Ergonomics in Microscopic and Endoscopic Ear Surgery

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I have nothing to disclose.

No, within the last 12 months I have not had any type of financial arrangement or affiliation with commercial interests related to the content of this continuing education activity that requires disclosure.
The study of people's efficiency in their working environment – results in adapting the people to the environment AND adapting the environment to the people.
Work Related Musculoskeletal Disorders

• Are prevalent in surgeons
  • Open surgery: 66% to 94%
  • Conventional laparoscopy: 73% to 100%
  • Vaginal surgery: 54% to 87%
  • Robot-assisted surgery: 23% to 80%

• Risk factors for injury
  • Open surgery: use of loupes, headlamps, and microscopes
  • Laparoscopic surgery: table and monitor position, long-shafted instruments, poor instrument handle design
  • Vaginal surgery: improper table height and twisted trunk position
  • Robotic surgery: trunk, wrist, and finger strain

• Surgeon WMSDs often result in disability but are under-reported to institutions.

Veterinarian injuries from spay/neuter

https://ergovet.com/pain-spay-neuter-vets/
Duke Surgery Introduces Ergonomics Program to Improve Surgeon Health July 2017

• Maintaining neck flexion at less than or equal to 25 degrees can prevent spine and neck strain during long stints in the OR.
The evolution of transsphenoidal surgery
Otolaryngology Data

J Gleysteen, MD Temple U

- 323 ENTs in the UK Survey (Babar et al, JLO 2003)
  - 72% had back pain and/or neck pain
    - Otology had the highest prevalence
- 377 ENTs in North America (Ho et al, Laryngoscope 2018)
  - 63.9% reported work-related MSK symptoms
- Rhinology study (Little et al, Int Forum Allergy Rhinol, 2012)
  - 77% of respondents experienced physical discomfort or symptoms associated with endoscopic sinus surgery
- Adopting the microscope for thyroid surgery (Davidson et al, H&N 2010)
The Goldilocks phenomenon – or, one size does not fit all.

• What fits a 6 foot 5 male surgeon isn’t necessarily the best device for a 5 foot 3 female surgeon.
• Most common male glove size is 7.
• Most common female glove size is 6.
World Congress on Endoscopic Ear Surgery 3.0
June 13-15, 2019
BOSTON RENAISSANCE WATERFRONT HOTEL

‘Easy Rider’ Microscope Users
Role for Exoscopes in ‘Heads Up’ Ear Surgery?

Mass Eye and Ear Infirmary
Line-of-sight for EES/exoscope monitor
Physician, Look After Thyself

• Be cognizant of your body’s comfort and ergonomics during surgery.
• Take brief breaks every 30 minutes.
• An ounce of prevention is worth several pounds of cure.