

ABSTRACT

The main objective of this bachelor thesis is to describe coordination and the load distribution between the limbs of Ultimate frisbee (UF) players. We evaluate postural coordination (PC) in the following situations: tests in tension compared with tests in compression, tests with or without eye control. We evaluate the weight distribution between lower limbs (LL) and between upper limbs (UL) too.

Methods: 20 volunteers enrolled in the study. They were the best national-level players represented by both sexes and aged 20-43 (average age is 31 years). The measurement was performed on the Imoove 300. The entry criteria were: active career in UF of at least 3 years, without serious illnesses (neurological, internal), surgery or injury (muscle rupture, fracture). Each player passed 12 DLC (dynamic life control) tests of Check Up mode. The following instrument set-up options were combined in the tests: type of standing position (stand straddling, PILL (pivot lower limb) step, LLL (lunge lower limb) step); test with eye control test (EC) or test with no eye control (NEC); test in tension or test in compression. The data was tested with a single Wilcoxon test.

Results: At a statistical significance level of 0.05, it was shown that in the following assays, PC was better with visual control than without it: stand straddling, tension ($p=0.003205$); stand straddling, compression ($p=0.01146$); LLL step, tension ($p=0.001406$); LLL step, compression ($p=0.01742$); PILL step, compression ($p=0.0001581$). Only with the PILL step, tension ($p=0.08558$) failed to prove this. PC was better in compression than in tension in the following cases: stand straddling, EC ($p=0.0004445$); LLL step, EC step ($p=0.0007508$); LLL step, NEC step ($p=0.02187$); PILL step, EC step ($p=0.04718$). This could not be shown in the tests: stand straddling, NEC ($p=0.211$); PILL step, NEC ($p=0.9291$). The weight distribution between the legs was symmetrical in all three standing positions: stand straddling ($p=0.2689$), PILL step ($p=0.7065$), LLL step ($p=0.05628$). Asymmetry was not shown at 0.05 level in either case. Asymmetry has been demonstrated in upper limb loads. The non-dominant limb was loaded more both in tension ($p=0.007211$) and in compression ($p=0.001903$).

Conclusion: There was no significant asymmetry in the LL load, while the difference in load distribution at UL was significant. The non-dominant upper limb is loaded more. Proband's had better PC results in compression than in tension and with visual control than without it.

Key words: Stability, load distribution, coordination, Ultimate frisbee, Imoove