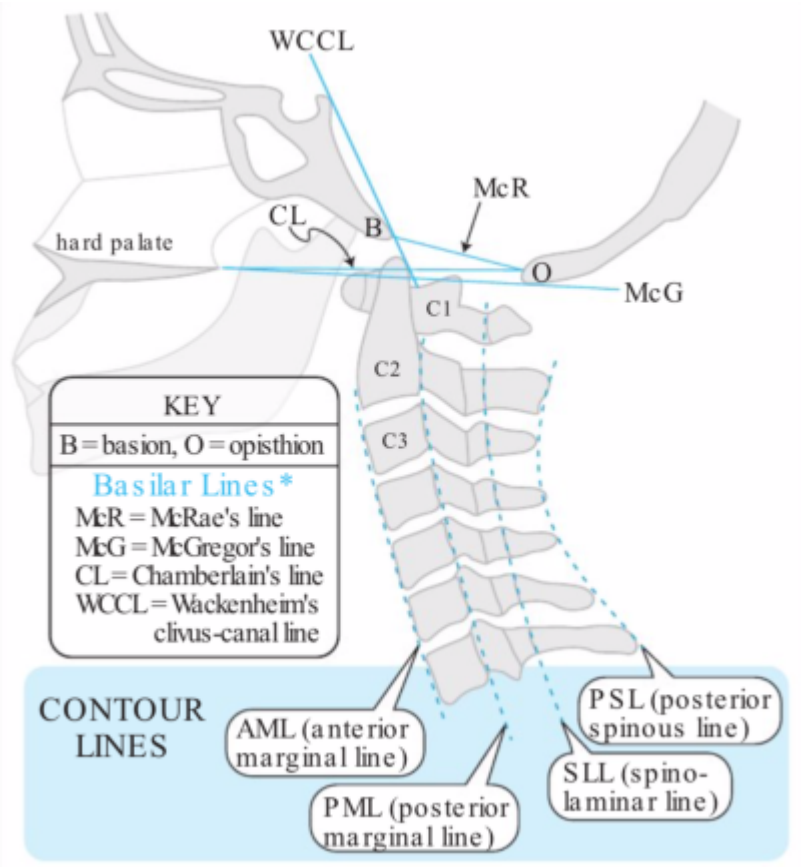
Occipitocervical angle



Occipitocervical angle an important factor to maintain horizontal gaze was demonstrated to be associated with radiological adjacent segment degeneration (ASD), suggesting that the occipitocervical angle influences accelerated cervical degeneration. Since occipitocervical angle did not change after surgery, degeneration of the cervical spine may be predicted by the value of the occipitocervical angle [1)].

A study compared the reliability of 3 techniques used to measure alignment between the occiput and cervical spine.

Intraobserver and interobserver intraclass correlation coefficient were computed to determine the most reliable method to measure occipitocervical angle.

No studies have been performed comparing occipitocervical angle measurement techniques.

The angles between the inferior endplate of second cervical vertebrae and the occiput line using the Chamberlain’s line, McRae’s line, and McGregor's line were measured from lateral cervical radiographs of 30 healthy volunteers. Five spine surgeons made measurements.

Mean intraobserver variances of the angles using Chamberlain line, McRae line, and McGregor's line were 2.0 degrees (ranging from 0 degrees-15 degrees), 4.7 degrees (from 0 degrees-28 degrees), and 1.5 degrees (from 0 degrees-9 degrees), respectively; intraobserver intraclass correlation coefficients of the angles were 0.956, 0.835, and 0.975. Mean interobserver variances of the angles using Chamberlain line, McRae line, and McGregor line were 2.3 degrees (from 0.4 degrees-6.4 degrees),

5.0 degrees (from 1.8 degrees-11.9 degrees), and 1.4 degrees (from 0 degrees-4.5 degrees), respectively; interobserver intraclass correlation coefficients were 0.939, 0.802, and 0.972. The highest reliability indexes were obtained for McGregor's line.

The McGregor's line is the most reproducible and reliable method for measurement of the occipitocervical angle [2].

1)
Yang X, Bartels RHMA, Donk R, Arts MP, Goedmakers CMW, Vleggeert-Lankamp CLA. The association of cervical sagittal alignment with adjacent segment degeneration. Eur Spine J. 2019 Oct 12. doi: 10.1007/s00586-019-06157-0. [Epub ahead of print] PubMed PMID: 31606815.
2)
Shoda N, Takeshita K, Seichi A, Akune T, Nakajima S, Anamizu Y, Miyashita M, Nakamura K. Measurement of occipitocervical angle. Spine (Phila Pa 1976). 2004 May 15;29(10):E204-8. PubMed PMID: 15131455.