



Special Olympics  
**Fit Feet**

---

Fit Feet Flipbook

[SpecialOlympics.org/Health](https://SpecialOlympics.org/Health)



# Fit Feet Flipbook

## Pathology, Diagnosis, and Action

Welcome to the Fit Feet HAS Flipbook.

This booklet will:

1. Present and explain sections of the Fit Feet HAS Form
2. Explain what pathology and conditions to be on the lookout for under each section
3. Recommend what actions to take, depending upon the findings during the Fit Feet screening.

If you are able please print and have available a copy of the [Fit Feet HAS form](#), as you page through the Flipbook. Additional information about Fit Feet can be found here:

<https://resources.specialolympics.org/Taxonomy/Health/ Catalog of Fit Feet Resources.aspx>

### Contents

Athlete Concerns/Previous Treatment or Surgery.....	5
Athlete Shoe Type and Condition.....	6
Athlete Sock Type .....	8
Shoe Size/Foot Size .....	10
Skin, Nail, Toe and Foot Exam: Part 1 – Nail.....	11
Skin, Nail, and Foot Exam: Part 2 – Skin.....	14
Skin, Nail, and Foot Exam: Part 3 – Foot and Bone/Deformities .....	18
Biomechanics, Joint Range of Motion: Part 1- Foot Structure.....	22
Biomechanics, Joint Range of Motion: Part 4 – Basic Gait Analysis.....	30
Education, Review of Findings and Checkout .....	33

<b>Firstname</b>	<b>Lastname</b>	<b>HAS ID</b> _____
------------------	-----------------	---------------------

<b>Date</b>	<input type="radio"/> <b>Male</b> <input type="radio"/> <b>Female</b>	<b>DOB</b>	<b>Age (years)</b> <input type="radio"/> <b>Not sure</b>
Event	Location	<input type="radio"/> Athlete <input type="radio"/> Unified partner	Sport
Delegation/County		SO Program	
<b>Cell phone number</b>	<b>Number is <input type="radio"/> Athlete's <input type="radio"/> Parent's / Guardian's</b>		
Providing a phone number is optional. It may be used to call or send reminders if follow up is recommended after screening.			

Athlete Concerns/Previous Treatment or Surgery:
Weight _____ lbs. _____ oz.      Weight _____ kgs <small>Measure up to 15 oz      Measure up to .01 kg</small>



**Shoe Exam and Shoe Size Measurement**

Screener's Name:
------------------

<b>Amputee</b>	<b>Prosthetics</b>
<b>Left</b>	<b>Left</b>
<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
<b>Right</b>	<b>Right</b>
<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No

<b>Current shoe size?</b>	<input type="radio"/> Child <input type="radio"/> Adult
Left      Right	
USA Euro UK Asia	USA Euro UK Asia
Length	
Width	
<b>Current Shoe Type</b>	<b>Current Sock Type</b>
<input type="radio"/> Sport <input type="radio"/> Sandal	<input type="radio"/> Acrylic <input type="radio"/> Wool
<input type="radio"/> Casual <input type="radio"/> Custom	<input type="radio"/> Cotton <input type="radio"/> Other
<input type="radio"/> Boots	<input type="radio"/> Nylon <input type="radio"/> No Sock

<b>Measured shoe size?</b>	<input type="radio"/> Child <input type="radio"/> Adult
Left      Right	
USA Euro UK Asia	USA Euro UK Asia
Length	
Width	

**Skin, Nail, Toe and Foot Exam**  
(Select all that apply)

Screener's Name:
------------------

Nail		Skin		Foot and Bone	
<input type="checkbox"/> Normal	<input type="checkbox"/> Wrong nail cut	<input type="checkbox"/> Normal	<input type="checkbox"/> Calluses	<input type="checkbox"/> Ulcers	<input type="checkbox"/> Normal
<input type="checkbox"/> Hematoma	<input type="checkbox"/> Lesion	<input type="checkbox"/> Warts	<input type="checkbox"/> Blisters	<input type="checkbox"/> Papules	<input type="checkbox"/> Crossover toe
<input type="checkbox"/> Discoloration	<input type="checkbox"/> Split and laceration	<input type="checkbox"/> Maceration	<input type="checkbox"/> Split/cracks	<input type="checkbox"/> Nevus	<input type="checkbox"/> Clawtoes
<input type="checkbox"/> Thick	<input type="checkbox"/> Yellow	<input type="checkbox"/> Redness	<input type="checkbox"/> Moist	<input type="checkbox"/> Rash	<input type="checkbox"/> Brachymetatarsia (Short toe)
<input type="checkbox"/> Black	<input type="checkbox"/> White	<input type="checkbox"/> Dry	<input type="checkbox"/> Odor	<input type="checkbox"/> Soft tissue mass	<input type="checkbox"/> Bunions
<input type="checkbox"/> Blister	<input type="checkbox"/> Crumbly			<input type="checkbox"/> Corns -	<input type="checkbox"/> Tailor's bunions
<input type="checkbox"/> Ingrown					<input type="checkbox"/> Hallux rigidus/limitus
					<input type="checkbox"/> Neuralgia
					<input type="checkbox"/> Haglunds
					<input type="checkbox"/> Exostosis
					<input type="checkbox"/> Hammertoes
					<input type="checkbox"/> Syndactyly
					<input type="checkbox"/> Hallus Varus

Firstname	Lastname	HAS ID _____
-----------	----------	--------------

**Biomechanics, joint range of motion**  
**Static Biomechanics**

Screener's Name: \_\_\_\_\_

Tekscan Provided? \_\_\_ Yes \_\_\_ No

Joint range of motion	Left Foot				Right Foot			
	Norm	Rst	Hypermobile	N/A	Norm	Rst	Hypermobile	N/A
Ankle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MTP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subtalar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtarsal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knee	Val	N	Var	<input type="radio"/>	Val	N	Var	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Recurvatum		Flexum	<input type="radio"/>	Recurvatum		Flexum	<input type="radio"/>
	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
<b>Foot structure</b>	<i>Left Foot</i>				<i>Right Foot</i>			
Pes Cavus	<input type="radio"/>				<input type="radio"/>			
Pes Planus	<input type="radio"/>				<input type="radio"/>			
Metatarsus Adductus	<input type="checkbox"/>				<input type="checkbox"/>			
Tibial varum	<input type="checkbox"/>				<input type="checkbox"/>			
Calcaneus	<input type="radio"/> Val	<input type="radio"/> N	<input type="radio"/> Var		<input type="radio"/> Val	<input type="radio"/> N	<input type="radio"/> Var	
N/A	<input type="radio"/>				<input type="radio"/>			
<b>Basic Gait Analysis</b>	<i>Left Foot</i>				<i>Right Foot</i>			
Normal	<input type="checkbox"/>				<input type="checkbox"/>			
Excessive Pronation	<input type="checkbox"/>				<input type="checkbox"/>			
Excessive Supination	<input type="checkbox"/>				<input type="checkbox"/>			
Forefoot Abduction	<input type="checkbox"/>				<input type="checkbox"/>			
Forefoot Adduction	<input type="checkbox"/>				<input type="checkbox"/>			
Early Heel	<input type="checkbox"/>				<input type="checkbox"/>			
N/A	<input type="checkbox"/>				<input type="checkbox"/>			

**Education, Review of Findings and Checkout**

Screener's Name: \_\_\_\_\_

Follow up care recommended? \_\_\_ Yes  Urgent  Not Urgent  
 \_\_\_ No (if NO, submit HAS form only)

Referral Made to:  Podiatrist  Physician  Physiotherapist  Pedicure  Orthopedist  Other

Name/Location of Physician Referred \_\_\_\_\_

LOCK LACES provided? \_\_\_ Yes \_\_\_ No  
 SOCKS Provided? \_\_\_ Yes \_\_\_ No  
 CREAM Provided? \_\_\_ Yes \_\_\_ No  
 POWDER Provided? \_\_\_ Yes \_\_\_ No  
 SHOES Provided? \_\_\_ Yes \_\_\_ No

Athlete already has Insoles:  Yes  No  
 OTC Insoles Dispensed?  Yes  No  
 Size: \_\_\_\_\_ Men Women Child  
 (circle one)

**Comments:**

## Fit Feet HAS Section: Athlete Concerns/Previous Treatment or Surgery

Athlete Concerns/Previous Treatment or Surgery:	
Weight _____ lbs. _____ oz. <i>Measure up to ½ oz</i>	Weight _____ ● _____ kgs <i>Measure up to .01 kg</i>

### What are you looking for:

1. You are looking to uncover and document any significant foot and ankle related treatment or surgery and describe in the space provided.
2. If you are unsure whether or not the athlete has had a previous foot treatment or surgery write "none reported".

## Fit Feet HAS Section: Athlete Shoe Type and Condition

<b><i>Current Shoe Type</i></b>	
<input type="radio"/> Sport	<input type="radio"/> Sandal
<input type="radio"/> Casual	<input type="radio"/> Custom
<input type="radio"/> Boots	

### **What are you looking for:**

1. You are looking to determine what shoe type the athlete wears in his/her sport.
2. You are trying to determine if the shoe the athlete is wearing in his/her sport is appropriate for their sport and if the general condition the shoe is acceptable.
3. You will carefully assess the athletes' shoe gear, used by the athlete for competition, and determine if it is the correct type of shoe gear for the sport engaged in and if it's in good condition.
4. Questions to ask yourself while assessing the shoe:
  - a. Are the shoes in good condition?
  - b. Are they worn excessively?
  - c. Is the midsole cushioning excessively or unevenly compressed?
  - d. Is the counter aligned on foot bed properly?
5. What is good condition? See samples below:
6. What is poor condition? See sample below:

Examples of good condition.



Examples of poor condition



**Action Items:** Athlete Shoe Type and Condition

1. If you determine the athlete's shoe is appropriate for his/her sport write or check "yes shoe appropriate for sport", if not write "shoe not appropriate for sport".
2. If the shoe is not appropriate for sport, write or check "shoe replacement recommended" and provide athlete education and suggestions on proper foot wear for his/her sport.
3. If you determine the athlete's shoe is also in good condition write or check "shoe replacement not recommended", if the shoe is NOT in good condition write or check "shoe replacement recommended" and explain to the athlete why you made this recommendation.
4. If the athlete did not have the footwear with him/her that is used during competition write or check "shoe not present for assessment".
5. These notes and recommendations will be discussed again with the athlete during the Check-out and Education station at the Fit Feet Screening.

Fit Feet HAS Section: Athlete Sock Type

**Current Sock Type**

<input type="radio"/> Acrylic	<input type="radio"/> Wool
<input type="radio"/> Cotton	<input type="radio"/> Other
<input type="radio"/> Nylon	<input type="radio"/> No Sock

**What are you looking for:**

1. You are looking to determine if the sock the athlete wears for competition is the correct choice for the sport they are engaged in.
2. Note that the sock they are wearing may not be the type of sock they use for competition. Be sure to assess the sock they use for competition, to the best of your ability.



Wool



Acrylic



Cotton

3. You are also looking for the condition of the sock.
  - a. Are the socks in good condition?
  - b. Are they worn excessively---with holes or threadbare areas?





### **Actions Items:** Athlete Sock Type

1. If you determine the athlete's sock is appropriate for his/her sport write or check "yes sock appropriate for sport", if not write "sock not appropriate for sport".
2. If you determine the athlete's sock is also in good condition write or check "sock replacement not recommended", if the sock is NOT in good condition write or check "sock replacement recommended". If you indicate "sock replacement recommended" explain to the athlete why you have determined this.
3. Be sure to recommend what type of sock would be better suited for the sport (i.e. acrylic {moisture wicking}, wool, etc.). In fact, have sample socks on hand to show the athlete different types of socks suitable for their sport.
4. If they do not have the socks with them worn during their sport write or check "sock unavailable for assessment".
5. These notes and recommendations will be discussed again and reinforced during the Check-out and Education station at the Fit Feet Screening.

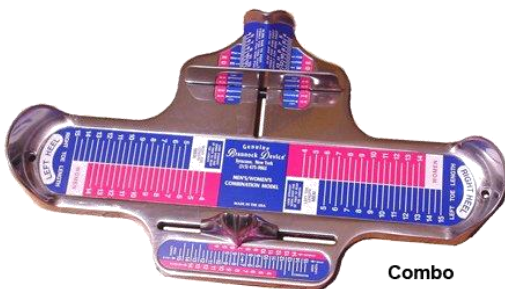
## Fit Feet HAS Section: Shoe Size/Foot Size

Current shoe size?		<input type="radio"/> Child		<input type="radio"/> Adult				
Left		Right						
	USA	Euro	UK	Asia	USA	Euro	UK	Asia
Length								
Width								

Measured shoe size?		<input type="radio"/> Child		<input type="radio"/> Adult				
Left		Right						
	USA	Euro	UK	Asia	USA	Euro	UK	Asia
Length								
Width								

### What are you looking for:

1. You are looking to determine if the shoe the athlete is wearing is the right fit for their foot size.
2. How do you determine this:
  - a. With the athlete standing and prior to removing shoes, check the fit of the foot within the shoe, noting length, width and depth compatibility.
  - b. After removing the athlete's shoes, identify the size of the shoe being worn. As different countries use different measuring systems, that system must be noted. Note: this is also the time when you would inspect the condition of the shoe (see page #3)
  - c. Next, using a Brannock device determine the actual size of the athlete's foot.
  - d. Compare their foot size to their shoe size and conclude any inconsistencies.



### Action Items: Shoe Size/Foot Size

1. Record shoe size and foot size on the HAS form, as requested.
2. Add: If you determine the athlete is wearing the correct shoe size write or check "shoes fit".
3. Add: If you determine the athlete is wearing the incorrect shoe size write or check "shoes are not the right fit" and be sure to write the correct shoe size they should be wearing.
4. These notes and recommendations will be discussed again and reinforced during the Check-out and Education station at the Fit Feet Screening.

## Fit Feet HAS Section: Skin, Nail, Toe and Foot Exam: Part 1 – Nail

<b>Nail</b>	
<input type="checkbox"/>	Normal
<input type="checkbox"/>	Wrong nail cut
<input type="checkbox"/>	Hematoma
<input type="checkbox"/>	Lesion
<input type="checkbox"/>	Discoloration
<input type="checkbox"/>	Split and laceration
<input type="checkbox"/>	Thick
<input type="checkbox"/>	Yellow
<input type="checkbox"/>	Black
<input type="checkbox"/>	White
<input type="checkbox"/>	Blister
<input type="checkbox"/>	Crumbly
<input type="checkbox"/>	Ingrown

### What are you looking for:

1. You are looking to determine the overall health and condition of the nail.
2. Carefully inspect the nails of the foot for any lesions, unusual color, streaks, thickening or unusual consistency.
3. Notice if the nail is firmly attached to the bed or is there lysis?
4. Examine to determine if the nail is cryptotic with or without associated infection?
5. Also, does the nail appear as if it has been trimmed/cut improperly?
6. Below are common conditions to be on the lookout for:

Wrong Cut



Thickened/crumblly



Subungual hematoma



Ingrown nail (Onychocryptosis)



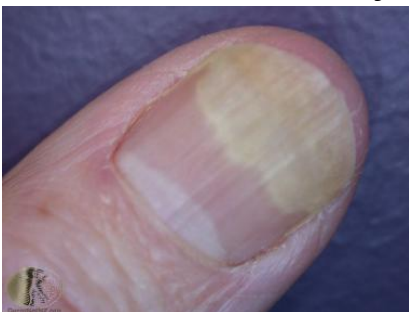
Split/lysis



Ingrown nail with infection (Onychocryptosis with Paronychia)



Yellow discoloration and lysis



**Action Items:** Skin, Nail, Toe and Foot Exam: Part 1 – Nail

1. If improper nail cutting is detected, instruct the athlete on how to trim his/her toenails.
2. If a nail fungus , onychomycosis , is detected, recommend appropriate crème, powder, and/or further treatment.
3. If onychocryptosis with or without paronychia is detected suggest the athlete follow up with a foot care professional for treatment.
4. These notes and recommendations will be discussed again and reinforced during the Check-out and Education station at the Fit Feet Screening.

Fit Feet HAS Section: Skin, Nail, and Foot Exam: Part 2 – Skin

Skin			
<input type="checkbox"/>	Normal	<input type="checkbox"/>	Ulcers
<input type="checkbox"/>	Calluses	<input type="checkbox"/>	Papules
<input type="checkbox"/>	Warts	<input type="checkbox"/>	Nevus
<input type="checkbox"/>	Blisters	<input type="checkbox"/>	Rash
<input type="checkbox"/>	Maceration	<input type="checkbox"/>	Soft tissue mass
<input type="checkbox"/>	Split/cracks	<input type="checkbox"/>	Corns -
<input type="checkbox"/>	Redness		
<input type="checkbox"/>	Moist		
<input type="checkbox"/>	Dry		
<input type="checkbox"/>	Odor		

**What are you looking for:**

1. You are looking to determine the overall health and condition of the skin of the foot and ankle.
2. Specifically:
  - a. Carefully inspect the skin of the foot and ankle for lesions or rashes. Be on the lookout for keratotic lesions.
  - b. Inspect the web spaces, looking for fissures and maceration. Especially be on the alert for suspicious pigmented lesions
  - c. Pay special attention to “hot spots” or pre-blister areas of high friction and actual blisters or even ulcers.
  - d. Note if the skin is especially dry or moist? Take into account a recent competition that may negate the finding of excessive moisture.
  - e. Assess for significant abnormal odor ignoring the normal “foot odor” seen with competitions.
3. Below are common conditions to be on the lookout for:

Callus/ tyloma (hyper keratotic lesion found on the plantar aspect of foot)



Athlete's foot/tinea pedis with maceration in web space



Corn/ heloma (hyper keratotic lesions found on the toes)



Dryness/ xerosis



Warts



Cracks/fissures



Blister



## Ulcers



## Rash



## Nevus/suspicious or questionable pigmented lesion –



For more information on "Treating Lower Extremity Conditions of Special Olympics Athletes":  
<https://www.podiatrytoday.com/treating-lower-extremity-conditions-special-olympics-athletes>



**Action Items:** Skin, Nail, and Foot Exam: Part 2 – Skin

1. If tyloma, heloma, or warts are detected, instruct the athlete on ideas for comfort and/or treatment, for example pads, different shoe style or correct sized shoes, thicker socks, or make a referral for professional treatment.
2. If a blister or maceration is detected, instruct the athlete on ideas for comfort, prevention, and/or treatment, for example different socks/shoes, topical remedies, crèmes and dressing, or make a referral for professional treatment.
3. If tinea pedis, xerosis, or fissures are detected, instruct the athlete on ideas for comfort, prevention and/or treatment, such as crèmes, powders, different socks, or make a referral for professional treatment.
4. If infection or suspicious pigmentation or a questionable lesion is detected, be sure to make an urgent referral for professional treatment.
5. These notes and recommendations will be discussed again and reinforced during the Check-out and Education station at the Fit Feet Screening.

## Fit Feet HAS Section: Skin, Nail, and Foot Exam: Part 3 – Foot and Bone/Deformities

<b>Foot and Bone</b>	
<input type="checkbox"/>	Normal
<input type="checkbox"/>	Crossover toe
<input type="checkbox"/>	Clawtoes
<input type="checkbox"/>	Brachymetatarsia (Short toe)
<input type="checkbox"/>	Bunions
<input type="checkbox"/>	Tailor's bunions
<input type="checkbox"/>	Hallux rigidus/limitus
<input type="checkbox"/>	Neuralgia
<input type="checkbox"/>	Haglunds
<input type="checkbox"/>	Exostosis
<input type="checkbox"/>	Hammertoes
<input type="checkbox"/>	Syndactyly
<input type="checkbox"/>	Hallus Varus

### What are you looking for:

1. You are looking to determine the overall health and condition of the bones, joints, and foot structure.
2. Specifically
  - a. Carefully inspect the foot and ankle for any overt deformities.
  - b. Identify if a deformity exists, what the deformity is called, the seriousness of the deformity, and whether to make a professional referral.
3. Below are common conditions to be on the look out for and be sure to report on the HAS form:

**Digital Deformities to look out for and document on HAS form:**

Crossover toe



Clawtoe



Hallux Abducto Valgus (bunion) with hammer toes



Brachymetatarsia



Hammer toe



Bunions:

Hallux Abducto Valgus or

Tailor's Bunions/Bunionette



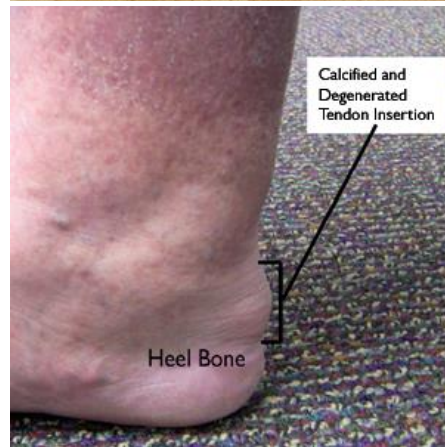
Severe Tailor's Bunion



Palpable heel spur/ Insertional Calcification of the Achilles Tendon



Hallux Varus/Metatarsus Primus Varus



Ectrodactyly



Metatarsal Cuneiform Exostosis/Saddle Bone Deformity



**Action Items:** Skin, Nail, and Foot Exam: Part 3 – Foot and Bone/Deformities

1. If any of these conditions are detected either check the box or write the condition on the HAS Form.
2. In addition, if a foot deformity is detected that is not on the HAS form, i.e. Ectrodactyly or Metatarsal Cuneiform Exostosis, document this condition in the box labeled "other".
3. In some cases the detection of a foot deformity will require you to instruct the athlete on ideas for comfort. Minimal treatment recommendations may include different socks/shoes, orthotics, cushions/pads, insoles, wider shoes, etc.
4. However, if the condition is severe and is impacting the athlete's ability to perform his/her daily activities or the condition is creating other injuries, be sure to make an urgent referral for professional treatment.
5. Your recommendations for comfort, prevention, and/or referral will be discussed and reinforced again during the Check-out and Education station at the Fit Feet Screening.

## Fit Feet HAS Section: Biomechanics, Joint Range of Motion: Part 1- Foot Structure

### Foot Structure/Foot Relaxed Calcaneal Stance Position

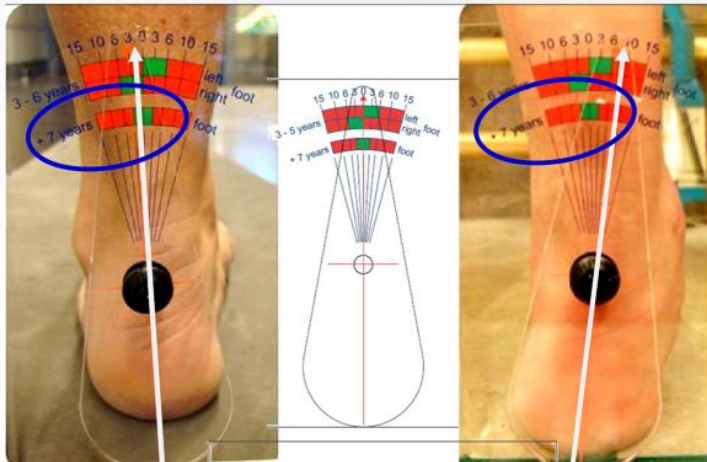
Foot structure	Left Foot			Right Foot		
Pes Cavus	○			○		
Pes Planus	○			○		
Metatarsus Adductus	□			□		
Tibial varum	□			□		
Calcaneus	○ Val	○ N	○ Var	○ Val	○ N	○ Var
N/A	○			○		

#### What are you looking for:

1. You are looking to determine the athlete's stance as normal, pronated/valgus, or supinated/varus.
2. Specifically:
  - a. Have the athlete stand such that you are positioned behind them.
  - b. Have athlete march in place for 5 seconds or so and then stand quietly in their presumed natural angle and base of gait. Note: Athlete must be facing forward—any twist to see what you are doing or to view teammates, etc. will alter your findings.
  - c. Using either a goniometer or Borg device determine the stance.
  - d. Document your findings on the HAS form.

Calcaneus Varus

Calcaneus Valgus



**Action Items:** Biomechanics, Joint Range of Motion: Part 1- Foot Structure

1. After assessing both the left and right foot and determining whether the athlete's stance is normal, valgus, or varus please record your findings.
2. If you detect valgus or varus please educate the athlete on correct shoes to wear as not to exacerbate the problem.
3. You may also suggest over the counter arch supports or custom made orthotics. Both of these recommendations require a non-urgent referral to a professional.
4. However, if the condition is severe and is impacting the athlete's ability to perform his/her daily activities or the condition is creating other injuries, be sure to make an urgent referral for professional treatment.
5. Your recommendations for comfort, prevention, and/or referral will be discussed and reinforced again during the Check-out and Education station at the Fit Feet Screening.

Fit Feet HAS Section: Biomechanics, Joint Range of Motion: Part 2 – Foot Structure

Foot Structure/Arch Structure

<b>Foot structure</b>	<i>Left Foot</i>			<i>Right Foot</i>		
Pes Cavus	O			O		
Pes Planus	O			O		
Metatarsus Adductus	<input type="checkbox"/>			<input type="checkbox"/>		
Tibial varum	<input type="checkbox"/>			<input type="checkbox"/>		
Calcaneus	O Val	O N	O Var	O Val	O N	O Var
N/A	O			O		

**What are you looking for:**

1. You are looking to determine the athlete’s foot/arch structure and whether or not a specific structural condition exists.
2. Specifically
  - a. Carefully inspect the foot/arch and stance of the athlete.
  - b. Identify if a foot/arch structural condition exists, what the condition is and which foot.
3. Below are common conditions to be on the look out for and be sure to report on the HAS form:



## Pes Planus



Fig. 1

Foot Type

Pes cavus  
(high arch)



Normal  
arch



Pes planus  
(flatfoot)



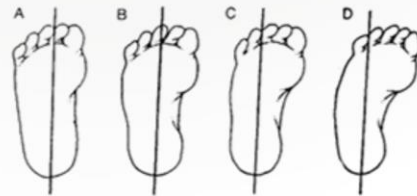
## Pes Cavus



## Metarsus Adductus



Metarsus Adductus if line is at  
4th or 5th toe



## **Action Items:** Biomechanics, Joint Range of Motion: Part 2 – Foot Structure

1. After assessing and determining whether the athlete's foot structure is normal or a structural condition exists, record your findings on the HAS form.
2. If you detect an arch condition, educate the athlete on ideas for comfort and injury prevention. Minimal recommendations may include different shoes, over the counter arch supports or custom made orthotics, cushions/pads, insoles, stretches, exercises, etc.
3. However, if the condition is severe and is impacting the athlete's ability to perform his/her daily activities or the condition is creating other injuries, be sure to make a referral for professional treatment.
4. Your recommendations for comfort, prevention, and/or referral will be discussed and reinforced again during the Check-out and Education station at the Fit Feet Screening.

Joint Range of Motion/Ankle and Metatarsophalangeal

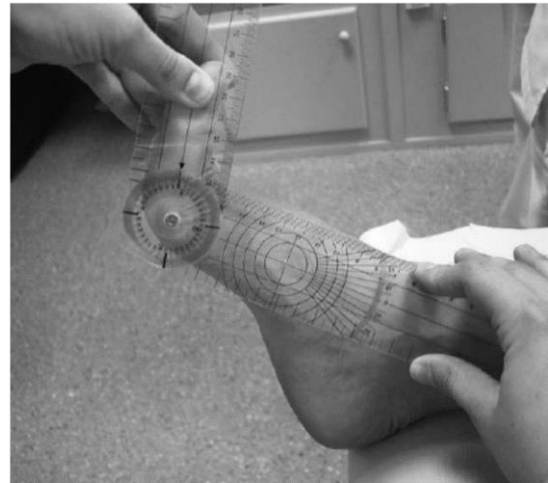
Joint range of motion	Left Foot				Right Foot			
	<i>Norm</i>	<i>Rst</i>	<i>Hypermobile</i>	<i>N/A</i>	<i>Norm</i>	<i>Rst</i>	<i>Hypermobile</i>	<i>N/A</i>
Ankle	0	0	0	0	0	0	0	0
MTP	0	0	0	0	0	0	0	0
Subtalar	0	0	0	0	0	0	0	0
Midtarsal	0	0	0	0	0	0	0	0
Knee	<i>Val</i>	<i>N</i>	<i>Var</i>	0	<i>Val</i>	<i>N</i>	<i>Var</i>	0
	0	0	0		0	0	0	
	<i>Recurvatum</i>		<i>Flexum</i>	0	<i>Recurvatum</i>		<i>Flexum</i>	0
	0		0		0		0	

**What are you looking for:**

1. You are looking to determine the athlete’s range of motion (ROM) of the ankle and MTP and whether or not specific conditions exist and to what extent.
2. Specifically for ankle:
  - a. The athlete is seated and relaxed.
  - b. The knee is extended—but not hyperextended.
  - c. Ask the athlete to pull “toe to nose” while the examiner is holding subtalar joint neutral and is pushing foot into dorsiflexion.
  - d. The goniometer is positioned so the Fulcrum of the device at joint and align the Stationary Arm of the device up along the fibula and Align the Moveable Arm parallel to the fifth metatarsal bone.
  - e. Read and document the measurement.
3. Specifically for MTP:
  - a. The athlete is seated and relaxed. The knee is extended—but not hyperextended.
  - b. The athlete is asked to pull “big toe to nose” while examiner is pushing hallux into dorsiflexion.
  - c. The goniometer is positioned so the Fulcrum of the device at 1st metatarsal joint and align the Stationary Arm of the device up along the first metatarsal and Align the Moveable Arm parallel to the hallux.
  - d. Read and document the measurement.
4. Below are photos to help in your assessment

Ankle joint range of motion using goniometer

1<sup>st</sup> Metatarsal phalangeal joint Range of motion measurement



# 1st Metatarsal Phalangeal Joint Disorders

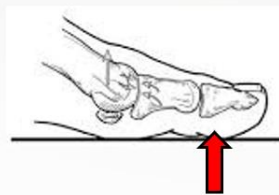
Special Olympics  
**Healthy Athletes<sup>®</sup>**



## Hallux rigidus/ limitus



Normal Function  
Normal function



Limited function



Rigid deformity



## **Action Items:** Biomechanics, Joint Range of Motion: Part 3 – Joint Range of Motion

1. When measuring the ankle joint and MTPJ Range of Motion, please use these measurements below to indicate the range. Record on the HAS Form.
  - a. 1<sup>st</sup> JMTP <50 is indicates restriction of 1<sup>st</sup> Metatarsal Phalangeal joint; Normal Range is 65+; 90< is hypermobile.
  - b. Consider the Ankle hypermobile is >30 degrees; and < 0 degrees with knee extended to indicate restriction of ankle joint.
2. If you detect restrictive or hypermobile ankle or MTP make suggestions to the athlete on ideas for comfort and injury prevention. Minimal recommendations may include stretching for restrictive conditions and bracing for hypermobile joints.
3. However, if the condition is severe and is impacting the athlete's ability to perform his/her daily activities or the condition is creating other injuries, be sure to make a referral for professional treatment.
4. Your recommendations for comfort, prevention, and/or referral will be discussed and reinforced again during the Check-out and Education station at the Fit Feet Screening.

## Fit Feet HAS Section: Biomechanics, Joint Range of Motion: Part 4 – Basic Gait Analysis

<b>Basic Gait Analysis</b>	<i>Left Foot</i>	<i>Right Foot</i>
Normal	<input type="checkbox"/>	<input type="checkbox"/>
Excessive Pronation	<input type="checkbox"/>	<input type="checkbox"/>
Excessive Supination	<input type="checkbox"/>	<input type="checkbox"/>
Forefoot Abduction	<input type="checkbox"/>	<input type="checkbox"/>
Forefoot Adduction	<input type="checkbox"/>	<input type="checkbox"/>
Early Heel	<input type="checkbox"/>	<input type="checkbox"/>
N/A	<input type="checkbox"/>	<input type="checkbox"/>

### What are you looking for:

1. You are looking to determine the athlete's natural gait, while walking.
2. Specifically to assess for Basic Gait Analysis:
  - a. Ask the athlete to walk barefoot ---
    - i. the path should be marked and the spot to stop and turn around should be clear.
    - ii. Roughly 20 feet/6 meters should be adequate.
    - iii. The surface should be smooth and free of any possible debris as well as in an area that is unobstructed and free from persons waiting, strolling or being examined by others.
  - b. In some cases, a clinician, coach or other can hold the hand of the athlete to guide them.
  - c. Encourage the athlete to walk naturally---not too fast or slow. Have the athlete walk back and forth 2 or 3 times and maybe more if gait has some notable findings.
  - d. Assess abduction/adduction. Assess for normal, pronated or supinated gait. Assess for a bouncy or early heel off gait.
  - e. Document the findings.
3. Below are photos to help in your assessment



Neutral



(Right Foot)

Pronation



Over Pronation



Neutral



Overpronation



Underpronation

**Action Items:** Biomechanics, Joint Range of Motion: Part 4 – Basic Gait Analysis

1. After assessing gait, determine abnormalities;
  - a. If the athlete's foot position in gait is  $< 0$  from midline of progression, this indicates adduction. If the athlete's foot position in gait is  $>15$  degrees from the line of progression, this indicates abduction.
  - b. Consider gait excessively pronated if the heel remains everted throughout the gait cycle and excessively supinated if the heel remains inverted throughout the gait cycle.
  - c. Consider a bouncy gait/early heel off if the heel fails to touch the ground during the gait cycle.
2. If you detect gait abnormalities, provide suggestions to the athlete on ideas for comfort and injury prevention. Minimal recommendations may include stretching for restrictive conditions and bracing for issues related to hypermobile joints. Over the counter arch supports or custom made orthotics may be beneficial as well.
3. However, if the condition(s) is(are) severe and is impacting the athlete's ability to perform his/her daily activities or the condition is creating other injuries, be sure to make a referral for professional treatment.
4. Your recommendations for comfort, prevention, and/or referral will be discussed and reinforced again during the Check-out and Education station at the Fit Feet Screening.



## Fit Feet HAS Section: Education, Review of Findings and Checkout

### Education, Review of Findings and Checkout

Screener's Name: \_\_\_\_\_

Follow up care recommended? \_\_\_ Yes  Urgent  Not Urgent  
\_\_\_ No (if NO, submit HAS form only)

Referral Made to:  Podiatrist  Physician  Physiotherapist  Pedicure  Orthopedist  Other

Name/Location of Physician Referred \_\_\_\_\_

LOCK LACES provided? \_\_\_ Yes \_\_\_ No

SOCKS Provided? \_\_\_ Yes \_\_\_ No

CREAM Provided? \_\_\_ Yes \_\_\_ No

POWDER Provided? \_\_\_ Yes \_\_\_ No

SHOES Provided? \_\_\_ Yes \_\_\_ No

Athlete already has Insoles:  Yes  No

OTC Insoles Dispensed?  Yes  No

Size: \_\_\_\_\_ Men Women Child  
(circle one)

**Comments:**

### What are you looking for:

1. This is where you record your recommendations for referral and/or education and where you give the athlete his/her "report card".
2. Specifically, please keep these points in mind when you are completing the referral and education section of the HAS Form and the "report card":
  - a. Sometimes symptoms and/or a reported disability will call for education only.
  - b. Sometimes symptoms and/or a reported disability will call for education and a referral.
  - c. If a referral is recommended, please document on the HAS form, and on the report card, and to the athlete if this is "URGENT" or "NOT URGENT"
    - i. Obvious findings such as pain, disability or infection would dictate an URGENT referral.
      1. Examples of URGENT may include: infection, ingrown nails, open sore (ulcer), limping (antalgic gait), pain with movement of foot, signs of significant inflammation such as edema, calor (heat) and/or erythema (redness)...
      2. Examples of NON-URGENT may include: visible deformities but without pain or disability, skin rash, warts/callus, nail issues without infection, ...
  - d. Please indicate in the space provided on the HAS Form and Report Card what type of professional you referred the athlete to, for example, Footcare Professional, Primary Care Provider, Orthopedist, Physiotherapist, Dermatologist, Other
3. After a thorough review of the HAS data form, complete the prescription/screening results (report card) form as appropriate.
  - a. If the athlete's feet checked out okay, mark the box that reads "Congratulations, you have FIT FEET and require no follow up care". Indicate current and measured shoe size.

- b. If certain conditions are noted on the HAS form, mark the box that reads, "*You have the following condition(s):*" and check/write in the conditions noted.
- c. If you are making recommendations to the athlete that involves a specific action or follow up be clear, verbally and on the Report Card, about what is recommended.
- d. If you are making a referral for follow up be clear by marking the appropriate box, i.e., *Your feet require extended treatment; please contact the following professional for a follow-up appointment.* Please indicate the professional you are recommending:  
Footcare professional, Primary Care Provider, Orthopedist, Physiotherapist, Dermatologist, other