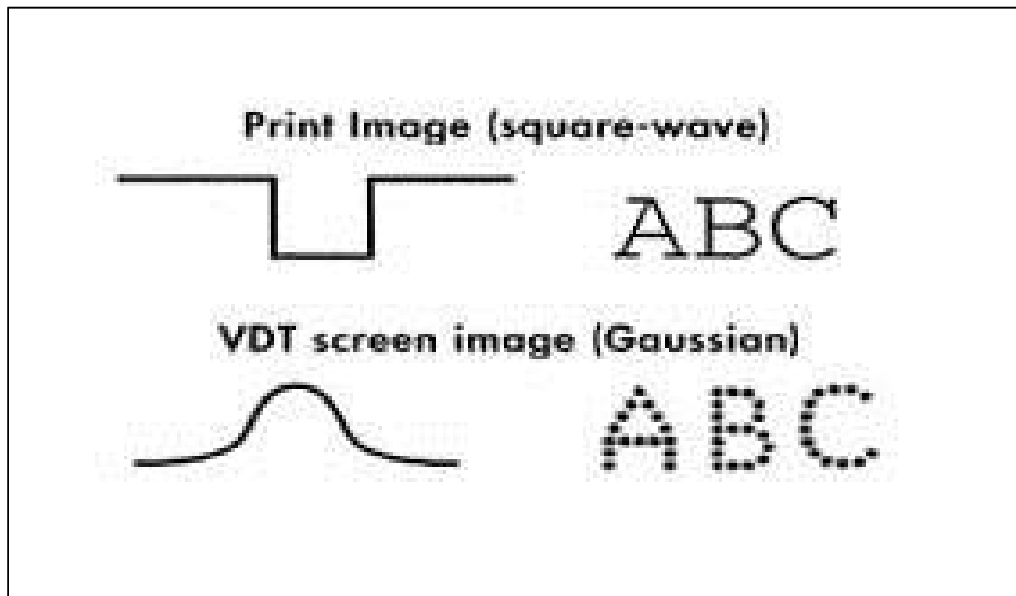


Fig 1. Comparison of print image and computer image

Treatments and prevention of computer vision syndrome

1.How to work for long hours on computer

The 20-20-20 rule

- Take a 20-second break every 20 minutes.
- Focus your eyes on points at least 20 feet from your computer.
- Blink your eyes often so as to dampen them.

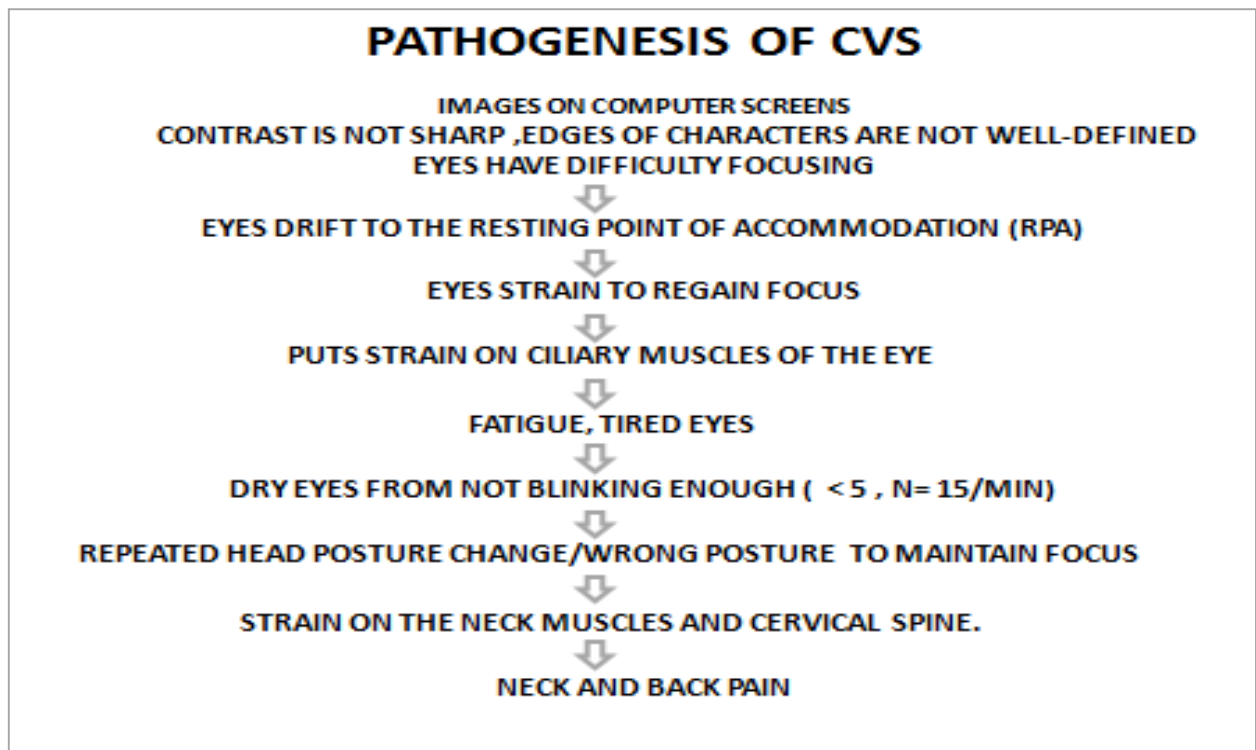


Fig 2. Pathogenesis of computer vision syndrome (CVS)

2. Proper lighting in the room

- Adjust lights to reduce glare on the computer screen.
- The monitor should not face any opened window to avoid glare on the screen.
- Use glare filters to reduce the glare on the monitor.
- Adequate illumination of room and do not work in the dark.

3. The ideal computer monitor

- Use flicker free monitor (LCD/LED).
- Monitor should always be five to nine inches below the eye level.
- The screen should be about a hand's distance from your eyes.
- Move your computer monitor away from the window.
- Adjust the brightness and contrast based on your comfort.
- Increase the font size of the text.

- Do not stare at your monitor for visibility.
- Affix paper documents so they are in line with your monitor.

4. How to adjust your monitor distance ?

ONE THIRD RULE: View a document you use every day on your computer monitor and then move back from the screen until it just starts to become blurred. Measure this distance and divide by three your monitor should be placed at that distance

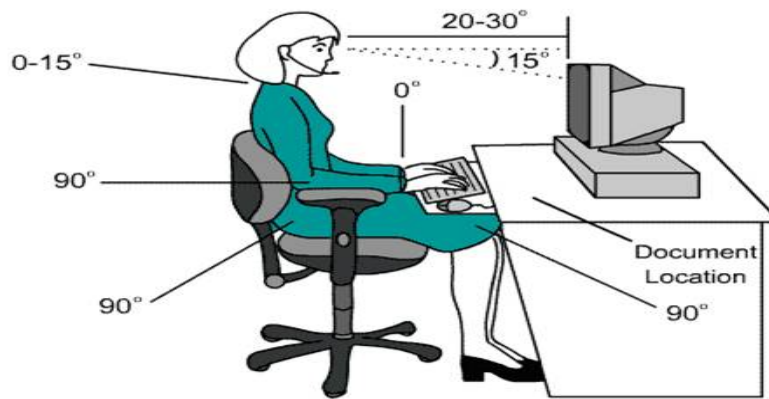


Fig 3. Viewing distance and monitor height

5. Comfortable setting of computer monitor

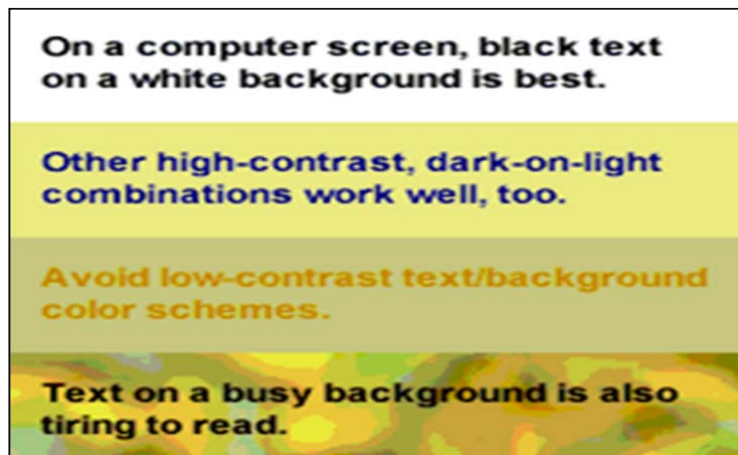


Fig 4. The monitor setting

6. Sitting posture

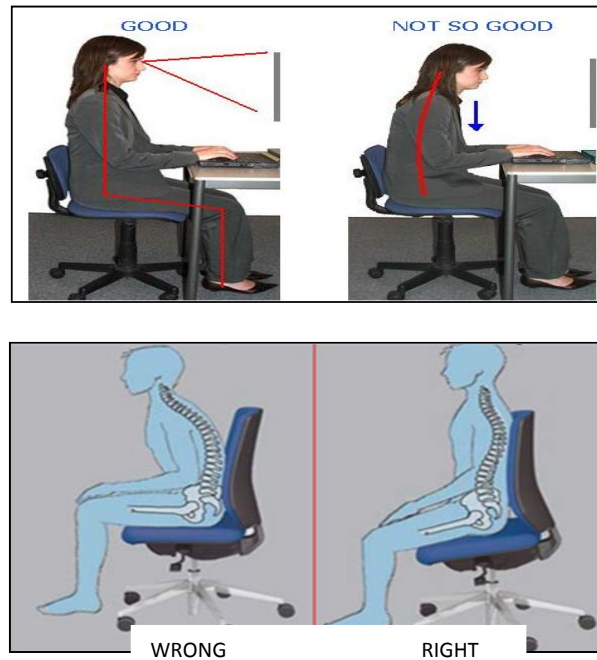


Fig 5. Sitting posture

7. Adjust your chair for comfortable sitting position

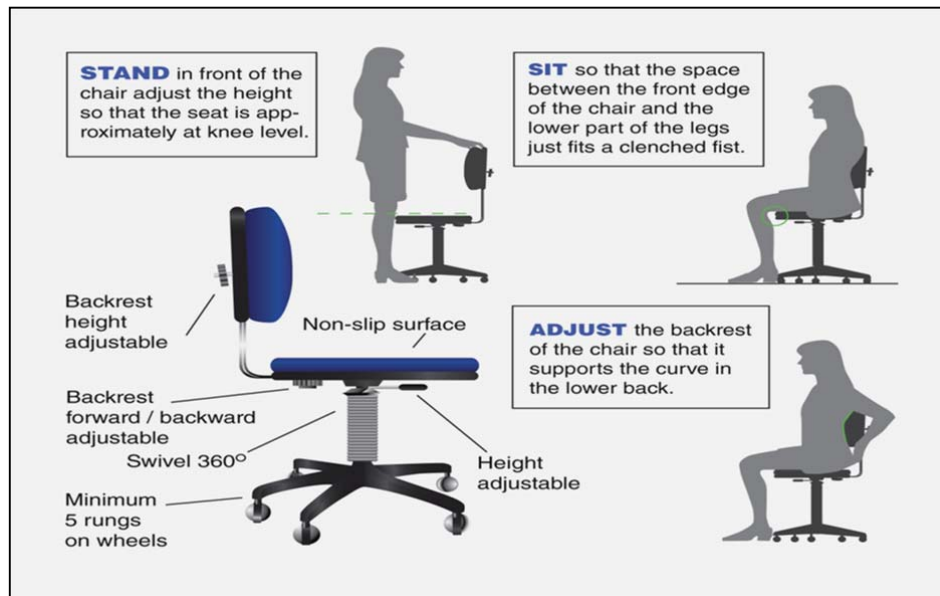


Fig 6. How to adjust your chair

8. Comfortable workplace

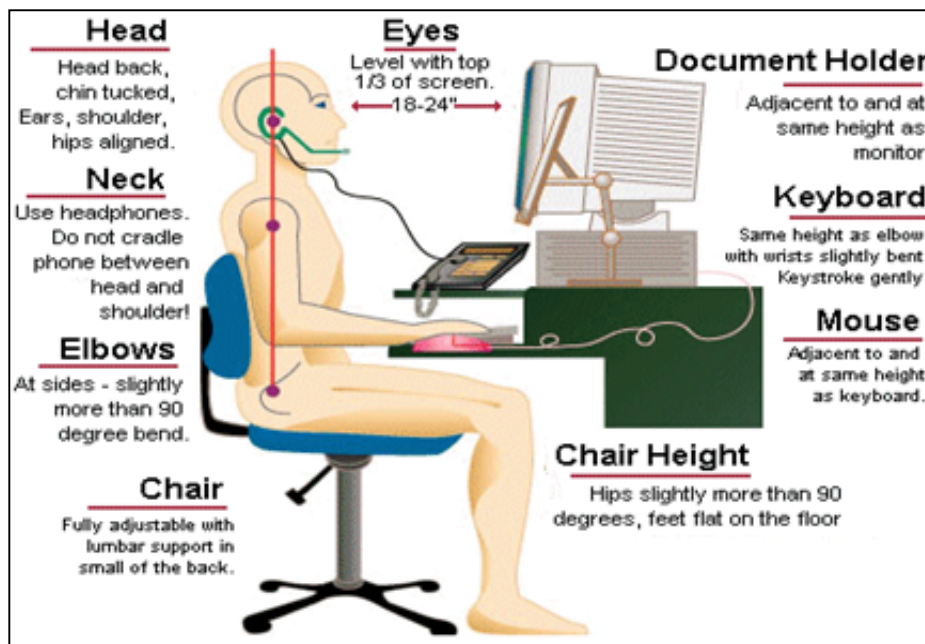


Fig 7. Ideal work station

9. Your smart phone may cause computer vision syndrome

- Hold your smart phone farther away.
- The closer you hold your phone to your eyes, the more stress you put on eyes.
- Adjust the settings if needed to enable larger print.

10. Consult your eye doctor

EYE POWER CHECK-UP.

CORRECTION OF REFRACTIVE ERROR.

CORRECTION OF PRESBYOPIA.

TREATMENT OF HETEROPHORIA AND HETEROTROPIA.

TESTS FOR MUSCLES BALANCE.

ACCOMMODATION FACILITY TESTS.

TESTS FOR BINOCULAR VISION.

TEARS FUNCTION TESTS.

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Authors Column



Dr Ajit Kumar Hazarika graduated from Assam Medical College, Dibrugarh and completed post graduation in Ophthalmology from the same institute in 2003. He joined Siri Sankerdev Netralaya in Guwahati and then worked at DRBRAM teaching Hospital in Agartala, Tripura.

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