Background: The isokinetic dynamometer has been considered the gold-standard measurement of muscle performance. However, the reliability for the passive mode in children has not been reported to date. Objectives: The purpose was to evaluate the reliability of the isokinetic dynamometer in passive mode in children. Method: Twenty-one healthy children (ten girls, eleven boys), aged 5 to 12 years (age: 8.5±2.2 years), were evaluated using an isokinetic dynamometer. Each participant was tested twice with a one-week interval and performed five consecutive cycles of knee extension and flexion. The test was performed at 60°/s in the concentric passive mode and the children performed maximal contractions. The measured variables were peak torque, average peak torque, total work, and average power, time to peak torque and angle of peak torque for dominant and non-dominant lower limbs. Reliabilities were determined using intraclass correlation coefficient (ICC3,1), standard error of measurement (SEM and SEM%), and coefficient of variation (CV). Results: We found good reliability in both lower limbs for peak torque, average peak torque, total work, and average power, with ICC3,1 values greater than 0.80; SEM ranging from 6.7 to 79.2; SEM% ranging from 10.4% to 16.8%; CV lower than 15%. Bland-Altman analysis showed that the bias was lower than 10% and limits of agreement (LOAs) ranging from 33.9% to 59.2%, and -28.8% and -52.8%, showing that measures tended to disagree. However, time to peak torque (ICC3,1<0.68; SEM > 0.34; SEM%>37.4%; CV>41.7%; bias >24.0%; LOA>101.0%) and angle of peak torque (ICC3,1<0.76; SEM>9.3; SEM%>27.6%; CV>15.3%; bias>11.0%; LOA>61.0%) were not reliable. Conclusions: The findings indicate that isokinetic evaluation in passive mode for knee flexors and extensors of dominant and non-dominant lower limbs of children without disabilities was reliable for peak torque, average peak torque, work, and power. However, average time to peak torque and angle of peak torque were not reliable.

Keywords
Isokinetic evaluation, children, knee, reliability, rehabilitation, movement.