

## ABSTRACT

### Background

An anatomical, biomechanical and neurophysiological relationship between the temporomandibular joint and upper cervical spine exists but an improvement in the treatment approaches of cervical pain is needed. The aim of the study was to determine if there is a relationship between the range of motion of the upper cervical spine and the range of motion of the temporomandibular joint in participants with neck pain.

### Method

This observational study included 25 participants with neck pain and 25 with no pain. The group with neck pain completed the Numerical Rating Scale and the Neck Disability Index. The range of motion of upper cervical flexion and extension were analysed using Kinovea and the range of motion of mouth opening was determined using a ruler. Results were analysed using independent t tests and correlation coefficients.

### Results

Non-significant relationships were found between the range of motion of the temporomandibular joint and range of motion of upper cervical flexion ( $r = 0.27$ ) and upper cervical extension ( $r = -0.026$ ) as well as between the intensity of cervical pain and the range of motion of the temporomandibular joint  $r(50) = 0.084$  and between functional limitations of cervical pain and range of motion of the temporomandibular joint  $r(50) = 0.064$ . A significant relationship between neck pain intensity and functional limitations due to cervical pain  $r(50) = 0.88$ ,  $p < .000$  was found.

### Conclusion

There is a significant relationship between neck pain intensity and disability in participants with neck pain and no significant relationship between the range of motion of upper cervical flexion and extension and mouth opening. Therefore, the inclusion of an assessment of the ROM of the TMJ in patients with cervical pain is not necessarily indicated.