# Gait Repeatability Study

Erik Waskiewicz 15/08/2018

# **Summary**

#### Parameters - 13

- Foot pitch
- Foot progression
- · Ankle dorsiflexion
- · Ankle inversion
- · Knee flexion
- · Knee adduction
- Knee rotation
- · Hip flexion
- Hip adduction
- · Hip rotation
- Pelvic tilt
- · Pelvic obliquity
- Pelvic rotation

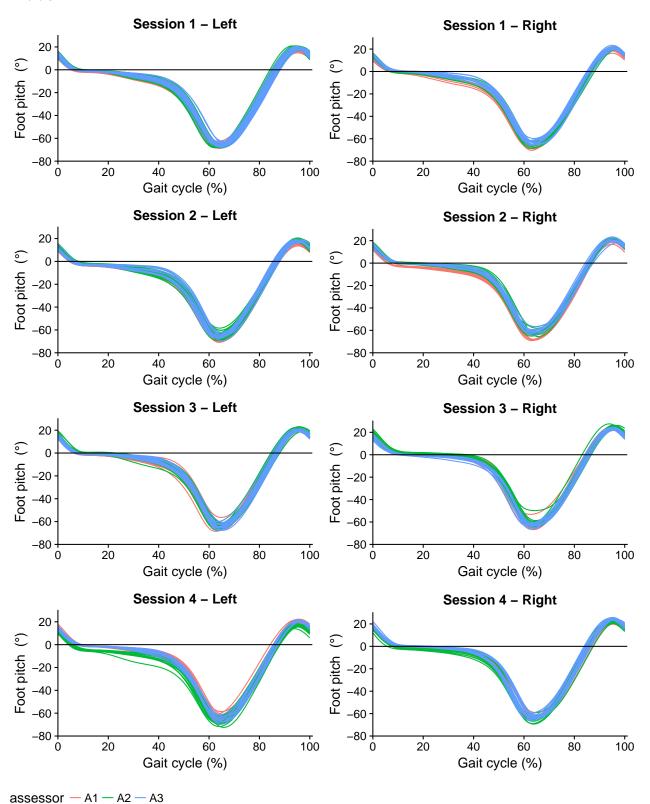
#### Assessors - 3

- A1
- A2
- A3

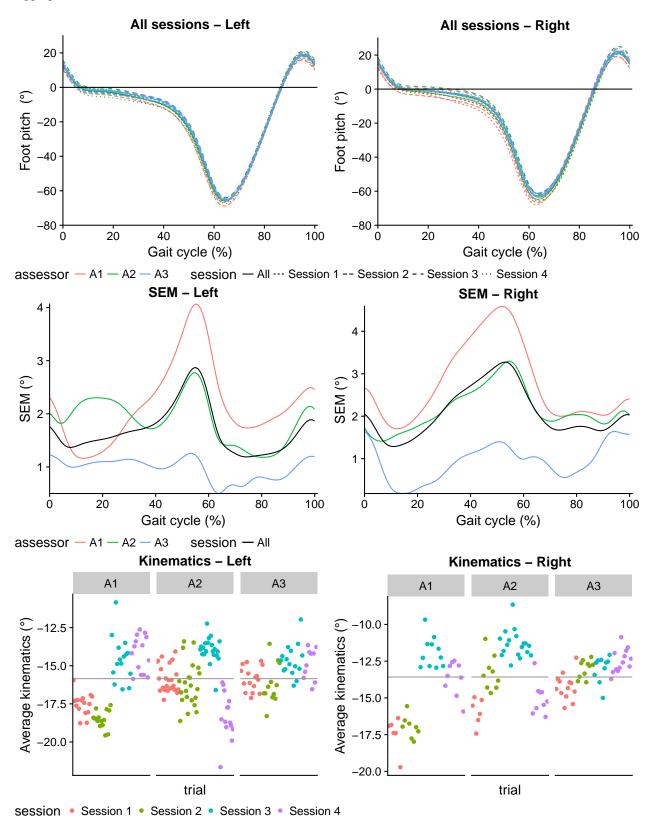
#### Number of sessions - 4

#### Foot pitch

#### All trials

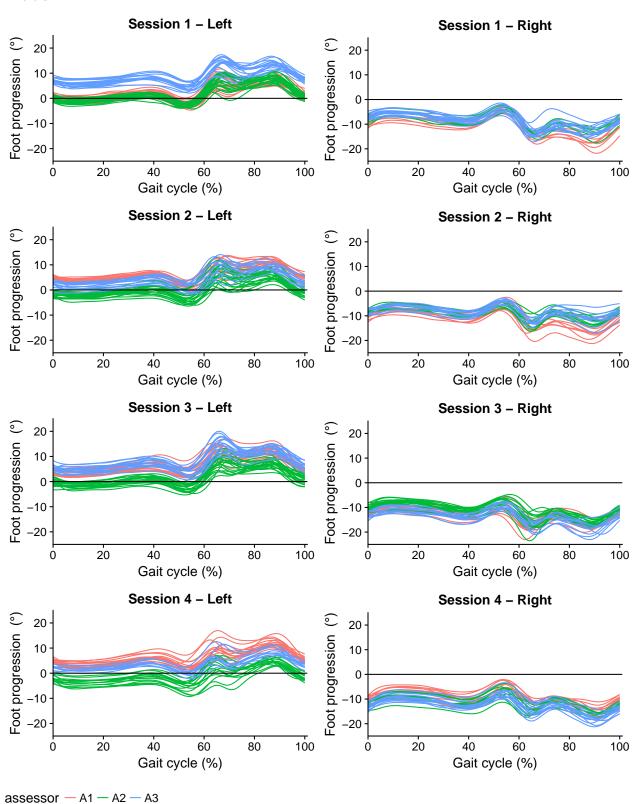


#### Foot pitch

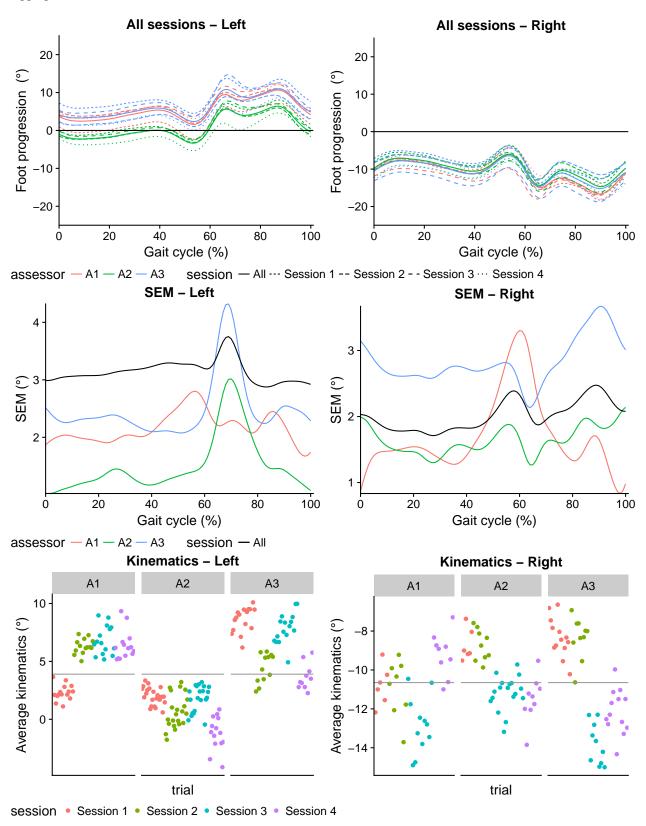


#### Foot progression





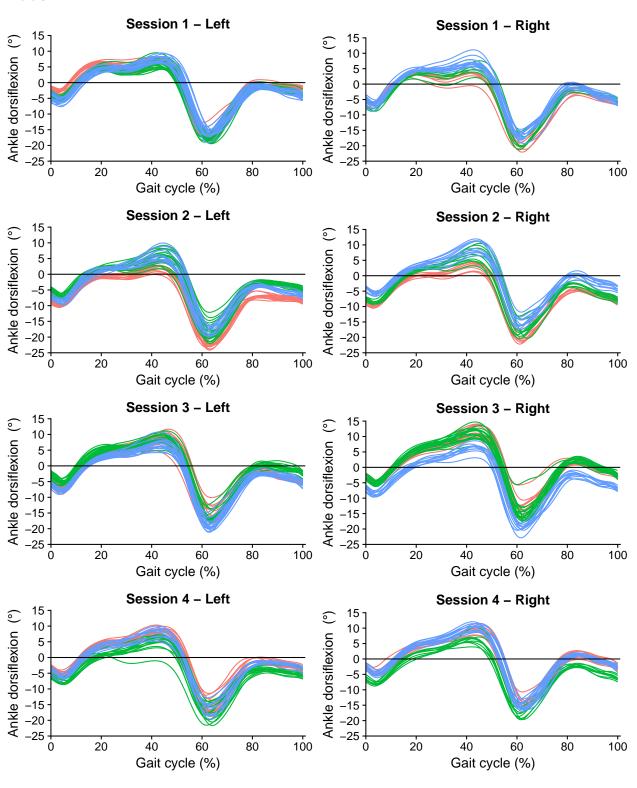
#### Foot progression



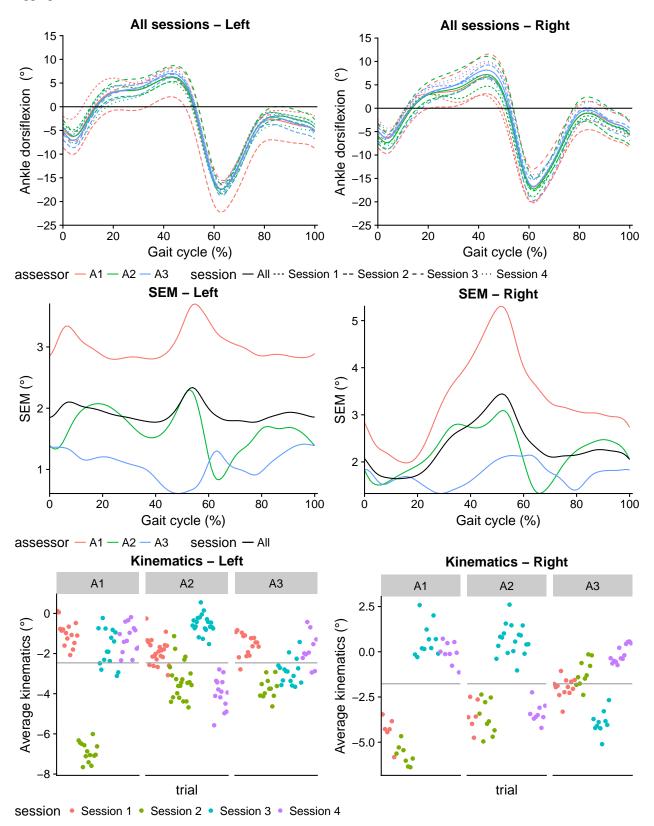
#### Ankle dorsiflexion

assessor - A1 - A2 - A3



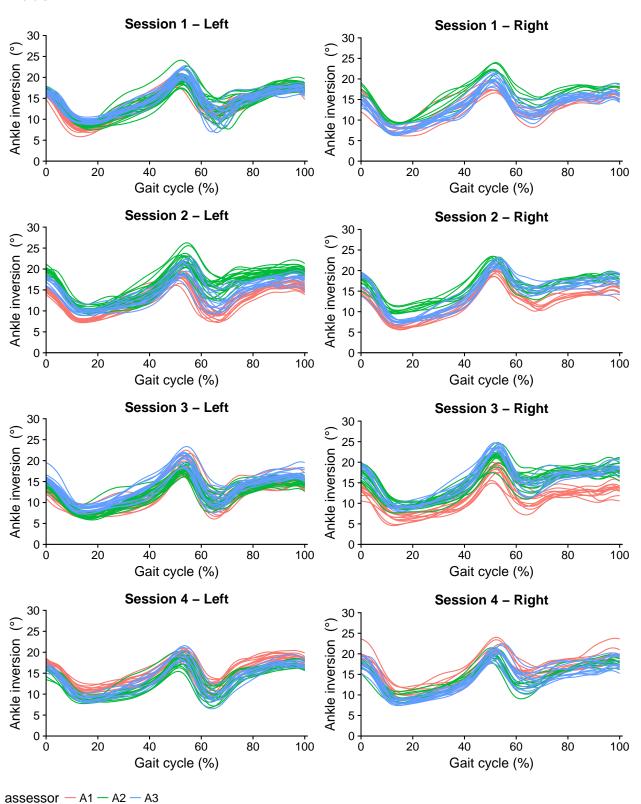


#### **Ankle dorsiflexion**

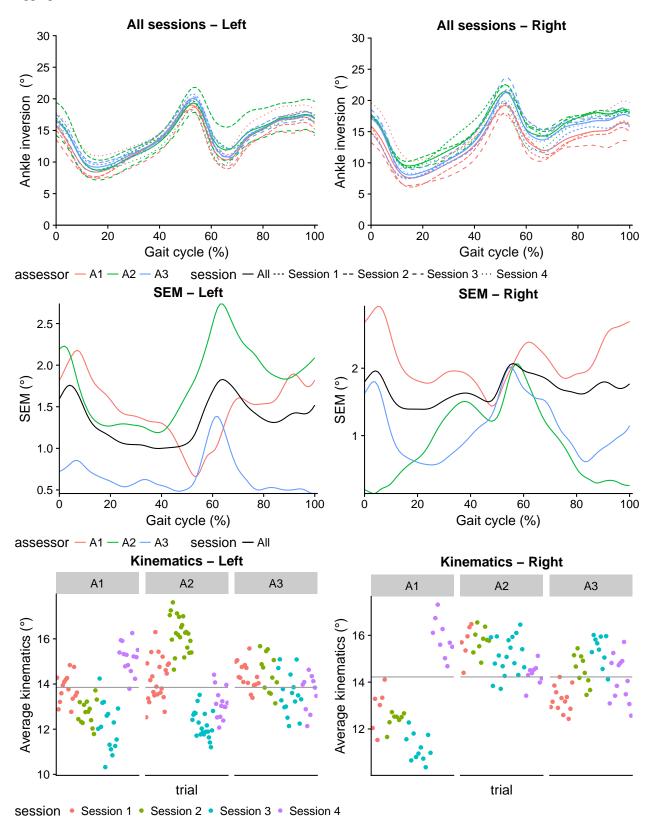


#### **Ankle inversion**





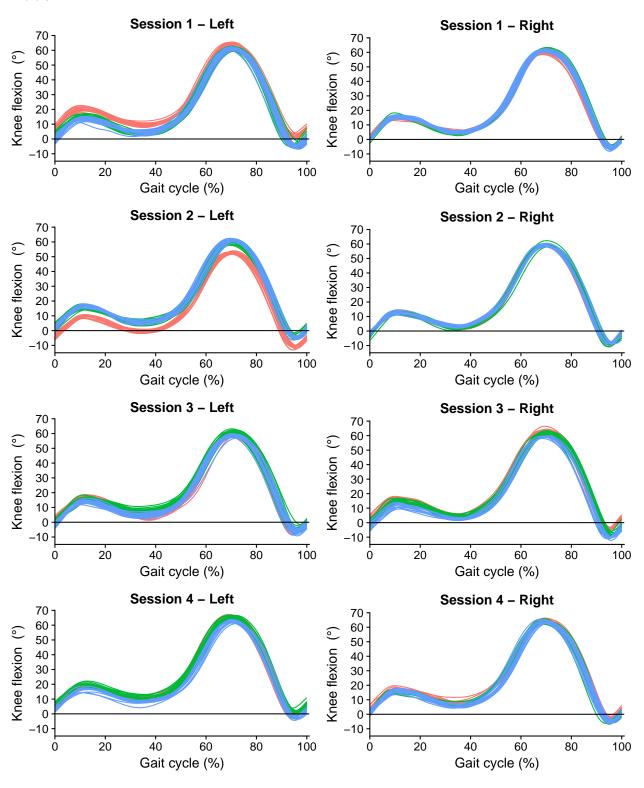
#### **Ankle inversion**



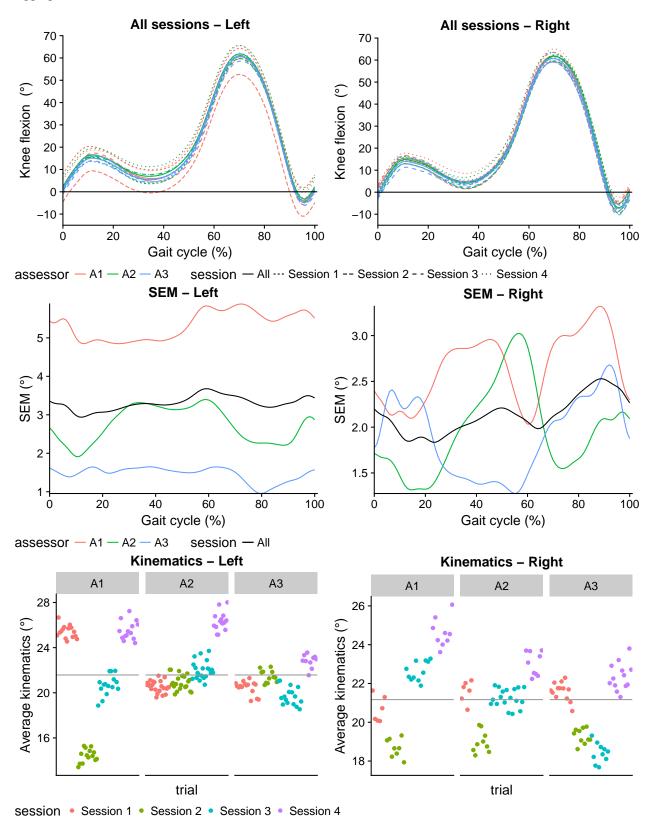
#### Knee flexion

assessor - A1 - A2 - A3



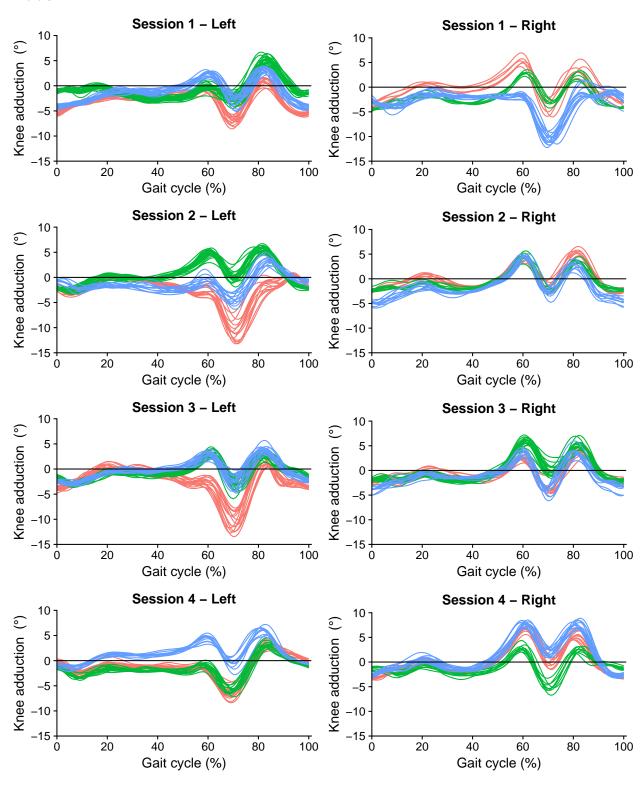


#### Knee flexion



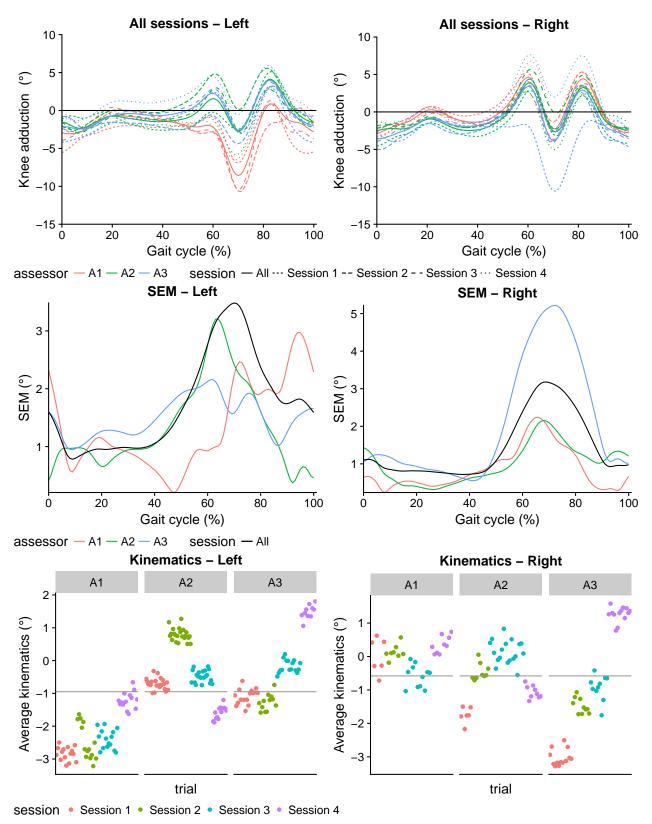
#### **Knee adduction**





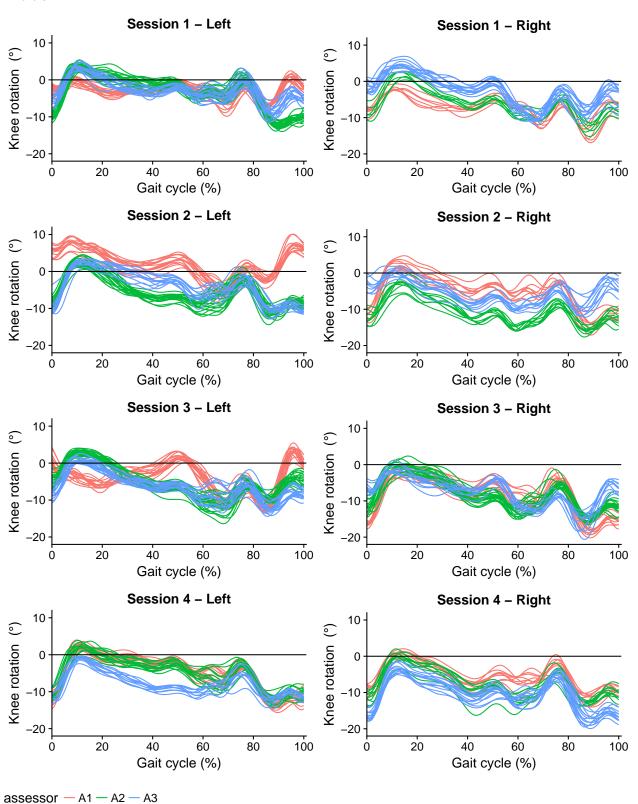
assessor — A1 — A2 — A3

#### **Knee adduction**

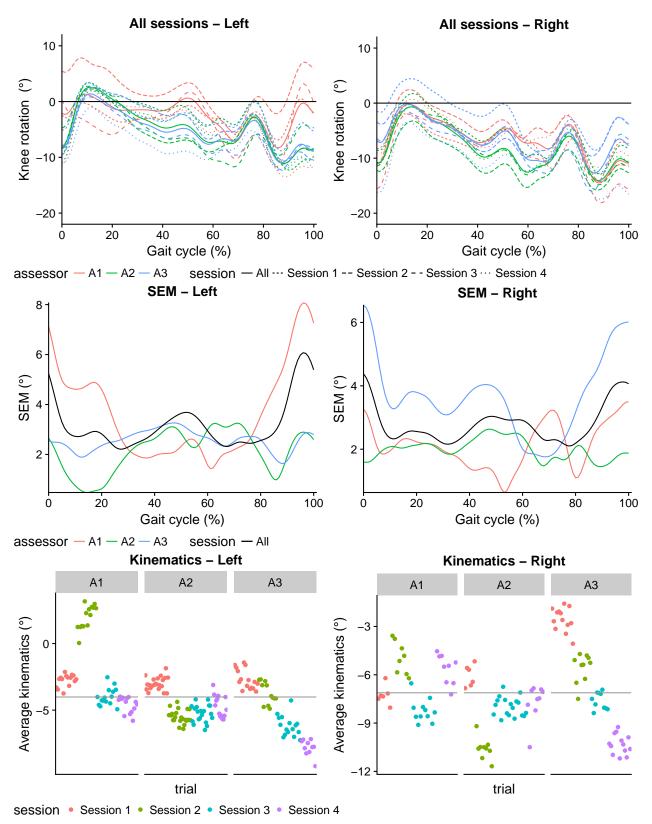


#### **Knee rotation**

#### All trials



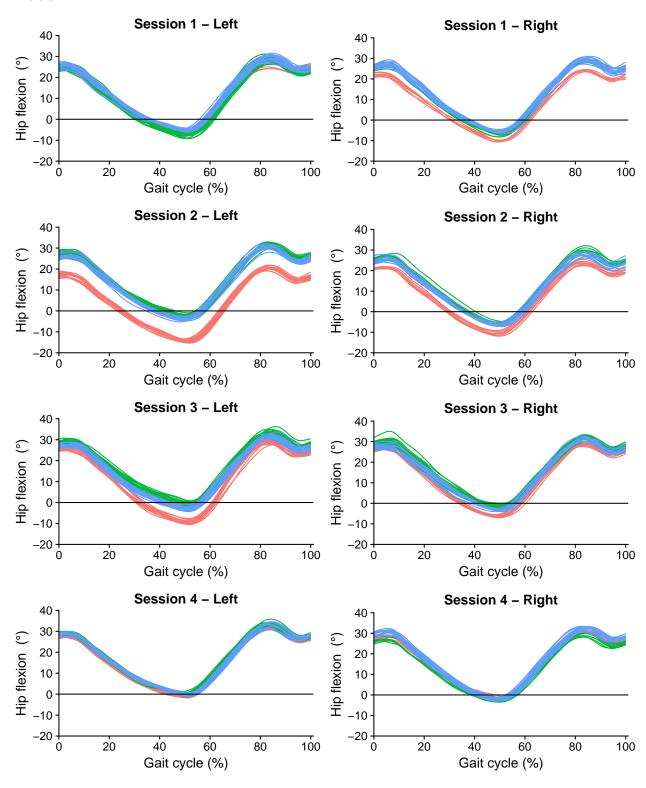
#### **Knee rotation**



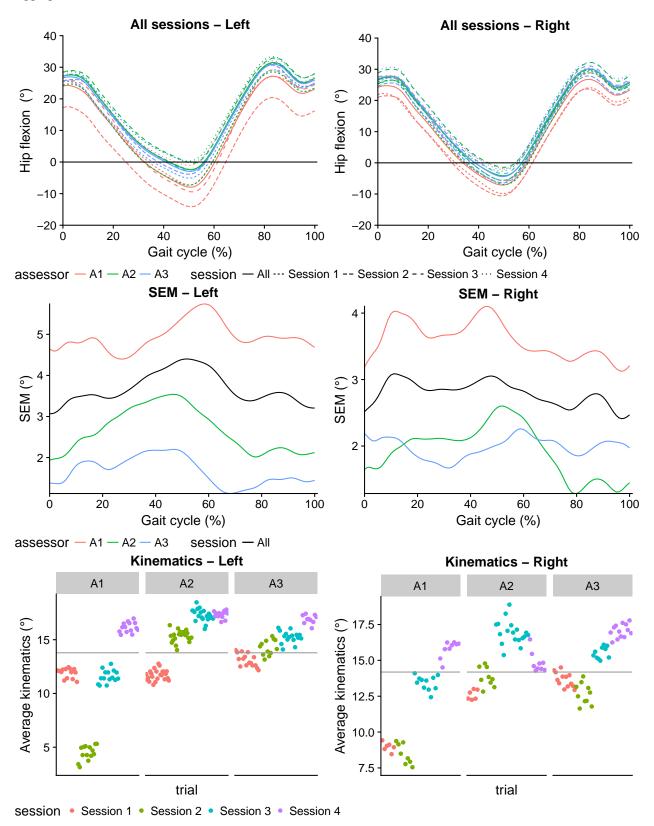
#### **Hip flexion**

assessor - A1 - A2 - A3





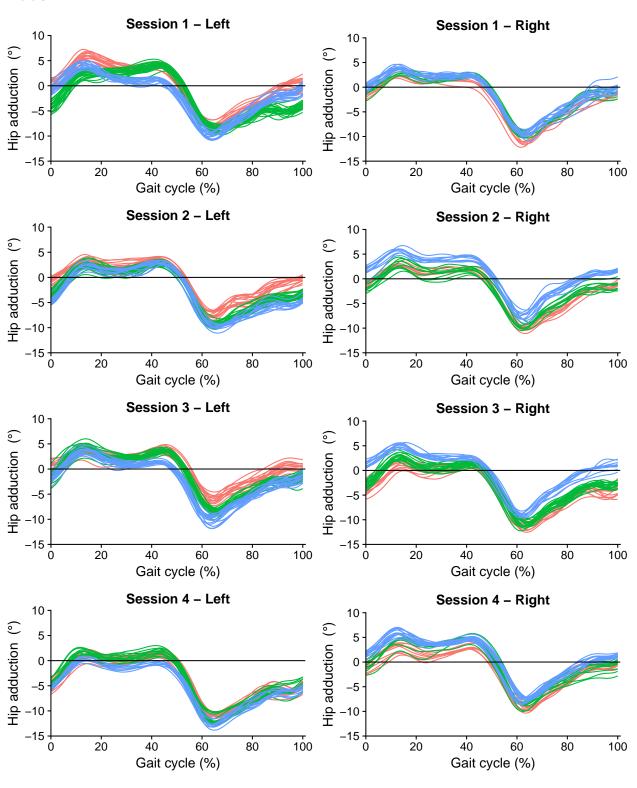
#### **Hip flexion**



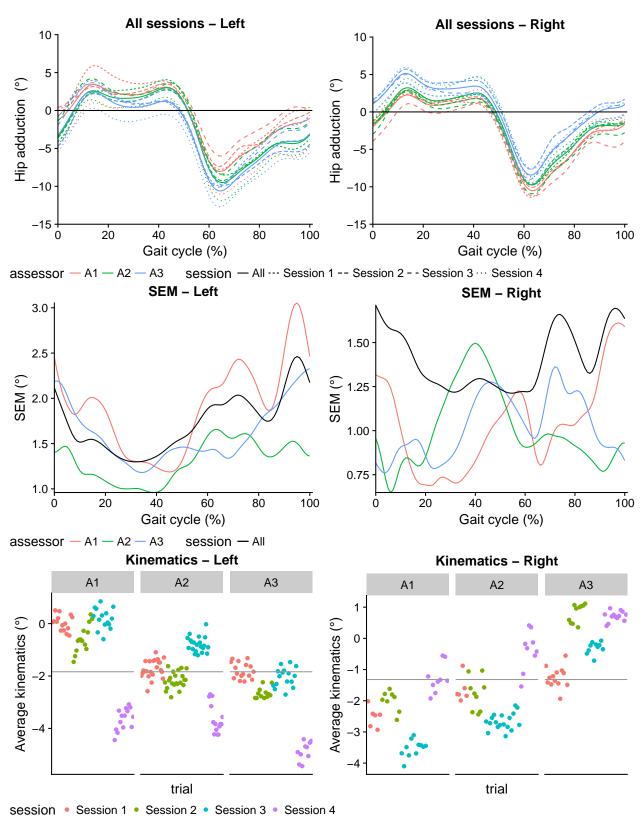
# Hip adduction

assessor - A1 - A2 - A3





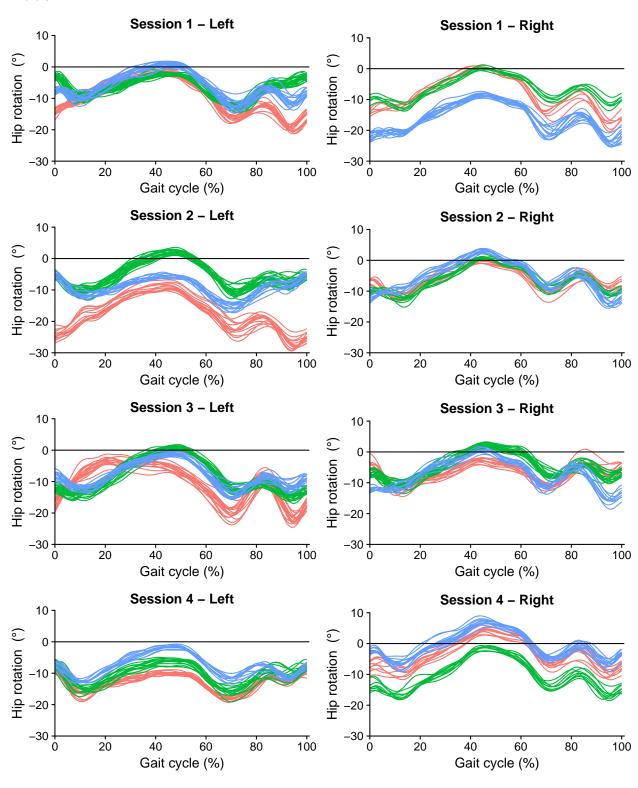
#### Hip adduction



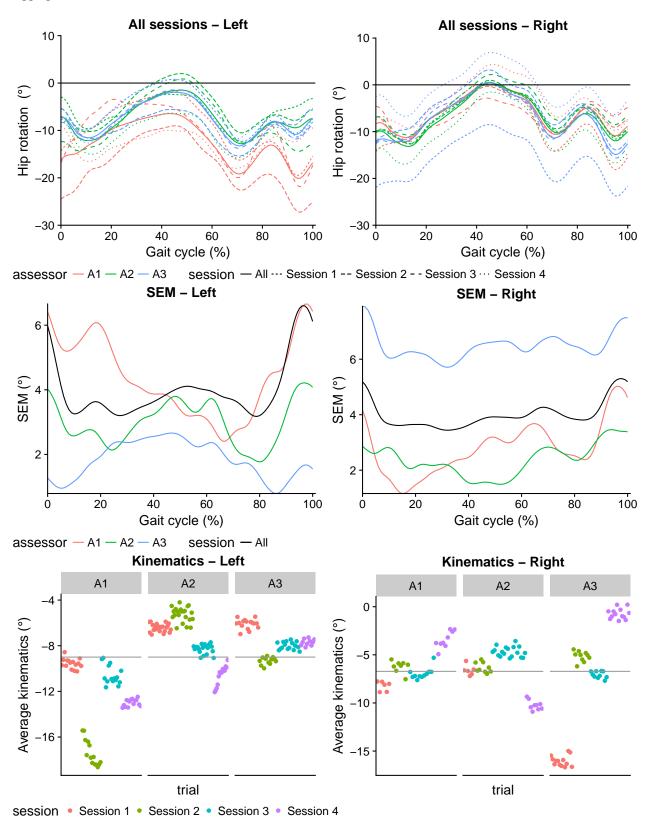
# Hip rotation

assessor - A1 - A2 - A3



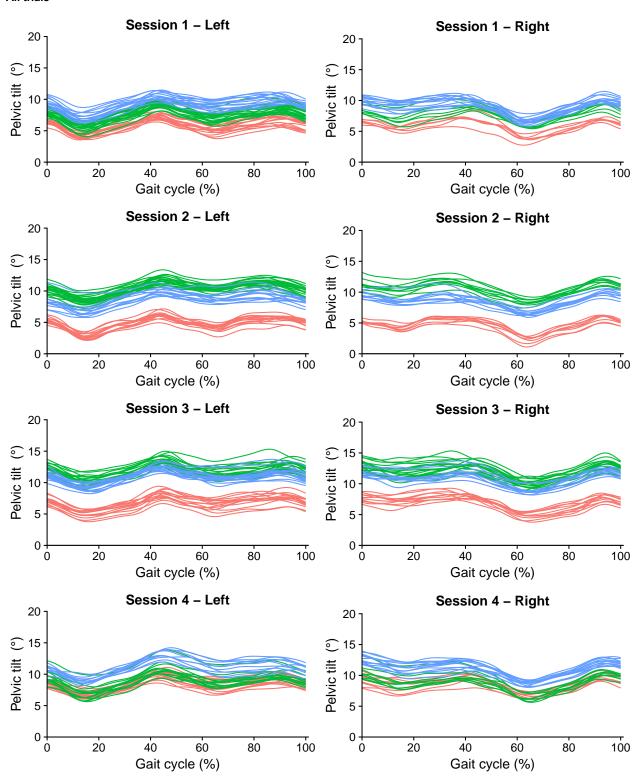


#### Hip rotation



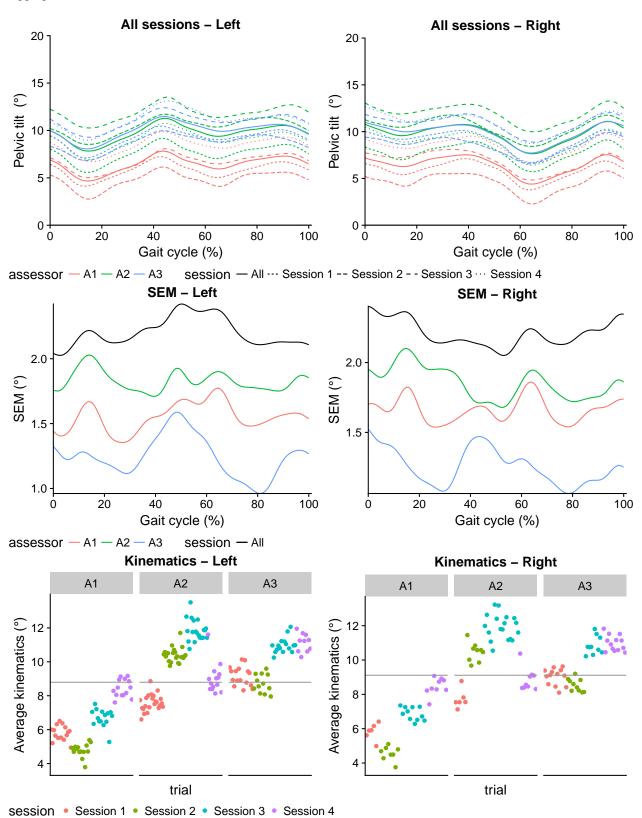
#### Pelvic tilt





assessor — A1 — A2 — A3

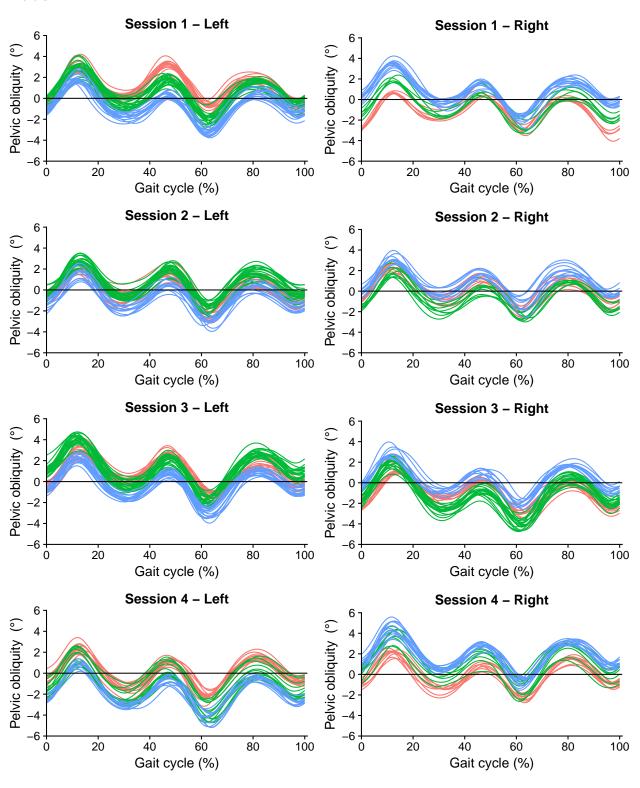
Pelvic tilt



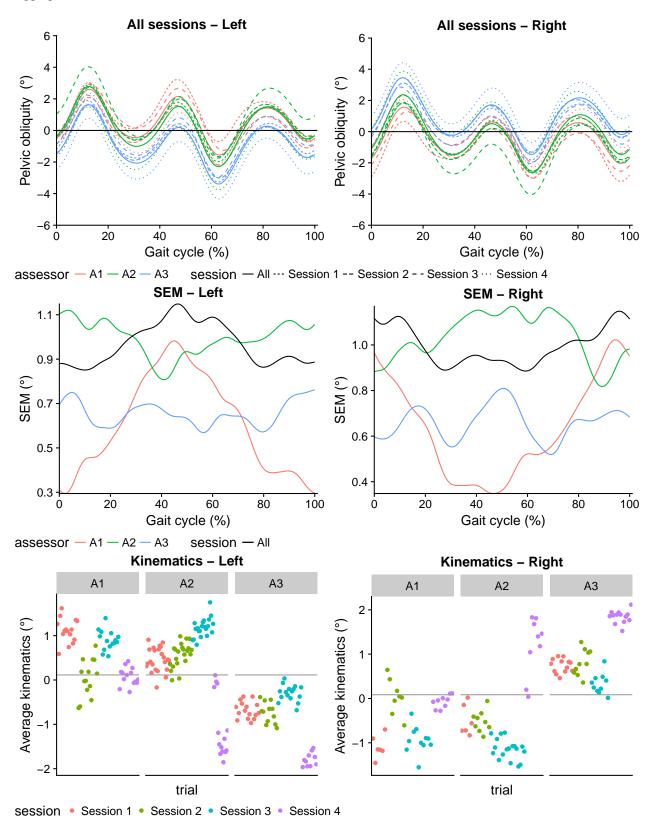
#### **Pelvic obliquity**

assessor - A1 - A2 - A3





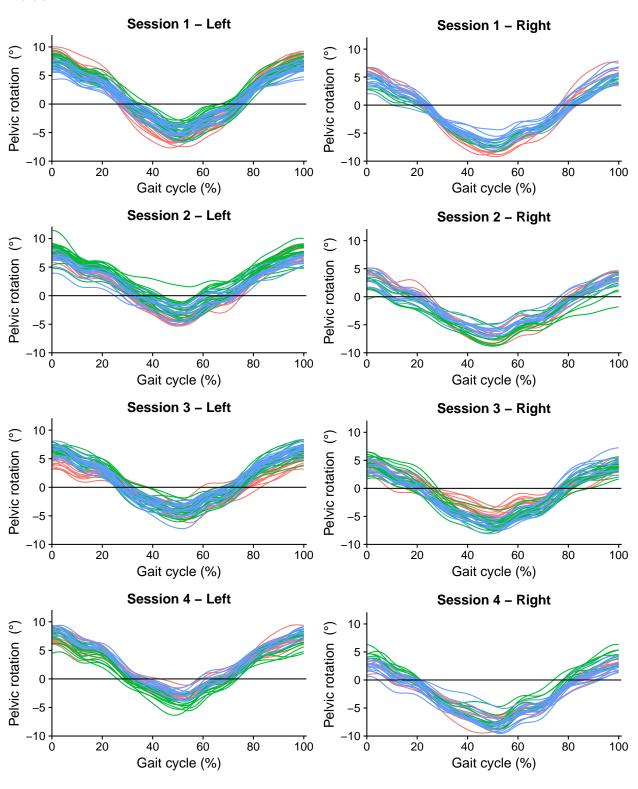
#### **Pelvic obliquity**



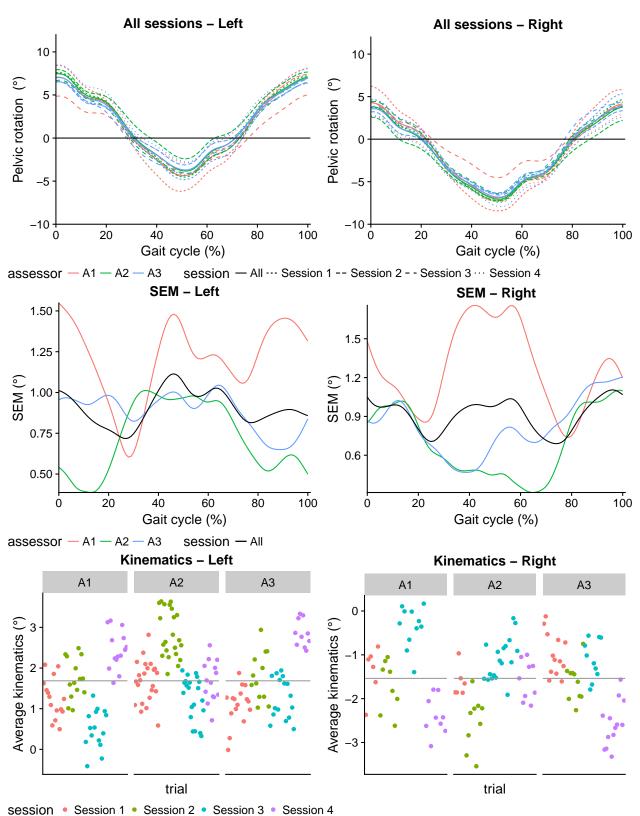
#### **Pelvic rotation**

assessor - A1 - A2 - A3

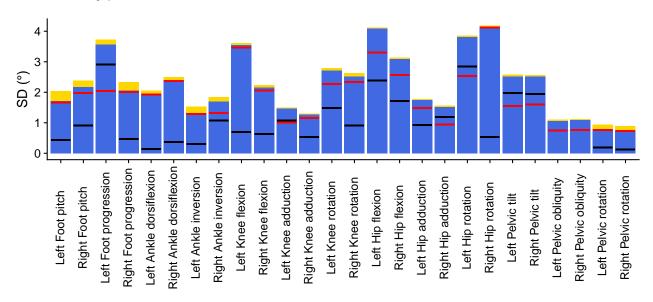
#### All trials



#### **Pelvic rotation**

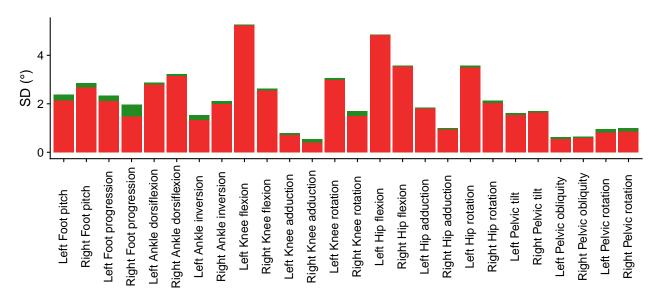


# Gait reliability profile - all



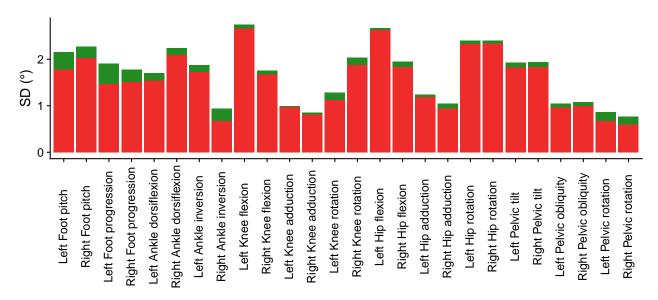
Parameter	Intertrial	WASS	BASS	Procedural	Total	Total-procedural
Left Foot pitch	1.11	1.66	0.43	1.72	2.05	0.33
Right Foot pitch	0.97	1.98	0.91	2.18	2.38	0.21
Left Foot progression	1.14	2.05	2.91	3.56	3.74	0.18
Right Foot progression	1.11	2.01	0.47	2.06	2.34	0.28
Left Ankle dorsiflexion	0.69	1.93	0.14	1.94	2.06	0.12
Right Ankle dorsiflexion	0.72	2.37	0.36	2.39	2.50	0.11
Left Ankle inversion	0.77	1.29	0.30	1.32	1.53	0.21
Right Ankle inversion	0.70	1.31	1.08	1.70	1.84	0.14
Left Knee flexion	0.70	3.47	0.69	3.54	3.61	0.07
Right Knee flexion	0.57	2.06	0.63	2.16	2.23	0.07
Left Knee adduction	0.26	1.01	1.08	1.47	1.50	0.02
Right Knee adduction	0.30	1.15	0.53	1.27	1.30	0.04
Left Knee rotation	0.68	2.28	1.48	2.72	2.80	0.08
Right Knee rotation	0.78	2.34	0.90	2.51	2.63	0.12
Left Hip flexion	0.54	3.31	2.39	4.08	4.12	0.04
Right Hip flexion	0.59	2.56	1.72	3.09	3.14	0.06
Left Hip adduction	0.38	1.48	0.92	1.74	1.78	0.04
Right Hip adduction	0.37	0.95	1.19	1.52	1.57	0.05
Left Hip rotation	0.59	2.54	2.85	3.82	3.86	0.05
Right Hip rotation	0.57	4.12	0.54	4.16	4.19	0.04
Left Pelvic tilt	0.55	1.55	1.98	2.52	2.58	0.06
Right Pelvic tilt	0.52	1.60	1.94	2.51	2.57	0.05
Left Pelvic obliquity	0.31	0.74	0.75	1.05	1.10	0.05
Right Pelvic obliquity	0.32	0.76	0.77	1.08	1.13	0.04
Left Pelvic rotation	0.50	0.76	0.20	0.79	0.94	0.15
Right Pelvic rotation	0.49	0.73	0.12	0.74	0.89	0.15

# Gait reliability profile - A1



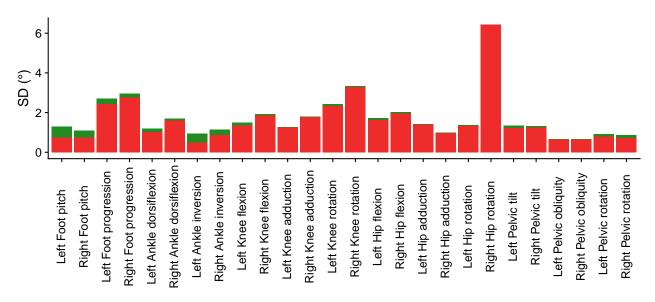
Parameter	Intertrial	WASS	Total	Total-procedural
Left Foot pitch	1.06	2.14	2.38	0.25
Right Foot pitch	1.05	2.66	2.86	0.20
Left Foot progression	1.00	2.11	2.34	0.23
Right Foot progression	1.29	1.48	1.96	0.49
Left Ankle dorsiflexion	0.70	2.80	2.88	0.09
Right Ankle dorsiflexion	0.74	3.14	3.23	0.09
Left Ankle inversion	0.75	1.34	1.53	0.20
Right Ankle inversion	0.71	1.99	2.11	0.12
Left Knee flexion	0.73	5.23	5.28	0.05
Right Knee flexion	0.61	2.56	2.63	0.07
Left Knee adduction	0.35	0.71	0.79	0.08
Right Knee adduction	0.36	0.40	0.54	0.14
Left Knee rotation	0.67	2.98	3.06	0.08
Right Knee rotation	0.83	1.49	1.71	0.21
Left Hip flexion	0.56	4.83	4.86	0.03
Right Hip flexion	0.55	3.54	3.59	0.04
Left Hip adduction	0.42	1.79	1.84	0.05
Right Hip adduction	0.35	0.94	1.00	0.06
Left Hip rotation	0.76	3.49	3.57	0.08
Right Hip rotation	0.67	2.03	2.14	0.11
Left Pelvic tilt	0.47	1.55	1.62	0.07
Right Pelvic tilt	0.45	1.65	1.71	0.06
Left Pelvic obliquity	0.29	0.55	0.63	0.07
Right Pelvic obliquity	0.29	0.58	0.65	0.07
Left Pelvic rotation	0.49	0.82	0.95	0.13
Right Pelvic rotation	0.52	0.85	0.99	0.14

# Gait reliability profile - A2



Parameter	Intertrial	WASS	Total	Total-procedural
Left Foot pitch	1.21	1.78	2.15	0.37
Right Foot pitch	1.04	2.02	2.27	0.25
Left Foot progression	1.22	1.47	1.91	0.44
Right Foot progression	0.93	1.51	1.78	0.26
Left Ankle dorsiflexion	0.72	1.54	1.70	0.16
Right Ankle dorsiflexion	0.81	2.09	2.24	0.15
Left Ankle inversion	0.76	1.72	1.88	0.16
Right Ankle inversion	0.66	0.67	0.94	0.27
Left Knee flexion	0.72	2.66	2.75	0.09
Right Knee flexion	0.56	1.67	1.76	0.09
Left Knee adduction	0.19	0.98	1.00	0.02
Right Knee adduction	0.26	0.81	0.85	0.04
Left Knee rotation	0.63	1.12	1.29	0.16
Right Knee rotation	0.80	1.87	2.04	0.16
Left Hip flexion	0.49	2.63	2.68	0.04
Right Hip flexion	0.66	1.83	1.95	0.12
Left Hip adduction	0.39	1.18	1.25	0.06
Right Hip adduction	0.48	0.94	1.05	0.11
Left Hip rotation	0.60	2.32	2.40	0.08
Right Hip rotation	0.52	2.34	2.40	0.06
Left Pelvic tilt	0.63	1.82	1.92	0.11
Right Pelvic tilt	0.63	1.84	1.94	0.11
Left Pelvic obliquity	0.42	0.96	1.05	0.09
Right Pelvic obliquity	0.41	1.00	1.08	0.08
Left Pelvic rotation	0.54	0.68	0.86	0.19
Right Pelvic rotation	0.48	0.60	0.77	0.17

# Gait reliability profile - A3



Parameter	Intertrial	WASS	Total	Total-procedural
Left Foot pitch	1.06	0.75	1.30	0.55
Right Foot pitch	0.81	0.74	1.10	0.35
Left Foot progression	1.20	2.44	2.72	0.28
Right Foot progression	1.07	2.76	2.96	0.20
Left Ankle dorsiflexion	0.64	1.01	1.20	0.19
Right Ankle dorsiflexion	0.61	1.60	1.71	0.11
Left Ankle inversion	0.80	0.49	0.94	0.45
Right Ankle inversion	0.72	0.88	1.14	0.26
Left Knee flexion	0.64	1.35	1.49	0.15
Right Knee flexion	0.53	1.86	1.94	0.07
Left Knee adduction	0.22	1.26	1.28	0.02
Right Knee adduction	0.28	1.77	1.80	0.02
Left Knee rotation	0.74	2.32	2.44	0.12
Right Knee rotation	0.70	3.28	3.35	0.07
Left Hip flexion	0.58	1.61	1.71	0.10
Right Hip flexion	0.55	1.95	2.03	0.07
Left Hip adduction	0.32	1.40	1.43	0.04
Right Hip adduction	0.26	0.97	1.00	0.03
Left Hip rotation	0.34	1.33	1.37	0.04
Right Hip rotation	0.50	6.43	6.45	0.02
Left Pelvic tilt	0.53	1.23	1.34	0.11
Right Pelvic tilt	0.46	1.24	1.33	0.08
Left Pelvic obliquity	0.19	0.64	0.67	0.03
Right Pelvic obliquity	0.22	0.64	0.68	0.04
Left Pelvic rotation	0.49	0.79	0.93	0.14
Right Pelvic rotation	0.47	0.73	0.87	0.14