

Est.  
1841

YORK  
ST JOHN  
UNIVERSITY

Comyns, Thomas, Flangan, Eammon, Harper, Damian, Fleming, Sean and Fitzgerald, Evan (2017) Interday reliability and usefulness of reactive strength index derived from the ten to five repeated jump test. *Journal of Sports Sciences*, 35 (Sup2). S80.

Downloaded from: <https://ray.yorks.ac.uk/id/eprint/2669/>

The version presented here may differ from the published version or version of record. If you intend to cite from the work you are advised to consult the publisher's version:

<http://www.tandfonline.com/doi/full/10.1080/02640414.2017.1378421>

Research at York St John (RaY) is an institutional repository. It supports the principles of open access by making the research outputs of the University available in digital form. Copyright of the items stored in RaY reside with the authors and/or other copyright owners. Users may access full text items free of charge, and may download a copy for private study or non-commercial research. For further reuse terms, see licence terms governing individual outputs. [Institutional Repository Policy Statement](#)

# RaY

Research at the University of York St John

For more information please contact RaY at [ray@yorks.ac.uk](mailto:ray@yorks.ac.uk)

## Important notes:

Only abstracts submitted using this template will be considered.

Please do **NOT** enter author and affiliation details on this form. You will be able to enter this information online when you submit the abstract.

Please do **NOT** write outside the boxes. Any text or images outside the boxes will be deleted.

Please do **NOT** alter this form by deleting parts of it or adding new boxes. Simply enter your information into the boxes. The form will be automatically processed – if you alter it your submission will not be processed correctly.

Save this file in **.doc or .docx** format.

**Abstract title:**

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

**Abstract** [max 400 words, containing no tables or figures, sub-headings or paragraph breaks]:

(Your abstract must use Normal style and must fit into the box. Please do not enter author or affiliation details).

---

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:  $21.1 \pm 0.9$  years; stature:  $1.65 \pm 0.73$  m; body mass:  $62.0 \pm 5.1$  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  $\geq$  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.