How posture affects disc pressure

The effect of four postures on the intervertebral disc pressure as measured between the 3rd & 4th lumbar vertebrae. The pressure when standing is taken as 100%. According to Buchner and Eriksson.

The dangers of sitting
Changing from a standing to a sitting position makes the top of the pelvis rotate backwards. This flattens the natural lumbar curve of the spine, causing an increased uneven pressure on the intervertebral discs.

On leaning forwards (80° angle) the spine describes a "C" shape, further increasing lumbar disc pressure (+115%) and extra strain is placed on the back muscles.

Adopt a new angle while working
Using a keyboard or writing means you have to lean forwards to work. This encourages a slouched unhealthy posture (80° angle).

However, you can achieve a 100° or 110° angle and restore the natural balance to your spine by setting the chair seat level or tilting it slightly forwards (10).

How posture controls disc pressure
The secret of sitting to reduce disc pressure is to encourage the spine to lengthen into its neutral "balanced" position, as when standing.

By sitting upright and leaning slightly backwards (100° angle) the top of the pelvis rotates forwards allowing the spine to hold its natural "S" shape. There is a better balance in the spinal column, with the head centrally positioned over the spinal column, and less strain is required from the supporting musculature. Weight is more evenly distributed across the intervertebral discs.

1) The use of a forward sitting seat is not advisable for certain medical conditions, if there is any pain or discomfort, use the seat in a level position or where comfortable. Initially vary posture regularly to allow muscle groups to adjust to the new position.

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