It Matters! Sex Differences Impact Ergonomic, Endoscopic Training for Gastroenterology Fellows

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Introduction

- Endoscopic related injuries (ERI) for gastroenterologists (GI) are common and can affect the longevity of an endoscopic career, with a prevalence from 39% to 89%.
- There has been a rapid increase in the number of female trainees in recent years.
- We were interested in identifying specific ergonomic challenges female trainees in gastroenterology may encounter.
- **This study seeks to identify how principles of ergonomics are being delivered in fellowship training and if there are sex differences in the prevalence of ERIs amongst gastroenterology trainees.**

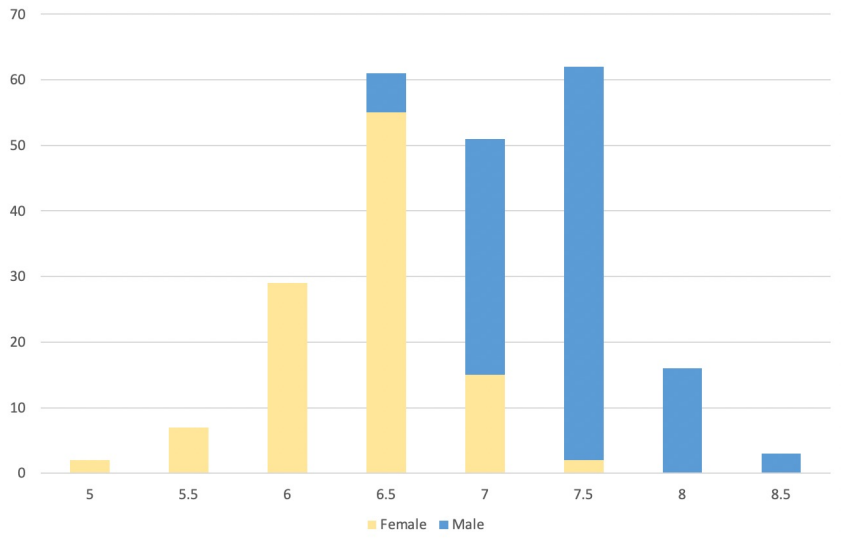
Methods

- 56-item anonymous survey sent to GI fellows at 73 academic centers across the US.
- Basic demographic information was obtained, and questions related to endoscopic suite environment, ergonomic instruction, technique, equipment availability/use, and ergonomic knowledge.
- Univariate and multivariate analyses used to compare responses of male versus female GI fellows.

Results

- Questionnaire emailed to 709 participants; 239 surveys initiated (34% response rate); 236 completed.
- 113 (44.5%) reported female sex at birth and 123 (52.1%) reported male sex at birth.
- Female fellows noted to have average smaller hand size and stature.
- More female fellows reported equipment was not ergonomically optimized for their use.
- There was a higher incidence of neck and shoulder pain following endoscopy sessions among female fellows.
- Despite no sex differences, overall poor ergonomic understanding was noted, with an average score of 68% on 5-point knowledge-based test.

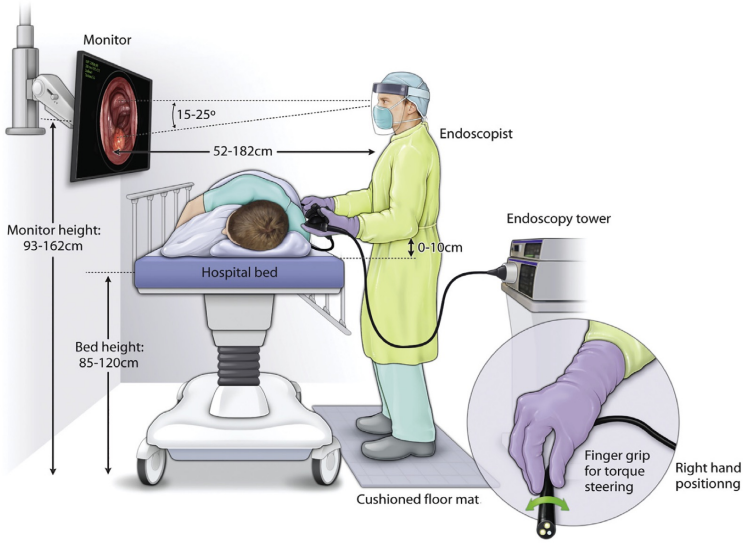
Figure: Glove size by birth sex



	Overall	Females	Males	p – value
Preference for same gender teacher	14 (5.9%)	13 (11.5%)	1 (0.8%)	0.001
Transient post endoscopy pain	186 (78.9%)	93 (82.3%)	93 (75.6%)	0.273
Transient neck/shoulder pain	96 (40.7%)	62 (54.9%)	34 (27.6%)	0.001
Equipment is not ergonomically optimized	86 (36.4%)	53 (46.9%)	33 (26.8%)	0.002
Glove size not available	19 (8.1%)	16 (14.2%)	3 (2.4%)	0.001
Dial extenders not available	68 (34.0%)	47 (41.6%)	28 (22.8%)	0.001
Well fitting aprons not available	39 (16.5%)	26 (23.0%)	13 (10.6%)	0.001
Desire for dial extenders	87 (37.2%)	64 (56.6%)	23 (19.0%)	0.001
Desire for well fitting aprons	78 (38.6%)	55 (49.1%)	39 (32.2%)	0.004
Desire for mandatory ergonomic training	228 (97.4)	112 (99.1%)	116 (95.9%)	0.371
Desires for teachers to receive ergonomic training	208 (88.9%)	103 (91.2%)	105 (68.8%)	0.459

Conclusion

- Physical differences exist between male and female trainees.
- With one-size-fits-all design, female GI may assume awkward positions to manipulate the endoscope.
- Over half of trainees report no formal ergonomic training.
- There are high rates of post endoscopy pain in both sexes with more females experiencing neck and shoulder pain.
- Trainee stature should be considered when teaching endoscopy and resources made available for safe endoscopy practices for both trainee and trainer.
- **This study highlights the urgent need for formal ergonomic training for trainer and trainee with consideration of trainee sex and stature, in order to enhance safety, comfort, efficiency, and equity in training and practice of endoscopy.**



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