OVERVIEW

Medicine spends a lot of time thinking about treatment for injured workers. Little attention or study has been given to occupational injuries that may affect surgeons in the course of their day-to-day activities. This survey is to assess whether orthopaedic surgeons are suffering occupational injuries, whether they report their injuries, what treatment they seek for the injuries, and what changes could be made to their operating room environment that would help to reduce these injuries.

681 Orthopaedic Surgeons responded to the survey from 27 states.

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SURVEY RESULTS

681 orthopaedic surgeons responded to the COA Occupational Injury Survey.

Demographics of Respondents

Age of respondents:
- 30 years of age or under: 1.76%
- 31-40 years of age: 9.84%
- 41-50 years of age: 20.41%
- 51-60 years of age: 29.22%
- 61-70 years of age: 26.28%
- Older than 70 years of age: 12.48%

Gender:
- Male: 91.48%
- Female: 8.37%
- Transgender: 0.15%
Race/Ethnicity:
American Indian/Alaska Native 0.15%
Asian 7.49%
Black/African American 1.03%
Caucasian/White 85.61%
Hispanic/Latino 2.94%
Native Hawaiian/Pacific Islander 0.29%
Other: Multiracial/Appalachian American 2.50%
Prefer not to state

Orthopaedic Sub-Specialty:
Foot and Ankle 7.49%
Hand/Elbow 17.91%
Hip 11.01%
Knee 27.61%
Oncology 1.62%
Shoulder 26.43%
Spine 11.01%
Total Joints 23.05%
General 29.96%
Other included surgeons working in 16.45%

Microscope/Loupe Experience
With use of a microscope/loupe in their practice 44.35%
No use of a microscope/loupe in their practice 55.65%

Of those respondents using a microscope/loupe,
Using them less than 5 times per month 45.76%
6-10 times per month 13.90%
11-15 times per month 10.51%
16-20 times per month 8.81%
21-25 times per month 3.05%
More than 25 times per month 17.97%

Arthroscopy Experience
With arthroscopy experience 96.26%
No arthroscopy experience 3.74%

For those have arthroscopy experience,
Perform arthroscopic procedures less than 5 per month 35.66%
6-10 arthroscopic procedures per month 23.61%
11-15 arthroscopic procedures per month 13.79%
16-20 arthroscopic procedures per month 11.89%
21-25 arthroscopic procedures per month 5.86%
More than 25 arthroscopic procedures per month 9.19%

Neck Pathology Diagnosis
Respondents reported the following cervical spine diseases:
Cervical degenerative disc disease 35.37%
Cervical spine trauma 4.50%
Cervical spine tumors 0.48%
Cervical spine infection 0.64%
Never having these conditions 58.52%
Other diseases included:
  Acute disc herniation
  Chronic neck pain
  Foraminal stenosis – multiple level
  Cervical disc rupture mild degenerative disc disease
  Cervical radiculopathy-resolved
  Cervical myelopathy
  HNP C-spine
  Neck strain
  Stenosis
  Herniated disk
  Spondylolisthesis
  Chronic pain
  Disc protrusion
  Arthritis
  Myofascial pain traps
  Mild degenerative disc disease
  Cervical facet arthritis

Neck Pain

Reported experiencing neck pain: 61.83%
No neck pain 38.17%

Of those reporting neck pain:
  Neck pain started before their medical training 10.05%
  No neck pain prior to starting their medical training 89.95%

Reported neck pain within the last 3 months 73.85%
No neck pain within the last 3 months 26.15%

Of those reporting neck pain felt the pain was:
  Related to a work-related Injury 10.36%
  Non work-related Injury 10.10%
  Acute event 3.89%
  Repetitive Injury 16.84%
  Degenerative condition 29.53%
  Age-related 10.36%
  Other 18.91%

Unknown of cause – assume age
Likely due to a combination of stress, computer and OR
Don’t know – no injury – intermittent pain
A combination of the injuries listed
HNP C5-6
Occasional soreness after shoulder arthroscopy but not knee – quickly resolves once the case is finished
Multiple long loupe cases that were very stressful
Regular work
Chronic strain of neck muscles during surgery
Sports injury
Hyperextended neck while shooting from a kneeling position
Chronic stiffness due to constantly looking down
Muscle spasm
Bike injury
Acute injury and chronic pain
Exercise related, but not due to an actual injury
Car accident
Idiopathic
Cycling
If the respondent felt the neck pain was related to a work injury:
Reported the injury 3.05%
Did not report the injury 96.95%

Reasons why they did not report the work-related injury:
Did not have Workers’ Compensation/Disability Insurance 13.84%
Did not know how to report the injury 2.23%
Did not understand their disability benefits 4.02%
Thought the neck pain would resolve on its own 33.48%
Felt reporting the injury would disrupt their daily workflow 33.04%
Listed other circumstances 34.82%
Life is complex
More life activity than associated with work
Never considered reporting injury as work-related
Self employed
Symptoms not sufficient to interfere with work
The last thing I will ever do is become a WC patient
Although exacerbated by work, not caused by work
Not worth the hassle
Resident at the time
No benefit of reporting
Was uncertain of cause, now have transfer facet arthritis

Asked whether they ever missed work as a result of the neck pain,
Yes 16.84%
No 83.16%

Asked whether they sought treatment for the neck pain,
Yes 37.18%
No 62.82%

Of those responding yes to receiving treatment, they tried the following treatment for the Neck Pain:
Chiropractic Care 13.85%
Acupuncture 7.95%
Used Heat or Ice 73.08%
Changed their mattress pad/pillow 70.77%
Used bracing 12.31%
Took non-narcotic pain medications 87.69%
Took narcotic pain medications 11.54%
Took muscle relaxants 20.26%

Had an epidural injection 10.26%
Underwent neck surgery 6.41%
Cervical Radiculopathy/Myelopathy Radiculopathy

Reported experiencing cervical radiculopathy/myelopathy radiculopathy 24.38%
Reported no cervical radiculopathy/myelopathy radiculopathy 75.63%

Of those reporting cervical radiculopathy/myelopathy radiculopathy,
Reported cervical radiculopathy/myelopathy radiculopathy before medical training 3.27%
No cervical radiculopathy/myelopathy radiculopathy prior their medical training 96.73%

Reported cervical radiculopathy/myelopathy radiculopathy within the last 3 months 48.70%
No cervical radiculopathy/myelopathy radiculopathy within the last 3 months 51.30%

Of those reporting cervical radiculopathy/myelopathy radiculopathy was related to,
Related to a work-related injury 10.39%
Non work-related injury 7.14%
Acute event 4.55%
Repetitive injury 16.88%
Degenerative condition 37.66%
Age-related 5.19%
Other 18.18%
Uncertain
A combination of injuries listed above
Sports injury
Hyperextended neck while shooting
Noticed triceps weakness while skiing
Congenital stenosis and HNP from non-work injury
Prolonged flexión of neck during surgery
Work related but no specific injury
Sport trauma
CT and aging

If the respondent felt the cervical radiculopathy/myelopathy radiculopathy was related to a work injury,
Reported the injury 6.86%
Did not report the injury 93.14%

Reasons why they did not report the work-related injury:
Did not have Workers’ Compensation/Disability Insurance 16.67%
Did not know how to report the injury 5.95%
Did not understand their disability benefits 4.76%
Thought the cervical radiculopathy/myelopathy radiculopathy would resolve on its own 29.76%
Felt reporting the injury would disrupt their daily workflow 26.19%
Listed other circumstances 39.29%
Not work-related
Uncertain if work-related
Symptoms not sufficient to interfere with work
Self-employed
No benefit of reporting
Never got bad enough
Multiple causes
Reported to disability carrier

Asked whether they ever missed work as a result of the cervical radiculopathy/myelopathy radiculopathy,
Yes 31.82%
No 68.18%

Asked whether they sought treatment for the cervical radiculopathy/myelopathy radiculopathy,
Yes 53.95%
No 46.05%
Of those responding yes to receiving treatment, they had the following treatment for the cervical radiculopathy/myelopathy radiculopathy:

- Chiropractic Care 14.47%
- Acupuncture 11.18%
- Used Heat or Ice 71.71%
- Changed their mattress pad/pillow 73.03%
- Used bracing 17.76%
- Took non-narcotic pain medications 87.50%
- Took narcotic pain medications 19.08%
- Took muscle relaxants 28.29%
- Had an epidural injection 23.03%
- Underwent neck surgery 18.42%

Anthropometrics

Respondents indicated that they spend the following average number of days per week doing physical activities:

- Mild Exercise (less than 15 minutes of walking) 341
- Moderate Exercise (more than 15 minutes of walking) 452
- Strenuous Exercise (more than 15 minutes of running) 481

When asked whether they currently smoke, respondents indicated:

- Yes, they smoke 0.83%
- Never smoked 99.17%

- They have smoked in the past 12.52%
- They have never smoked 87.48%

For those who did smoke, respondents indicated that they smoked:

- less than 2 years 43.21%
- 3-5 years 22.22%
- 6-10 years 12.35%
- 11-15 years 6.71%
- 16-20 years 7.41%
- More than 20 years 8.64%

Respondents reported the following stress in their job:

- No stress 1.84%
- Very little stress 4.34%
- Little stress 10.52%
- Moderate stress 48.25%
- High stress 27.88%
- Very high stress 7.18%

Respondents reported the following stress in other areas of their life:

- No stress 2.84%
- Very little stress 19.37%
- Little stress 33.39%
- Moderate stress 36.89%
- High stress 6.18%
- Very high stress 1.34%

When asked whether an ergonomics specialist has ever assessed their OR, respondents responded as follows:

- Yes 0.83%
- No 89.48%
- Did not know 9.68%
Recommendations to Improve the ergonomics in the OR or survey design:

OR/Surgeon Recommendations:

1. Exercise often and continuously.
2. Need breaks. Surgeons are pushed to work 6-10 hours straight without any rest for the neck.
3. The weight and load distribution of “space and helmets” used in total joint replacement.
4. Appropriate level (eye level) for arthroscopic monitors.
5. Figure out ways one does not have to lean to the side during total knee replacement surgeries.
7. Be very aware of your posture when using loupes for hand procedures.
8. Need improved ergonomics for surgeons who are performing arthroscopic procedures.
9. Less lifting of the patients by the surgeon- more held in the OR
10. Hire qualified interested personnel which today is hard to find.
11. Because I am shorter than the residents I teach, I have to stand on a lift in the OR so they can have the OR table high enough for their necks/backs. Not all of my shorter partners do this.
12. OR rooms need ergonomic assessments.
13. More lifting help and education for OR staff.
14. Need adjustable chairs with foot pedal and back support.
15. Table height adjustments.
16. Sit whenever possible.
17. Better helmets for arthroplasty procedures.
18. No surgeries for aging surgeons.
19. Suspect that PTSD may be more common (or less reported) than examined or discussed.
20. Taller scrub nurse techs
21. Stand when you scope and elevate the table and bend the knee
22. Low back pain and issues are a problem too...if I have a SCR or a case longer than 2 hours my low back is an issue. If I have a moderate to big day with loupes...my c spine is an issue. Back strengthening, foam roller and core are key for me.
23. Micro Scope extenders and elbows to keep neck long and neutral.
24. Frequent position changes during surgeries.
25. Frequent bathroom breaks w yoga stretching.
26. I dropped my seat height and raised the hand operating table to decrease neck flexion. Also, I scheduled on one long case a day.
27. Maintaining a comfortable operating temperature.
28. Ortho hand cases necessitate C-spine flexion for long periods of time & worsen sx. Would need quality prism glasses to look forward & see downward, instead of flexing spine.
29. Booms holding video images angled toward me
30. OR lights need to be higher or lower profile, I constantly bang my head and jar my neck on the OR lights. We have 2 OR lights , there ought to be 3 per room.
31. Recommend neck and shoulder strengthening exercises

Survey Recommendations:

1. I would maintain that wearing loupes has far less implications than microscope usage in terms of cervical spine stress and believe that the survey should separate these questions.
2. Add swimming to choices of exercise.
3. The survey should also ask about low back issues.
4. Add a choice for “degenerative” and/or “age” to the source of neck pain. Not all neck pain is due to injury.
5. Geez ... you didn't even ask about low back pain. Ouch. How about low back pain every day of my life since having to reduce a hip fracture dislocation in my 3rd month of private practice! Too bad for my back that the ER doctor didn't know how to give proper sedation.
6. I have not experienced neck pain but I have chronic scapular pain at the end of every surgery day.
7. Perhaps misleading to ask questions about Microscope/Loupes procedures as if they were the same. I never use a microscope but frequently use 3.5 power Loupes because of my foot/ankle subspecialty.
8. There are lots of other injuries ortho surgeons are prone to: low back injury, shoulder, wrist--may wish to assess those at some point as well
Occupational Injury Task Force Members

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