Kinesiotape© Application to the External Oblique and Resulting Effects on Club Head Velocity and Total Driving Distance on Low-Handicap Collegiate Golfers

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Introduction

- With the advances in golf technology over the past couple decades, golf has become a game of power and distance.
- The "body-swing connection" has recently become a hot topic in the golf industry as numerous studies have examined the body's connection to the golf swing.
- Experts at the Titleist Performance Institute state that the body should be efficiently optimized to deliver maximal speed to the golf ball at impact.
- Electromyography studies have demonstrated that the abdominal obliques are the most active trunk muscles during the acceleration phase of the downswing.
- Kinesiotape (KT©) tape is stated by KinesioTaping International to improve strength when applied to a muscle from muscle origin to insertion
- It is unknown if KT© application can assist with golf swing

Objective

- Evaluate the resulting effects of KinesioTape© (KT©) application to the external oblique on club head velocity and total driving distance on low-handicap collegiate golfers.

Methods

- Within-subjects repeated measures design with three conditions: application (KT©), segmental KT© (KT©seg) application, and non-application (control).

- Inclusion Criteria:
  - Male and female golfers ages 18 to 45
  - Established USGA handicaps of 12 or better
  - Willing to meet with researchers at FGCU PGM Lab
  - Presently enrolled in the PGM Program at FGCU
- Exclusion Criteria:
  - Injury within the past month
  - Allergy to non-latex hypoallergenic adhesive

- The sample consisted of 20 low-handicap golfers recruited from the Professional Golf Management (PGM) Program at Florida Gulf Coast University (FGCU).
- Comparisons were made based on two outcomes of interest: club head speed and ball distance.

- This study was approved by the FGCU IRB #S2015-27

Results

Final Analysis

- Hypothesis testing to detect statistically significant variations in club head speed within subjects under the three conditions, i.e. - KT©, segmental KT©, and no tape, yielded an F statistic = 0.81, p = 0.46 (df = 2).
- Testing to detect statistically significant variations in ball distance within subjects under the three conditions noted above yielded an F statistic = 0.05, p = 0.94 (df = 2).
  - These results confirm the null hypothesis that there are no statistically significant differences in performance, as measured by club head speed or ball distance, when KT© or segmental KT© is applied, as compared with no tape.

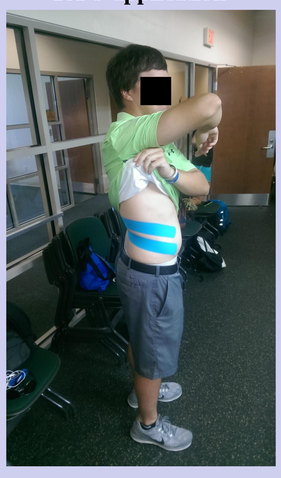
- *Participant Demographics and Performance*

Variable	Males (n = 18) (Mean)	Females (n = 2) (Mean)	Total Sample (Mean)
Age	19.80	23.00	21.40
Club Head Speed KT©	104.61	83.62	94.12
Club Head Speed Segmental KT©	98.14	83.35	90.75
Club Head Speed no tape	104.74	83.45	94.10
Ball Distance KT ©	253.68	187.87	220.78
Ball Distance Segmental KT ©	236.15	194.17	215.16
Ball Distance no tape	250.56	207.83	229.19

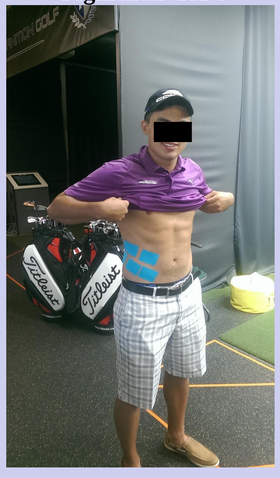
- *Results of Hypothesis Testing, n = 20*

Variable	F Statistic	Significance Level	Hypothesis df
Club Head Speed	.807	p = .463	2
Ball Distance	.052	p = .949	2

KT© application



Segmental KT©



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Data Analysis

- Data were analyzed using IBM SPSS Statistics for Windows, Version 22.0
- Descriptive analysis of demographic data included frequency counts, mean, median, range, and standard deviation.
- Hypothesis testing was conducted using repeated measures analysis of variance, using a separate within subjects main factor for each of the three conditions
- Separate models were utilized for each of the outcomes of interest: club-head speed and ball distance.
- Using the F statistic to compare within subjects differences in mean scores under each of the three conditions, the level of significance for hypothesis testing was set at $p < .05$.

Discussion

- Neither club head speed nor resulting ball distance improved with the application of KT©. Potential reasons include:
  - the predetermined sample size (43) was not able to be met, and the sample size used to obtain preliminary data (20) was insufficient to capture the estimated effect size.
  - the application of KT© will not insure an accurate ball strike on every swing.
- Further research is indicated to determine the effect of the warm-up, number of swings taken, and the resulting club head speed.
  - It is important to note that not all participants conducted the warm-up as prescribed.
  - Best research results may occur with swings taken on sequential days with a controlled number of swings during each testing session.

Conclusions

- While no statistically significant results were yielded, it is the authors' belief that KT© still may have beneficial performance enhancements for the golfing population.
  - While potential performance enhancements while using KT© is controversial, multiple studies have shown improvements in strength and power output .
- It remains unclear if a proper sample size of participants or different methodology would have affected the data measuring the impact of KT© application on improving club head velocity and resulting distance.

References: See Handout with Reference List