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Interday reliability and usefulness of reactive strength index derived from the ten to five repeated jump test.

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Reactive strength index (RSI) has been described as an individual's ability to change quickly from an eccentric to a concentric contraction (Young, 1995, *New Studies in Athletics*, 10, 825-833). RSI has been used in the practical strength and conditioning setting and exercise science literature as a means of quantifying stretch-shortening cycle performance (Flanagan and Comyns, 2008, *Strength and Conditioning Journal*, 30, 32-38). A drop jump test has been used extensively to assess an athlete's RSI capabilities. Recently, RSI has been derived from the average of the best 5 jumps obtained from a series of 10 maximal repeated bilateral hops (10/5 repeated jump test (RJT)) (Harper, Hobbs and Moore, 2011, *BASES Student Conference*). Limited research exists on the interday reliability and usefulness (ability to detect the smallest worthwhile change) of the 10/5 RJT with no reported research for a female population. This study aimed to assess the reliability and usefulness of RSI derived from the 10/5 RJT for an amateur female field sport population. With institutional ethical approval, 15 female participants (mean age: 21.1 ± 0.9 years; stature: 1.65 ± 0.73 m; body mass: 62.0 ± 5.1 kg) (mean \pm s) completed 2 trials of the 10/5 RJT with 60 s rest after a specific warm-up protocol on two testing sessions separated by a minimum of 48 hours. A 10/5 RJT technique familiarisation session preceded the two testing sessions. For all 10/5 RJT trials the participants were instructed to minimise ground contact time and maximise jump height. The best trial from each testing day was used for the interday reliability and usefulness analysis. Acceptable reliability was determined at an ICC ≥ 0.8 and a CV $\leq 10\%$ (Hopkins, 2000, *Sports Medicine*, 30, 1-15). The reported ICC for RSI was 0.91 (95% CI; 0.76 to 0.97) and the CV was 7.3%. In order to assess the usefulness of the test the typical error (TE) was compared to the smallest worthwhile change (SWC). The SWC for RSI in the 10/5 RJT test was 0.09 units (SWC%: 7.0%), while the TE was 0.14 units. Therefore the usefulness of this test for this female population is rated as 'marginal' (Hopkins, 2004, *Sportscience*, 8, 1-7). The results suggest that the 10/5 RJT is a reliable test for RSI as both criteria for acceptable reliability were satisfied but the ability of the test to detect the SWC is marginal.