DYNAMIC BALANCE IN CHILDREN: PERFORMANCE COMPARISION BETWEEN TWO TESTING DEVICES

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Dynamic balance (DB) refers to the ability to maintain balance while moving and requires strength, flexibility and proprioception. DB is typically measured in youth and adults on a Y-balance kit (YBK). For general use in most public schools, less expensive devices are needed. **PURPOSE:** To compare DB performance in children measured on a YBK with a less expensive hand-made device (HMD) made from wood slats and cloth measuring tape. **METHODS:** Sixteen children (age 10.6 ± 0.3 yr; height 146.4 ± 7.2 cm, body mass 46.4 ± 14.9 kg) performed the Y balance test using a YBK and a HMD on nonconsecutive days. Standard testing procedures which included 6 warm-up trials and 3 test trials on each leg in the anterior, posteromedial and posterolateral directions were followed. Subjects attempted to maintain single-leg stance while reaching as far as possible in each direction with the contralateral leg. Data were analyzed for each limb in all 3 directions using paired t-tests and Bland-Altman plots. **RESULTS:** HMD provided a strong relationship to YBK measures with composite correlation coefficients ranging from $r=0.90$ to $r=0.94$ and no difference in performance for any direction on either limb between the YBK and the HMD ($p>0.05$). Bland-Altman plots confirmed no systematic shift in DB performance in any measure between YBK and HMD. **CONCLUSION:** These findings demonstrate that DB performance on a HMD is comparable to performance on a commercially marketed YBK in children.