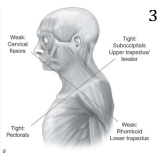
The Solution to the Pain in Your Neck?

Justin Cayabyab, June Nguyen, Olivia Porter
Mentor: Susan Kotowski, PhD, CPE
College of Allied Health Sciences
Department of Rehabilitation, Exercise, and Nutrition Sciences
University of Cincinnati College of Allied Health Sciences

BACKGROUND

- With the rise of office work in the late 20th century and the migration to remote work during the COVID pandemic, reported neck pain has risen. [1]
- With prolonged desk work comes musculoskeletal discomfort due to:
- Overcompensation of superficial cervical flexors and chest flexors
- Underuse of intrinsic cervical flexors [2]
- What can be done to mitigate discomfort? [3]



PURPOSE

To investigate if focused training of the longus colli muscle improves perceived neck discomfort

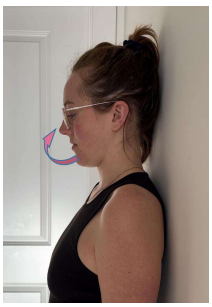
PARTICIPANTS

- 15 participants who work primarily at a desk (professional or school work, etc.)

	Age (Yrs)	Height (in)	Weight (lbs)
Females	18-23	60-67	103-138
Males	19-23	60-63	160-210

METHODS

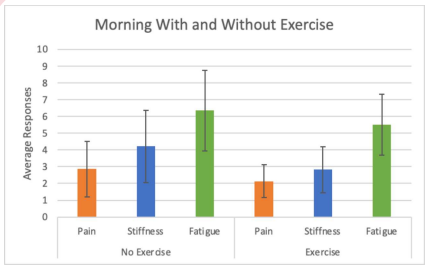
- Participants asked to complete initial questionnaire
  - Hours spent working, workspace setup, etc.
- Participants were the asked to rate their neck pain, neck stiffness, and general fatigue
  - 1- 10 (1 being the least, 10 being the most)
  - Completed in the AM and the PM each day for 3 days
- For the next 10 days participants were performed neck exercises and filled out pain, stiffness, fatigue surveys
  - Back/head against wall
  - Lengthen neck by elongated at crown of head, look down
  - Perform slow, controlled downward nod
  - Performed 4x day, evenly spaced between morning and evening



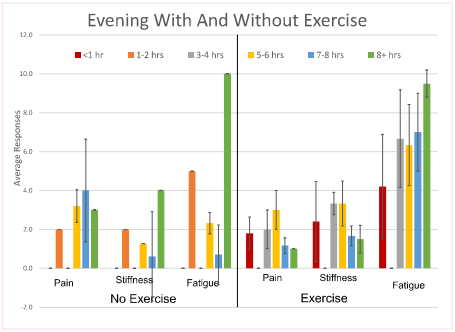
DATA ANALYSIS

- Averages and standard deviations calculated for all outcome variables
- Paired t-tests used to check for differences between groups

RESULTS

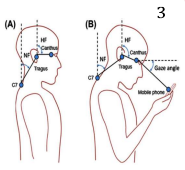


- Reported pain and fatigue did not significantly differ between the exercise and no exercise groups, but stiffness in the exercise group was significantly lower.
- In the evenings with no exercise, general fatigue had risen the greater the number of hours worked, but neck stiffness and pain are relatively similar with amongst all responses.



DISCUSSION

- Redoing experiment within monitored office environment
- Recording neck flexion and head flexion angle



LIMITATIONS

- Pilot study – sample size
- Subject adherence

CONCLUSIONS

The mitigation technique only significantly improved reported stiffness in the morning

REFERENCES

1. Tunwattanapong P, Kongkasuwan R, Kuptniratsaikul V. The effectiveness of a neck and shoulder stretching exercise program among office workers with neck pain: a randomized controlled trial. *Clinical Rehabilitation*. 2016;30(1):64-72. doi:10.1177/0269215515575747
2. Deborah Falla, Gwendolen Jull, Trevor Russell, Bill Vicenzino, Paul Hodges, Effect of Neck Exercise on Sitting Posture in Patients With Chronic Neck Pain, *Physical Therapy*, Volume 87, Issue 4, 1 April 2007, Pages 408–417, https://doi.org/10.2522/ptj.20060009
3. Fiebert, Ira et al. 'Text Neck: An Adverse Postural Phenomenon'. 1 Jan. 2021 : 1261 – 1270.