



# AB064. SOH24AB\_240. A critical analysis of cervical spine malpositioning during hand surgery

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**Background:** Surgeons often perform procedures that require maintenance of sustained postures for prolonged periods of time. Hand surgeons may be at increased risk of sustained end of range postures, particularly cervical spine flexion. This can lead to strain on the musculoskeletal structures of the neck. Recent evidence suggests a higher incidence of neck dysfunction in hand surgeons, leading to an associated morbidity.

**Methods:** We examined the cervical-spine positions of both consultant and trainee hand surgeons, who performed 40 common hand surgery procedures. Real-time dynamic goniometric measurements of neck flexion were obtained using the 'UPRIGHT GO 2™' device in combination with a dedicated smartphone app. Neck flexion exceeding 40-degrees was used as the threshold for defining an acceptable neck position. Each participating surgeon also completed the Standardised Nordic Questionnaire for musculoskeletal pain with specific reference to neck pain.

**Results:** Hand surgeons of all experience levels adopt maladaptive positions during hand surgery. Junior surgeons tended to adopt maladaptive positions 71% of the procedure time versus 60% for consultant surgeons. These figures are put into perspective by the questionnaire results that showed 70% of the surgeons experience non-trauma related neck pain, and one third of these had neck pain or

discomfort in the previous 7 days.

**Conclusions:** The results of our study underscore the critical issue of cervical spine health within the surgical community. We need to advocate for the integration of comprehensive ergonomic education in surgical curricula, focusing on posture awareness, exercises, and strategies to reduce the risk of musculoskeletal disorders.

**Keywords:** Cervical spine; ergonomics; hand surgeon; musculoskeletal disorder; UPRIGHT GO 2

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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