WALK WISE-ORTHO

ACCURATE ASSESSMENTS FOR EMPOWERING MOVEMENT

The Walk Wise Report

This report presents a comprehensive biomechanical analysis of running gait based on 2D and 3D kinematic assessments, and clinical parameters.

The analysis provides an in-depth view of the athlete's movement mechanics. All measured values are compared against established normative data from current scientific literature, ensuring a robust and objective evaluation.

By identifying subtle deviations or inefficiencies in the running gait, this report aims to:

- optimize athletic performance
- prevent potential injuries
- assist in the treatment of existing musculoskeletal issues.

The insights provided here are intended to guide targeted interventions, corrective strategies, and personalized training programs.
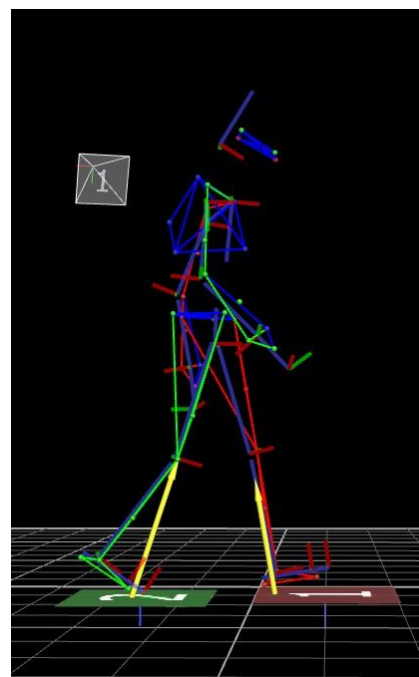
A complete 2 and 3-Dimensional Analysis

Clinical Gait Analysis Report

Name: John Doe
Patient ID: 00xWalkJohn
Date of Birth:
Gender:
Referred by: Dr xxxxx

Current Diagnosis

Past Medical History

Clinical Evaluation

Height (cm) –   Weight (Kg) –   BMI (kg/m^2) –

Passive ROM	RIGHT	LEFT	Special tests	RIGHT	LEFT
Hip					
Flexion			Thomas Test		
Extension			Ely-Duncan test*		
Abduction					
With hip-knees in flexion					
With neutral hips & knees					
Internal Rotation*					
External Rotation*					
Knee					
Flexion			FFD		
Hyperextension			Popliteal Angle		
			Popliteal Angle with hamstring shift		
			Patella Alta		
			Extensor Lag		
			Genu Varum/Valgum		
Ankle					
Dorsiflexion (knee extended)			Silfverskiöld Test		
Dorsiflexion (knee flexed)			Confusion Test		
Plantarflexion					

Deformities/Measurements				
Joint			**RIGHT**	**LEFT**
Spine Alignment	Kyphosis/Lordosis/Scoliosis		-	
Limb Length	ASIS to Malleolus (cms)			
Foot position				
Ankle				
Hindfoot/Subtalar				
Midfoot				
Forefoot				
Hallux				
Toes				

Manual Muscle Testing (MRC grading)		
	RIGHT	**LEFT**
Hip Flexors		
Hip Extensors		
Hip Abductors		
Knee Extensors		
Knee Flexors		
Ankle Dorsiflexors		

Others:

Pain (site/duration): IT band is painful, pain after exercise

Ability to perform heel raises: ☐ Right ☐Left ☐Bilaterally

Ability to climb stairs unassisted: ☐ Yes ☐No

Ability to climb down stairs unassisted: ☐ Yes ☐No

Ability to get up from chair unassisted: ☐ Yes ☐No

Ability to get up from floor without using hands: ☐ Yes ☐No

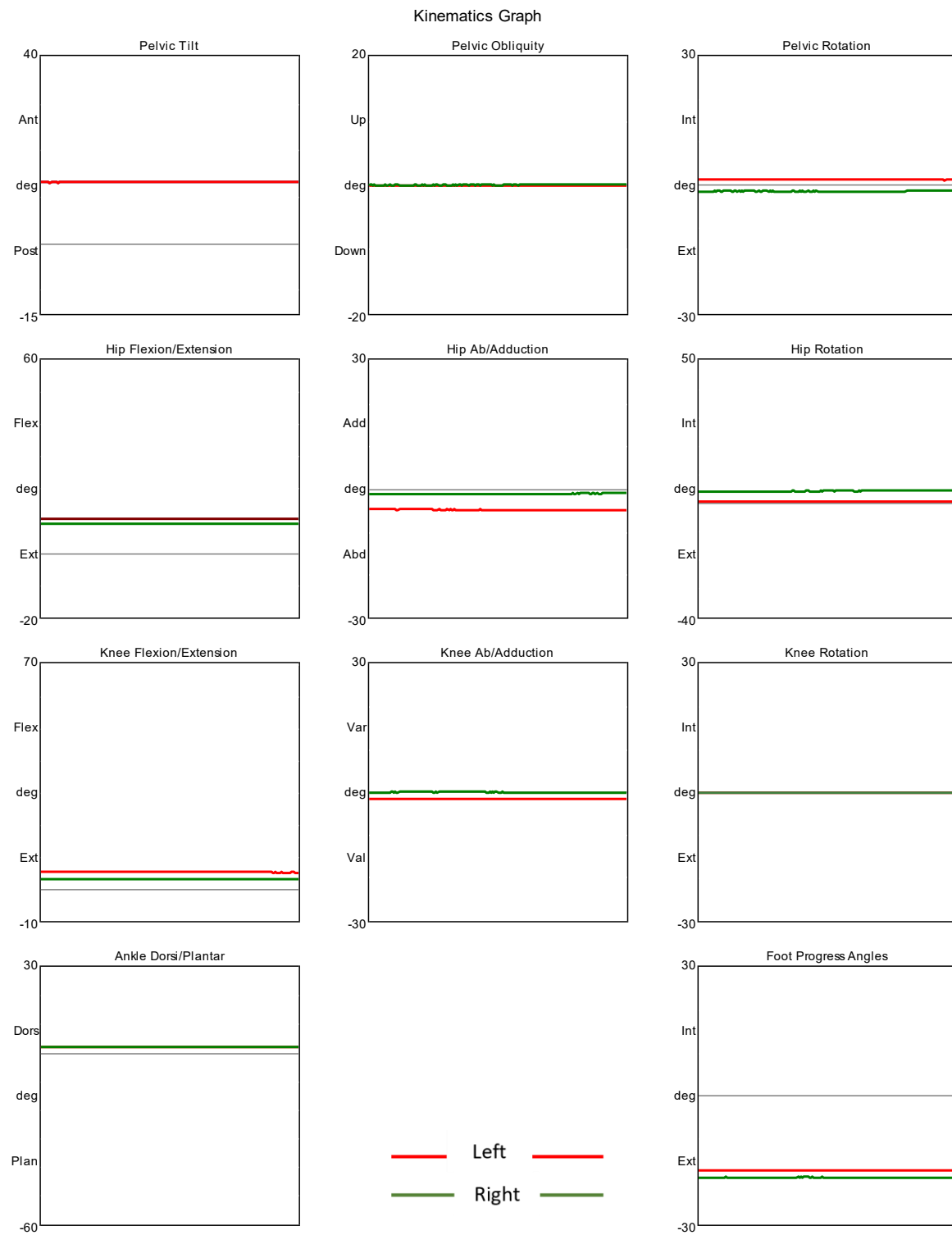Ability to squat: ☐ Yes ☐No

Ability to sit cross-legged: ☐ Yes ☐No

Spatiotemporal Parameters

	Left	**Right**	**Normative Data***
Cadence	117 ± 1.95 steps/min	114 ± 5.63 steps/min	107 ± 6 steps/min
Double Support	**0.27 ± 0.0058 s**	**0.30 ± 0.036 s**	0.21 ± 0.02 s
Limp Index	0.95 ± 0.037	0.97 ± 0.024	1.01 ± 0.044
Opposite Foot Contact	49.8 ± 2.77 %	47.0 ± 0.53 %	50.2 ± 1.53 %
Opposite Foot Off	**13.0 ± 1.43 %**	**12.4 ± 0.42 %**	7.56 ± 1.69 %
Single Support	0.36 ± 0.0100 s	0.36 ± 0.015 s	0.39 ± 0.01 s
Step Length	0.64 ± 0.028 m	0.65 ± 0.029 m	0.66 ± 0.06 m
Step Time	0.51 ± 0.026 s	0.56 ± 0.029 s	0.56 ± 0.03 s
Step Width	**0.25 ± 0.0098 m**	**0.24 ± 0.020 m**	0.17 ± 0.02 m
Stride Length	1.27 ± 0.016 m	1.24 ± 0.042 m	1.32 ± 0.12 m
Stride Time	1.02 ± 0.018 s	1.05 ± 0.053 s	1.12 ± 0.07 s
Walking Speed	1.24 ± 0.026 m/s	1.18 ± 0.096 m/s	1.17 ± 0.14 m/s

Note: All values except Limp Index, Opposite foot off and Opposite foot contact are obtained from Herssens et al. (2020). These three are obtained from Schwartz et al. (2008).

3D Gait Analysis
Kinematic data of static trial

Kinematics Graph

Pelvic Tilt

Pelvic Obliquity

Pelvic Rotation

Hip Flexion/Extension

Hip Ab/Adduction

Hip Rotation

Knee Flexion/Extension

Knee Ab/Adduction

Knee Rotation

Ankle Dorsi/Plantar

Foot Progress Angles

Left
Right

Kinematic data of selected trials while walking barefoot at a relatively faster pace

(Data normalised to the period of the gait cycle and presented as the mean ± 1SD)
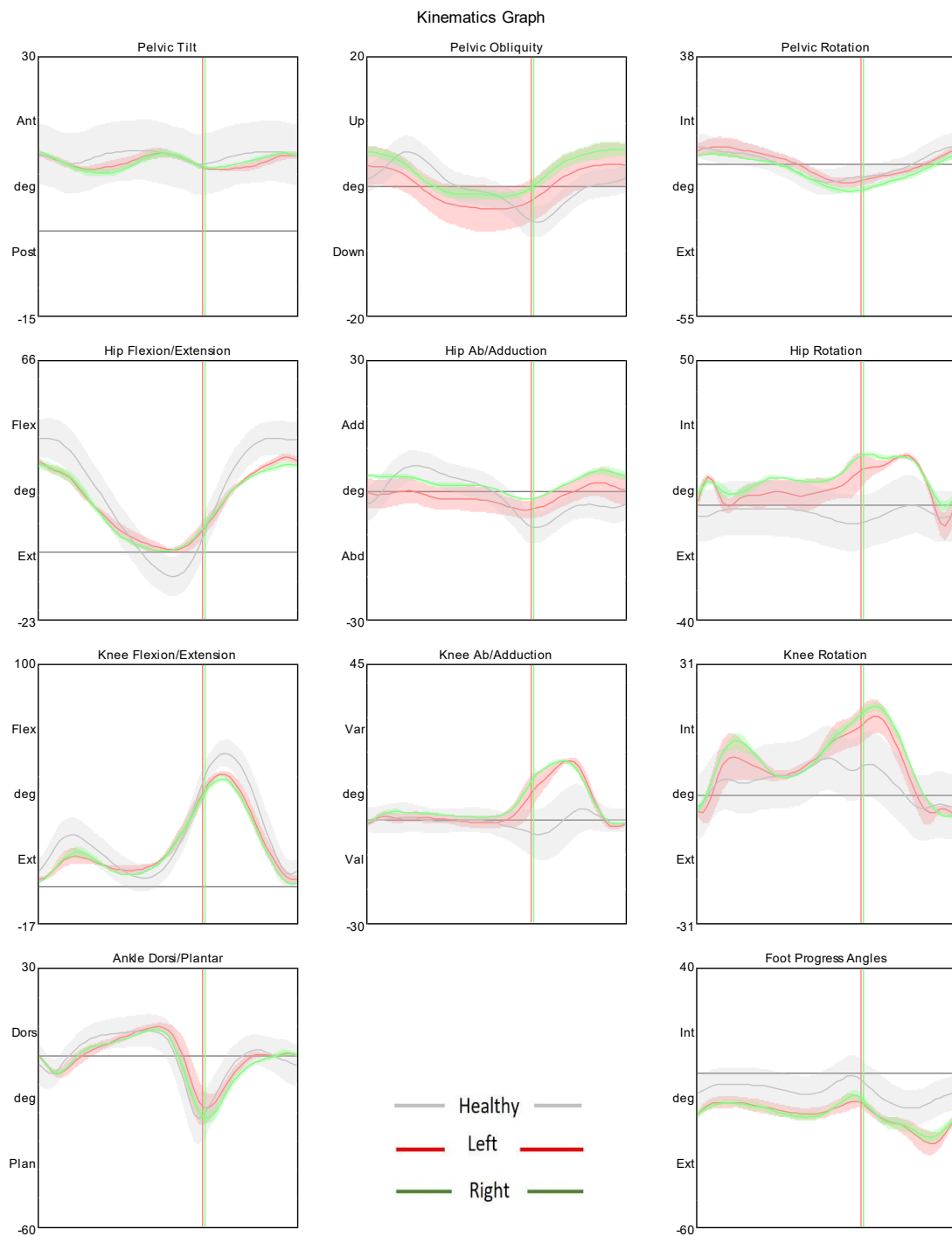

Kinematics Graph
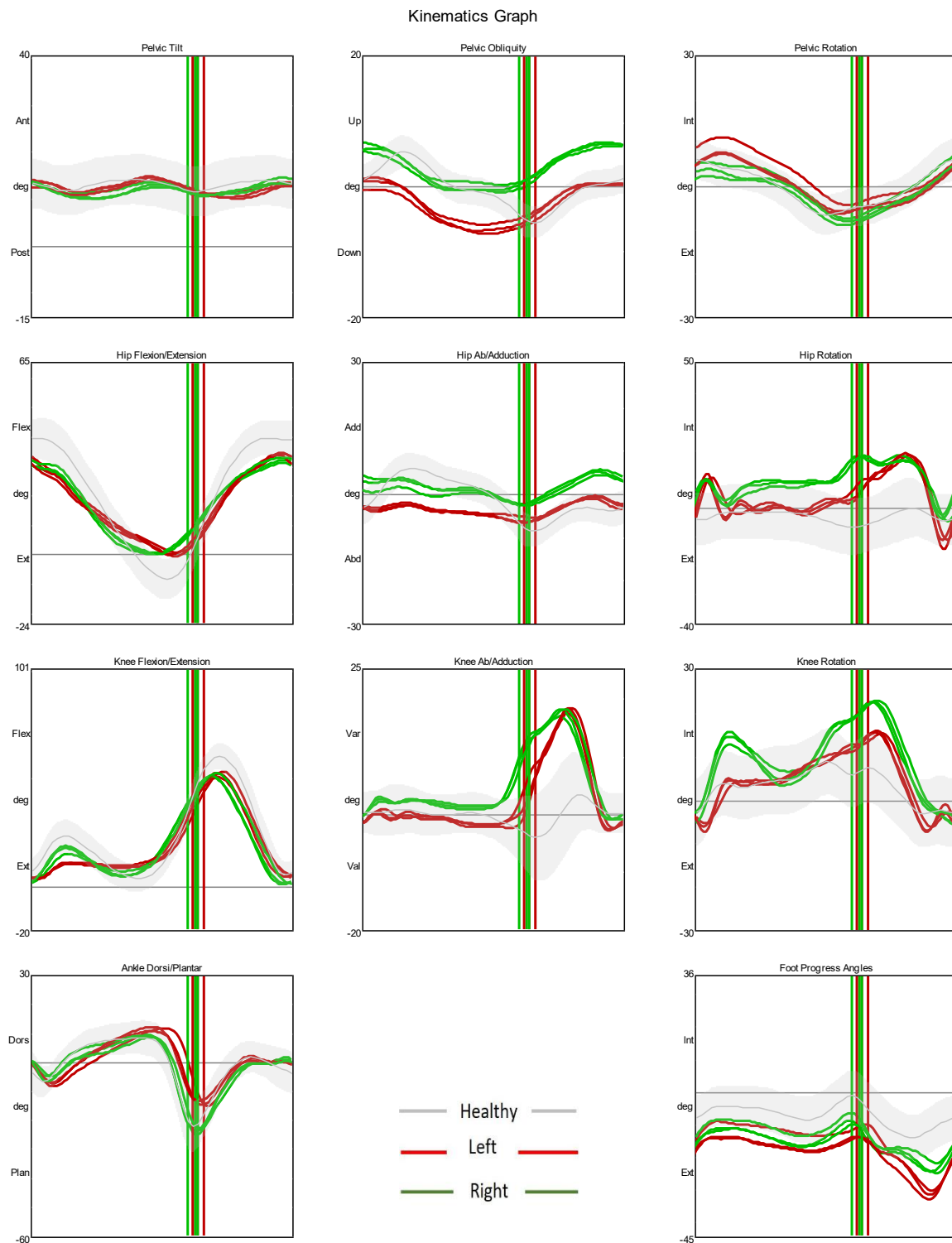
Kinematic data of a single representative trial while walking barefoot
(Data normalised to the period of the gait cycle and presented as the mean ± 1SD)

Kinematics Graph

Legend:
- Healthy
- Left
- Right
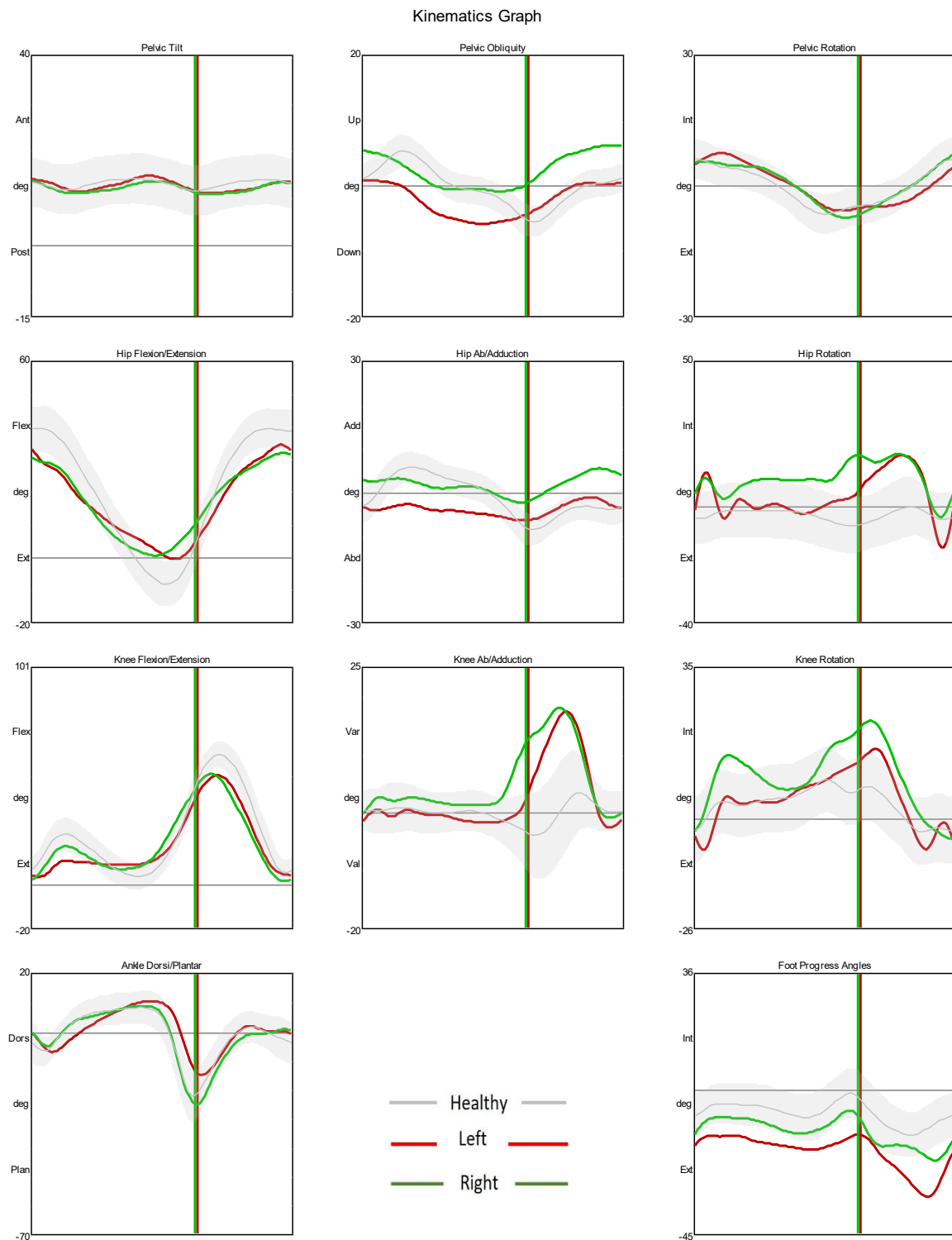
Kinematic data Averaged across trials

(Data normalised to the period of the gait cycle and presented as the mean ± 1SD)

Kinematics Graph

Legend:
- Healthy (grey)
- Left (red)
- Right (green)

Kinematic and Kinetic data of selected trial while walking barefoot

(Data normalised to the period of the gait cycle and presented as the mean ± 1SD)
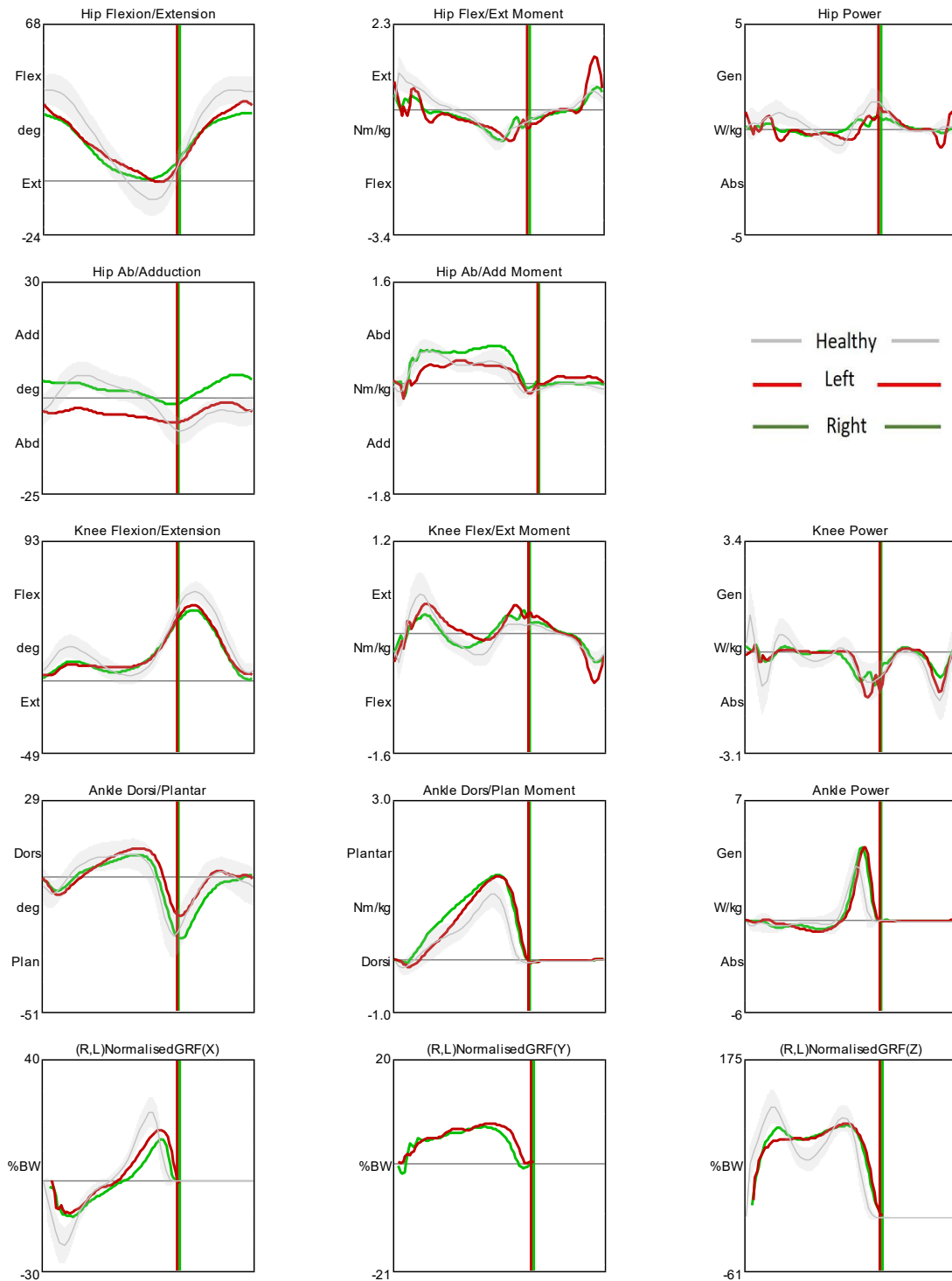
Interpretations

3D Instrumented Gait Analysis was performed on the subject using 10 Vicon Vero 2.2 cameras, 2 FLIR video cameras and 2 AMTI Force plates.

John Doe coped well with the demands of gait analysis. We collected 3D movement, force plate, and video data of his barefoot independent walking. Below, we discuss our main findings…

Recommendations

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Disclaimer

The results presented in this 3D walking analysis are based on comparisons with normative data published in scientific literature. It is important to note that individual anatomical and biomechanical differences exist, and as such, findings must be interpreted within the context of each person's unique characteristics. This report is intended for use by trained healthcare professionals who can appropriately analyze and apply the information to clinical or performance-related decisions. While every effort is made to ensure measurement accuracy through strict marker placement protocols and the use of trained personnel, minor errors may still occur and should be considered when interpreting results.