

Report of findings

With this letter we report on the diagnostic findings of

This series of measurements is a Initial findings.

Indication:

Patient reports 2× R PCL reconstrucon (age 18) - football realated
R lateral ankle ligament repair (age 17)
R ankle minor fracture last season
Bilateral Achilles tendinopathy age 23–25 weekly shockwave
Pubic symphysis injury age 19 3–4 months out of football
Recurrent hamstring strains, ~3 per season over last 4 seasons; constant low-grade hamstring tension
Constant low-grade lower back pain - worse with running, bending
Constant mid-back sffness with frequent need to "click"
Bilateral flat feet
Recent spine MRI clear (normal wear and tear)

Assessments conducted on the day:

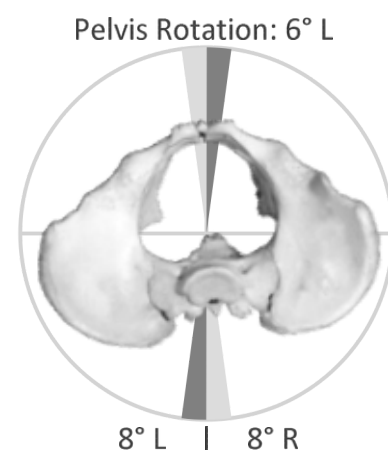
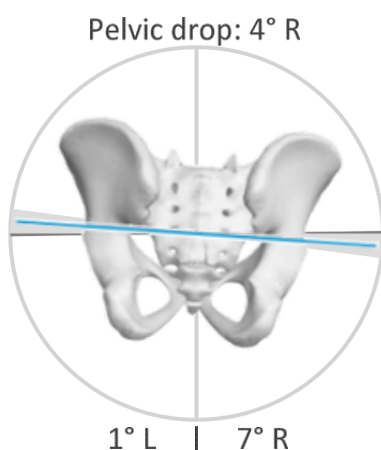
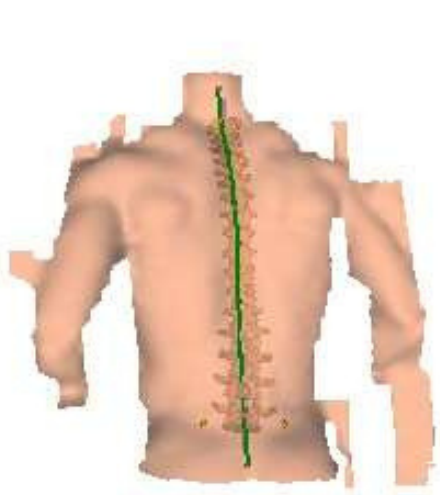
Diers static posture analysis
Diers single leg stability
Diers gait analysis
Diers Running analysis
P-DTR neuromuscular assessment

DIERS formetric 4D Motion - Static spine measurement

Initial running

The following kinematic data were collected as part of the dynamic videorasterstereographic survey:

SPEED	16 km/h	
PARAMETER	VALUE	RANGE OF MOTION
Kyphotic Angle ICT-ITL (max)	34°	26° - 39°
Lordotic Angle ITL-ILS (max)	52°	33° - 57°
Pelvis Rotation	0°	8° Left - 8° Right
Pelvic drop	8 mm Right	15 mm Right - 2 mm Left
Sagittal Imbalance VP-DM	12° A	8° A - 15° A



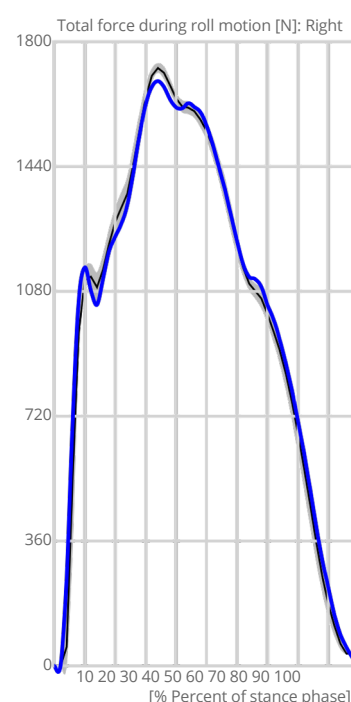
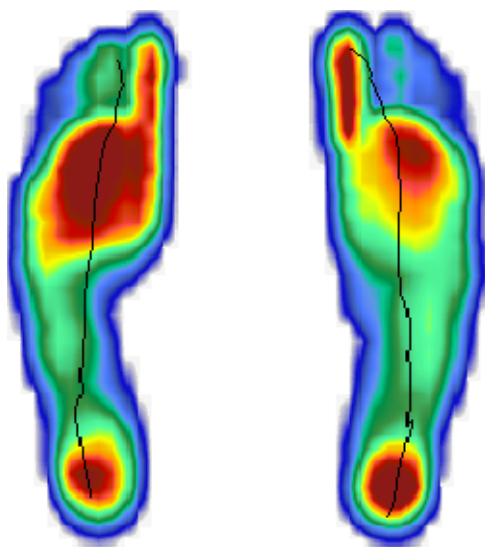
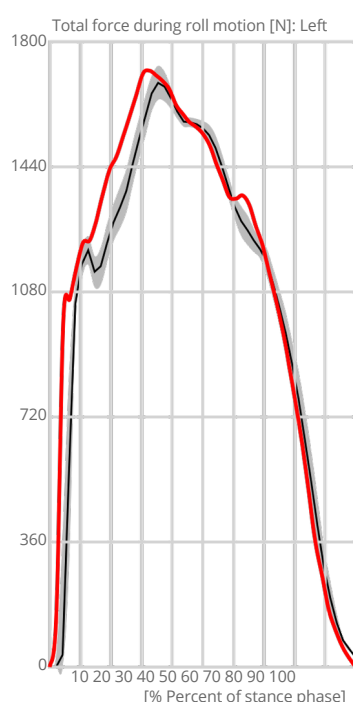
During running increased forward lean (12 deg), anterior pelvis lt. Right push off phase compensaon with excessive torso counter rotaon and lateral torso flexion to complete the phase.

DIERS pedogait - Dynamic foot pressure measurement

Initial running

Within the pedobarographic measurement in dynamics, the following data were collected:

SPEED	16.2 km/h		
Gait Line Way	22 m		
PARAMETER	LEFT	RIGHT	DIFFERENC
Step Length	151 cm	155 cm	4 cm
Step Time	201 ms	197 ms	4 ms



PARAMETER	VALUE	NORMATIVE VALUES
Foot Rotation	Left: 3° (OR) Right: 4° (OR)	10-15°
Stride Time	397 ms	1200 ms
Stride Length	306 cm	141 cm
Track Width	9 cm	10 cm
Cadence	180 °	113 °

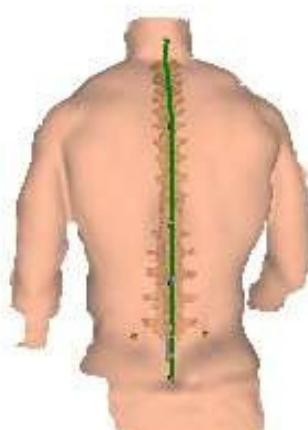
More cautious loading through R side with longer loading phases and shorter repulsion (concentric phase for running)

DIERS formetric 4D Motion - Static spine measurement

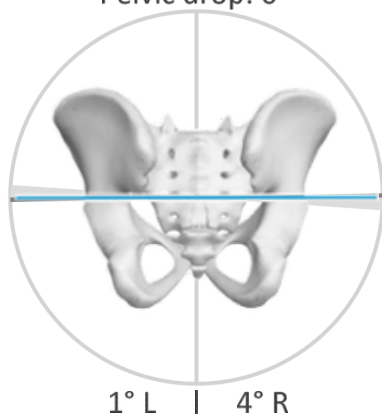
Initial gait

The following kinematic data were collected as part of the dynamic videorasterstereographic survey:

SPEED	4 km/h	
PARAMETER	VALUE	RANGE OF MOTION
Kyphotic Angle ICT-ITL (max)	43°	43° - 47°
Lordotic Angle ITL-ILS (max)	40°	35° - 41°
Pelvis Rotation	2° Left	3° Left - 2° Right
Pelvic drop	0 mm	8 mm Right - 3 mm Left
Sagittal Imbalance VP-DM	8° A	7° A - 10° A



Pelvic drop: 0°



1° L | 4° R

Pelvis Rotation: 1° L



3° L | 2° R

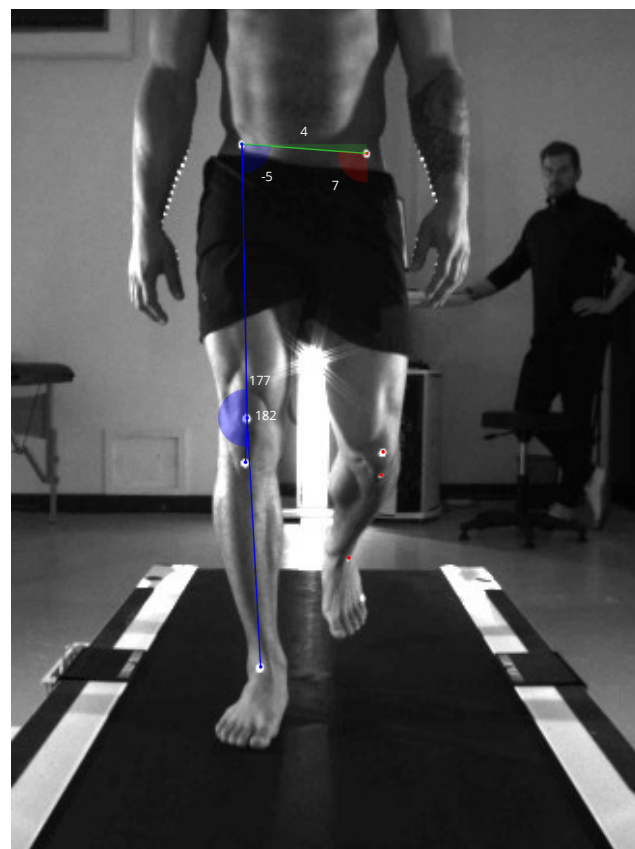
During walking torso shifts over the right hip during loading - strategy to unload the lower limb muscles.

DIERS leg axis - Dynamic leg axis analysis

Initial running

Within the video gait analysis in the frontal plane (anterior), the following kinematic data were collected during the stand phases:

SPEED	4 km/h		
PARAMETER	LEFT	RIGHT	NORMATIVE VALUES
Pelvic Angle	4°	4° Right	-
Knee Angle	Right -	2° Varus	3° Valgus - 3° Varus
Q-Angle	-	3° Valgus	10° Valgus - 15° Valgus



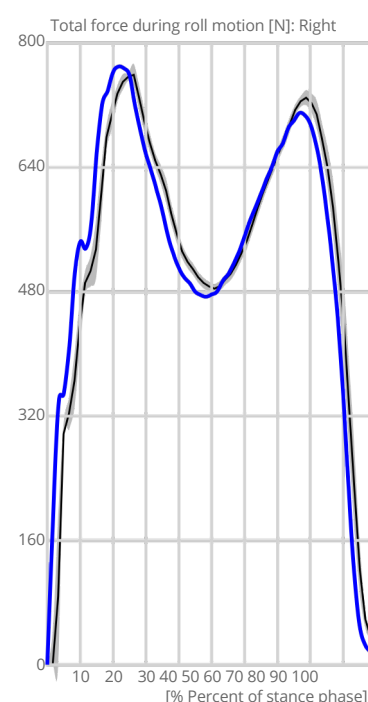
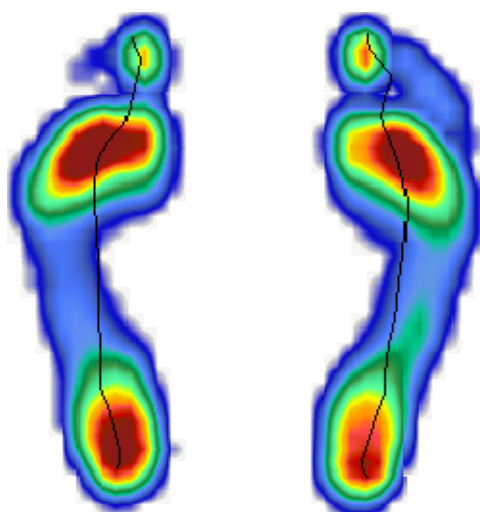
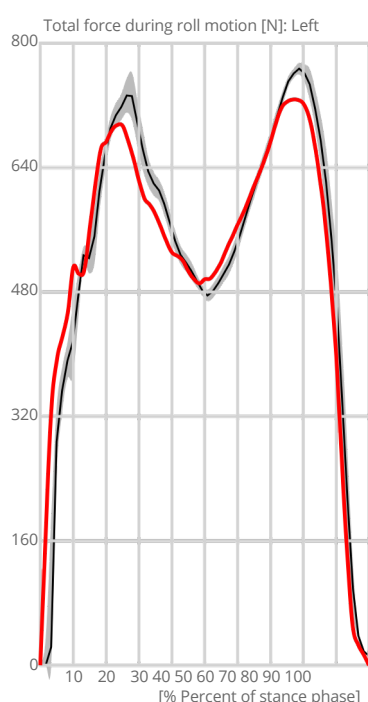
more variability through R lower limb joint motions - less control and again showing unloading strategy.

DIERS pedogait - Dynamic foot pressure measurement - 25/04/2026 (14:32)

Initial gait

Within the pedobarographic measurement in dynamics, the following data were collected:

SPEED	4.9 km/h		
Gait Line Way	7 m		
PARAMETER	LEFT	RIGHT	DIFFERENC
Step Length	62 cm	67 cm	5 cm
Step Time	476 ms	480 ms	4 ms



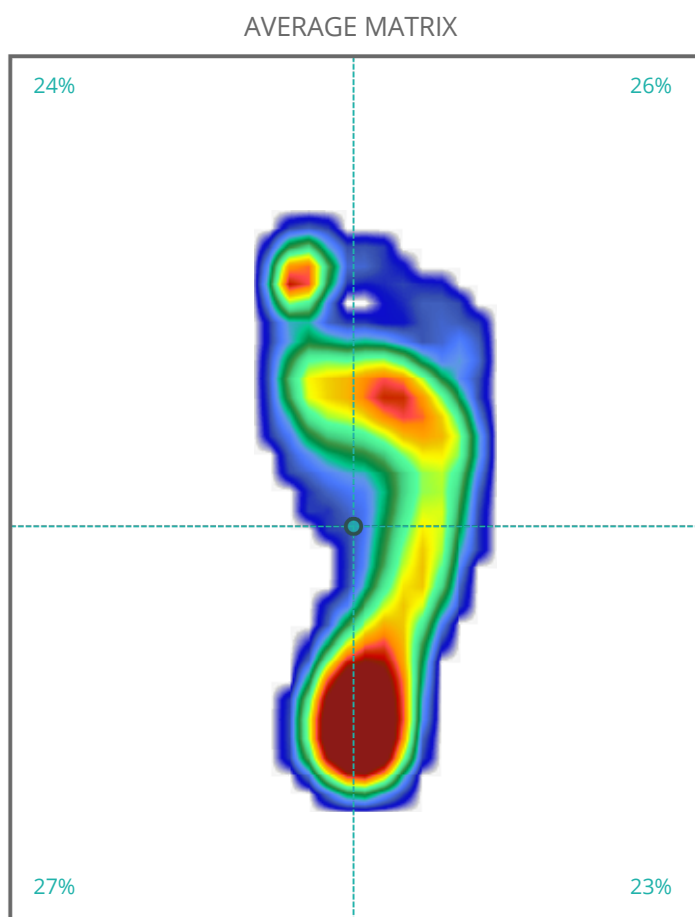
PARAMETER	VALUE	NORMATIVE VALUES
Foot Rotation	Left: 9° (OR) Right: 10° (OR)	10-15°
Stride Time	956 ms	1200 ms
Stride Length	129 cm	141 cm
Track Width	12 cm	10 cm
Cadence	132 °	113 °

Foot overpronaon on both sides. Shorter step length on the L with reduced hip flexion - showing hamstring hyperactivity. R side less hip extension with higher pelvis torsion.

DIERS pedoscan - Static foot pressure measurement

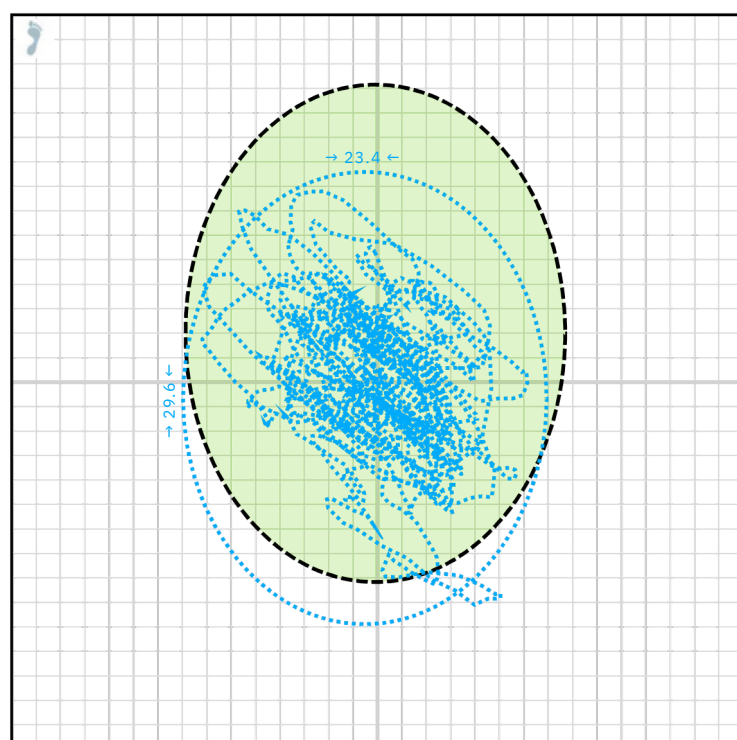
Initial R stability

Within the static pedobarographic measurement, the following data were collected:



COP - Movement

● COP ● --- Norm

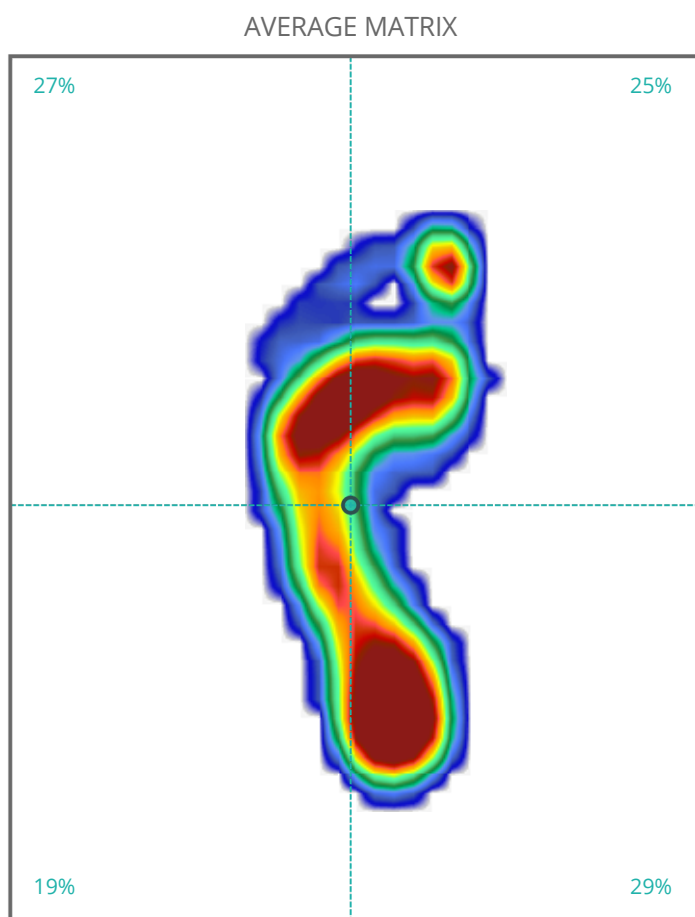


Overall single leg stability is well controlled with mild torso shift over the right hip

DIERS pedoscan - Static foot pressure measurement

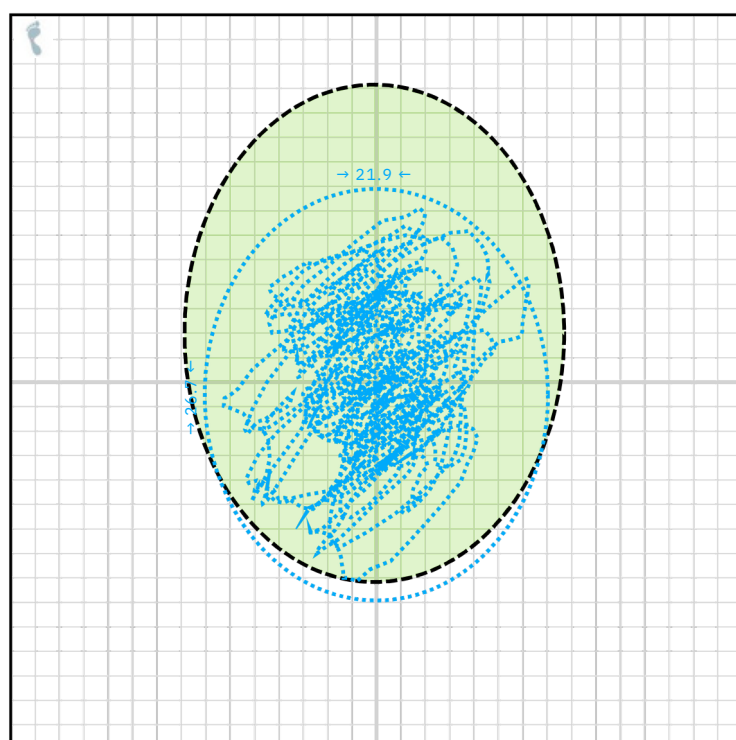
Initial L stability

Within the static pedobarographic measurement, the following data were collected:



COP - Movement

● COP ● --- Norm



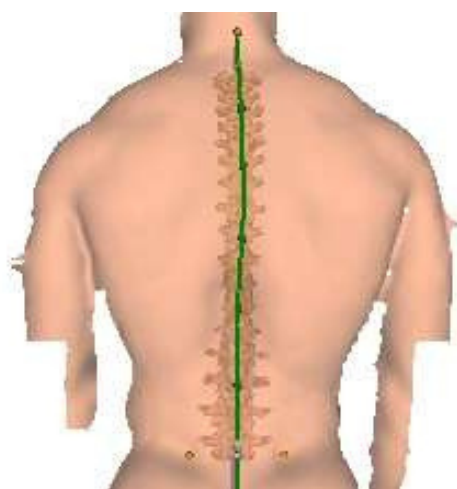
Good single leg stability and just slight torso over the hip shift

DIERS formetric 4D Average - Static spine measurement

Initial posture

The following kinematic data were collected as part of the static videorasterstereographic survey:

PARAMETER	VALUE	NORMATIVE VALUES
Kyphotic Angle ICT-ITL (max)	55°	3970° - 5604°
Lordotic Angle ITL-ILS (max)	54°	371° - 1043°
Pelvis Rotation	1° Left	
Pelvic Obliquity	2 mm Right	234 mm Left - 234 mm Right
Sagittal Imbalance VP-DM	0°	95° A - 525° A
Apical Deviation VP-DM (-max)	0 mm	0 mm left - 11 mm left



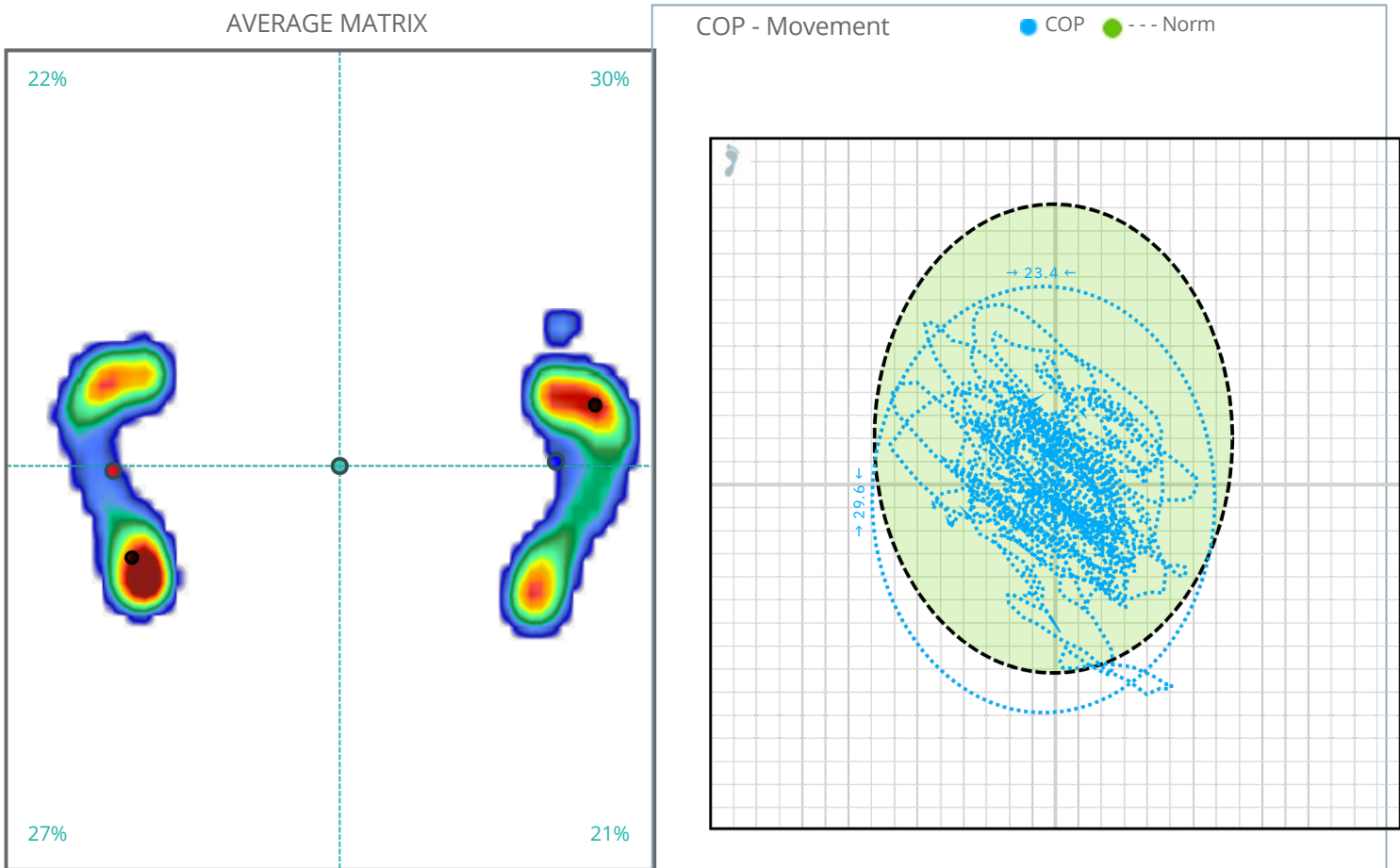
Main findings from the posture analysis show increased pelvis anterior tilt with high lordotic arch and R pelvis torsion. This also continues through all functional tests and also confirms as being one of the primary drivers for lumbar spine symptoms.

DIERS pedoscan - Static foot pressure measurement

Initial posture

Within the static pedobarographic measurement, the following data were collected:

PARAMETER	VALUE	NORMATIVE VALUES
Weight Distribution	49 : 51%	50 : 50 % +/-5%
Weight Distribution	52 : 48%	45 : 55 % +/-5%
Foot Rotation	Left: 9° Right: 11°	10-15°
COP Rotation	3°	0-3°



Foot posture show overpronated feet on both sides uneven foot loading - L heel dominant vs R forefoot dominant pattern. This goes in line with hyperactive hamstrings on L and under active hamstrings on R

CLINICAL SUMMARY

The client presents with excessive pelvic anterior tilt and poor pelvic control as the primary driver, sustained by inhalation-dominant breathing, bilateral psoas hyperactivity, and bilateral glute max inhibition substituted by hamstrings. This position holds the hamstrings in chronic length and recruitment, producing the constant low-grade tension, recurrent strains, and current high tear-risk that prevents running.

The right lower limb shows a cautious loading strategy in running - longer landing, shorter support, shorter repulsion - with vGRF plateau at the support-to-repulsion transition. This is the downstream consequence of long-standing post-surgical inhibition (2x PCL reconstruction, ankle ligament repair, recent fracture), now expressed as inhibited right glute med, glute max, and hamstring. Because the right hip cannot generate clean propulsive drive, the body recruits massive thoracic side-bend and rotation at T9 (rotation range 39°, lateral deviation 47 mm) to complete right push-off.

The right elbow symptoms are driven by the same pattern - repeated thoracic over-rotation loads the right upper limb during running and heavy pulling. The left side shows hamstring hyperactivity, shorter step length, and reduced hip flexion.

Back pain and bilateral hamstring vulnerability are downstream consequences of pelvic dysfunction and right-side neurological inhibition, not isolated tissue events.

PHASES TO RESTORE NORMAL FUNCTION

Initial Phase - Neurological Reset (Weeks 1-2)

P-DTR screening and reset of compensatory neurological patterns underlying the dysfunction. Address bilateral psoas hyperactivity, glute max inhibition, R glute med and R hamstring inhibition, and diaphragm output before any loaded retraining begins. Without this, downstream loading work cannot hold.

Phase 1 - Pelvic Repositioning, Breathing, and Foot Mechanics (Weeks 2-10)

Diaphragmatic breathing retraining to exit inhalation-dominance and reposition pelvis toward neutral. Address bilateral overpronation through tibialis posterior and short-foot activation, with custom insoles for day-to-day management. Neurologically safe re-loading of right glute med, glute max, and hamstring — eccentric and isometric before concentric. Bracing and breathing strategy applied on every loaded exercise to protect the lumbar spine.

Phase 2 - Glute Drive, Pelvic Rotational Control, and Return to Running (Weeks 10-16)

Build bilateral glute max as primary hip extensor, displacing hamstring substitution. Single-leg loading with pelvic drop as the criterion measure. Gradual reintroduction of running with intermediate speed and power work to retrain fast-twitch motor recruitment for postural control during sport-specific autonomous movement.

TRAINING MODULATION AND COMPETITION PLANNING

Significant training continues with load redirected away from structures at risk. Running volume stays at zero short-term. Cycling is the preferred cardiovascular alternative provided saddle position supports pelvic neutral. Swimming is appropriate maintenance. Resistance training continues with bracing and breathing on every loaded movement. Heavy hinging, lunging, and single-leg drive should be screened individually - glute inhibition makes lumbar compensation highly likely.

Football or long distance running return-to-training within four to six weeks carries unacceptable hamstring strain risk and reproduces the lumbar shear pattern. Return to football-specific training is realistic at twelve weeks if the initial neurological reset and Phase 1 progress well and pelvic control improves on reassessment.