

CHECKLIST

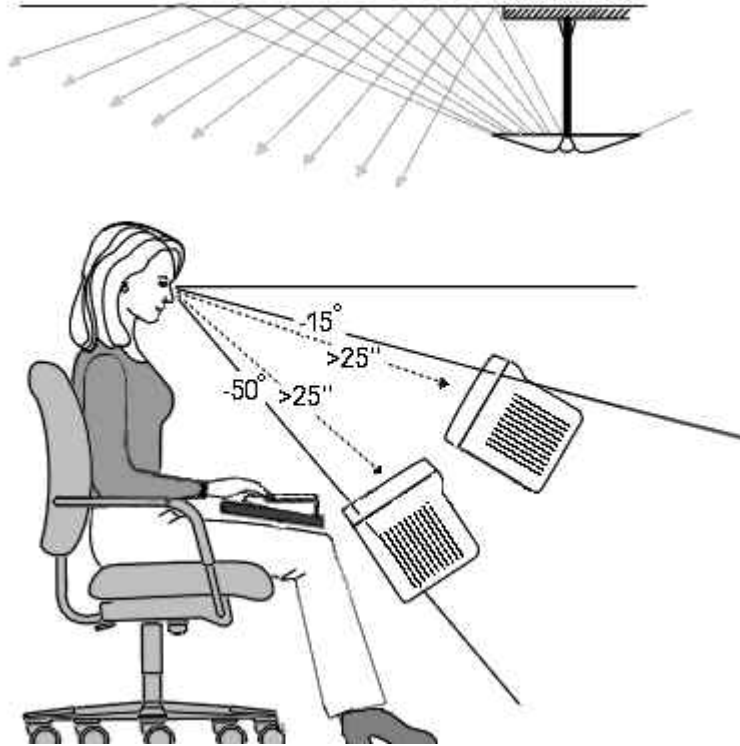
Below is one that has been successful in helping people "sharpen their eyes" in looking for risk factors. Possible solutions to each problem are also listed.

Things to look for	Possible solutions, (depending on further analysis)
Prolonged hunched or elevated shoulder while holding the phone	<ul style="list-style-type: none"> ● Telephone headset ● Speakerphone
Elbows splayed out (shoulder abduction)	<ul style="list-style-type: none"> ● Lower work surface ● Lower chair armrests ● Bring chair armrests in closer ● Awareness and habit training
Raised or tensed shoulders	<ul style="list-style-type: none"> ● Habit or tension training ● Lower work surface or keyboard ● Lower chair armrests ● Raise chair, if foot contact with the floor can be maintained
Twisting the head to the side	<ul style="list-style-type: none"> ● Bring viewed item closer to centerline of view
Elbow flexed for long periods using the telephone	<ul style="list-style-type: none"> ● Telephone headset ● Speakerphone
Elbow or forearm resting for long periods on hard or sharp work surface, chair armrests	<ul style="list-style-type: none"> ● Pad or round surfaces, corners, and armrests ● Replace armrests ● Telephone headset ● Habit training
Wrists bent to the sides when using side keys	<ul style="list-style-type: none"> ● Habit training ● Keyboard with more accessible keys or split keyboard design
Wrists bent back (extended) or forward (flexed) for prolonged periods	<ul style="list-style-type: none"> ● Habit training ● Palm rest ● Lower, raise, or change slope of the keyboard
Wrists or palms resting for long periods on hard or sharp keyboard or worksurfaces	<ul style="list-style-type: none"> ● Habit training ● Palm rest ● Padded or rounded surfaces, corners
Hands held actively over the keyboard during keying pauses	<ul style="list-style-type: none"> ● Habit training ● Palm or forearm rest
Rapid, sustained, or prolonged keying	<ul style="list-style-type: none"> ● Greater work variety ● Aggressive break schedule ● Reduce overtime
Forceful keying, key pounding	<ul style="list-style-type: none"> ● Habit training ● Light-touch keyboard
Significant amounts of hand stapling, punching, lifting, opening mail, or other forceful exertions, especially	<ul style="list-style-type: none"> ● Mechanical aids, such as electric stapler or punch ● Reduce size of lifted loads ● Bring heavy loads close to the body, at a medium height

combined with awkward postures	<ul style="list-style-type: none"> ● Substitute sliding (work surface) or wheeling (floor) ● Sharpen letter openers
Prolonged mouse use	<ul style="list-style-type: none"> ● Greater work variety ● Aggressive break schedule ● Alternate hands ● Alternative pointing devices ● Arm support, including small table ● Mouse close to body (extended keyboard tray) ● Learn keystroke substitutes for menus
Prolonged sitting, especially in only one posture	<ul style="list-style-type: none"> ● Greater work variety ● Aggressive break schedule ● Chair that supports posture change, through movement, size, or easy adjustability ● Habit training ● Move phone and printer to the other side of the office to force standing, or suggest standing when on phone ● Check chair fit ● Monitor in-out mechanism ● Sit-stand work surface
Lumbar back area not supported	<ul style="list-style-type: none"> ● Lumbar cushion ● Backrest height and tilt ● Check chair fit, especially backrest/lumbar height
Feet dangling, not well supported, or a posture which seems to put pressure on the backs of the thigh	<ul style="list-style-type: none"> ● Lower chair ● Lower work surface ● Habit training ● Foot rest (last resort)
Chair backrest not used for long periods	<ul style="list-style-type: none"> ● Check chair fit, especially seat pan depth and height ● Check leg room ● Check monitor distance and character height ● Habit training
Twisted torso	<ul style="list-style-type: none"> ● Rearrange work ● Provide more knee space ● U-shaped worksurface layout ● Swivel chair
Frequent or prolonged leaning or reaching	<ul style="list-style-type: none"> ● Rearrange work ● Mouse pad, palm or forearm rest ● Bring mouse and keyboard closer to body
Working with one or both arms "reaching" toward a mouse or keyboard	<ul style="list-style-type: none"> ● Bring keyboard closer to body ● Mouse pad, palm or forearm rest ● Bring mouse closer to keyboard
Light sources that can be seen by the worker	<ul style="list-style-type: none"> ● Cover or shield light sources ● Rearrange work arena ● Lower other viewed objects to lower field of view
Reflected glare on the screen	<ul style="list-style-type: none"> ● Shield light sources ● Shade screen ● Glare screen ● Move monitor so light enter from side angle, not back ● Do NOT tip monitor down ● Lower light levels

	<ul style="list-style-type: none"> ● Move light sources
Too much contrast between screen and surroundings or document; worker feels relief when bright areas are shielded	<ul style="list-style-type: none"> ● Lower ambient light levels ● Turn off, reposition, or dim task lights ● Block offending light sources ● Change screen polarity to black on white
Very bright ambient lighting (above 500 lux or 50 fc) or shadowed areas caused by over-illumination	<ul style="list-style-type: none"> ● Lower ambient light levels to 200-500 lux (20-50 fc) and use task lights
Monitor closer than approximately 65 cm (25")	<ul style="list-style-type: none"> ● Push monitor back (enlarge font size) ● Habit training for reclining ● Computer glasses ● Bring keyboard forward, possibly with a keyboard tray
Different viewed objects (screen, documents) at different distances from the eyes	<ul style="list-style-type: none"> ● Use document stand or otherwise equalize distances to within about 10 cm (4") if rapid viewing changes are required
Screen or documents not oriented perpendicular to the line of sight (tipped back slightly is even better)	<ul style="list-style-type: none"> ● Change monitor, document stand angle
Prolonged near focusing throughout the day with few far-focusing opportunities	<ul style="list-style-type: none"> ● Move monitor back as far as possible ● Habit training ● Rearrange space to provide view ● Introduce glazing
Monitor image dim, fuzzy, flickery, small, or otherwise difficult to read	<ul style="list-style-type: none"> ● Upgrade monitor ● Use software to enlarge image
Shiny, low-contrast, or small-print documents	<ul style="list-style-type: none"> ● Improve lighting on documents if documents cannot be changed
Forward head posture (peering) or squinting	<ul style="list-style-type: none"> ● Lower monitor ● Tilt monitor back ● Check for monitor image quality problems, character height or monitor distance ● Suggest consultation with vision specialist
Eyestrain complaints	<ul style="list-style-type: none"> ● Check all aspects of visual environment ● Suggest consultation with vision specialist
Neck extended backwards, head tilted back, even slightly	<ul style="list-style-type: none"> ● Remove CPU from under monitor ● Remove tilt-swivel base from monitor (leave ventilation space) ● Check for bifocals and suggest full-frame "computer glasses" prescription
Neck severely flexed (downward)	<ul style="list-style-type: none"> ● Tilt face of monitor back ● Tilt document - do not lay flat on worksurface ● Raise document or monitor to a comfortable height ● Adjust posture ● Habit retraining ● Check glasses for proper prescription

VISUAL ERGONOMICS IN OFFICE



Summary: Guidelines for monitor placement and lighting

- **Eye-to-screen distance:** at least 25", preferably more.
- **Vertical location:** viewing area of the monitor between 15° and 50° below horizontal eye level.
- **Monitor tilt:** top of the monitor slightly farther from the eyes than the bottom of the monitor.
- **Lighting:** ceiling suspended, indirect lighting. Use blinds and shades to control outside light.
- **Screen colors:** dark letters on a light background.