INTRODUCTION

- Tuck jump assessment (TJA) developed to determine neuromuscular deficits and identify flaws (Figure 1) in lower extremity technique
- TJA assesses risk for lower extremity injury in an athletic population.¹
- TJA can also be used for lower extremity injury prevention, specifically Anterior Cruciate Ligament (ACL) tears and knee valgus injuries.²
- Current research of the TJA’s reliability is inconsistent. Further research warranted to determine reliability in athletic population

PURPOSE

Does the TJA demonstrate reliability in healthy subjects?

MATERIALS AND METHODS

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<th>Author</th>
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<td>Dudley et al³</td>
<td>108 participants including undergraduate and graduate students</td>
<td>Videos of 40 participants randomly selected for reliability study.</td>
<td>Participants told to “jump repeatedly for 10 seconds with high effort level, bringing the knees up as high as possible so both thighs are parallel with the ground, landing softly in the same footprint with each jump, and then immediately begin the next jump.”³ Rates view videos at various speeds and angles, rate jump based on 10 criteria. Three rates scored jumps one month later to determine intra-rater reliability.</td>
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Foot-Vannereethege et al² | 24 elite youth volleyball athletes | 12 males, 12 females | All activity participating in four year professional development program. Each attended 8-10-120 minute training sessions per week. Recruited athletes were excluded if they had overuse or acute injuries at time of testing. | Participants familiarized with testing procedures 1 week prior to testing. All participants completed 10 minutes of neuromuscular warm-up, followed 3 TJA practice trials. Participants instructed to place feet in middle of rectangle on floor consisting of 4 smaller rectangles. Instructed to lift knees to hip height and attempt to land on the same footprint with their feet shoulders width apart. | Average percent agreement across all scoring criteria was 92.1%. Inter-rater reliability for total score was excellent (7.88 ± 1.59 total score). Average percent agreement was 90.08% for Rater 1 and 95.4% for Rater 2. Intra-rater reliability for total score was excellent for both Rater 1 and Rater 2. |

Harrington, Myer, Munro³ | 10 participants: 5 male and 5 female | 2 tester viewed and scored the videos. | The participants were asked to continuously perform the tuck jump for 10 seconds after instructions were provided. These instructions included lifting the knees to hip height and landing in the same spot. The 10 criteria were grouped into 3 areas. | 95% agreement for all Males: 92.7% intra-rater reliability for males; 1 tester was 100% agreement and the other was 96%. Females: 97.2% inter-rater reliability for females. 1 tester was 100% in agreement and the other was at 96% |

Real et al² | 25 pre-peak height velocity (PHV) and 25 post-PHV youth soccer players | Pre-PHV average age of 11.93 years. Post-PHV average age of 17.26 years. All participants healthy and with soccer training and competitions. Subjects completed a physical activity readiness questionnaire to determine their health status and that there was no significant physical reason why they should not participate in the research project. | Participants attended 3 sessions total, 7 days apart, under the same conditions. Session 1: familiarizing subjects to the test. Data collected in the second and third sessions were retrospectively analyzed by a single examiner with emphasis on within-subject variation. 10-minute warm up of dynamic stretch prior to each testing. | Intra-rater reliability deemed strong. Intraclass Correlation Coefficient (ICC) = 0.88. High within-subject variance indicated by low kappa agreement (κ). Suggests score variation due to participants and not the raters. Knee valgus, foot not parallel, pause between jumps: acceptable reliability in pre-PHV. Knee valgus on landing, thighs not parallel in flight and contact noise: acceptable reliability in post-PHV. |

REFERENCES