ABSTRACT

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A three-week intervention study was conducted to determine the effect that a recently developed therapeutic exercise treatment device had on measures associated with low back pain sufferers. The device, named the ATM2, utilises the concept of the requirement for lumbo-pelvic stability for normal stable function of the lumbar spine. It is purported to provide the stability of the lumbo-pelvic region through mechanical support while re-training the activation of muscles about the now stable lumbo-pelvic region.

Two groups of participants were used in this study. The first group consisted of active sportspeople aged between 18 and 34 who had a history of lower back pain and were considered suitable for exercise treatment on the ATM2 device after a physiotherapist's assessment took place. The second group consisted of active sportspeople aged between 18 and 23 who were currently asymptomatic for low back pain and had been during the previous six months.

Exercise treatment took place three times per week for three weeks for those in the injured group. Testing of critical variables including trunk muscle activation patterns, lumbar multifidus muscle size and pain measures took place before and after the ATM2 exercise during the first and last sessions. All measures, except pain indicators, were assessed for the healthy group, who underwent two testing sessions, three weeks apart.

No significant difference ($p>0.05$) in trunk muscle activation patterns or lumbar multifidus size was found between groups, however significant differences ($p<0.05$) were evident over time in mean trunk muscle activation patterns within the injured group. Significance was indicated between the measures taken before and after ATM2 exercise during the first session and between measures taken before ATM2 exercises from the first and last sessions. Although there was no noticeable change in multifidus muscle size indicated, pain results showed a significant improvement ($p<0.05$).

It was concluded that ATM2 exercise significantly altered measures of muscle dysfunction and pain in those symptomatic for low back pain. The manufacturer's claim that benefits would be noticed after just one session has also been substantiated.

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