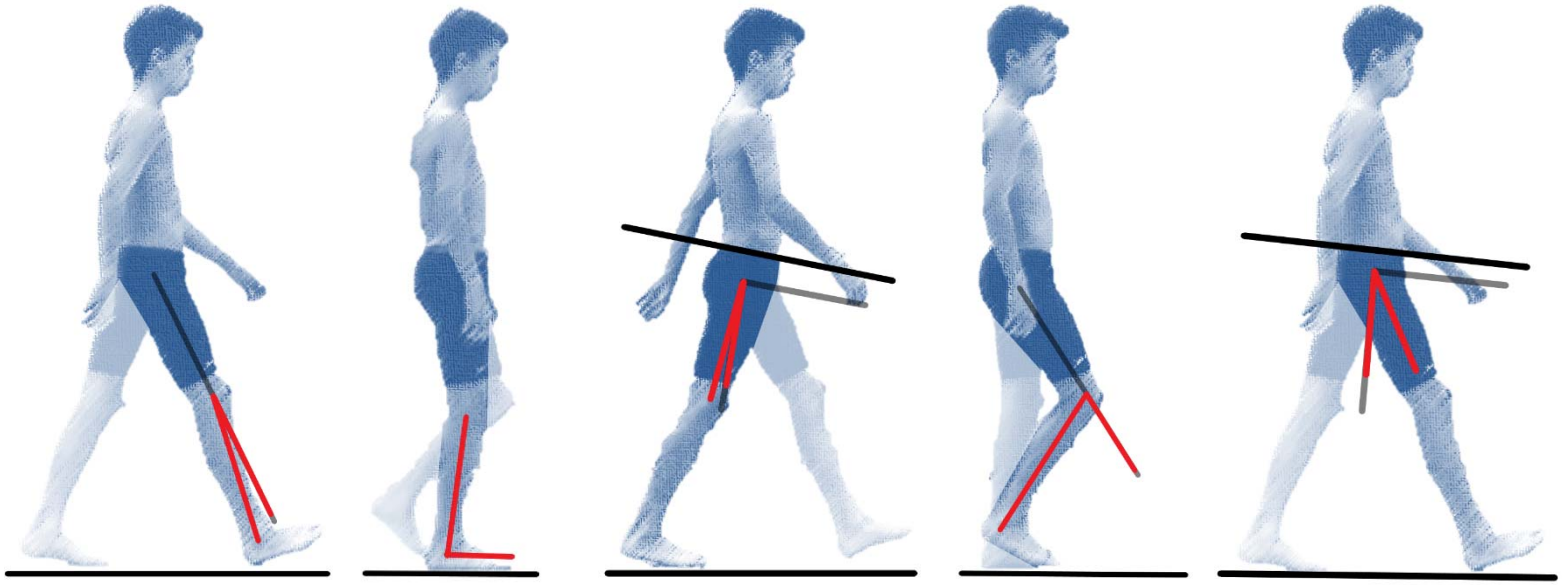
*m*OGA

mobile app enhanced **O**bservational **G**ait **A**nalysis

www.gaitanalysis.org



*m*OGA

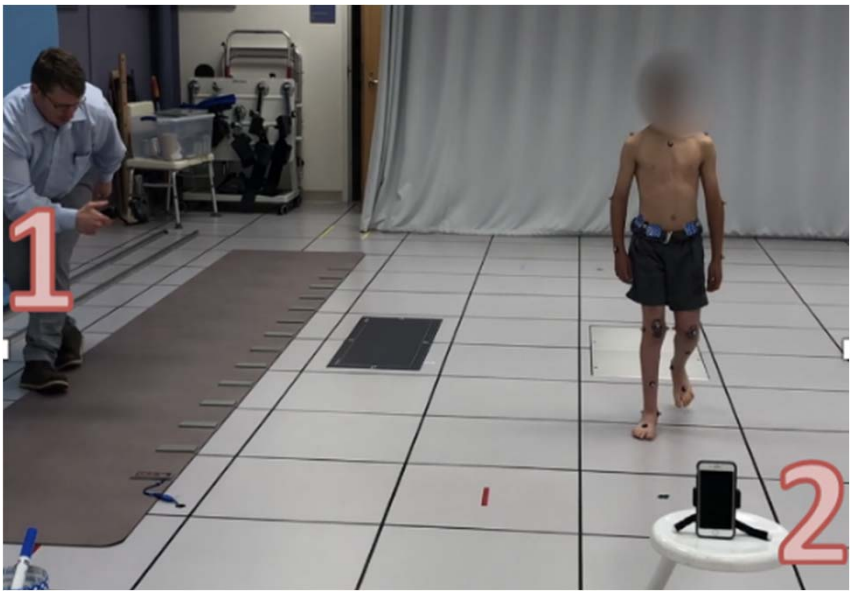
*m*obile app enhanced Observational Gait Analysis

Introduction

In settings where a three dimensional gait analysis is not feasible, observational gait analysis can provide important information about gait pathology. Among the validated scoring systems to organize the observations of gait, the Edinburgh Visual Gait Score (EVGS) is the most comprehensive and has the most favorable psychometrics. Improvements in mobile videography have created opportunities to obtain high-quality slow-motion video in a clinic setting. These videos can provide excellent documentation of gait pathology in the sagittal, coronal, and vertical planes. Free and low-cost video analysis software is now available on all mobile device platforms, allowing for slow-motion video analysis of gait with increased accuracy. By utilizing the appropriate technology with a validated scoring system, gait analysis outside the walls of a gait lab is possible. Though limitations of the mobile enhanced observational gait analysis technique (mOGA) require further study, the technique can facilitate improved documentation of gait pathology and improved communication between providers.

High Quality Video Acquisition

To obtain high quality slow motion video, we recommend the use of a two camera mobile device setup as seen below.



This two-camera setup allows for acquisition of simultaneous sagittal and coronal video. For sagittal video acquisition, utilization of a image stabilization gimbal can improve video quality. The subject should fill up at least 2/3 of the field of view of the screen. Centering the image on the subject's knees will give the proper perspective.

We recommend utilizing the slow-motion video at 60 frames per second or higher, to prevent blur of the limb in swing phase. Natural, incandescent tungsten, or halogen lighting will prevent video flicker at slow motion speeds. The space should allow for at least a 10 foot distance from the subject in the sagittal plane and a 30 foot walkway in the coronal plane.

Once the video has been acquired, it can be transferred to a low-cost commercially available sports performance mobile application. These applications allow for frame-by-frame analysis and on-screen angle measurements, which increase the accuracy of the analysis. Applications that could be used on an Apple iOS or Android device include Hudl Technique (free), Slomo (free), Coach's Eye (US$4.99) or Dartfish Express (US$6.99).

Subject Attire

To properly visualize the landmarks for analysis, the subject should be dressed in fitting shorts with additional tight sleeveless top for girls. Ideally, the child's upper thoracic spine, anterior and posterior superior iliac spines, femoral condyles, and medial and lateral malleoli should be visible and marked with high contrast 3D markers. The patellae, tibial tubercle, and Achilles tendon should be also be marked with a high-contrast skin marker. The subject below demonstrates the ideal markings and attire.

Video Analysis

The video required for proper analysis using the Edinburgh Visual Gait Score (EVGS) requires four views:

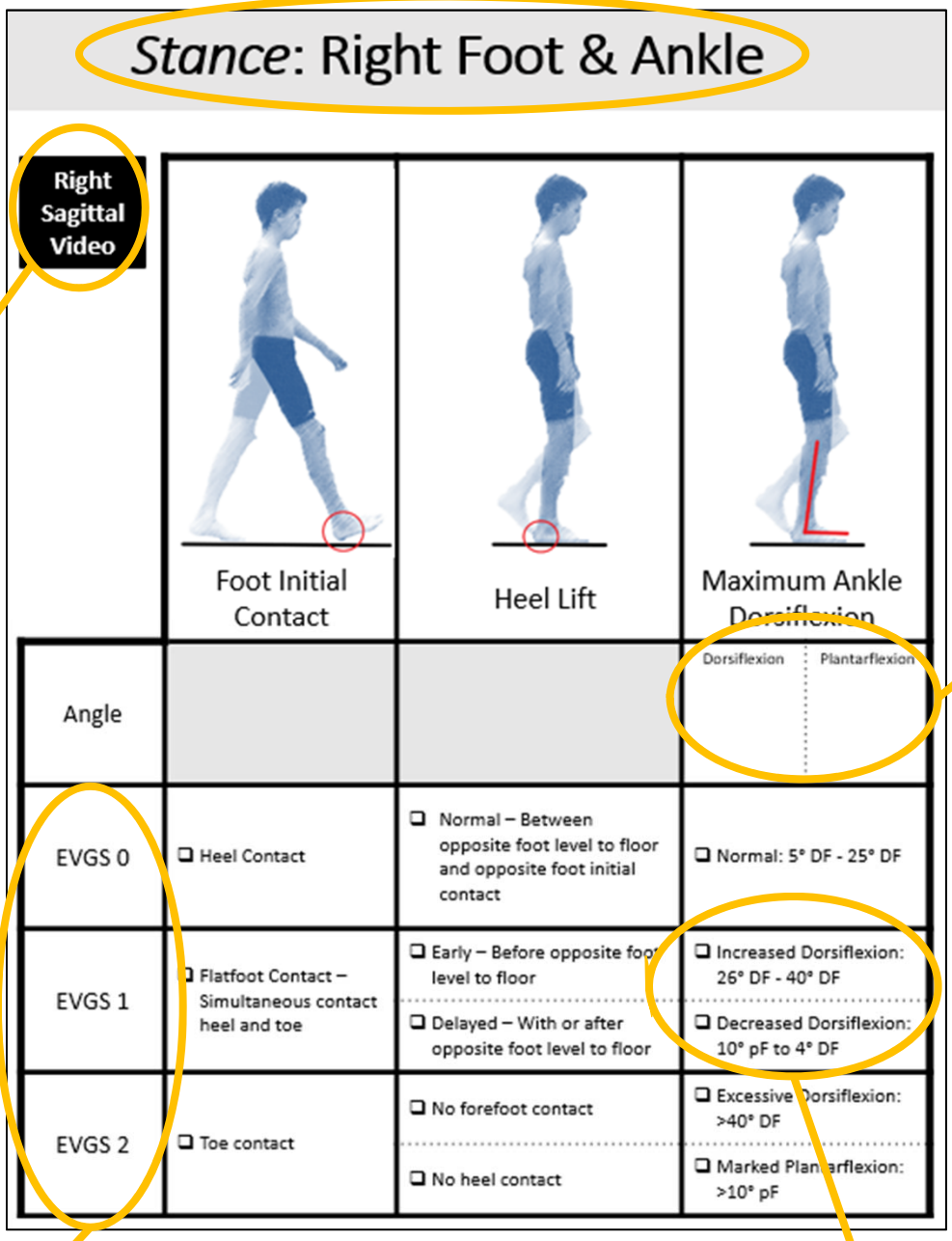
1. Right Sagittal Video – The subject's right limb is closer to the camera.
2. Left Sagittal Video – The subject's left limb is closer to the camera.
3. Coronal Front Video – The subject is walking towards the camera.
4. Coronal Rear Video – The subject is walking away from the video.

Once the four views have been obtained, each gait cycle can be analyzed systematically using the worksheet on the following pages. The components of the EVGS have been divided into a logical sequence to facilitate ease of scoring. Each page lists the video view to be analyzed and leads the reviewer through the components of scoring. Many of the EVGS observations assign scores based on severity of deviation within an angle range, but to allow for an increased level of precision, the worksheet has a space for writing the actual angle measurement. Joint segment scores can be totaled at the bottom of the worksheet. The mOGA Summary Page, the final two pages of the worksheet, can be used to summarize the EVGS observations.

Using the mOGA Worksheet

Each page of the worksheet gives details to efficiently obtain and document the components of the EVGS for each limb. The illustration below shows the features of each page of the worksheet.

Phase of gait cycle and body segments to be measured



Stance: Right Foot & Ankle

Right Sagittal Video

	Foot Initial Contact	Heel Lift	Maximum Ankle Dorsiflexion
Angle			Dorsiflexion | Plantarflexion
EVGS 0	❑ Heel Contact	❑ Normal – Between opposite foot level to floor and opposite foot initial contact	❑ Normal: 5° DF - 25° DF
EVGS 1	❑ Flatfoot Contact – Simultaneous contact heel and toe	❑ Early – Before opposite foot level to floor ❑ Delayed – With or after opposite foot level to floor	❑ Increased Dorsiflexion: 26° DF - 40° DF ❑ Decreased Dorsiflexion: 10° pF to 4° DF
EVGS 2	❑ Toe contact	❑ No forefoot contact ❑ No heel contact	❑ Excessive Dorsiflexion: >40° DF ❑ Marked Plantarflexion: >10° pF

Video view to make observations

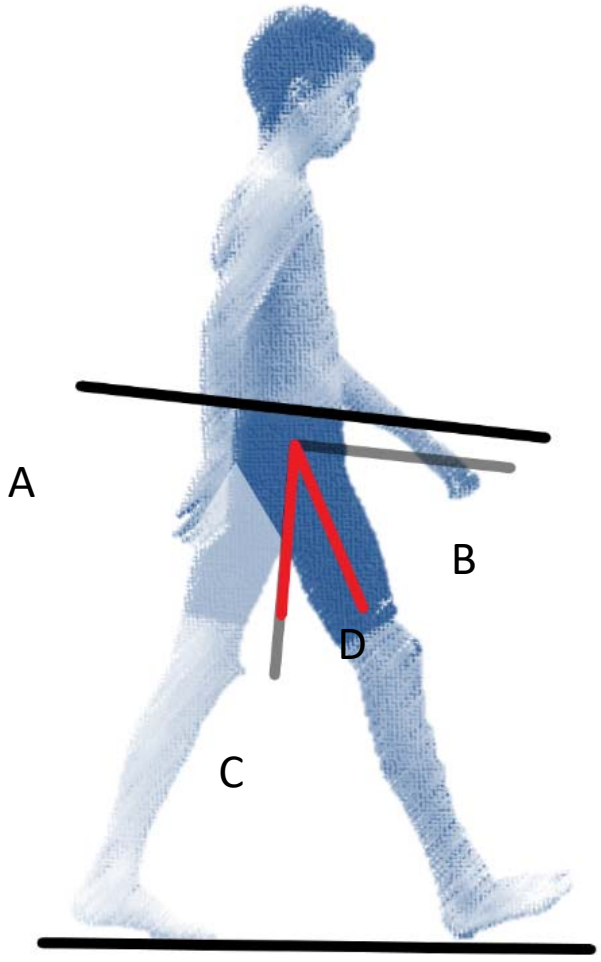
For increased precision, the angle measurement can be documented for the EVGS observations that allow for angle annotation

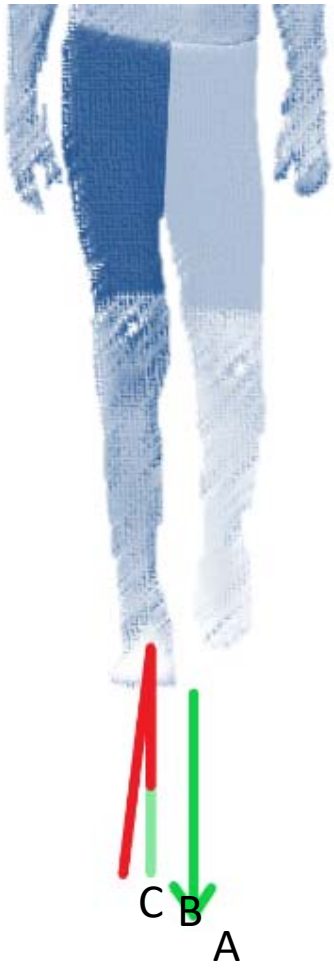
Each row contains the criteria for the corresponding EVGS scores

EVGS assigns a value to deviations in either direction. In this example, an EVGS score of 1 can be given for either increased OR decreased dorsiflexion. Choose just one of the boxes for each observation.

Measuring Angles

The illustration in each column demonstrates how to measure the corresponding angle. The two examples below illustrate the common conventions used in the illustrations.





<u>Maximum Hip Flexion in Swing</u>

A – Pelvis Line. This line may not be parallel to the floor.
B – Parallel to line A, centered on hip joint. Transparent lines indicate intermediate steps needed to draw the final angle.
C – Perpendicular to line B, centered on hip joint. Red lines represent lines used to calculate the final angle.
D – Line of thigh.

Final angle measurement is the angle between lines C and D.

<u>Foot Progression Angle</u>

A – Line of Gait Progression.
B – Parallel to line A, centered on foot.
C – Line parallel to foot.

Final angle measurement is the angle between lines B and C.

Details of Each Measurement

In the table below you will find some detailed suggestions on how to most accurately obtain the EVGS score.

	EVGS Observation	Comments
Stance Sagittal Video	**Foot Initial Contact**	Qualitative measurement.
	Heel Lift	Qualitative measurement.
	Maximum Ankle Dorsiflexion	**Quantitative measurement.** Scan entire stance phase to find the maximum dorsiflexion. Be sure to measure the ankle dorsiflexion even if a flat foot is present. The angle for assigning EVGS is the red angle in the illustration subtracted from 90° (i.e., 0° degrees of dorsiflexion is a 90° degree tibia-foot angle).
	Knee Position at Initial Contact	**Quantitative measurement.** The angle for assigning EVGS is the red angle in the illustration.
	Peak Knee Extension in Stance	**Quantitative measurement.** Scan entire stance phase to find the peak knee extension, or smallest red angle in the illustration. The angle for assigning EVGS is the red angle in the illustration.
	Peak Hip Extension	**Quantitative measurement.** Scan entire stance phase to find the peak hip extension, or smallest red angle in the illustration. The angle for assigning EVGS is the red angle in the illustration.
	Pelvic Rotation in Mid-Stance	Qualitative measurement**.** As this is a transverse plane measurement obtained from sagittal video, it is impossible to annotate an angle on the screen. Estimate the pelvic rotation visually. If the sacral marker and tape can be visualized symmetrically on both the right sagittal and left sagittal video, significant pelvic rotation is unlikely.
	Peak Trunk Position	**Quantitative measurement.** Scan entire stance phase to find the peak trunk position, or largest deviation of the red angle from 90 degrees. The angle for assigning EVGS is the red angle in the illustration subtracted from 90°.

Details of Each Measurement (Continued)

	EVGS Observation	Comments
Swing Sagittal Video	**Foot Clearance**	Qualitative measurement. An EVGS 2 score can be assigned to both no foot clearance ("none") and reduced clearance where a high step compensation is present ("Reduced Clearance and High Steps Present").
	Maximum Ankle Dorsiflexion	**Quantitative measurement.** Scan entire swing phase to find the maximum dorsiflexion. The angle for assigning EVGS is the red angle in the illustration subtracted from 90° (i.e., 0° degrees of dorsiflexion is a 90° degree tibia-foot angle).
	Peak Knee Flexion	**Quantitative measurement.** Scan entire swing phase to find the maximum knee flexion angle. The angle for assigning EVGS is the red angle in the illustration.
	Peak Hip Flexion	**Quantitative measurement.** Scan entire swing phase to find the maximum hip flexion angle. The angle for assigning EVGS is the red angle in the illustration.
Stance Coronal Front Video	**Maximum Trunk Lateral Shift**	**Quantitative measurement.** Scan the entire stance phase to find the maximum lateral trunk shift. Though the EVGS score is a qualitative assessment, the displacement can be quantified as the distance between the vertical red (half way between shoulders) and vertical black lines (mid-pelvis).
	Pelvic Obliquity in Mid-Stance	**Quantitative measurement.** The angle for assigning EVGS is the red angle in the illustration.
	Knee Progression Angle	**Quantitative measurement.** The angle for assigning EVGS is the red angle in the illustration.
	Foot Progression Angle	**Quantitative measurement.** The angle for assigning EVGS is the red angle in the illustration subtracted from the knee progression angle.
Stance Coronal Back Video	**Hindfoot Position**	**Quantitative measurement.** Though the EVGS score is a qualitative assessment, the hindfoot position can be quantified by the red angle in the illustration.

References:

1. Read HS, Hazlewood ME, Hillman SJ, Prescott RJ, Robb JE. Edinburgh visual gait score for use in cerebral palsy. *J Pediatr Orthop*. 2003;23(3):296-301

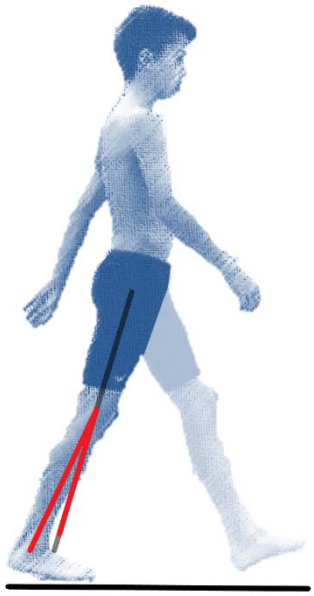
2. Rathinam C, Bateman A, Peirson J, Skinner J. Observational gait assessment tools in paediatrics--a systematic review. *Gait Posture*. 2014;40(2):279-285.

Stance: Right Foot & Ankle

Right Sagittal Video	 Foot Initial Contact	 Heel Lift	 Maximum Ankle Dorsiflexion
Angle			Dorsiflexion | Plantarflexion
EVGS 0	❑ Heel Contact	❑ Normal – Between opposite foot level to floor and opposite foot initial contact	❑ Normal: 5° DF - 25° DF
EVGS 1	❑ Flatfoot Contact – Simultaneous contact heel and toe	❑ Early – Before opposite foot level to floor ❑ Delayed – With or after opposite foot level to floor	❑ Increased Dorsiflexion: 26° DF - 40° DF ❑ Decreased Dorsiflexion: 10° pF to 4° DF
EVGS 2	❑ Toe contact	❑ No forefoot contact ❑ No heel contact	❑ Excessive Dorsiflexion: >40° DF ❑ Marked Plantarflexion: >10° pF

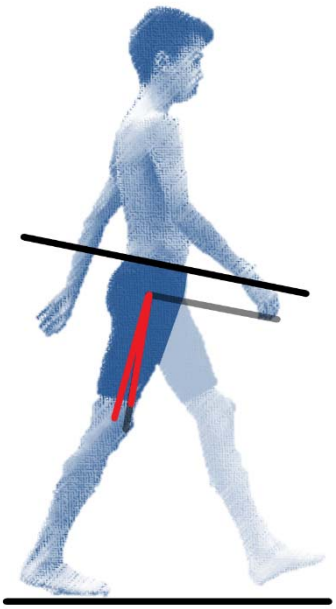
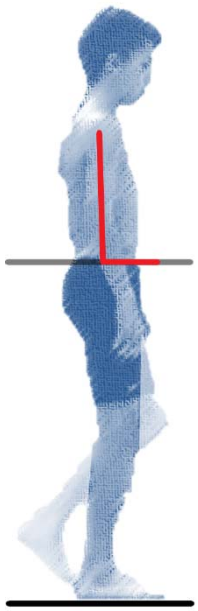
 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Right Knee

Right Sagittal Video	 Knee Position at Initial Contact	 Peak Knee Extension in Stance
Angle	Flexion | Extension	Flexion | Extension
EVGS 0	❑ Normal: 5° - 15° Flex	❑ Normal: 0° - 15° Flex
EVGS 1	❑ Moderate Flexion: 16° - 30° Flex ❑ Moderate Extension: 4° Flex - 10° Ext	❑ Moderate Flexion: 16° - 25° Flex ❑ Moderate Hyper-Extension: 1° - 10° Ext
EVGS 2	❑ Severe Flexion: > 30° Flex ❑ Severe Hyper-Extension: >10° Ext	❑ Severe Flexion: > 25° Flex ❑ Severe Hyper-Extension: >10° Ext

 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Right Hip, Pelvis, & Trunk

Right Sagittal Video	 Peak Hip Extension	 Pelvic Rotation at Mid-Stance	 Peak Trunk Position
Angle	Flexion : Extension	Protraction : Retraction	Forward : Backward
EVGS 0	❑ Normal: 0° - 20° Ext	❑ Normal: 5° retraction - 10° protraction	❑ Normal Upright: 5° forward - 5° backward
EVGS 1	❑ Moderate Flexion: 1° - 15° Flex ❑ Moderate Hyper-Extension: 21° - 35° Ext	❑ Moderate Retraction: 6° - 15° retraction ❑ Moderate Protraction: 11° - 20° protraction	❑ Moderate Forward Lean: 6° - 15° forward ❑ Moderate Backward Lean: >5° backwards
EVGS 2	❑ Severe Flexion:> 15° Flex ❑ Severe Hyper-Extension: >35° Ext	❑ Marked Retraction: > 15° retraction ❑ Marked Protraction: >20° protraction	❑ Marked Forward Lean: >15° forward

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Swing: Right Foot & Ankle

Right Sagittal Video	 Foot Clearance	 Maximum Ankle Dorsiflexion
Angle		Dorsiflexion / Plantarflexion
EVGS 0	❑ Full Clearance – No contact of foot with floor	❑ Normal: 15° DF - 5° pF
EVGS 1	❑ Reduced Clearance and No High Steps – Shortened but present period of foot clearance. No excessive hip and knee flexion to clear foot.	❑ Increased Dorsiflexion: 16° - 30° DF ❑ Moderate Plantarflexion: 6° - 20° DF
EVGS 2	❑ Reduced Clearance and High Steps Present – Shortened but present period of foot clearance. Excessive hip and knee flexion to clear foot present. ❑ None – Continuous contact between foot and floor	❑ Excessive Dorsiflexion: >30° DF ❑ Marked Plantarflexion: >20° pF

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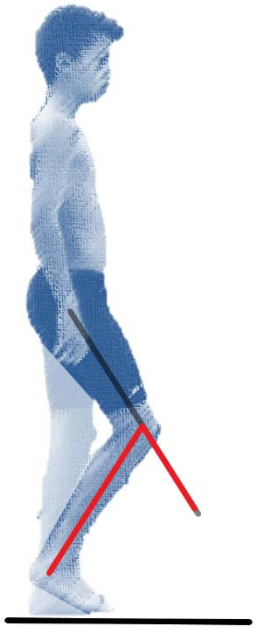
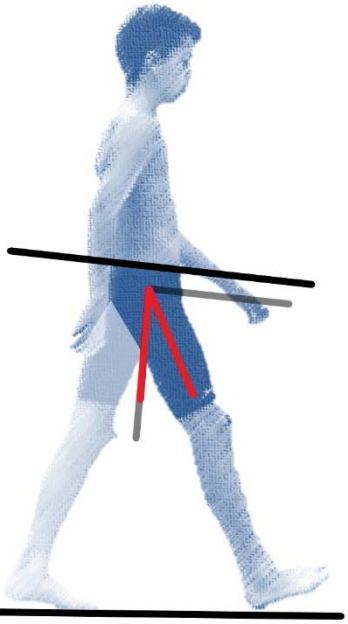
Swing: Right Knee & Hip

Right Sagittal Video	 Peak Knee Flexion	 Peak Hip Flexion
Angle	Flexion / Extension	Flexion / Extension
EVGS 0	❑ Normal: 50° - 70° Flex	❑ Normal: 25° - 45° Flex
EVGS 1	❑ Moderately Increased: 71° - 85° Flex ❑ Moderately Reduced: 35° - 49° Ext	❑ Increased: 46° - 60° Flex ❑ Reduced: 10° - 24° Ext
EVGS 2	❑ Severely Increased: > 85° Flex ❑ Severely Reduced: <35° Flex	❑ Marked Increase: > 60° Flex ❑ Severely Reduced: <10° Flex

 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Left Foot & Ankle

Left Sagittal Video	 Foot Initial Contact	 Heel Lift	 Maximum Ankle Dorsiflexion
Angle			Dorsiflexion | Plantarflexion
EVGS 0	❑ Heel Contact	❑ Normal – Between opposite foot level to floor and opposite foot initial contact	❑ Normal: 5° DF - 25° DF
EVGS 1	❑ Flatfoot Contact – Simultaneous contact heel and toe	❑ Early – Before opposite foot level to floor ❑ Delayed – With or after opposite foot level to floor	❑ Increased Dorsiflexion: 26° DF - 40° DF ❑ Decreased Dorsiflexion: 10° pF to 4° DF
EVGS 2	❑ Toe contact	❑ No forefoot contact ❑ No heel contact	❑ Excessive Dorsiflexion: >40° DF ❑ Marked Plantarflexion: >10° pF

 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Left Knee

Left Sagittal Video	 Knee Position at Initial Contact	 Peak Knee Extension in Stance
Angle	Flexion | Extension	Flexion | Extension
EVGS 0	❑ Normal: 5° - 15° Flex	❑ Normal: 0° - 15° Flex
EVGS 1	❑ Moderate Flexion: 16° - 30° Flex ❑ Moderate Extension: 4° Flex - 10° Ext	❑ Moderate Flexion: 16° Flex - 25° Flex ❑ Moderate Hyper-Extension: 1° Ext - 10° Ext
EVGS 2	❑ Severe Flexion: > 30° Flex ❑ Severe Hyper-Extension: >10° Ext	❑ Severe Flexion: > 25° Flex ❑ Severe Hyper-Extension: >10° Ext

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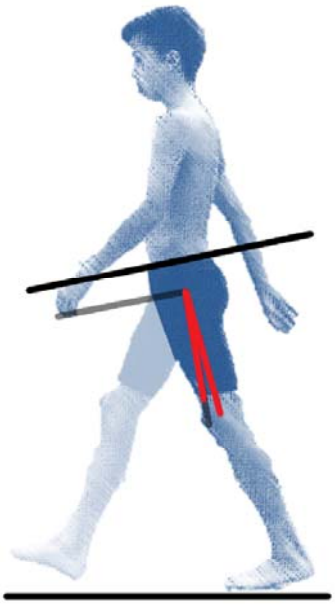
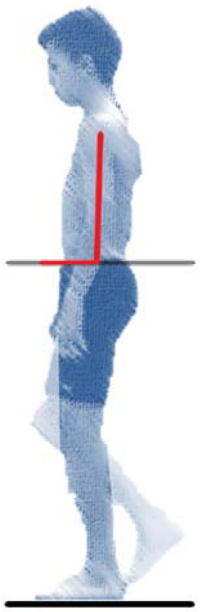
Stance: Left Hip, Pelvis, & Trunk

Left Sagittal Video	 Peak Hip Extension	 Pelvic Rotation at Mid-Stance	 Peak Trunk Position
Angle	Flexion : Extension	Protraction : Retraction	Forward : Backward
EVGS 0	❑ Normal: 0° - 20° Ext	❑ Normal: 5° retraction - 10° protraction	❑ Normal Upright: 5° forward - 5° backward
EVGS 1	❑ Moderate Flexion: 1° - 15° Flex ❑ Moderate Hyper-Extension: 21° - 35° Ext	❑ Moderate Retraction: 6° - 15° retraction ❑ Moderate Protraction: 11° - 20° protraction	❑ Moderate Forward Lean: 6° - 15° forward ❑ Moderate Backward Lean: >5° backwards
EVGS 2	❑ Severe Flexion:> 15° Flex ❑ Severe Hyper-Extension: >35° Ext	❑ Marked Retraction: > 15° retraction ❑ Marked Protraction: >20° protraction	❑ Marked Forward Lean: >15° forward

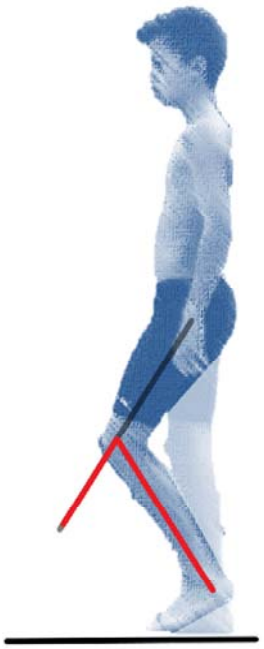
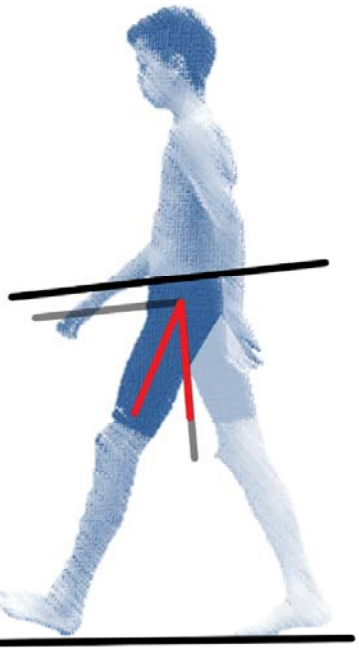
 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Swing: Left Foot & Ankle

Left Sagittal Video	 Foot Clearance	 Maximum Ankle Dorsiflexion
Angle		Dorsiflexion / Plantarflexion
EVGS 0	❑ Full Clearance – No contact of foot with floor	❑ Normal: 15° DF - 5° pF
EVGS 1	❑ Reduced Clearance and No High Steps – Shortened but present period of foot clearance. No excessive hip and knee flexion to clear foot.	❑ Increased Dorsiflexion: 16° - 30° DF ❑ Moderate Plantarflexion: 6° - 20° DF
EVGS 2	❑ Reduced Clearance and High Steps Present – Shortened but present period of foot clearance. Excessive hip and knee flexion to clear foot present. ❑ None – Continuous contact between foot and floor	❑ Excessive Dorsiflexion: >30° DF ❑ Marked Plantarflexion: >20° pF

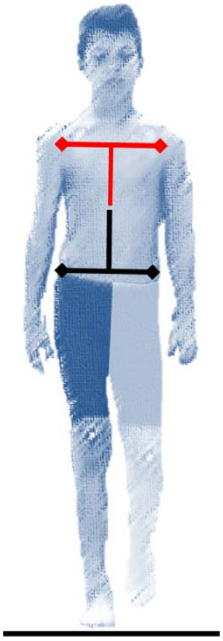
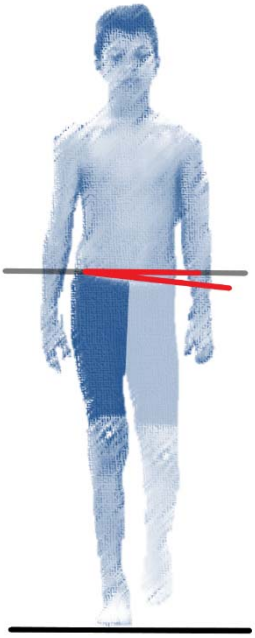
 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Swing: Left Knee & Hip

Left Sagittal Video	 Peak Knee Flexion	 Peak Hip Flexion
Angle	Flexion | Extension	Flexion | Extension
EVGS 0	❑ Normal: 50° - 70° Flex	❑ Normal: 25° - 45° Flex
EVGS 1	❑ Moderately Increased: 71° - 85° Flex ❑ Moderately Reduced: 35° - 49° Ext	❑ Increased: 46° - 60° Flex ❑ Reduced: 10° - 24° Ext
EVGS 2	❑ Severely Increased: > 85° Flex ❑ Severely Reduced: <35° Flex	❑ Marked Increase: > 60° Flex ❑ Severely Reduced: <10° Flex

 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Right Trunk & Pelvis

Coronal Front Video	 Maximum Trunk Lateral Shift	 Pelvic Obliquity at Mid-Stance
Angle		Stance Up / Stance Down
EVGS 0	❑ Normal: Less than 25mm lateral trunk displacement	❑ Normal: 0° - 5° Stance Side Up
EVGS 1	❑ Moderate lateral shift ❑ Reduced lateral shift	❑ Moderate Up: 6° - 15° Stance Side Up ❑ Moderate Down: 1° - 10° Stance Side Down
EVGS 2	❑ Marked lateral shift	❑ Marked Up: >15° Stance Side Up ❑ Marked Down: >10° Stance Side Down

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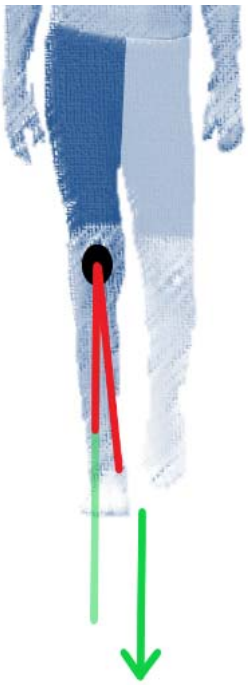
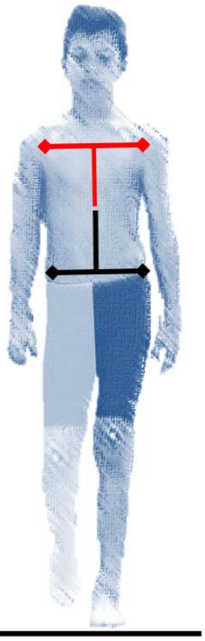
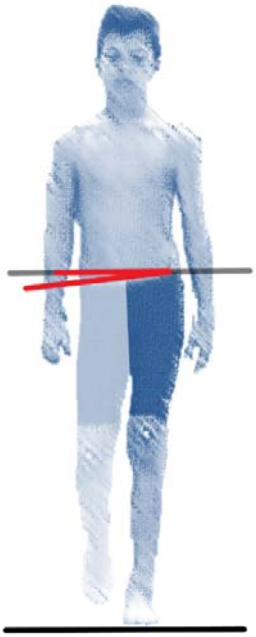
Stance: Right Knee and Foot

Coronal Front Video	 Knee Progression Angle	 Foot Progression Angle
Angle	External | Internal	External | Internal
EVGS 0	❑ Neutral – Patella midline	❑ Normal: 0° - 20° > than Knee Progression Angle (KPA)
EVGS 1	❑ External – Entire patella visible ❑ Internal – Entire patella visible	❑ Moderate Internal: Internal 1° - 25° > than KPA ❑ Moderate External: External 21° - 40° > than KPA
EVGS 2	❑ External – Part of patella not visible ❑ Internal – Part of patella not visible	❑ Marked Internal: Internal > 25° than KPA ❑ Moderate External: External > 40° than KPA

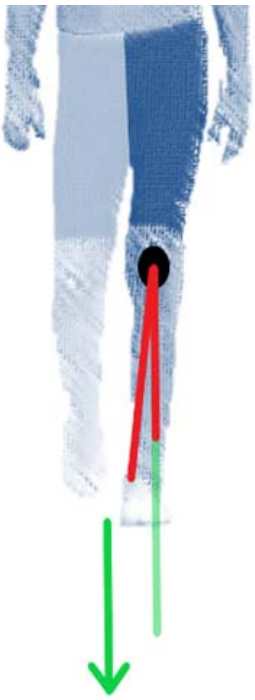
 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Left Trunk & Pelvis

Coronal Front Video	 Maximum Trunk Lateral Shift	 Pelvic Obliquity at Mid-Stance
Angle		Stance Up / Stance Down
EVGS 0	❑ Normal: Less than 25mm lateral trunk displacement	❑ Normal: 0° - 5° Stance Side Up
EVGS 1	❑ Moderate lateral shift ❑ Reduced lateral shift	❑ Moderate Up: 6° - 15° Stance Side Up ❑ Moderate Down: 1° - 10° Stance Side Down
EVGS 2	❑ Marked lateral shift	❑ Marked Up: >15° Stance Side Up ❑ Marked Down: >10° Stance Side Down
TOTAL		

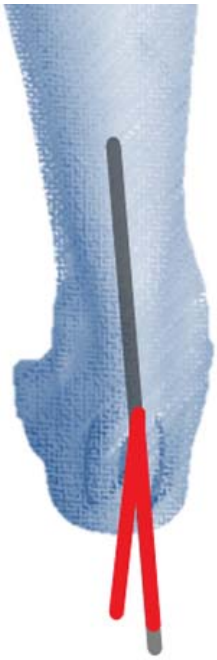
 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Left Knee and Foot

Coronal Front Video	 Knee Progression Angle	 Foot Progression Angle
Angle	External | Internal	External | Internal
EVGS 0	❑ Neutral – Patella midline	❑ Normal: 0° - 20° > than Knee Progression Angle (KPA)
EVGS 1	❑ External – Entire patella visible ❑ Internal – Entire patella visible	❑ Moderate Internal: Internal 1° - 25° > than KPA ❑ Moderate External: External 21° - 40° > than KPA
EVGS 2	❑ External – Part of patella not visible ❑ Internal – Part of patella not visible	❑ Marked Internal: Internal > 25° than KPA ❑ Moderate External: External > 40° than KPA

 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

Stance: Hindfoot

Coronal Rear Video	 Left Hindfoot	 Right Hindfoot
Angle	Valgus / Varus	Valgus / Varus
EVGS 0	❑ Neutral/slight valgus	❑ Neutral/Slight Valgus
EVGS 1	❑ Moderate valgus ❑ Mild varus	❑ Moderate valgus ❑ Mild varus
EVGS 2	❑ Severe valgus ❑ Severe varus	❑ Severe valgus ❑ Severe varus

 EVGS Scoring by HS Read, et.al., J Pediatr Orthop 23:296-301 (2003)

mOGA Right

	EVGS Observation	Angle Measurement		EVGS Score	Body Segment
Stance Sagittal Video	Foot Initial Contact				Foot
	Heel Lift				Foot
	Maximum Ankle Dorsiflexion	DF	PF		Ankle
	Knee Position at Initial Contact	Flex	Ext		Knee
	Peak Knee Extension in Stance	Flex	Ext		Knee
	Peak Hip Extension	Flex	Ext		Hip
	Pelvic Rotation in Mid-Stance	Pro	Ret		Pelvis
	Peak Trunk Position	Forw	Back		Trunk
Swing Sagittal Video	Foot Clearance				Foot
	Maximum Ankle Dorsiflexion	DF	PF		Ankle
	Peak Knee Flexion	Flex	Ext		Knee
	Peak Hip Flexion	Flex	Ext		Hip
Stance Coronal Front Video	Maximum Trunk Lateral Shift				Trunk
	Pelvic Obliquity in Mid-Stance	Up	Down		Pelvis
	Knee Progression Angle	Ext	Int		Knee
	Foot Progression Angle	Ext	Int		Foot
Stance Coronal Back Video	Hindfoot Position	Val	Var		Foot

EVGS Right

Foot Subtotal	***Ankle Subtotal***	***Knee Subtotal***	***Hip Subtotal***	***Pelvis Subtotal***	***Trunk Subtotal***

mOGA Left

	EVGS Observation	Angle Measurement		EVGS Score	Body Segment
Stance Sagittal Video	Foot Initial Contact				Foot
	Heel Lift				Foot
	Maximum Ankle Dorsiflexion	DF	PF		Ankle
	Knee Position at Initial Contact	Flex	Ext		Knee
	Peak Knee Extension in Stance	Flex	Ext		Knee
	Peak Hip Extension	Flex	Ext		Hip
	Pelvic Rotation in Mid-Stance	Pro	Ret		Pelvis
	Peak Trunk Position	Forw	Back		Trunk
Swing Sagittal Video	Foot Clearance				Foot
	Maximum Ankle Dorsiflexion	DF	PF		Ankle
	Peak Knee Flexion	Flex	Ext		Knee
	Peak Hip Flexion	Flex	Ext		Hip
Stance Coronal Front Video	Maximum Trunk Lateral Shift				Trunk
	Pelvic Obliquity in Mid-Stance	Up	Down		Pelvis
	Knee Progression Angle	Ext	Int		Knee
	Foot Progression Angle	Ext	Int		Foot
Stance Coronal Back Video	Hindfoot Position	Val	Var		Foot

EVGS Left

Foot Subtotal	***Ankle Subtotal***	***Knee Subtotal***	***Hip Subtotal***	***Pelvis Subtotal***	***Trunk Subtotal***