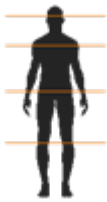# HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

PROFILE ASSESSMENT
Leonardo Murabito
8th September, 2021

PROFILE INFORMATION

NAME	Leonardo Murabito
ORGANISATION	Alta Allied Health
DATE OF BIRTH	17th May, 1995
GENDER	Male
HEIGHT	182cm / 71in
WEIGHT	82kg / 180lb
AGE	26

Standing Posture
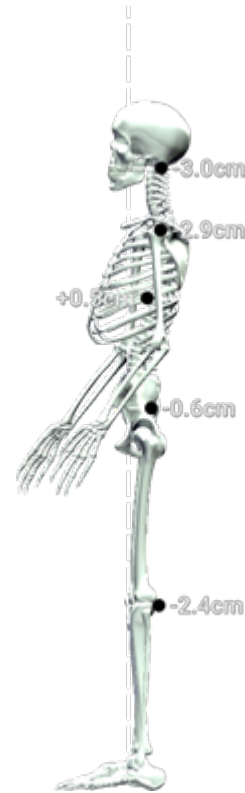**Posture and Stability Assessment**

Standing Posture is a baseline postural assessment that can provide insight into an individual's structural balance, alignment, and postural strategy.

RESULTS

BALANCE SNAPSHOT

SIDETRAK POSTURAL DEVIATION
(SAGITTAL PLANE/SIDE VIEW)

-3.0cm
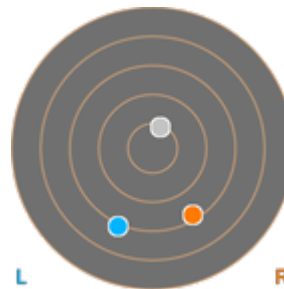-2.9cm
+0.?cm
-0.6cm
-2.4cm

KEY RESULTS

Neck lateral flexion	3.0° Right ▼
Trunk lateral flexion	1.0° Right ▼
Pelvis Lateral Tilt	0.1° Right ▼
Trunk Flexion	3.0° Posterior

SWAYTRAK MOVEMENT PATHS (KNEES AND CENTRE OF MASS)

L   R

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Single Leg Stand
Posture and Stability Assessment

Single Leg Stand is a postural assessment that can provide insight into an individual's structural balance, alignment, postural strategy and imbalance.
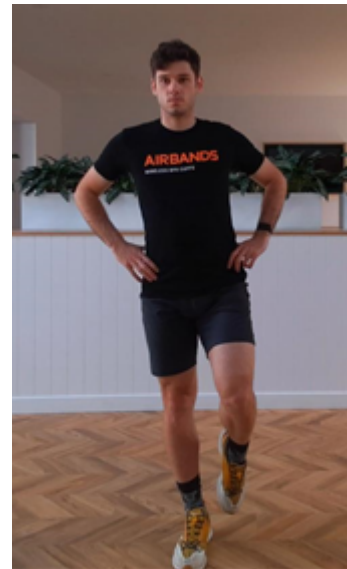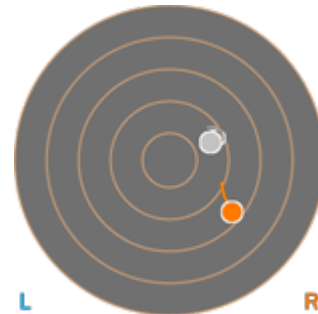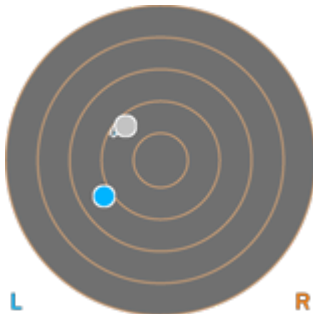
RESULTS

SNAPSHOTS	
LEFT LEG	**RIGHT LEG**

SWAYTRAK MOVEMENT PATHS (KNEES AND CENTRE OF MASS)

KEY RESULTS	LEFT LEG	RIGHT LEG	IMBALANCE
Neck lateral flexion	0.8° Right ▼	6.4° Right ▼	+5.6°
Trunk lateral flexion	3.5° Left ▼	5.0° Right ▼	+1.5°
Pelvis Lateral Tilt	3.9° Left ▼	4.5° Right ▼	+0.6°
Trunk Flexion	0.8° Posterior	6.4° Posterior	N/A

PRACTITIONER COMMENTS (LEFT)

PRACTITIONER COMMENTS (RIGHT)

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Semi-Tandem Stand
Balance Assessment

Standing balance over time is assessed with the feet together, and one slightly in front of the other.

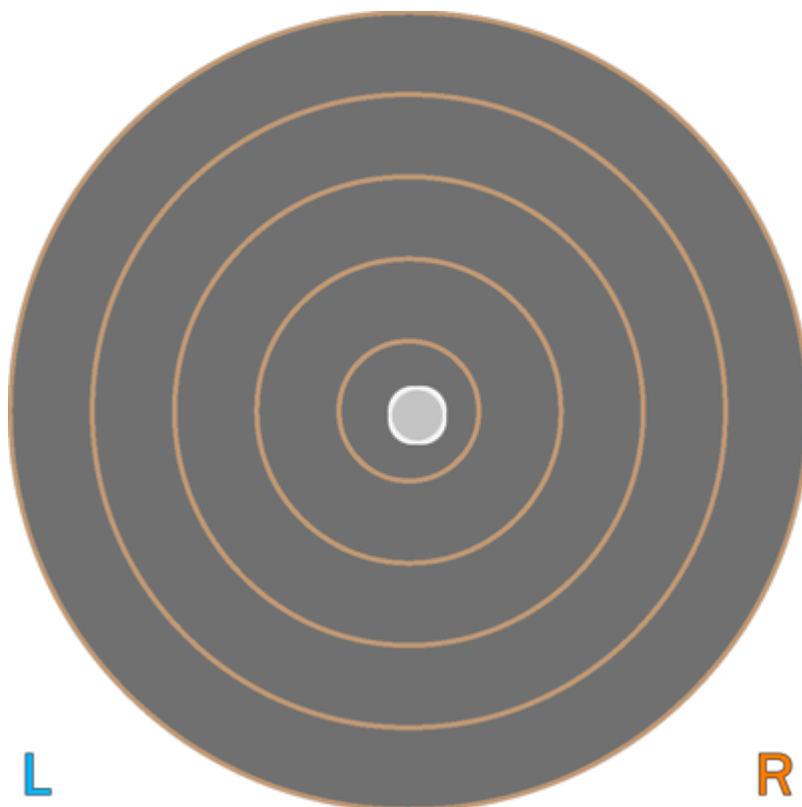|	
Eyes	Open
Surface	Stable
Time	10.0 s

RESULTS

BALANCE RESULTS (LEFT)

SNAPSHOT – START OF TEST	CENTER OF MASS PATH

L   R

KEY METRICS	RESULTS
Ellipse Area	0.29 cm-2
COM Path Length	19.55 cm
Range – ML	2.20 cm
Range – AP	1.99 cm
Pelvis Lateral Tilt	0.7° Left ▼
Trunk lateral flexion	0.7° Left ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Semi-Tandem Stand
Balance Assessment

Standing balance over time is assessed with the feet together, and one slightly in front of the other.

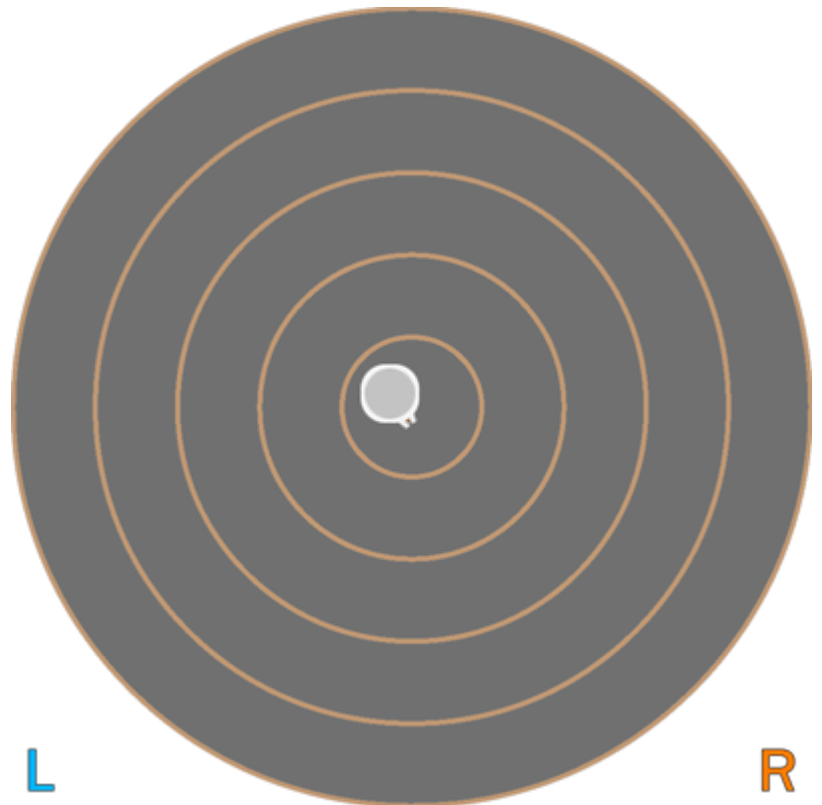|	
Eyes	Open
Surface	Stable
Time	10.0 s

RESULTS

BALANCE RESULTS (RIGHT)

SNAPSHOT – START OF TEST	CENTER OF MASS PATH

L   R

KEY METRICS	RESULTS
Ellipse Area	0.62 cm-2
COM Path Length	20.08 cm
Range – ML	2.45 cm
Range – AP	2.83 cm
Pelvis Lateral Tilt	2.7° Left ▼
Trunk lateral flexion	1.8° Left ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Tandem Stand
Balance Assessment

Standing balance over time is assessed with one foot directly in front of the other.

Eyes	Open
Surface	Stable
Time	10.0 s

RESULTS

BALANCE RESULTS (LEFT)

SNAPSHOT − START OF TEST	CENTER OF MASS PATH

L   R
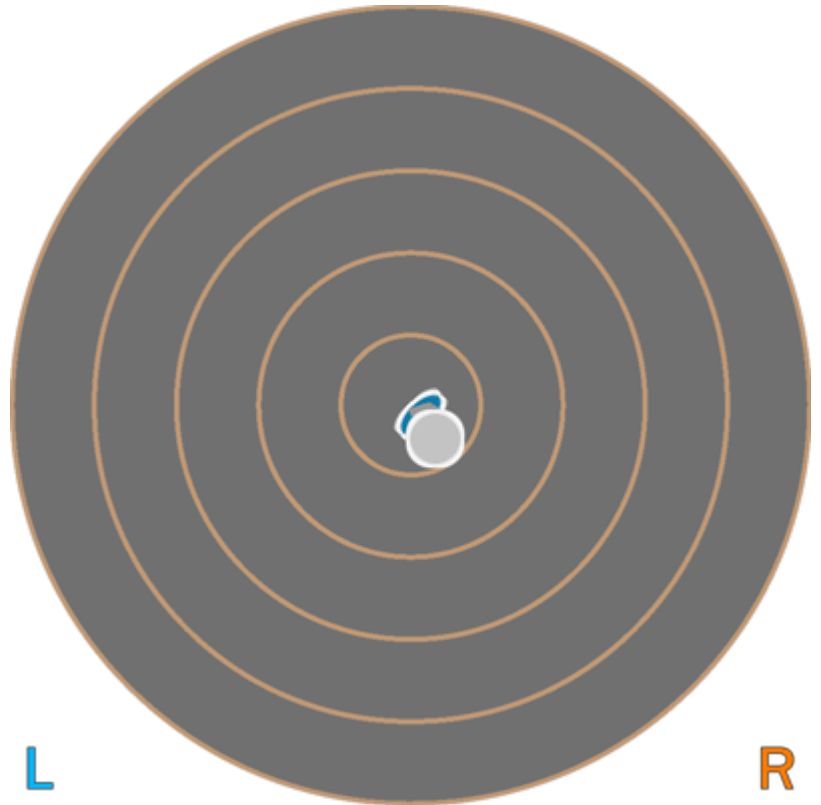
KEY METRICS	RESULTS
Ellipse Area	1.17 cm-2
COM Path Length	18.77 cm
Range − ML	4.12 cm
Range − AP	3.62 cm
Pelvis Lateral Tilt	1.6° Left ▼
Trunk lateral flexion	0.4° Left ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Tandem Stand
Balance Assessment

Standing balance over time is assessed with one foot directly in front of the other.

Eyes	Open
Surface	Stable
Time	10.0 s

RESULTS

BALANCE RESULTS (RIGHT)	
SNAPSHOT – START OF TEST	CENTER OF MASS PATH

L   R
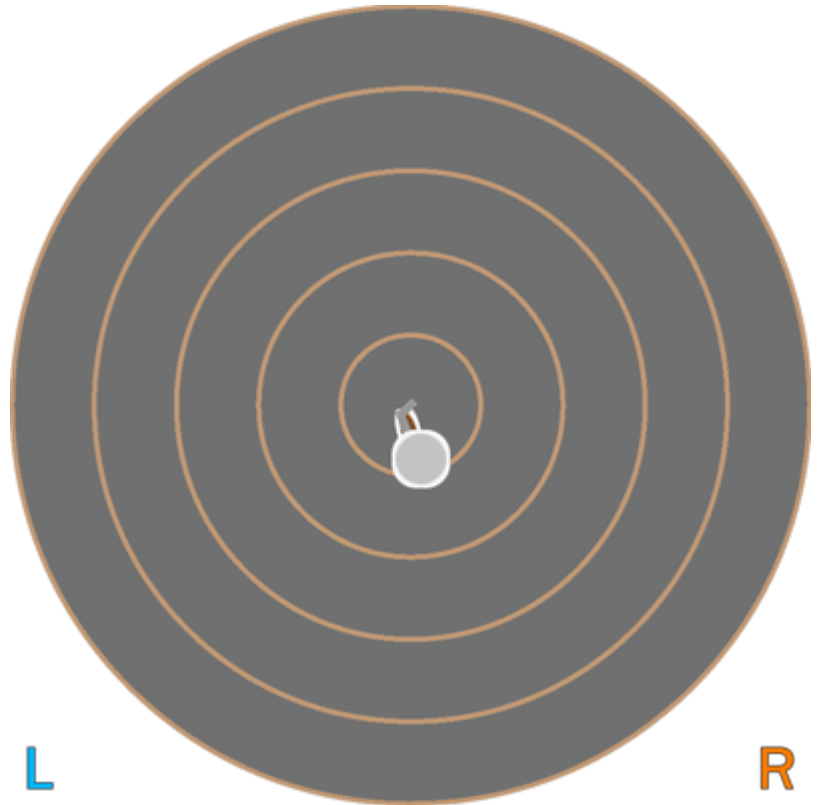
KEY METRICS	RESULTS
Ellipse Area	0.61 cm-2
COM Path Length	19.41 cm
Range – ML	2.43 cm
Range – AP	4.65 cm
Pelvis Lateral Tilt	1.7° Left ▼
Trunk lateral flexion	0.4° Left ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Single Leg Stand
Balance Assessment

Standing balance over time is assessed while standing on one leg.

Eyes	Open
Surface	Stable
Time	10.0 s

RESULTS

BALANCE RESULTS (LEFT)

SNAPSHOT – START OF TEST	CENTER OF MASS PATH

L   R
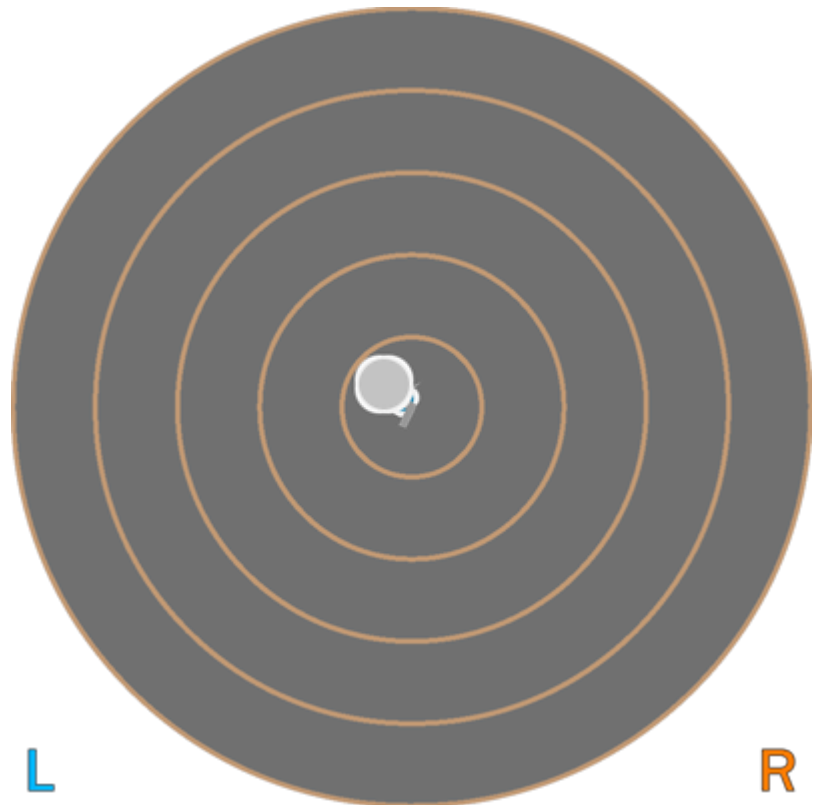
KEY METRICS	RESULTS
Ellipse Area	0.57 cm-2
COM Path Length	23.30 cm
Range – ML	2.89 cm
Range – AP	3.01 cm
Pelvis Lateral Tilt	7.3° Left ▼
Trunk lateral flexion	7.7° Left ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Single Leg Stand
Balance Assessment

Standing balance over time is assessed while standing on one leg.

Eyes	Open
Surface	Stable
Time	10.0 s

RESULTS

BALANCE RESULTS (RIGHT)

SNAPSHOT – START OF TEST	CENTER OF MASS PATH

L   R

KEY METRICS	RESULTS
Ellipse Area	1.12 cm-2
COM Path Length	25.88 cm
Range – ML	2.26 cm
Range – AP	3.36 cm
Pelvis Lateral Tilt	4.6° Right ▼
Trunk lateral flexion	4.3° Right ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM
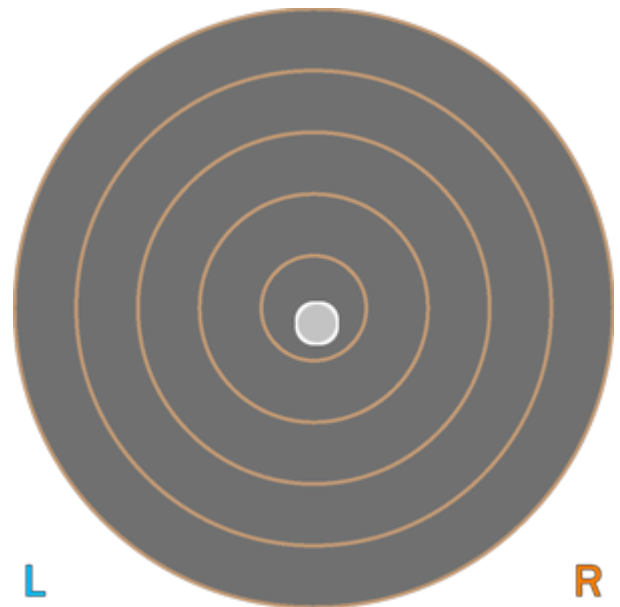
Cervical Spine Lateral Flexion
Range of Motion Assessment

Cervical Spine Lateral Flexion (left and right) is calculated by taking the inclination of the head relative to the line of the trunk in the frontal plane (front view).

RESULTS

PEAK LEFT LATERAL FLEXION	PEAK RIGHT LATERAL FLEXION

KEY RESULTS	PEAK FLEXION (LEFT)	PEAK FLEXION (RIGHT)	IMBALANCE
Lateral Flexion	11.1°	15.6°	+4.5°
Trunk Flexion	5.7° Posterior	6.0° Posterior	N/A
Trunk lateral flexion at Peak Flexion	1.1° Right ▼	0.7° Right ▼	+0.3°

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM
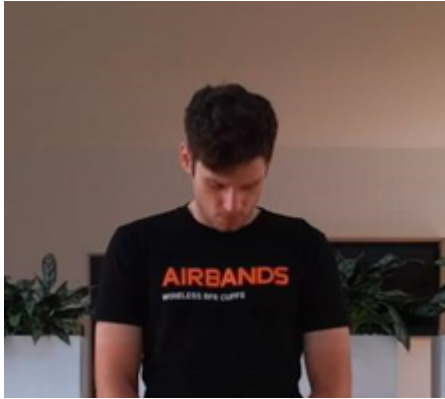
Cervical Spine Flexion/Extension
Range of Motion Assessment

Cervical Spine Flexion (forward) / Extension (backwards) calculated by taking the inclination of the head relative to the line of the trunk in the sagittal plane (side view).

RESULTS

PEAK FLEXION SNAPSHOT	PEAK EXTENSION SNAPSHOT

KEY RESULTS	STARTING POSITION	PEAK FLEXION	PEAK EXTENSION	TOTAL RANGE
Flexion/Extension	0.0°	23.4°	4.5°	27.9°
Trunk Flexion	6.4° Posterior	2.4° Posterior	4.2° Posterior	N/A
Trunk lateral flexion	0.2°	0.4° Left ▼	0.9° Left ▼	N/A

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM
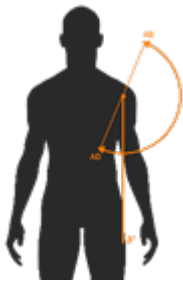
Shoulder Adduction/Abduction
Range of Motion Assessment

Shoulder Adduction/Abduction is calculated by taking the angle created by the humerus (upper arm) relative to the line of the trunk in the frontal plane (front view).

RESULTS

PEAK ADDUCTION		PEAK ABDUCTION	
LEFT	RIGHT	LEFT	RIGHT

KEY RESULTS	LEFT	RIGHT	IMBALANCE
Shoulder Adduction	6.6°	25.5°	+18.9°
Shoulder Abduction	169.2°	179.6°	+10.4°
Trunk lateral flexion at Peak Abduction	1.9° Right ▼	3.7° Left ▼	+1.8°

PRACTITIONER COMMENTS (LEFT)

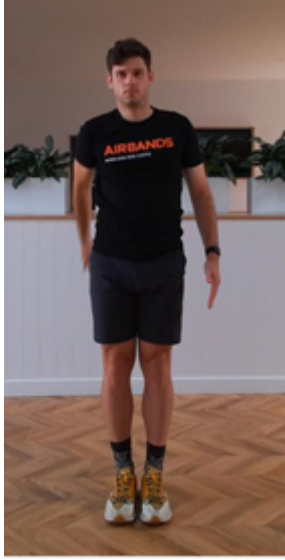PRACTITIONER COMMENTS (RIGHT)

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM
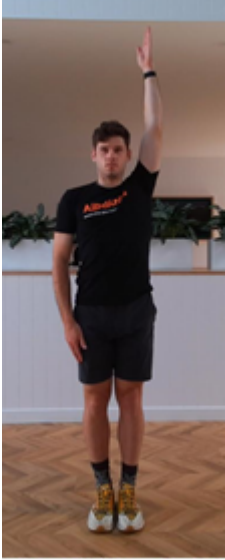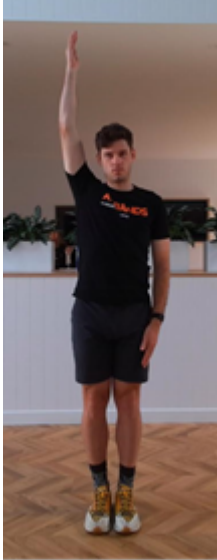
Shoulder Flexion/Extension
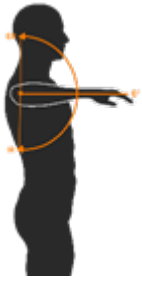
Range of Motion Assessment

Shoulder Flexion/Extension is calculated by taking the angle created by the humerus (upper arm) relative to the line of the trunk in the sagittal plane (side view).

RESULTS

	PEAK FLEXION		PEAK EXTENSION	
	LEFT	RIGHT	LEFT	RIGHT

KEY RESULTS	LEFT	RIGHT	IMBALANCE
Shoulder Flexion	180.0°	179.4°	+0.6°
Shoulder Extension	70.3°	59.5°	+10.9°
Trunk lateral flexion at Peak Flexion	0.9° Right ▼	3.9° Left ▼	+3.1°

PRACTITIONER COMMENTS (LEFT)

PRACTITIONER COMMENTS (RIGHT)

HUMANTRAK
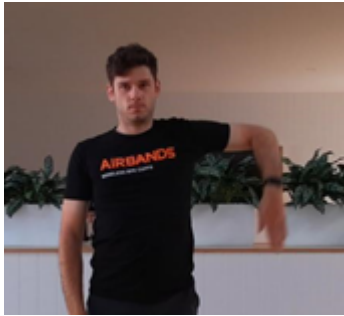MOVEMENT ANALYSIS SYSTEM

Shoulder Internal/External Rotation

Range of Motion Assessment

Shoulder Internal/External Rotation calculated by taking the angle created by the forearm relative to horizontal in the sagittal plane (side view).
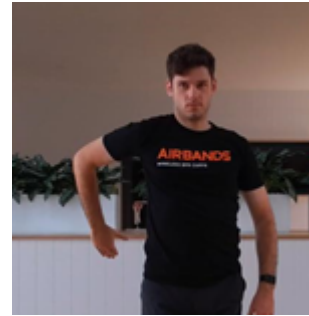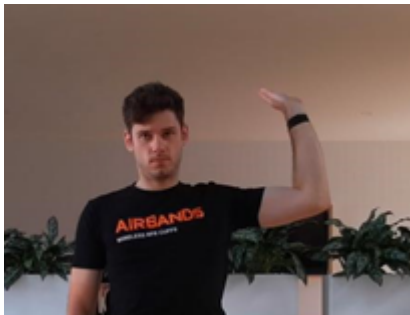
RESULTS

PEAK INTERNAL ROTATION	
LEFT	RIGHT

PEAK EXTERNAL ROTATION	
LEFT	RIGHT

KEY RESULTS	LEFT	RIGHT	IMBALANCE
Shoulder Internal Rotation	63.9°	92.9°	+29.0°
Shoulder External Rotation	83.4°	94.1°	+10.7°
Total ROM	147.3°	186.9°	+39.6°
Trunk lateral flexion at Peak Internal Rotation	3.1° Right ▼	1.0° Left ▼	+2.0°

PRACTITIONER COMMENTS (LEFT)

PRACTITIONER COMMENTS (RIGHT)

HUMANTRAK
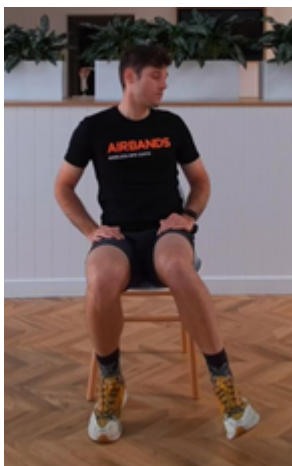MOVEMENT ANALYSIS SYSTEM

Hip Internal/External Rotation
Range of Motion Assessment

Hip Internal/External Rotation is calculated by taking the angle created by the tibia relative to vertical in the frontal plane (front view) while seated with 90° of hip flexion.
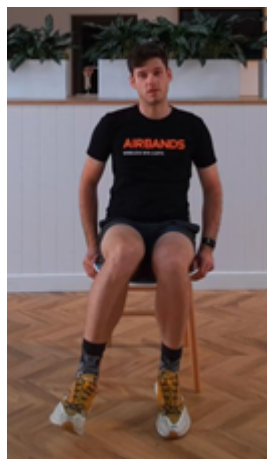
RESULTS

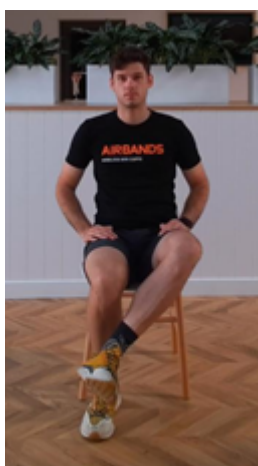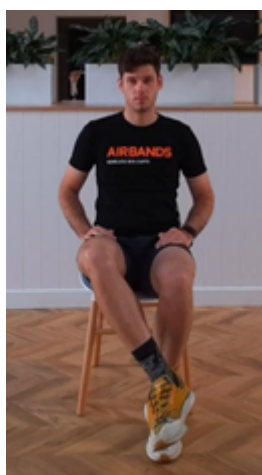| PEAK INTERNAL ROTATION	
LEFT	RIGHT

PEAK EXTERNAL ROTATION	
LEFT	RIGHT

KEY RESULTS	LEFT	RIGHT	IMBALANCE
Peak Internal Rotation	20.3°	15.7°	+4.6°
Peak External Rotation	39.9°	29.5°	+10.4°
Total ROM	60.2°	45.2°	+15.0°

PRACTITIONER COMMENTS (LEFT)

PRACTITIONER COMMENTS (RIGHT)
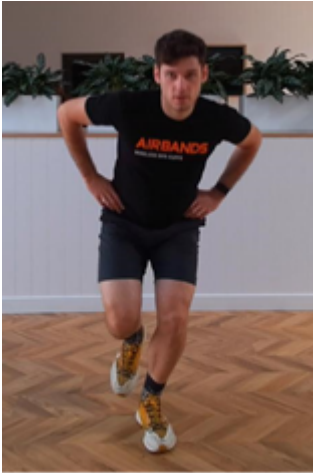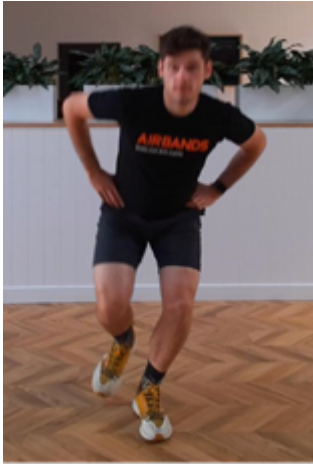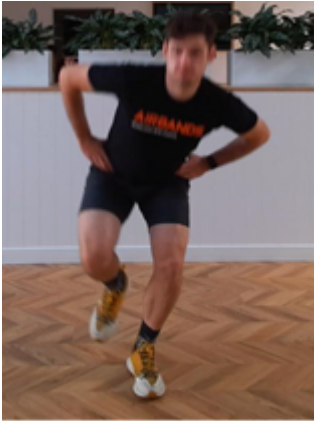
HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Single Leg Squat
Lower Body Dynamic Assessment

Single Leg Squat is a dynamic movement assessment that provides insight into an individual's balance, stability, flexibility, and strength.

RESULTS

LEFT LEG			
SNAPSHOTS			
START	REP 1: PEAK KNEE FLEXION	REP 2: PEAK KNEE FLEXION	REP 3: PEAK KNEE FLEXION

KEY RESULTS	REP 1	REP 2	REP 3
Peak Knee Flexion	71.7°	69.0°	78.2°
Knee Displacement (total)	3.7 cm	8.9 cm	11.6 cm
Peak Knee Valgus	0.0°	0.0°	0.0°
Peak Knee Varus	6.7° **Varus**	11.2° **Varus**	14.5° **Varus**
Trunk lateral flexion at Peak Knee Flexion	8.9° Left ▼	7.1° Left ▼	13.2° Left ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

RESULTS

RIGHT LEG			
SNAPSHOTS			
START	REP 1: PEAK KNEE FLEXION	REP 2: PEAK KNEE FLEXION	REP 3: PEAK KNEE FLEXION

KEY RESULTS	REP 1	REP 2	REP 3
Peak Knee Flexion	75.7°	81.4°	87.9°
Knee Displacement (total)	8.9 cm	9.0 cm	6.3 cm
Peak Knee Valgus	4.4° **Valgus**	6.7° **Valgus**	7.4° **Valgus**
Peak Knee Varus	1.3° **Varus**	3.2° **Varus**	1.7° **Varus**
Trunk lateral flexion at Peak Knee Flexion	8.6° Right ▼	9.2° Right ▼	7.9° Right ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Squat
Lower Body Dynamic Assessment

Squat is a dynamic movement assessment providing insight into an individual's balance, stability, flexibility, and strength.

RESULTS

SNAPSHOTS			
START	REP 1: PEAK KNEE FLEXION	REP 2: PEAK KNEE FLEXION	REP 3: PEAK KNEE FLEXION

KEY RESULTS	REP 1	REP 2	REP 3
Peak Knee Flexion (Left)	101.2°	106.8°	114.9°
Peak Knee Flexion (Right)	106.0°	112.4°	121.5°
Spine Tilt at Peak Knee Flexion	42.7° Anterior	46.6° Anterior	47.1° Anterior
Trunk lateral flexion at Peak Knee Flexion	1.8° Left ▼	3.5° Left ▼	1.0° Left ▼

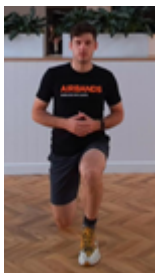## PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM
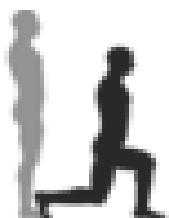
Lunge
Lower Body Dynamic Assessment

The Lunge assesses the strength and range of motion of the knees and hips.

RESULTS

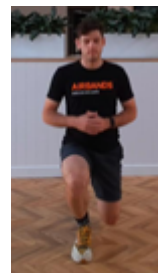| PEAK KNEE FLEXION	
LEFT	RIGHT

KEY METRICS	LEFT LEG	RIGHT LEG	ASYMMETRY
Peak Hip Flexion	76.2°	75.0°	1.5%
Peak Knee Flexion	96.9°	110.7°	12.5%
Peak Spine Lateral Tilt	3.1° Anterior	0.3° Anterior	N/A
Peak Pelvic Lateral Tilt	1.6° Left	0.6° Right	N/A

PRACTITIONER COMMENTS (LEFT)

PRACTITIONER COMMENTS (RIGHT)

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Countermovement Jump
Lower Body Dynamic Assessment

The Countermovement Jump assesses the landing posture during an explosive dynamic exercise.

RESULTS

PEAK KNEE FLEXION
after landing

KEY METRICS (TORSO)		
Jump Height	33.81 cm	
Peak Spine Tilt after landing	30.1° **Anterior**	
Peak Lateral Spine Tilt after landing	5.7° **Left**	
Peak Lateral Pelvic Tilt after landing	2.3° **Right**	

KEY METRICS (LEGS)	LEFT LEG	RIGHT LEG	ASYMMETRY
Peak Hip Flexion after landing	73.9°	77.6°	4.8%
Peak Knee Flexion after landing	82.5°	83.0°	0.6%
Peak Knee Valgus/Varus after landing	34.6° **Varus**	26.4° **Varus**	23.5%

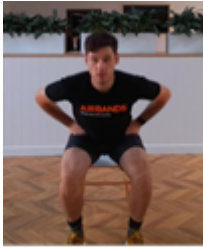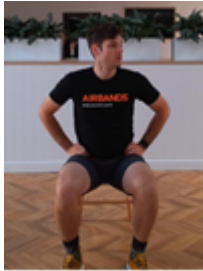## PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Sit To Stand
Lower Body Dynamic Assessment

Sit to Stand is a pathway assessment to the Repeated Sit to Stand Test. This test provides information on functional leg power and strength.

RESULTS

KEY RESULTS	OVERALL
Peak Knee Extension	L 7.6° R 5.6°
Knee Displacement	L 8.8 cm R 8.4 cm
Peak Lateral Trunk Flexion	1.9° Left ▼

PHASE	INITIAL	MID-POINT	FINAL
SNAPSHOTS			

KEY METRICS	BEGINNING POSITION	PEAK TRUNK FLEXION	END POSITION
Knee-Ankle Separation Ratio	1.1	1.1	1.2
Lateral Trunk Flexion	1.3° Left ▼	0.2° Right ▼	0.1° Right ▼
Knee Flexion	L 89.3° R 89.2°	L 73.9° R 81.3°	L 103.4° R 105.1°
Hip Flexion	L 75.3° R 74.3°	L 83.2° R 89.1°	L 83.6° R 84.1°
Trunk Flexion	3.4° Posterior	37.9° Anterior	6.7° Anterior

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Stand to Sit
Lower Body Dynamic Assessment

Stand to Sit is an assessment on how well an individual can sit down without external support. This test provides information on lower limb stability, balance and strength.
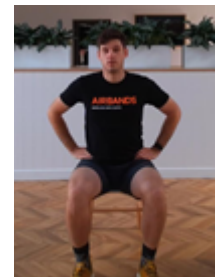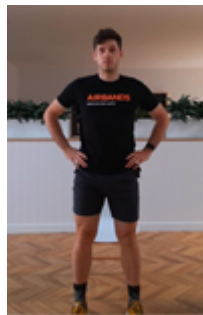
RESULTS

KEY RESULTS	OVERALL		
Knee Displacement	L 9.1 cm R 7.4 cm		
Peak Lateral Trunk Flexion	1.8° Right ▼		

PHASE	INITIAL	MID-POINT	FINAL
SNAPSHOTS			

KEY METRICS	BEGINNING POSITION	PEAK TRUNK FLEXION	END POSITION
Knee-Ankle Separation Ratio	0.8	1.1	1.2
Lateral Trunk Flexion	1.6° Left ▼	0.7° Right ▼	0.2° Right ▼
Knee Flexion	L 6.1° R 8.1°	L 76.9° R 83.6°	L 101.0° R 101.9°
Hip Flexion	L 1.3° R 1.9°	L 83.7° R 87.3°	L 86.1° R 87.3°
Trunk Flexion	0.5° Posterior	32.2° Anterior	2.8° Anterior

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

30 Second Sit To Stand
Lower Body Dynamic Assessment

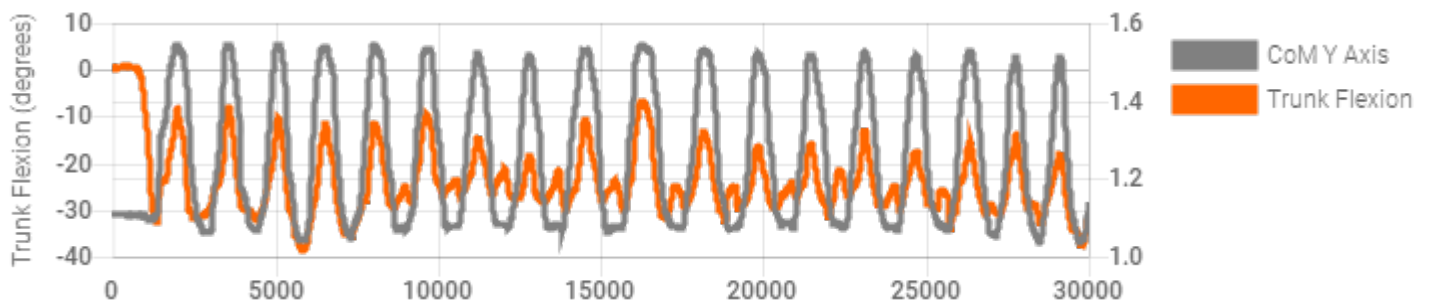30 Second Sit To Stand is an assessment that provides information on function leg power and strength of participants.

RESULTS

KEY RESULTS	OVERALL
Successful Repetitions	18
Peak Knee Extension	L 5.3° R 4.7°
Knee Displacement	L 12.7 cm R 9.9 cm
Peak Lateral Trunk Flexion	3.7° Left ▼

SNAPSHOTS					
START	1st REP: PEAK TRUNK FLEXION	Q1 REP: PEAK TRUNK FLEXION	MEDIAN REP: PEAK TRUNK FLEXION	Q3 REP: PEAK TRUNK FLEXION	LAST REP: PEAK TRUNK FLEXION

KEY METRICS	1st REP	Q1 REP	MEDIAN REP	Q3 REP	LAST REP
Knee-Ankle Separation Ratio	1.1	1.2	1.1	1.2	1.1
Lateral Trunk Flexion	0.4° Left ▼	0.6° Left ▼	0.3° Right ▼	1.3° Right ▼	0.0° Left ▼
Knee Flexion	L 77.4° R 83.3°	L 89.3° R 91.6°	L 75.9° R 77.8°	L 77.9° R 82.6°	L 77.8° R 83.8°
Hip Flexion	L 75.8° R 77.4°	L 87.4° R 87.4°	L 75.3° R 74.9°	L 77.1° R 78.3°	L 75.8° R 78.9°
Trunk Flexion	0.4° Anterior	0.6° Anterior	0.3° Posterior	1.3° Posterior	0.0° Anterior

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

5 Repetition Sit to Stand
Lower Body Dynamic Assessment

5 Repetition Sit to Stand is an assessment that provides information on function leg power and strength of participants.

RESULTS

KEY RESULTS	OVERALL
Peak Knee Extension	7.0°
Knee Displacement	L 10.5 cm R 11.1 cm
Peak Lateral Trunk Flexion	3.5° Right ▼

SNAPSHOTS					
START	REP 1: PEAK TRUNK FLEXION	REP 2: PEAK TRUNK FLEXION	REP 3: PEAK TRUNK FLEXION	REP 4: PEAK TRUNK FLEXION	REP 5: PEAK TRUNK FLEXION

KEY METRICS	REP 1	REP 2	REP 3	REP 4	REP 5
Knee-Ankle Separation Ratio	1.0	1.1	1.0	1.2	1.1
Lateral Trunk Flexion	1.0° Right ▼	0.7° Left ▼	1.6° Left ▼	0.6° Right ▼	0.6° Right ▼
Knee Flexion	L 77.9° R 81.1°	L 76.6° R 78.3°	L 72.3° R 73.4°	L 86.8° R 87.7°	L 86.3° R 87.8°
Hip Flexion	L 77.3° R 80.0°	L 79.6° R 80.5°	L 75.7° R 75.7°	L 84.6° R 85.0°	L 84.0° R 84.8°
Trunk Flexion	25.9° Anterior	28.6° Anterior	28.6° Anterior	25.3° Anterior	25.2° Anterior

PRACTITIONER COMMENTS
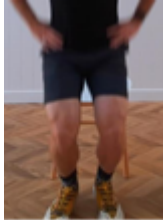
HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Drop Jump
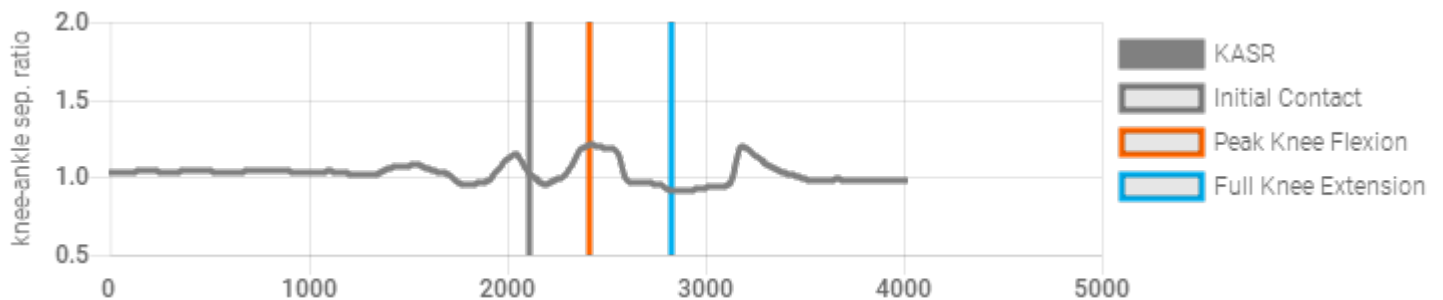**Lower Body Dynamic Assessment**

Drop Jump is used to assess coordination, balance, joint stability and power, requiring the patient to drop from a box or platform and transition from landing into an explosive jump .

Height   unspecified

RESULTS

PHASE	Initial Contact	Peak Knee Flexion
SNAPSHOTS		

Result		
Knee-Ankle Separation Ratio	1.0	1.2
Hip Flexion (Left)	25.5°	58.3°
Hip Flexion (Right)	23.1°	63.0°
Knee Flexion (Left)	12.3°	79.1°
Knee Flexion (Right)	14.2°	81.9°

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM

Overhead Squat
Lower Body Dynamic Assessment

Overhead squat is a dynamic movement assessment providing insight into an individual's balance, stability, flexibility, and strength.

RESULTS

SNAPSHOTS			
START	REP 1: PEAK KNEE FLEXION	REP 2: PEAK KNEE FLEXION	REP 3: PEAK KNEE FLEXION

KEY RESULTS	REP 1	REP 2	REP 3
Peak Knee Flexion (Left)	127.7°	129.3°	130.4°
Peak Knee Flexion (Right)	125.6°	131.2°	130.8°
Trunk Flexion at Peak Knee Flexion	24.6° Anterior	24.1° Anterior	21.6° Anterior
Trunk lateral flexion at Peak Knee Flexion	1.9° Right ▼	0.8° Left ▼	1.2° Right ▼

PRACTITIONER COMMENTS

HUMANTRAK
MOVEMENT ANALYSIS SYSTEM