**Introduction**

- Elastic tape has been used for a variety of conditions in physical therapy ranging from edema control, postural control, pain modulation, joint support and neuromuscular facilitation.
- Elastic tape has been used in all types of population from infants all the way to geriatrics.
- Changes in healthcare and reimbursement policies are demanding more evidence based practice making it important that the use of certain therapeutic techniques be supported by research.
- Kinesio Tape (KT) is the most common type of elastic tape mentioned/studied in the literature.
- Evidence to support KT is either lacking or of poor quality and, therefore, results from those studies may not be valid or consistent in all populations.
- This research will explore the physiologic effect behind elastic tape, more specifically RockTape.
- Decompression effects allows for increases in blood flow and neuromuscular facilitation.
- This technology is the foundation of elastic tape and in part may play a major role in helping athletes to the general population.
- A gap exists in the literature with regards to the impact of decompression.
- It makes it difficult for researchers to explore the true impacts of elastic tapes.

**Objective**

- Testing whether RockTape application over the quadriceps muscles compared to placebo tape (Elastikon) will produce increases in velocity when kicking a soccer ball.

**Methods**

- Randomized trial with three conditions: RockTape, placebo tape (Elastikon), and control (no tape).
- Participants asked to pick number 1-99.
- Numbers previously randomly assigned with computer randomizer into three categories.
- Population: FGCU’s women’s club soccer teams.
- 51 participants.
- Participants being treated for a lower Quarter injury (low back and below) will be excluded.
- Participants treated for a lower Quarter injury (low back and below) will be excluded.
- Recent injuries no longer being treated were cleared to participate in study.
- All participants completed a dynamic warm up of 5-8 minutes which included: Butt kicks, high knee, over and under kicks, high kicks, power skip, karaoke hip/trunk mobility, walking lunges with trunk rotation.
- After warm up participants were asked to complete five warm up kicks of increasing intensity with dominant leg.
- After warm up kicks, participants completed 5 more kicks to be averaged for baseline data.
- After baseline data was collected, each participant chose a # 1-99 to place them into one of the 3 experimental conditions.
- Taping groups had RockTape or Elastikon placed from inferior AIIS to 1” superior to patella.
- Participants asked to pick number 1.
- Participants being treated for a lower Quarter injury (low back and below).

**Results**

<table>
<thead>
<tr>
<th>Group</th>
<th>Participants</th>
<th>Mean (mph)</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RockTape</td>
<td>17</td>
<td>51.48</td>
<td>5.51</td>
<td>41.20</td>
<td>65.80</td>
</tr>
<tr>
<td>Placebo</td>
<td>18</td>
<td>50.41</td>
<td>6.63</td>
<td>39.20</td>
<td>61.40</td>
</tr>
<tr>
<td>Control</td>
<td>16</td>
<td>50.48</td>
<td>7.06</td>
<td>34.80</td>
<td>63.80</td>
</tr>
<tr>
<td><strong>Experimental Data</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RockTape</td>
<td>17</td>
<td>50.87</td>
<td>5.64</td>
<td>40.20</td>
<td>64.00</td>
</tr>
<tr>
<td>Placebo</td>
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<td>50.77</td>
<td>7.00</td>
<td>38.00</td>
<td>63.60</td>
</tr>
<tr>
<td>Control</td>
<td>16</td>
<td>50.48</td>
<td>7.06</td>
<td>34.80</td>
<td>63.80</td>
</tr>
</tbody>
</table>

**Discussion**

- The data was analyzed using SPSS software.
- Three-way repeated measures ANOVA was performed to analyze differences in ball velocity between RockTape, Elastikon tape, and control groups for baseline and experimental conditions.
- Results indicated that RockTape showed no improvement in velocity of soccer kicks.
- RockTape had a net negative impact on kick velocity while Elastikon had a net positive impact, neither of which were significant.
- Limitations:
  - Tapes inability to adequately stick to players with hairier legs.
  - Surface area of quadriceps covered by tape.
  - Angle of the kicks when the ball crossed the path of the radar gun.
  - Making sure players hit the ball towards the middle of the goal not the corners.
  - Inaccurate radar gun readings.
  - Conflicting schedules with baseball team to borrow radar gun.
- Inability to include collegiate soccer players during our data collection.
- Future research involving elastic tape and measuring velocity should take into account these limitations.
- Working proactively to diminish any issues that may arise was a key factor in similar studies.
- Preferred method of collecting data was having participants come one at time rather than in groups. It was more efficient and took less time out of each participants practice time.

**Conclusions**

- Analyzing the data showed that RockTape placed at 50% tension on the anterior thigh over the rectus femoris of the quadriceps did not have a significant difference on ball velocity during near maximal effort kicks by college club soccer players.
- Results also showed a net negative impact on ball velocity with RockTape and a net positive impact on ball velocity with placebo tape.
- Suggestions for future research to improve upon our study include more surface area coverage with RockTape for the majority of the quadriceps, rather than one strip partially covering such a large muscle, including high skill athletes to decrease variance between subjects, removing hair to increase adhesion of tap.

**References**: See Handout with Reference List