Assignment 1
2D Kinematik beim Weitsprung
Gruppe 4711

Dozierender:
Dr. Björn Braunstein
+49.(0)221.4982.5621
braunstein@dshs-koeln.de

Kontaktperson:
BA Sc. Vorname Nachname
+49.(0)221.4982.5621
info@info.de
Matrikelnummer: 08154711

Mitstreiter:
Vorname Nachname (ID: 08154711)
Vorname Nachname (ID: 08154711)
Vorname Nachname (ID: 08154711)
Vorname Nachname (ID: 08154711)
Vorname Nachname (ID: 08154711)

1 Theoretisches Basiswissen

Rope Skipping (RS) has been a common leisure-time activity of children for generations [1]. Today, especially Asia holds high popularity of rope skippers with 87.4% of the Chinese youth participating in jump rope exercises at least once a week [2]. Defined as a repetitive vertical jump with both feet losing contact to the ground to allow rope rotation [1], RS can be performed both outdoors and indoors by using inexpensive equipment [3].

2 Anwendungsorietierter Teil

2.1 Subjects

This study was conducted with the formal approval of the university ethics committee (№137/2018) . All participants were informed about the experimental procedure together with potential risk factors and provided written informed consent to participate in this study. Descriptive data, including participants' anthropometrics, length and mass of their jump rope as well as athletes' personal best were collected prior to testing and are presented together with further group characteristics in Table 1.

evt. Speed-ball bild

References

[1] B Gowitzke and L Brown. Kinematic and kinetic components of rope skipping: A pilot study. In *Proceedings of the 7th International Society Biomechanics in Sports Conference (ISBS)*, Footscray, Australia, 1989.

[2] P Li and W Xiao. The feasibility of implementing a jump rope curriculum in shanghai middle school students. *Contemporary Sports Technology*, 3(20):104–105, 2013.

[3] P Wong and Y Hong. Changes of kinematics in rope skipping after fatigue. In *Proceedings of the 22nd International Society Biomechanics in Sports Conference (ISBS)*, pages 111–114, Ottawa, Canada, 2004.

Tables

Table 1: test test test dertf d se rf tgtzhtee edfgfgjsdjs ddffgthegsgd

Movement task	**mean±SD**	**r**	**p**	**N**	**F**
Skipping					
Tapping	111±11	0.111	0.111	33	44
Arm-better					
Arm-weaker					

Figures

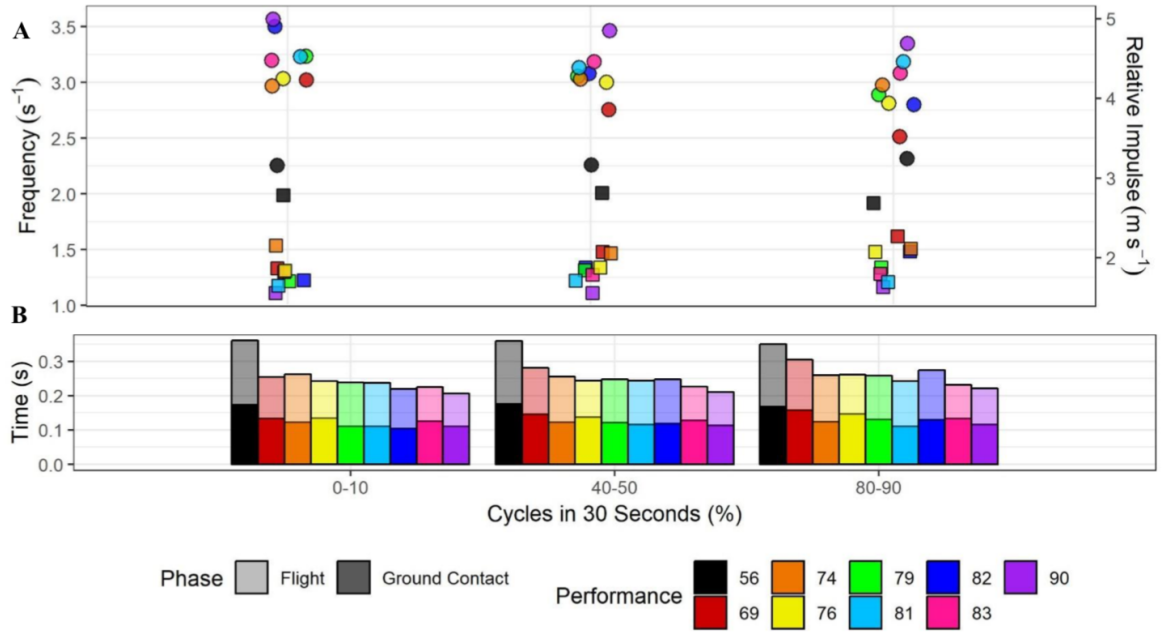

Figure 1: Kinetic parameters (ground contact and flight time (B) as well as relative vertical ground reaction force (GRF) impulse of the right foot and skipping frequency (A)) over three phases of the 30 s skipping test, depicted as 10% intervals of the total number of ground contacts. Circles represent the skipping frequency and squares the relative vertical GRF impulse. Athletes' skipping performance is illustrated in distinct colors.