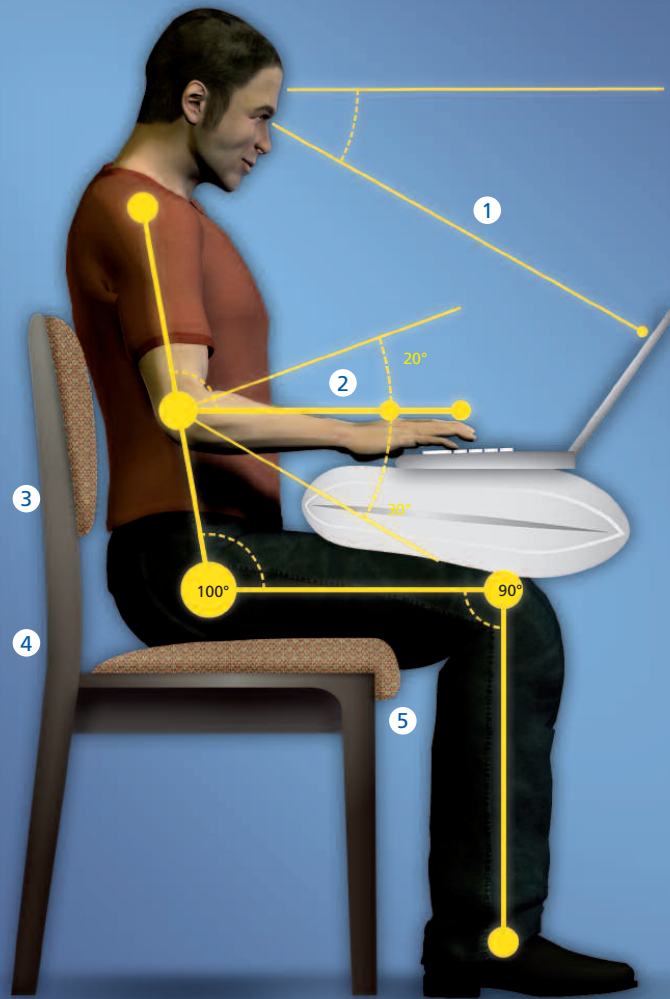# Laptop tips

1. The moitor screen should be at about a 90-degree angle to the line of sight

2. Adjust keyboard height and tilt so wrists are straight

3. Seat back supports inward curve of spine

4. Adjust the seat, as possible, so that thighs are parallel to the floor, and feet are firmly on the floor or footrest

5. Front of seat cushion rounded off

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Many people today use laptop computers at work, at home, and on the road due to their portability and ease of use. With the widespread use of the laptop, conditions can arise that result in discomfort, pain or injury to the laptop computer user. This brochure provides guidance on the safe use and transport of laptop computers from both practical and best practice approaches.

- Employees should sit at workstations with their feet firmly on the floor or on a footrest. Their knees should be at about a 90-degree angle, and their thighs should be parallel to the floor. The shoulders should be relaxed, elbows about 90-degrees, and wrists straight.
  - Chairs should have both height and backrest adjustments, and should be padded.
  - Backrests should provide low back support, and should allow the individual to slightly recline. Employees using laptop computers should avoid chairs with armrests, as they can restrict movement.
  - Seating used by employees should be easily adjusted.
  - Seating should have five caster bases (for stability) and be padded, the height and backrest should be easy to adjust, the back of the legs should be supported, and the front edge of the seat should be rounded downward.
  - Chair casters should be appropriate for the floor surface and chairs should not roll too easily.

- Employees should have their chairs and workstations adjusted so they are able to work with straight wrists.

- Desk edges should be rounded or padded to reduce the localized contact stress, which can reduce circulation and cause nerve damage. Keyboard wrist rests also help to keep employees' wrists straight when not typing, and can help reduce localized contact stress.

- Under ideal conditions, workstations with height adjustable work surfaces are most desirable for providing an environment that is most user-friendly for employees.
  - Keyboard platforms should be wide enough to hold both the keyboard and the mouse in the same horizontal plane to encourage proper posture and to reduce the risk of disorders.

- Whether using a keyboard or mouse, employees' wrists should be straight. Sometimes this requires that the height of the mouse, keyboard, or employee be adjusted.
  - A computer mouse should be placed directly adjacent to the keyboard to limit awkward reaches. The mouse should be used with a full forearm motion to reduce awkward wrist postures.

- To work with proper neck posture, the top of the monitor should be at or just below the horizontal line of sight, and placed, along with keyboards, directly in front of employees.

- For employees who work with documents, secure documents with a document holder next to the monitor in a position that reduces awkward neck postures.

- People who use eyeglasses with multi-focal lenses should place the monitor directly on the desk surface and look downward at the monitor screen.

- When possible, use a laptop computer in conjunction with a docking station that provides a full size monitor, keyboard, and mouse device.

- Carry laptops in lightweight rolling bags or in padded backpacks (where both shoulder straps are used).

- People who travel with laptops should be aware of their surroundings and the awkward positions that may result. Unless extra space and privacy screens are available (e.g. an empty seat), employees should not use laptops on airline flights due to the confined postures experienced due to airline seating configurations, and due to potential privacy and corporate security issues.

- In a hotel room, if placing the laptop on the lap, employees may need to prop up their laptops.

- If possible, employees should try to use a desk where they have knee and leg clearance but where their elbows and shoulders are not elevated.

- For "hoteling" employees who use laptop computers at office locations, provide full-sized adjustable height monitors.
  - Provide docking stations with full-sized keyboard and mouse, as well as articulating keyboard and mouse trays.
  - Provide footrests at each workstation to accommodate smaller stature employees.

- Employees who work with a laptop from a work-at-home office should be issued equipment that will allow them to follow proper ergonomic design guidelines.
  - Do not set the laptop on a kitchen or dining room table, unless it is possible to work with relaxed shoulders and elbows at about 90-degrees.
  - Employees should use laptops with a docking station, full sized keyboard and mouse, and full-sized monitor.
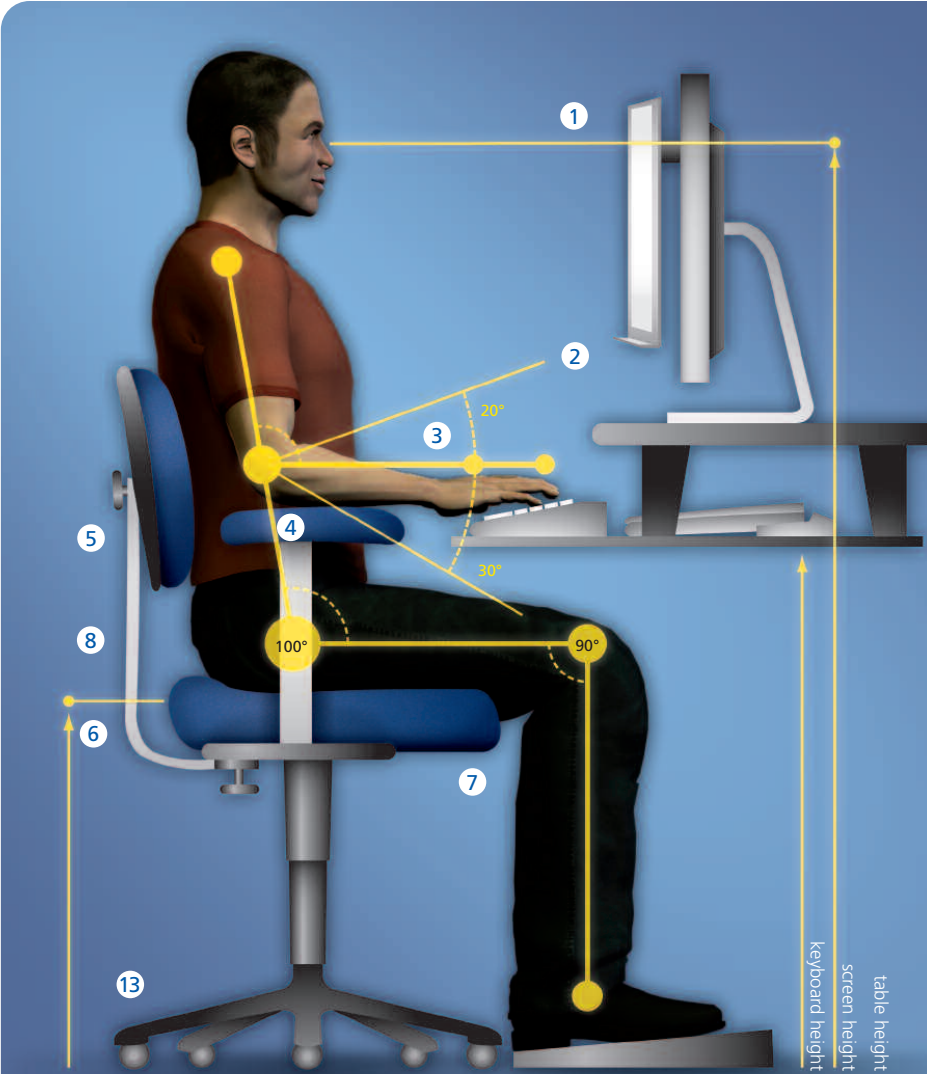
1 Top of monitor screen should be just below the horizontal line of sight

2 Copyholder at same height as screen

3 Adjust keyboard height and tilt so wrists are straight

4 Arm rests support elbows at a 90 to 100 degree angle

5 Seat back supports inward curve of spine

6 Adjust seat so that thighs are parallel to the floor, and feet are firmly on the floor or footrest

7 Front of seat cushion rounded off

8 The backrest of the chair should allow the user to recline slightly

9 Screen at right angle to window

10 Screen, keyboard and copyholder in front of operator

11 Sufficient desk space for work

12 Overhead lights to side of operator

13 Make certain the chair casters are appropriate for the floor type