


# Lower-body running analysis

Sports 3DMA OT Version 2020.6 -BETA- | Powered by STT SYSTEMS

FULL NAME <b>CON, VICON</b>		STUDY PERFORMED BY: 
ANALYSIS PROTOCOL <b>Lower-body running analysis</b>	REPORT DATE <b>3/6/2021</b>	

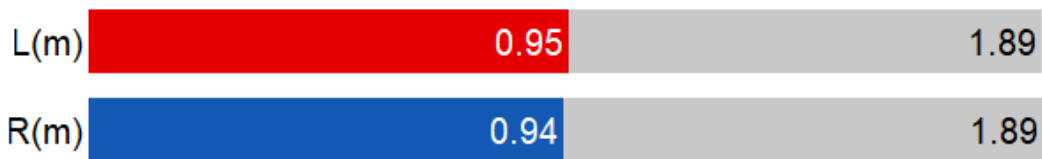
## 3D Motion Capture: Technical details

RECORDING DATE 2020-10-01	DATA SAMPLING RATE 100 Hz (frames/sec.)	RECORDING TIME 28.96 sec.	AVG RUNNING SPEED 8.00 km/h
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### 1. OVERVIEW - STRIDE ANALYSIS



#### STEP LENGTH OVER STRIDE LENGTH:



#### CONTACT TIME



#### CONTACT TIMES OVER STRIDE TIMES (sec):



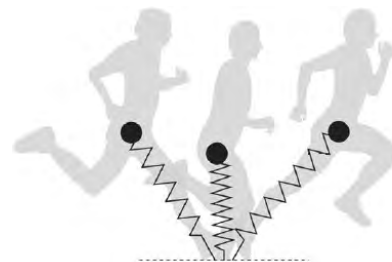
#### FLIGHT TIME



#### FLIGHT TIMES OVER STRIDE TIMES (sec):



#### LEG STIFFNESS



# Lower-body running analysis

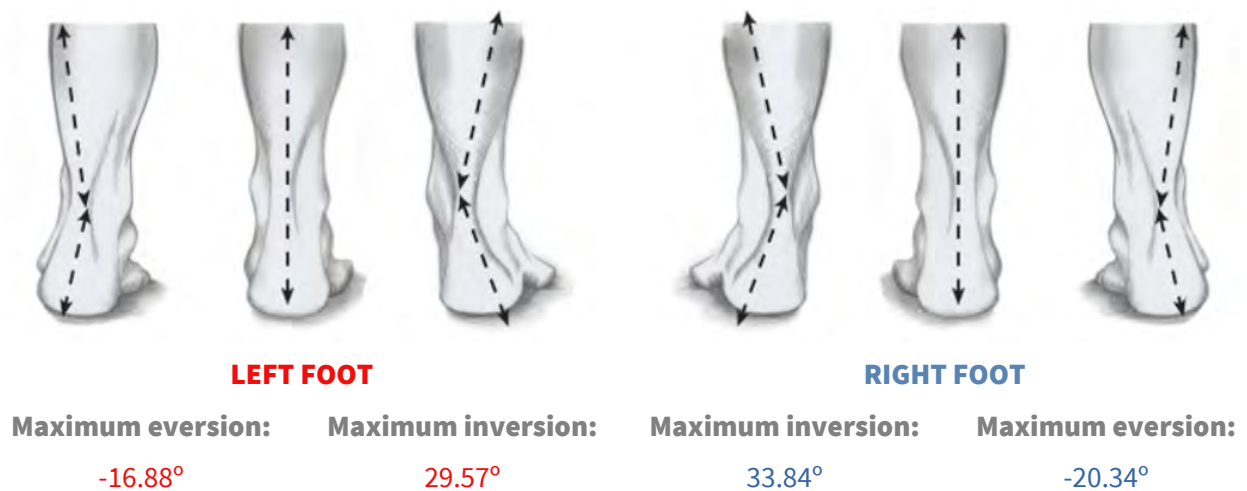
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## 2. FOOT ANALYSIS

### FOOT ANGLE AT STRIKE:



### FOOT INVERSION/EVERSION DURING THE RUNNING CYCLE:



### MAXIMUM FOOT INVERSION ANGLE AT INITIAL FOOT STRIKE (°)



### MAXIMUM FOOT INVERSION VELOCITY (°/seg)



# Lower-body running analysis

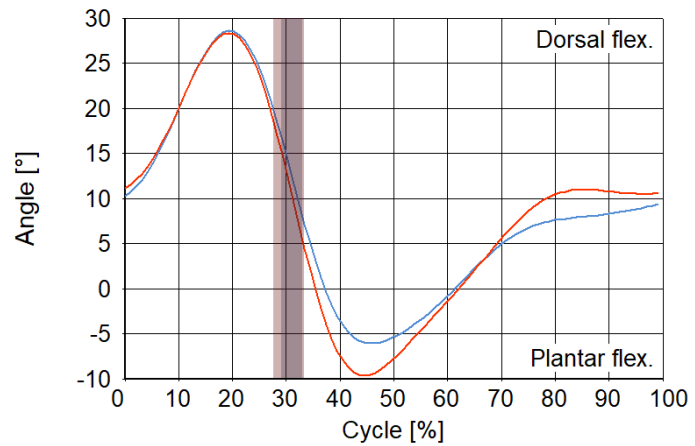
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## 3. ANKLE ANALYSIS



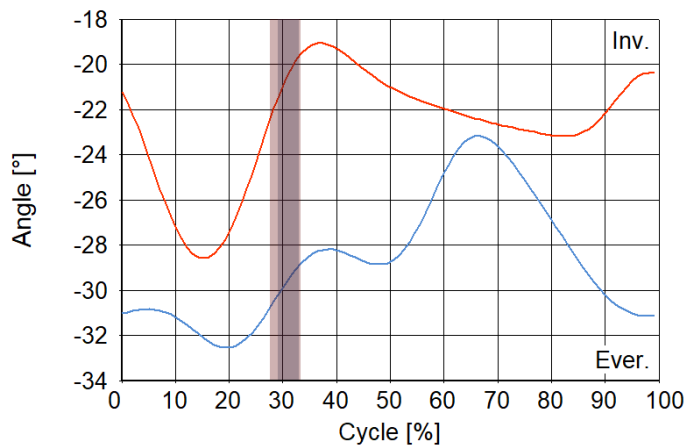
### DORSAL/ PLANTAR FLEXION

	Min	Max	Range
<b>LEFT</b>	-15.25 °	29.98 °	45.23 °
<b>RIGHT</b>	-9.27 °	30.23 °	39.49 °



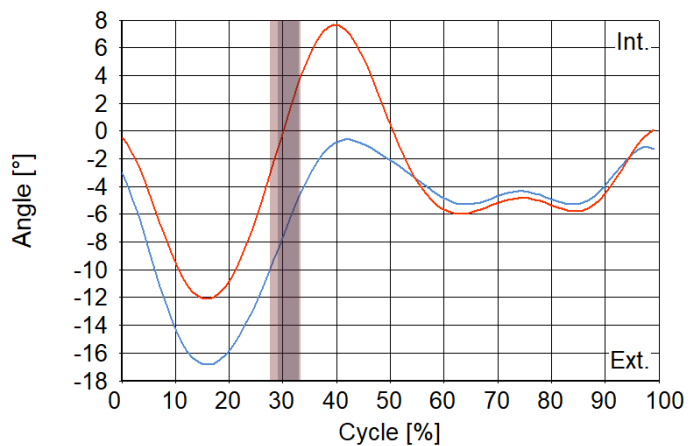
### ABDUCTION/ ADDUCTION

	Min	Max	Range
<b>LEFT</b>	-29.58 °	-16.88 °	12.69 °
<b>RIGHT</b>	-33.85 °	-20.34 °	13.51 °



### INTERNAL/ EXTERNAL ROTATION

	Min	Max	Range
<b>LEFT</b>	-14.30 °	12.65 °	26.94 °
<b>RIGHT</b>	-18.96 °	2.54 °	21.49 °



# Lower-body running analysis

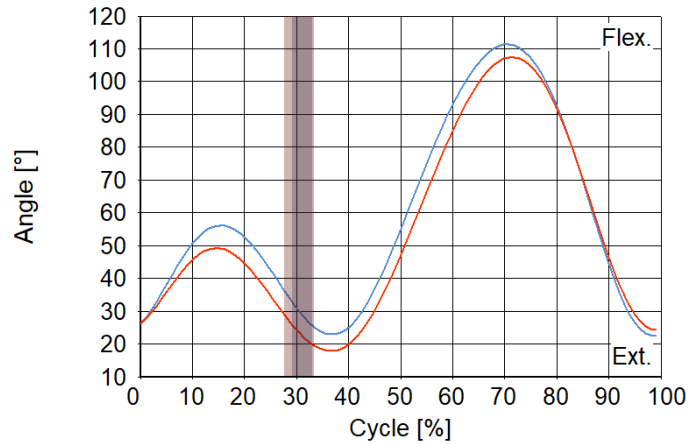
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## 4. KNEE ANALYSIS



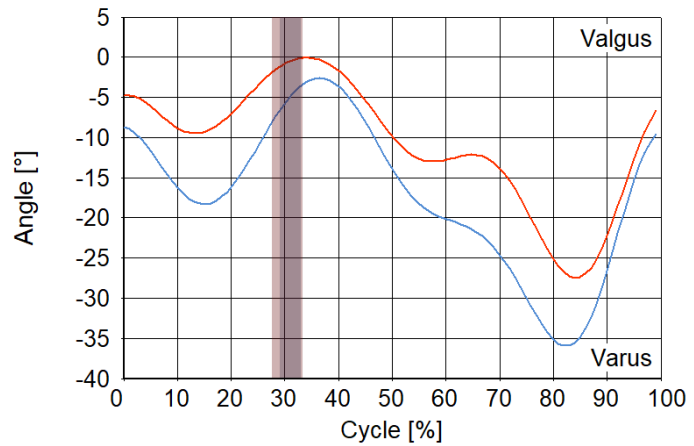
### FLEXION/ EXTENSION

	Min	Max	Range
<b>LEFT</b>	10.32 °	111.37 °	101.05 °
<b>RIGHT</b>	18.47 °	117.41 °	98.93 °



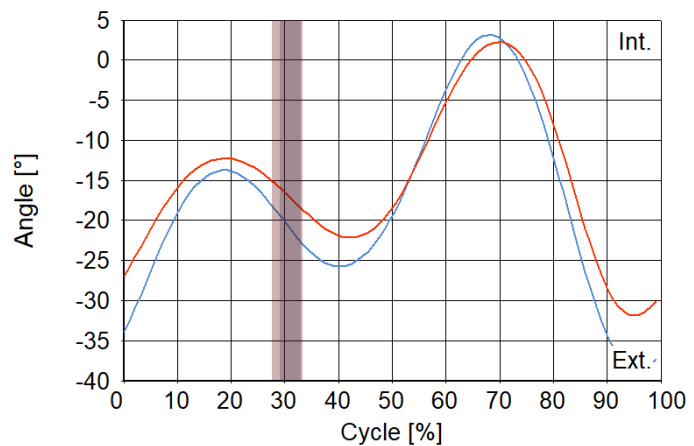
### VARUS / VALGUS

	Min	Max	Range
<b>LEFT</b>	-29.92 °	1.06 °	30.97 °
<b>RIGHT</b>	-38.40 °	-1.25 °	37.15 °



### INTERNAL/ EXTERNAL ROTATION

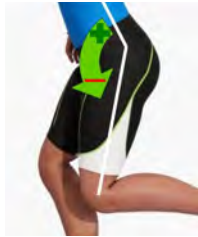
	Min	Max	Range
<b>LEFT</b>	-34.66 °	3.89 °	38.54 °
<b>RIGHT</b>	-39.78 °	6.84 °	46.60 °



# Lower-body running analysis

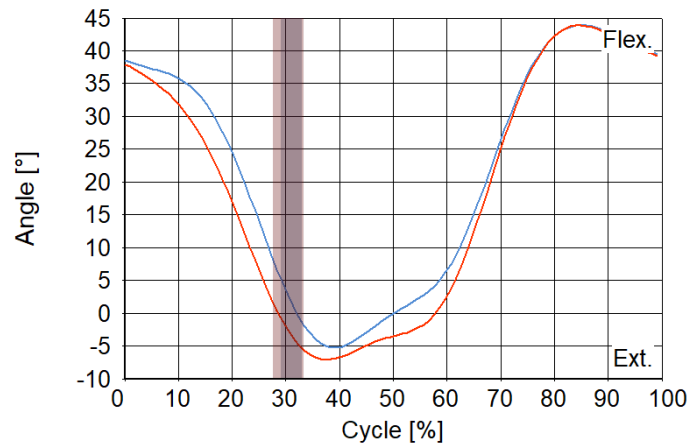
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## 5. HIP ANALYSIS



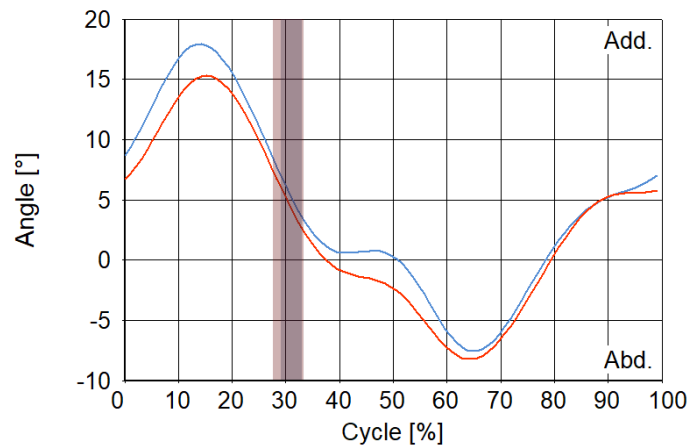
### FLEXION/ EXTENSION

	Min	Max	Range
<b>LEFT</b>	-9.40 °	47.17 °	56.57 °
<b>RIGHT</b>	-7.67 °	46.83 °	54.49 °



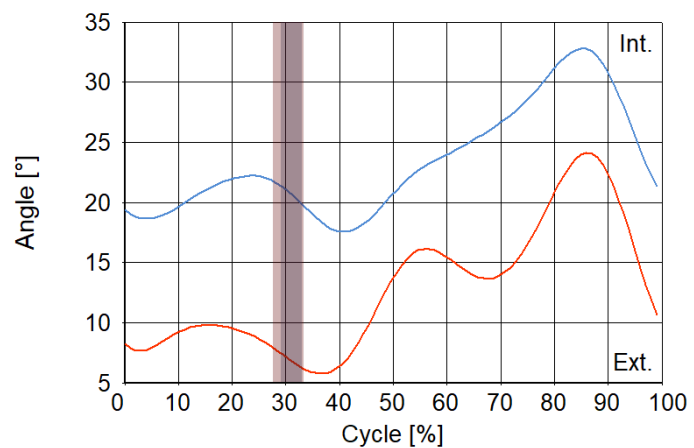
### ABDUCTION/ ADDUCTION

	Min	Max	Range
<b>LEFT</b>	-10.78 °	17.44 °	28.21 °
<b>RIGHT</b>	-9.97 °	21.51 °	31.46 °



### INTERNAL/ EXTERNAL ROTATION

	Min	Max	Range
<b>LEFT</b>	3.32 °	25.97 °	22.64 °
<b>RIGHT</b>	16.54 °	34.22 °	17.69 °

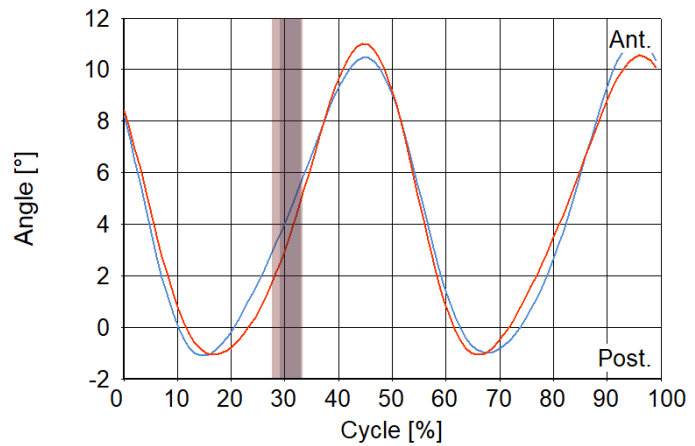


## 6. PELVIC ANALYSIS



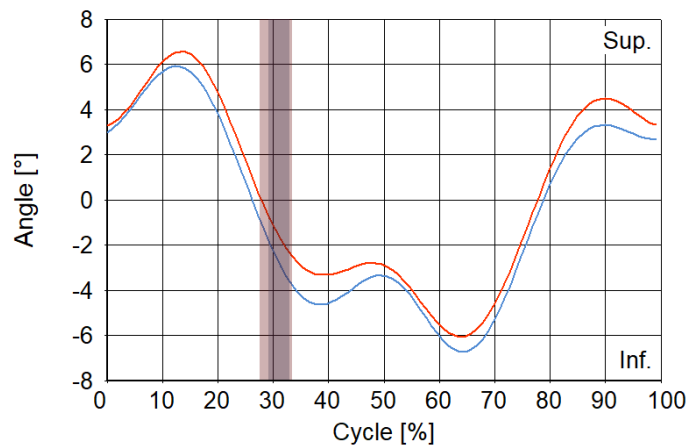
### TILT

	Min	Max	Range
<b>LEFT</b>	-2.81 °	13.60 °	16.41 °
<b>RIGHT</b>	-2.81 °	13.60 °	16.41 °



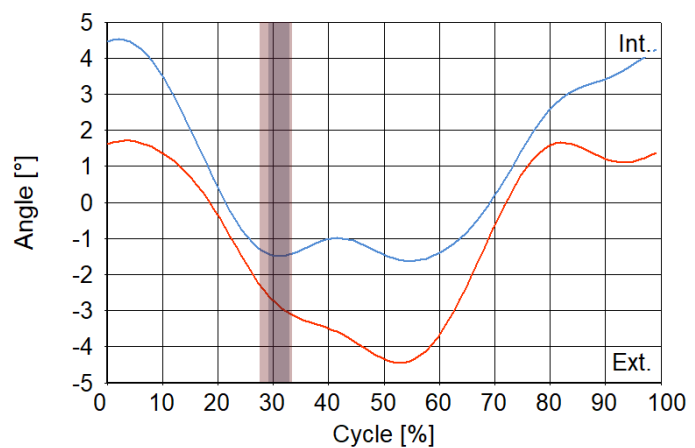
### OBLIQUITY

	Min	Max	Range
<b>LEFT</b>	-7.65 °	8.05 °	15.69 °
<b>RIGHT</b>	-8.06 °	7.15 °	15.21 °



### ROTATION

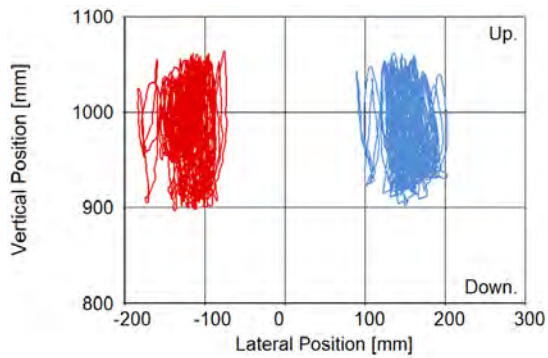
	Min	Max	Range
<b>LEFT</b>	-7.10 °	4.19 °	11.29 °
<b>RIGHT</b>	-7.49 °	4.19 °	11.68 °



# Lower-body running analysis

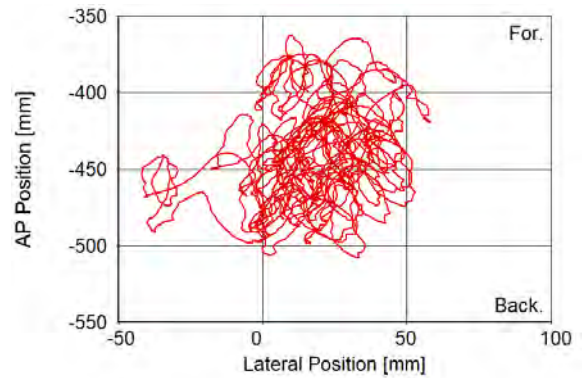
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## ROM SYMMETRY IN PELVIC OBLIQUITY



Left ASIS track    Right ASIS track

## PELVIC TRACK (TOP VIEW)



## VERTICAL RATIO

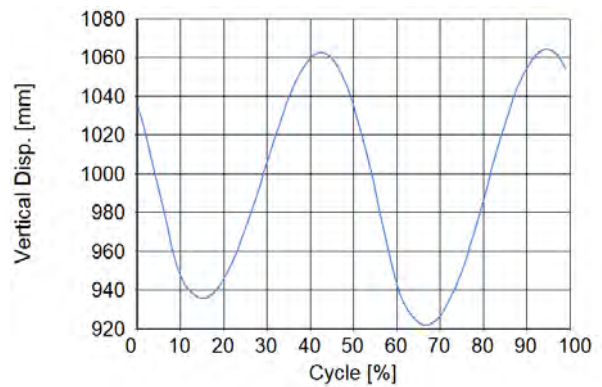
$$VR \% = (\text{Vertical Displacement} / \text{Stride Length}) * 100$$



**8.80 %**



## VERTICAL PELVIC DISPLACEMENT



**Min:**

914.95 mm

**Max:**

1077.19 mm

**Range:**

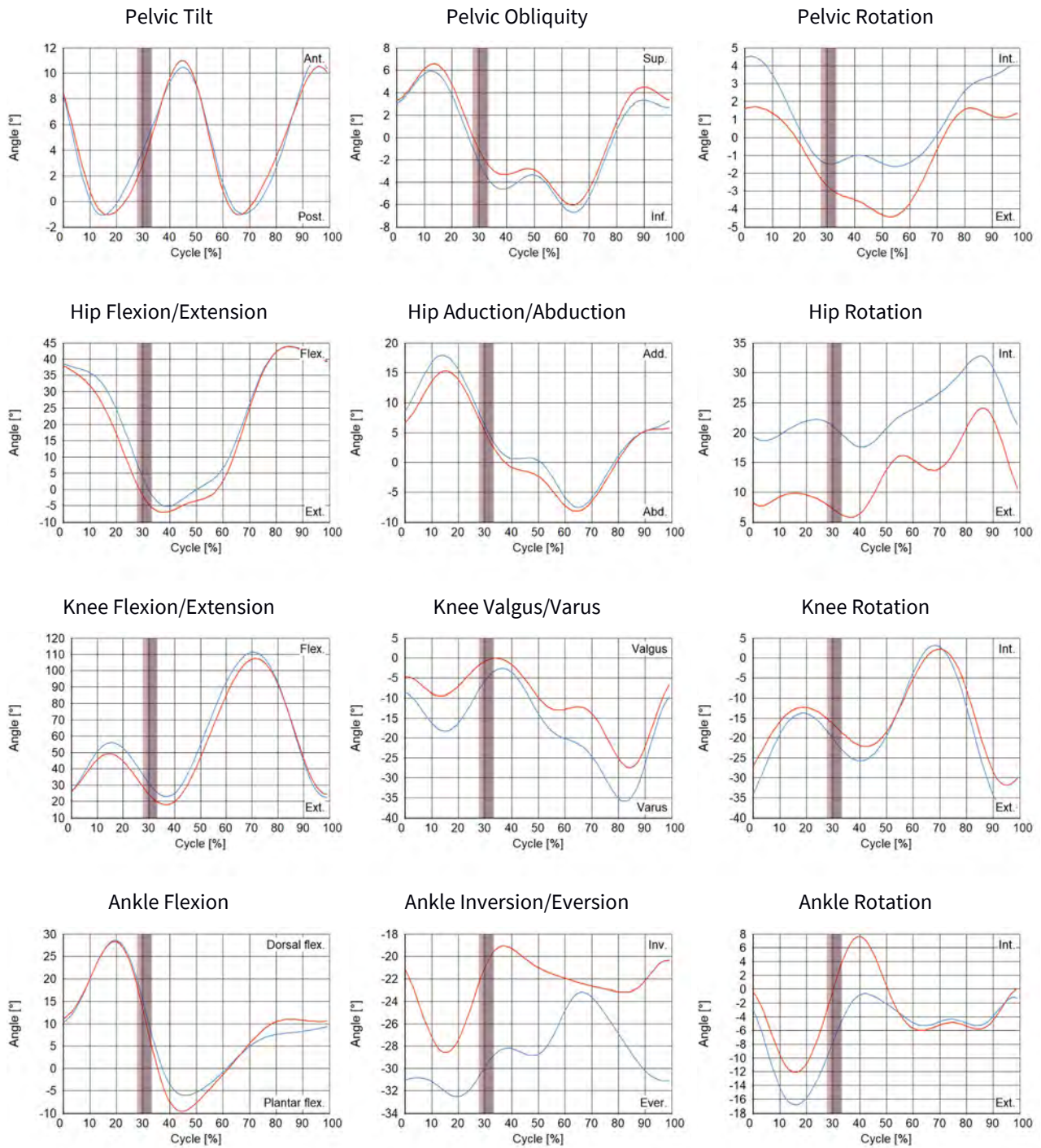
162.22 mm



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## 7. SUMMARY





## **8. CONCLUSIONS**

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## **9. RECOMMENDATIONS**

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