NO CORRELATION BETWEEN ANKLE DORSIFLEXION RANGE OF MOTION AND VERTICAL JUMP HEIGTH IN MALE ELITE YOUTH BASKETBALLPLAYERS

Sempf, F.1, Glage. D.1, Brahms, C. M.2, Thienes, G.1

1: Georg-August-Universität Göttingen (Germany), 2: University of Regina (Canada)

Introduction

- Limited ankle dorsiflexion range of motion (ADROM) has been shown to alter jumping mechanics in a non-favorable way (Fong et. al, 2011; Papaiakovou et al., 2006)
- May also negatively affect vertical jump performance (Papaiakovou, 2013)

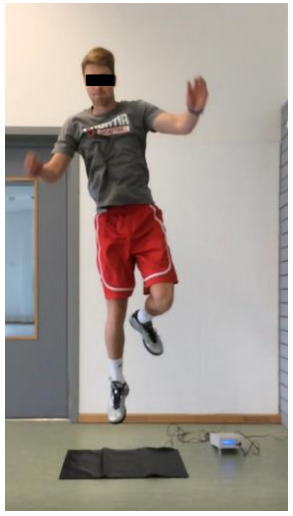
Purpose

- Investigate if ADROM is correlated with unilateral hop and counter movement jump (CMJ) height

contact: felix.sempf@sport.uni-goettingen.de

NO CORRELATION BETWEEN ANKLE DORSIFLEXION RANGE OF MOTION AND VERTICAL JUMP HEIGTH IN MALE ELITE YOUTH BASKETBALLPLAYERS



Methods

- 28 male basketball players (height = 184.79 ± 10.44 cm, weight = 77.46 ± 15.01 kg, age = 15.96 ± 1.62 years)
- ADROM: Weight bearing Lunge test
- Left and right unilateral hop & CMVJ height
- The relationship between ADROM and hop/CMJ height was computed using Pearson's r

NO CORRELATION BETWEEN ANKLE DORSIFLEXION RANGE OF MOTION AND VERTICAL JUMP HEIGTH IN MALE ELITE YOUTH BASKETBALLPLAYERS

Correlations

		CMJ_Height	Vertical_Hop_Left	Vertical_Hop_Right
Ankle_Dorsiflex_Mean	Pearson Correlation	0,137		
	Sig. (2-tailed)	0,495		
Ankle_Dorsiflex_Left	Pearson Correlation		-0,015	
	Sig. (2-tailed)		0,939	
Ankle_Dorsiflex_Right	Pearson Correlation			0,122
	Sig. (2-tailed)			0,536

Results

Group means

- ADROM: 11.5 ± 2.7 cm (l); 11.6 ± 2.7 cm (r)
- Hop height: 35.89 ± 4.69 cm (l), 36.04 ± 5.77 cm (r)
- CMJ: 52.75 ± 7.78 cm

No significant correlations were found between mean ADROM and CMJ, left ADROM and left unilateral CMJ height or right ADROM and right unilateral CMJ height

NO CORRELATION BETWEEN ANKLE DORSIFLEXION RANGE OF MOTION AND VERTICAL JUMP HEIGTH IN MALE ELITE YOUTH BASKETBALLPLAYERS

Discussion

- ADROM does not significantly influence vertical jump performance in young male basketball players
- Has been identified to play a role in the etiology of lower extremity injury, important to monitor (Amraee et al. 2015; Gabbe et al., 2004)
- Future research needs to investigate if these results are task-specific or if ADROM affects other performance-related tasks such as sprinting

References

Amraee D, Alizadeh MH, Minoonejhad H, Razi M, Amraee GH. (2015). Knee surgery, sports traumatology, arthroscopy: official journal of the ESSKA.

Fong CM, Blackburn JT, Norcross MF, McGrath M, Padua DA. (2011). Journal of athletic training, 46 (1)

Gabbe BJ, Finch CF, Wajswelner H, Bennell KL. (2004). Clinical journal of sport medicine. 14 (2), 56-63.

Papaiakovou, G. (2013). Journal of sports sciences, 31 (16), 1789-1796.

Papaiakovou G, Katsikas F, Nikodelis T, Panoutsakopoulos V, Kollias I. (2006). 24 International Symposium on Biomechanics in Sports.