

Les Mills Lab: LES MILLS CORE and Lower Back Pain.



Introduction

Low back pain (LBP) is prevalent, with 65-85% of people experiencing it at one point in their lives¹. Core exercises that challenge dynamic stability have become an accepted component of LBP rehabilitation. These exercises aim to build strength and endurance using neuromuscular control strategies required to maintain dynamic trunk stability².

Hypothesis

An 8-week, bi-weekly, LES MILLS CORE™ class, focusing on dynamic core stability would improve trunk muscle activity patterns, strength, and endurance in people with and without a history of LBP.

Methods

40 participants (age 19-55) with a history of LBP were randomized to exercise and no-exercise (LBPCo, n=20) groups. 20 participants without a history of LBP also exercised.

Pre and post-intervention surface EMG (to determine levels of muscle activity) from abdominal and low back muscles were recorded during a trunk stability task. Abdominal and back extensor strength and endurance were also measured.

Results

Overall abdominal muscle activity decreased in the trunk stability test for most muscles for both groups that completed the intervention. Back extensor endurance significantly increased in NoLBP and LBPEx groups. Abdominal strength, and back extension, plank, and right side plank endurance significantly increased ($p<0.05$) for LBPEx.

Conclusions

The 8-week, biweekly, 30-minute group exercise intervention LES MILLS CORE resulted in increased abdominal strength and abdominal and back extensor endurance in people with and without a history of LBP. There were decreases in overall abdominal muscle activity during tasks designed to challenge lumbar-pelvic stability for NoLBP and LBPEx groups indicating improved control of the abdominal muscles.

[View the full study report here](#)

References

1. Manchikanti, L. (2000). Epidemiology of Low Back Pain. *Pain Physician*, 3(2), 167-92.
2. Hubley-Kozey, C. L., & Vezina, M. J. (2002). Muscle activation during exercises to improve trunk stability in men with low back pain. *Archives of Physical Medicine Rehabilitation*, 83, 1100-8. <https://doi.org/10.1053/apmr.2002.33063>