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

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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
Exercises on the Unstable surface
RESULTS

(One-way repeated measures ANOVA)

EXERCISES

SA MUSCLE ACTIVATION

SFPP

SCS

SOS

SA Muscle Activation - STABLE

SA Muscle Activation - UNSTABLE

UFPP

UCS

UOS

% MVIC

EXERCISES

SA MUSCLE ACTIVATION

SFPP

UFPP

SCS

UCS

SOS

UOS

% MVIC

0

40

80

120

160

X

Statistically significant

X

Statistically significant

X

Statistically significant

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.

REFERENCES


