

THE EFFECT OF GLUTEUS MEDIUS KINESIO®TAPING ON TORSO-PELVIC SEPARATION DURING THE GOLF SWING, BALL FLIGHT DISTANCE AND ACCURACY

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A research report submitted to the Faculty of Health Sciences,
University of the Witwatersrand, Johannesburg, in partial
fulfilment of the requirements for the degree of Master of
Science in Physiotherapy

Johannesburg, Gauteng, South Africa 2012

DECLARATION

I, Boudine Pearce, declare that this research report is my original work. It is being submitted for the degree of Master of Science in Physiotherapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

Boudine Pearce

First day of October 2012.

DEDICATION

This study would not have been possible without the keen interest, support and assistance of Biokineticist, Gavin Groves and Human Movement Specialist, Ian Corbett. They played an integral part of the data collection process. I also express my gratitude to Danny Baleson for providing me with unlimited access to the facility, equipment and students at the School for Champions at the World of Golf.

I am very grateful to Hitech Therapy for sponsoring the Kinesio® Taping used in the study.

A special thank you to my devoted husband Shaun and my beautiful son Ashton for their unwavering love and belief in my aspirations and endeavours.

ACKNOWLEDGEMENTS

The following people or institutions provided assistance and guidance in carrying out this study and preparing this research report:

- Benita Olivier (supervisor)
- Siphe Mtshali (co-supervisor)
- Prof. Aimee Stewart (physiotherapy post-graduate co-ordinator)
- Prof. Piet Becker (statistician)
- Danny Baleson (golf co-ordinator at The World of Golf)
- Gavin Groves, Biokineticist at The World of Golf
- Ian Corbett, Human Movement Specialist at The World of Golf

ABSTRACT

Introduction:

The effect that an increased torso-pelvic separation (x-factor) has on driving performance and accuracy is well appreciated by golfers and golf instructors. Increased torso and pelvic separation produces a greater upper trunk energy store to be utilised for a more powerful downswing. Specific muscles' contribution towards pelvic stability during the golf swing has not been well documented.

Aim:

The aim of this study is to determine the effect that gluteus medius Kinesio® Taping has on torso-pelvic separation, subsequent ball flight distance and accuracy.

Method:

The study was a one group pre-test-post test quasi-experimental design. A group of amateur golfers underwent a biomechanical golf swing analysis with iClub™ Body Motion System to determine torso-pelvic separation at the top of the backswing. Ball flight distance and accuracy (smash factor ratio) were measured with the FlightScope®. These outcomes were recorded with and without Kinesio® Tape application on the gluteus medius muscle. Each participant's dominant gluteus medius muscle strength was tested with a Microfet Hand-held Dynamometer before and after Kinesio® Tape application. The data gathered in the taped and non-taped groups was analysed using a paired t-test, when testing at the 0.05 level of significance. Correlation between gluteus medius and x-factor, ball flight distance and smash factor ratio with and without KT application, was done using Pearson Correlation analysis.

Results:

The results showed that Kinesio® Tape is effective in improving gluteus medius muscle activation and thereby the relative muscle strength ($p=0.00<0.05$). With regard to the other aforementioned outcome measures, x-factor, ball distance and accuracy, results showed no statistical significance ($p=0.28$, $p=0.53$ and $p=0.1$ respectively). Correlation analysis revealed a negative relationship between gluteus medius muscle strength and x-factor ($r = -0.46$, $p = 0.01$) and smash factor ratio ($r = -0.33$, $p = 0.08$).

Discussion

Kinesio® Tape has been shown to improve strength in target muscles. As the golf swing is so complex, involving the entire kinetic chain, each golfer differs significantly in his/her swing. This study showed that the gluteus medius strength improved with Kinesio® Tape application in the majority of the golfers tested, but affected each golfer's shot differently. This highlights the fact that each golfer's swing is unique and they utilise the kinetic chain differently.

Conclusion:

Kinesio® Tape is significantly effective in improving gluteus medius muscle activation and strength in amateur golfers. X-factor, ball distance and accuracy are dependent on a wide variety of body movements that act in harmony to produce the golf swing and a statistically significant result was not found regarding these outcome measures. It is thus difficult to isolate only one muscle in creating pelvic stability and only the pelvis in the motion of the golf swing.

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LIST OF ACRONYMS

Ball Speed = BS

Body Motion System = BMS

Club Head Speed = CHS

Electromyography = EMG

Kinesio® Tape = KT