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6   THE LANDING ERROR SCORING SYSTEM (LESS) AND LOWER LIMB POWER PROFILES IN ELITE RUGBY UNION PLAYERS

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The Landing Error Scoring System (LESS) is a relatively new clinical test that assesses landing biomechanics during a drop jump task. Performance measures such as Jump Height (JH), Power (P), Contact time (CT) and Reactive Strength Index (RSI) are common performance measures in an athletic population. Comparing results from the LESS against these performance measures has not previously been reported in an elite rugby union setting. The aim of this study was to compare differences between LESS scores and lower limb performance measures in elite male rugby union players. Thirty two male, elite rugby union players participated in the study. Each participant completed 3 trials of the LESS. Performance data regarding JH, P, CT and RSI were recorded concurrently via the OptoJump system (Microgate, Bolzano, Italy). LESS trials were scored independently by the authors. Statistical analyses were used to confirm inter and intra-rater reliability. Data was tested for normality and one-way factorial MANOVA was used to assess between group differences ($p < 0.05$). Ethical approval was granted by the University's Ethics Committee. Intra-class Correlation Coefficients (ICC) demonstrated excellent intra (0.96) and inter (0.94) rater reliability for the LESS in the current study. Six participants produced LESS scores deemed excellent to good (score ≥ 6), 26 participants produced scores deemed moderate to poor (score ≤ 5). Participants with moderate to poor LESS scores produced significantly greater P ($p = 0.038$), RSI ($p = 0.016$) and lower CT ($p = 0.002$), there was no significant difference in JH ($p = 0.842$) between participants scoring excellent to good and moderate to poor. The current study reports excellent intra and inter rater reliability for the LESS, supporting its use as a clinical assessment tool in an elite rugby union populations. The majority of players presented with moderate to poor LESS scores, therefore landing biomechanics may need to be improved in this population. Participants scoring moderate to poor in the LESS recorded significantly higher P, CT and RSI but not JH. This suggests participants with high risk landing biomechanics may also produce higher performance measures, but these do not result in improved outcome performance such as jump height.