

## Background

- Proper training provides a positive effect in improving people ergonomic knowledge and reducing their risk of musculoskeletal disorders (MSDs)<sup>1</sup>
- Workers with no or poor training are more prone to MSDs. This can be explained by a limited amount of office ergonomic training programs and resources<sup>2</sup>
- MSDs are the most frequently reported lost-time claims injuries in Ontario according to the Workplace Safety and Insurance Board (WSIB)<sup>3</sup>
- Fixed or constrained body position and forced concentration on small parts of the body, e.g. hands or wrists, as common among office workers, contributed to MSDs<sup>4</sup>

## Objectives

- To compare Rapid Office Strain Assessment (ROSA) scores and assess risk of MSDs between ergonomically trained and untrained staff
- To compare staff's subjective opinions on their sitting postures and satisfaction of their workstations
- To determine the relationship between the level of staff's office ergonomic trainings and their current practice

## Hypotheses

- There is no significant difference between the office ergonomic knowledge of trained and untrained staff
- There is a negative correlation between ROSA scores and the level of office ergonomic training

## Methodology

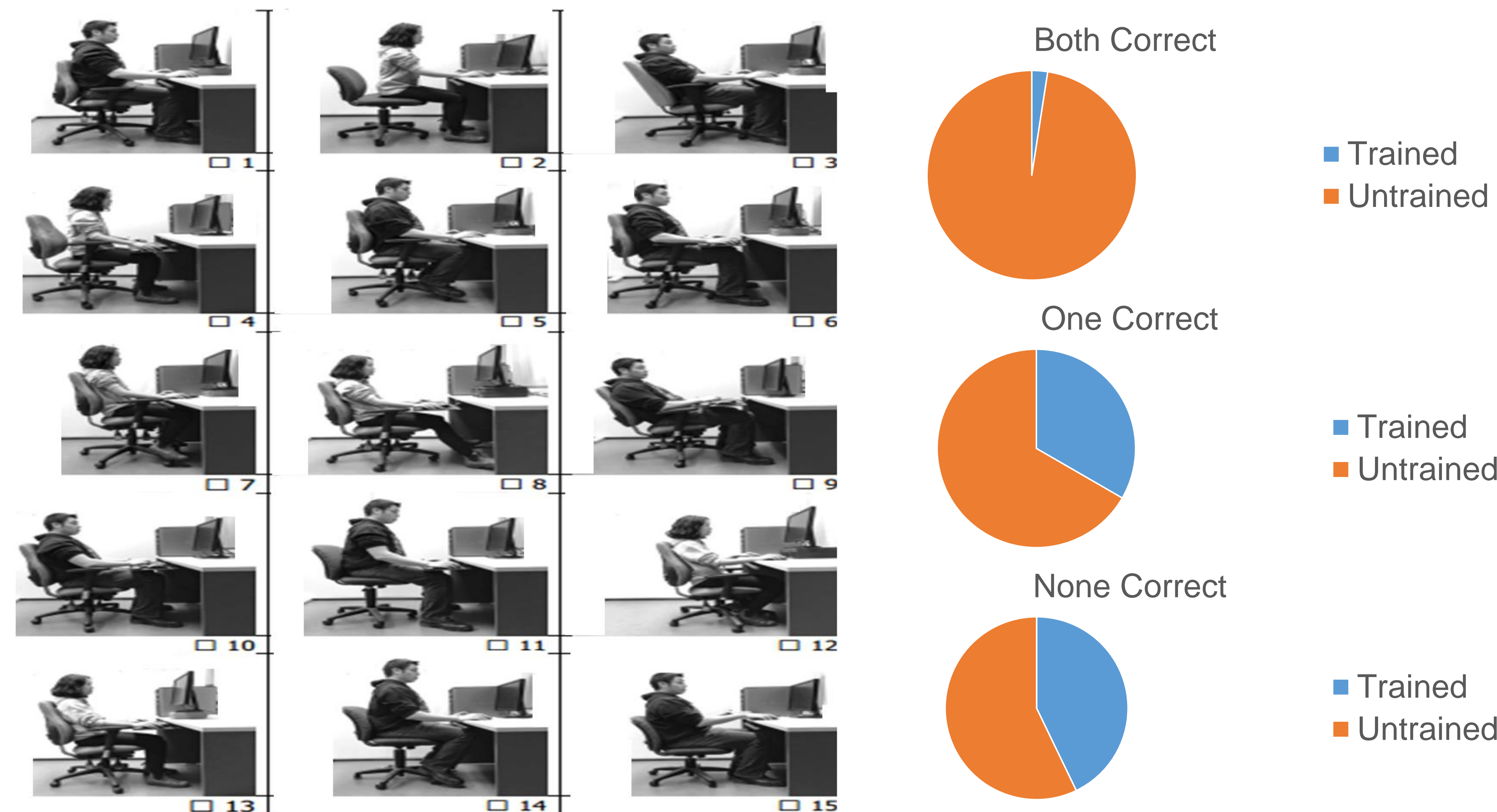
40 staff members in Ryerson University were randomly chosen to participate in this study. 12 were trained and 28 of them were not trained in ergonomics. They were assessed by a customized questionnaire regarding their opinions about their postures and workstations. Photographs of their usual practices in using their computers were taken. The pictures were used to calculate ROSA scores for each workspace. Chi square tests were conducted for statistical comparison.

## Results

### Comparison between Trained and Untrained Workers in relation to their ROSA Scores (Figure 1)

ROSA Scores	Ergonomic?	TRAINED			UNTRAINED		
		Yes	No	Unsure	Yes	No	Unsure
ROSA Scores	Danger	0	4	0	0	1	3
	Warning	2	3	3	3	10	11
	Safe	0	0	0	0	0	0

### “Can you identify correct sitting postures?” (Figure 2)



### ROSA Score Matrix (Figure 3)

SEAT SCORE	% SAFE	% MODERATE TO HIGH RISK	
TRAINED	66.7	33.3	
UNTRAINED	71.4	28.6	
OVERALL	70	30	
WORKSPACE	% SAFE	% MODERATE TO HIGH RISK	
TRAINED	25	75	
UNTRAINED	46.4	53.6	
OVERALL	40	60	
COMBINED	% SAFE	% MODERATE RISK	% HIGH RISK
TRAINED	0	66.7	33.3
UNTRAINED	0	85.7	14.3
OVERALL	0	80	20

**Figure 1:** 17% of trained staff and 11% of untrained staff think their sitting postures were correct. 58% of the trained and 39% of the untrained think they do not sit with proper posture. 25% of the trained and 50% of the untrained do not know if they have proper sitting posture.

**Figure 2:** Interviewees were asked to identify 2 pictures with correct postures out of 16 pictures. 21% more of trained staff failed to pick any of the correct pictures. None could identify both correctly while 29% of untrained staff did so.

## Discussion

- All staff experience moderate to high risk in developing MSDs from working in their offices
- Untrained staff have a lower risk of developing MSDs compared to trained staff
- No statistical significant difference in subjective opinions between trained and untrained staff about their posture correctness ( $p > 0.05$ ) as well as the perceived comfort levels of their workstations ( $p > 0.05$ )
- No difference was found in the application of ergonomics between trained and untrained staff

## Conclusions

- It appears that ergonomic trainings received by the office staff was not effective and in some instances, their outcome might be worse than those who are untrained
- This might suggest that standard training should be proposed for the office staff at Ryerson University and potentially across the country

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## References

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