THE INFLUENCE OF PROPHYLACTIC ORTHOSES ON ABDOMINAL STRENGTH AND LOW BACK INJURY IN THE WORKPLACE.

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Abstract

This study was designed to determine the effect of multimodal intervention and the prevention of back injury, and to evaluate the adverse side effects of using a lumbosacral corset in the workplace. Subjects were 90 male warehouse workers randomly selected from over 800 employees at a grocery distribution center. Subjects were assigned to three groups: true controls, no back school, no brace orthoses; back school only; and back school plus wearing a custom molded lumbosacral orthosis. Comparisons of pre-testing and 6-month follow-up post-testing for abdominal strength, cognitive data, work injury incidence and productivity and use of health care services were evaluated. Controls and training-only group showed no changes in strength productivity or lost time. Orthoses and training-group showed no changes in strength productivity or accident rate; however, they showed substantially less lost time. This study supports the concept of using education and prophylactic bracing to prevent back injury and reduce time loss. It appears that the use of intermittent prophylactic bracing has no adverse affects on abdominal muscle strength and may contribute to decreased lost time from work injuries.

SELECTED QUOTATIONS

Discussion

“...lumbosacral orthoses do not appear to compromise abdominal strength. …we do not believe that wearing an orthotic device during working hours leads to any changes in abdominal strength.”

“It has been asserted that ‘… the use of external supports may cause disuse atrophy of those muscles that specifically support the lumbar spine.’ Not only does our data provide direct evidence to the contrary, but there actually appeared to be an increase in average abdominal strength for Group 3 in which subjects wore the orthoses.

Although it is not likely that wearing an abdominal binder increases abdominal strength, it is plausible that it may reduce fatigue of abdominal muscle by providing biomechanical assistance to active muscle contractions.” (Pg. 249)

Conclusion

“The results of this prospective randomized experimental study support the hypotheses that: (1) workers using a prophylactic lumbosacral orthosis will not weaken their abdominal musculature, and (2) the use of appropriate education and prophylactic bracing will result in decreased lost time from work because of back injury.” (Pg. 250)