

Oral presentation

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## A comparative study of the stability ball vs. the desk chair in healthy young adults: sagittal curvature, sitting duration and usability

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### Objectives

The purpose of this study was to evaluate the effect of seating type on sitting posture through comparison of a modified desk chair and a stability ball in the sagittal plane over a duration of 30 minutes. The usability of the stability ball was assessed through the completion of a purposely designed questionnaire.

### Background

Lower back pain affects a significant number of people throughout working life, meaning treatment and prevention are key topics in back care. In recent years the stability ball has increased in popularity as a common tool used in physiotherapy practice. However its uses have been taken out of the gym and into the workplace as an alternative to the traditional desk chair in an attempt to combat back pain through the belief of encouraging a better sitting position.

### Method

Twenty eight subjects participated in the study, sourced from the student population of the University of Teesside. Postural information was collected using the Microscribe 3DX Digitiser from Immersion Corp Ltd. (California). A desk chair with the back rest removed was used and categorized as a stable seating type, allowing comparison to the unstable stability ball. Spinal curvature was recorded at the point of initial sitting, and through 10 minute intervals for a total of 30 minutes on each of the seating types.

A usability questionnaire was completed by each subject following each sitting trial.

### Results

The results showed no significant difference with regard to spinal curvature between seating types ( $p > 0.05$ ). Initial sitting curvature was found to increase significantly over 30 minutes in both the desk chair and stability ball ( $p < 0.05$ ). In addition the results of the usability questionnaire showed a significant difference in 3 of the 8 questions ( $p < 0.05$ ), in favor of the desk chair.

### Conclusion

No benefits were found through sitting on a stability ball over that of a desk chair in prolonged sitting as both seating types were found to replicate a poor sitting position through a kyphosed and slumped posture. The clinical implications of this study serve to benefit any healthcare professional considering use of the stability ball as a replacement desk chair.