

Range of motion

Range of motion (or ROM), is the linear or angular distance that a moving object may normally travel while properly attached to another. It is also called range of travel (or ROT), particularly when talking about mechanical devices and in mechanical engineering fields.

As used in the biomedical and by weightlifters, range of motion refers to the distance and direction a joint can move between the flexed position and the extended position. The act of attempting to increase this distance through therapeutic exercises (range of motion therapy—stretching from flexion to extension for physiological gain) is also sometimes called range of motion.

Fourteen fresh frozen human cadaver [lumbar spines](#) (L2-L5) were tested in a spinal testing device with a moment of 7.5 N m in flexion/extension, lateral bending and rotation with and without a preload. The ROM of the decompressed segment L3/4 and the adjacent segments L2/L3 and L4/L5 was measured intact and after creating a gradual defect with resection of the interspinous ligament (ISL), bilateral undercutting decompression, detachment of the supraspinous ligament (SSL) and bilateral medial [facetectomy](#).

The resection of the ISL had no significant effect on the ROM of all segments. Undercutting decompression showed a significant increase in the ROM of all segments during flexion/extension and lateral bending. The detachment of the SSL caused a significant increase of ROM during flexion/extension in the instrumented and adjacent segments. After bilateral medial facetectomy, a decrease of ROM was observed in all directions of motion except flexion/extension with preload ¹⁾.

Cervical range of motion

[Cervical range of motion](#)

[Lumbar range of motion](#)

¹⁾

Hartmann F, Janssen C, Böhm S, Hely H, Rommens PM, Gercek E. Biomechanical effect of graded minimal-invasive decompression procedures on lumbar spinal stability. Arch Orthop Trauma Surg. 2012 Sep;132(9):1233-9. doi: 10.1007/s00402-012-1543-2. Epub 2012 May 17. PubMed PMID: 22592915.

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