

Protecting the OR team

Orthopaedic reconstructive surgery often exposes the operating room (OR) team to physically demanding conditions. As a result, there is a notable prevalence of lower back, neck, ankle, foot, and shoulder pain among orthopaedic surgeons and their assistants. Surgeons and their teams are trying to avoid or even ignore the pain. However, there are other measures they may want to consider.

Ergonomic strain

Orthopaedic reconstructive surgery typically exposes members of the OR team to strenuous postures, prolonged static positions (eg. retraction), standing for extended periods of time, and additional extremes of motion required to do surgery. It often requires considerable physical effort to manipulate and support heavy limbs, especially during the draping and disinfection phase.¹

Intraoperative assistance

Providing assistance during surgery may in particular entail contorted body positions for holding extremities and muscular strain with prolonged retraction, all while craning the neck attempting to visualize the surgical field.² This could be especially true in cases with limited exposure such as total hip arthroplasty.

High prevalence of pain

All these factors entail a relatively high prevalence of (lower) back and neck pain,

ankle/foot and shoulder pain among orthopaedic surgeons, residents, PA's, and scrub nurses.³

Especially lower back pain is reported to be an important reason for absence from work and even career change among the operating room personnel.⁴

Measures

OR team members may ignore their pain or try to avoid it by changing body position, wearing specialized footwear, compression stockings, adjusting table or working height, or taking breaks.

There are other tangible measures with immediate impact that you may want to consider:

- Reducing instrument trays and their weight;
- Using the Gripper System to position and hold retractors during surgery;
- Using the EsySuit Range to drape quickly and minimize the time holding up legs.

¹ Neumann, J., et al. "Ergonomic assessment of operating room setups for orthopedic reconstructive surgery." 18. Jahrestagung der Deutschen Gesellschaft für Computer und Roboter-assistierte Chirurgie (CURAC) (2019). Ali Sheikhzadeh, Chaitrali Gore, Joseph D. Zuckerman, Margareta Nordin, Perioperating nurses and technicians' perceptions of ergonomic risk factors in the surgical environment, Applied Ergonomics, Volume 40, Issue 5, 2009, 833-839.
² McQuivey, Kade S. MD; Deckey, David G. MD; Christopher, Zachary K. MD; Rosenow, Christian S. BS; Mi, Lanyu MS; Spangehl, Mark J. MD; Bingham, Joshua S. MD. Surgical Ergonomics and Musculoskeletal Pain in Orthopaedic Surgery Residents: A Multicenter Survey Study. JAAOS: Global Research and Reviews 5(3):e20.00119, March 2021.

³ Neumann, J., et al. "Ergonomic assessment of operating room setups for orthopedic reconstructive surgery." 18. Jahrestagung der Deutschen Gesellschaft für Computer und Roboter-assistierte Chirurgie (CURAC) (2019). Ali Sheikhzadeh, Chaitrali Gore, Joseph D. Zuckerman, Margareta Nordin, Perioperating nurses and technicians' perceptions of ergonomic risk factors in the surgical environment, Applied Ergonomics, Volume 40, Issue 5, 2009, 833-839.

⁴ Reza Tavakkol, Esmaeil Kavi, Soheil Hassanipour, Hadiseh Rabiei, Mahdi Malakoutikhah, The global prevalence of musculoskeletal disorders among operating room personnel: A systematic review and meta-analysis, Clinical Epidemiology and Global Health 8, 2020, 1053-1061.