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Effect of Stable and Unstable Surfaces on the Serratus Anterior Muscle Activation in a Kinetic-chain Exercise Among Healthy Adults

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Effect of Stable and Unstable Surfaces on the Serratus Anterior Muscle Activation in Kinetic Chain Exercises among Healthy Adults

Presented by

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Co-Investigators

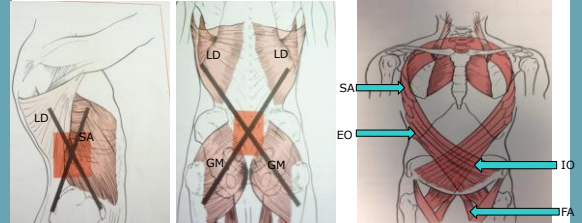
Kunal Bhanot, PT, PhD, MTC, CMTPT, FAAOMPT

Germaine Ferreira, PT, DPT, MSPT



MYOFASCIAL CONNECTIONS

Courtesy: Porterfield/DeRosa



SERAPE

PURPOSE

To determine if the serratus anterior (SA) muscle activity changes with kinetic chain recruitment on stable and unstable surfaces.



METHODS

Subjects

21 healthy males with mean age 26.7 ± 2.6 yrs.

Muscles Analyzed

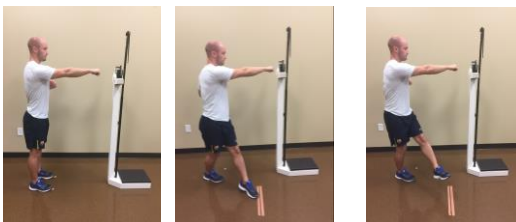
SA, LD, and EO muscles on the dominant side, GM bilaterally, and FA of the contralateral side

Exercises Analyzed (Stable and Unstable)

FPP, Closed Chain Serape (CS), Open Chain Serape (OS)



Exercises on the Stable Surface



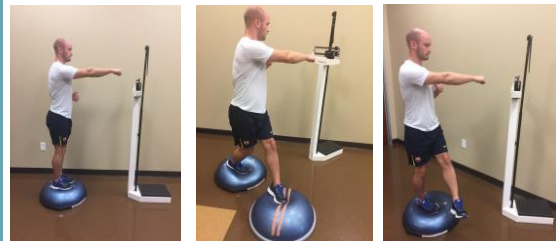
FPP

CS

OS



Exercises on the Unstable surface



FPP

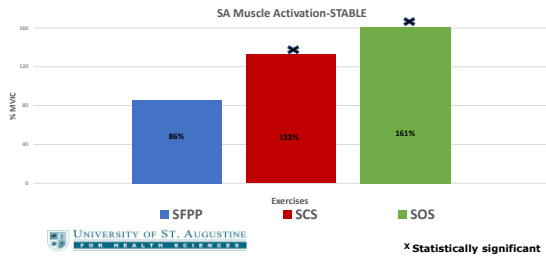
CS

OS



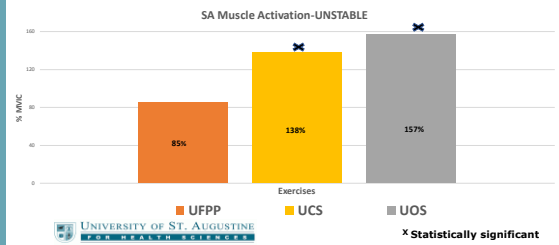
RESULTS

(One-way repeated measures ANOVA)



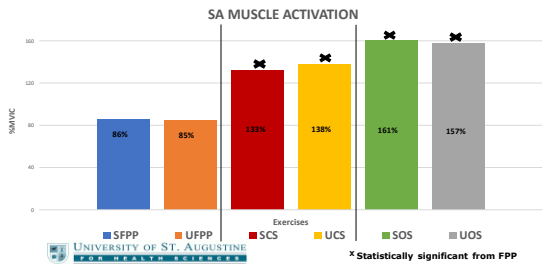
RESULTS

(One-way Repeated measures ANOVA)



RESULTS

(Paired t-test: Stable Vs Unstable)



TAKE HOME MESSAGE

- Our study strengthens the concept of recruitment of the kinetic chain during exercises for better muscle activation.
- Clinicians also need to be aware that adding an unstable surface to an exercise does not always imply higher activation of the involved muscles.

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QUESTIONS?

