

Trunk muscle activation in side plank exercises with and without external-focus instruction

Cite

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Abstract

BACKGROUND:

Trunk muscle activity during isometric exercise is altered by external-focus instruction.

OBJECTIVE:

To check alterations in trunk muscle activity during side plank exercise both with and without instructions to refrain from crushing an item (external-focus instruction method).

METHODS:

Twenty-one healthy men aged 20–49 participated in this study. Ten trunk muscle activities were measured using surface electromyography during side plank exercises both with and without external-focus instruction. The unpaired t-test or Mann–Whitney U test was used to compare differences between exercise tasks and between sides.

RESULTS:

Side plank exercise with external-focus instruction increased activity of the upper trapezius, lower trapezius, latissimus dorsi, medial head of the triceps, and internal oblique on the supported side when compared with that without external-focus instruction ($p < 0.05$ for all). On the unsupported side, side plank exercise with external-focus instruction significantly increased activity of the upper trapezius, lower trapezius, latissimus dorsi, medial head of the triceps, clavicular part of the pectoralis major serratus anterior, external oblique, rectus abdominis, internal oblique, and multifidus when compared with that without external-focus instruction ($p < 0.001$ for all).

CONCLUSIONS:

Adding the external-focus instruction method to the conventional side plank exercise may be effective in increasing the trunk muscles' activity.

Side plank task



Regular side plank VS Paper balloon method

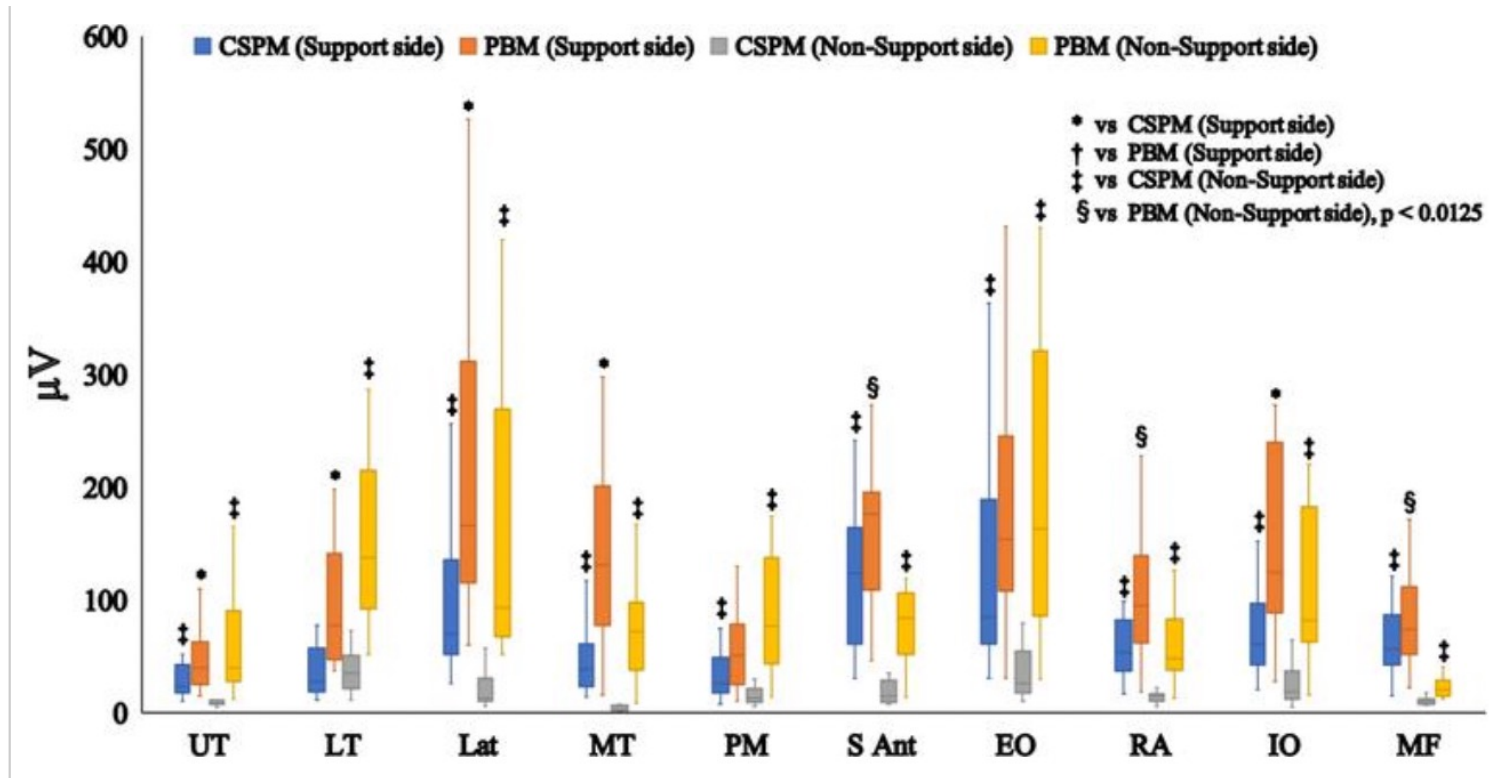
Murofushi, Koji et al. 'Trunk Muscle Activation in Side Plank Exercises with and Without External-focus Instruction'. 1 Jan. 2022 : 1 – 8.

潰さないよう Press することで
支持側だけでなく非支持側の体幹部の筋活動 up ↑



External focus instruction
Press hard but don't crush it!

This study supports the importance of using the arm to activate the other side of the trunk muscles!



upper trapezius (UT), lower trapezius (LT), latissimus dorsi (Lat), medial head of the triceps brachii (MT), clavicular part of the pectoralis major (PM), serratus anterior (S Ant), external oblique (EO), rectus abdominis (RA), internal oblique (IO) and multifidus (MF) muscles significantly activates **On both support side and non-support side!**