
ORIGINAL RESEARCH

LOWER LIMB ASYMMETRIES IN RHYTHMIC GYMNASTICS ATHLETES

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ABSTRACT

Background: Different limb training demands and limb preference may determine anthropometric and muscle force inter-limb asymmetries in Rhythmic Gymnastics (RG) athletes.

Purpose: The purpose of this study was to evaluate the influence of lateral preference of the lower extremity on anthropometric, range of motion, and isokinetic torque measurements of RG athletes.

Study Design: Cross sectional study

Methods: Lower limb anthropometric measurements (girth, estimated anatomical cross-sectional area), hip, knee and ankle range of motion, flexor and extensor isokinetic torques (angular velocities = 60, 180, e 240° · s⁻¹) and bilateral asymmetry index were evaluated in 11 international level Rhythmic Gymnastics athletes (17.9 ± 4.0 years of age; 9.1 ± 5,1 years of experience; 26.8 ± 6.0 weekly training hours).

Results: The preferred limb showed larger thigh girth and anatomical cross-sectional area, higher ankle dorsiflexor range of motion, higher hip flexor torque at 60° · s⁻¹ and higher plantarflexor torque at 180° · s⁻¹ compared to the non-preferred limb.

Conclusions: The observed differences seem to be strictly related to lateral preference and rhythmic gymnastics training.

Levels of Evidence: 3

Keywords: Ankle joint; hip joint; isokinetic dynamometer; knee joint; muscle strength.

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