Adaptive, reactive and daily life gait in older populations



Introduction

Motor & balance impairments due to physiological and pathological ageing







In daily life: gait quality characteristics (stability & variability measures) predict falls²

¹Pijnappels et al. 2005, 2008; Potocanac et al. 2016; Roeles et al. subm; ²van Schooten et al. 2015, 2016; Ihlen et al. 2018; Nait Aicha et al. 2018







Study 1 Mismat	ch between adaptive	and reactive	gait	
Hypothesis: (some in ali	e) older adults do not s gnment with their actu	elect strategie al abilities	S	
	Characteristics	N=21		
	Age (yrs)	71 (SD 7)		
	Female	7 (33%)		
	Height (cm)	169 (SD 12)		
	Weight (kg)	69 (SD 12)		
	FES-i	18 (SD 3)		
-	Falls history (≥2)	7 (33%)		
	Grip strength (N)	284 (SD 97)		
_	Knee extension torque (Nm)	79 (SD 5)		
L				Kluft et al. 201





















Study 2

2 Mismatch between gait ability and daily life gait behaviour

Standardized gait speed is very weakly related to daily life gait speed

	Gait speed (m/s)	Bivariate correlation, r (p-value)
4-meter gait speed	1.43 (SD 0.21)	
1 st peak	0.61 (SD 0.15)	0.005 (0.936)
2 nd peak	1.26 (SD 0.23)	0.181 (0.004)
Р5	0.34 (SD 0.06)	0.095 (0.131)
P25	0.60 (SD 0.14)	0.036 (0.565)
P50	0.90 (SD 0.23)	0.132 (0.036)
P75	1.22 (SD 0.23)	0.224 (<0.001)
P95	1.49 (SD 0.19)	0.352 (<0.001)
P99	1.59 (SD 0.18)	0.399 (<0.001)









