

Mulligan Bent Leg Raise Technique

A Placebo Controlled Trial Investigating Immediate Effects in Low Back Pain

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Introduction

The straight leg raise (SLR) test is frequently used to identify the degree of impairment in low back pain. Increasing range, when SLR is limited, is thought to have a beneficial effect on functional status as well as pain, though there are few studies that have investigated this relationship in symptomatic subjects. Specifically no studies have investigated the Mulligan bent leg raise (MBLR) technique that is frequently used in clinical practice to restore mobility and treat low back pain. The aim of this prospective, randomized, blind, placebo-controlled, 24 hour follow-up intervention study is to examine the immediate and short term effects of the MBLR technique on pain, range of SLR and range of posterior pelvic rotation in subjects with low back and referred thigh pain.

Methods

Twenty-four subjects with low back pain with or without thigh pain, with a unilateral limitation of SLR more than 15° on the symptomatic side, were randomly allocated to either a MBLR or placebo group. Participants were excluded if there was any evidence of neurological deficit in the lower quarter. Participants were blinded to their group allocation. Range of SLR, hip flexion and posterior pelvic rotation was recorded using goniometers positioned on the knee and pelvis. SLR mobility was measured pre-technique, post-technique and 24 hours after the intervention. Average pain intensity over the 24 hours prior to and following the intervention was recorded by use of a visual analogue scale. The researcher, taking measurements, were blind to the participant's group allocation. Ethical approval for this study was granted by Curtin University human research ethical approval committee.

Results:

Immediately following the intervention range of SLR increased by 10.5° in the MBLR group but only 5.1° in the alternative group. Similarly range of SLR 24 hours after intervention increased in the MBLR group by 12.7°, but only 4.4° in the alternative group. An analysis of variance showed a significantly greater increase in range of SLR in the MBLR group when compared to the placebo, both immediately after the intervention and 24 hours later. Further analysis revealed that the increase in range of SLR was dependent on hip flexion by 69% and pelvic rotation by 31%. Mean VAS scores significantly reduced in both groups, however an analysis of variance showed that the BLR technique was no more effective than the alternative technique in pain reduction.

Conclusions:

This study has shown that MBLR technique has a clinically significant immediate and short-term effect in improving range of SLR more than placebo. Improvement is largely due to hip flexion rather than pelvic rotation. Pain was significantly reduced by both the MBLR technique as well as placebo.

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