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CHEAT SHEET
EVERYTHING YOU NEED TO KNOW ABOUT PROSTHETIC FEET

Here is your quick reference sheet that you can take to your prosthetist/physical therapy appointment. The original blog available on my **website** has more in- depth descriptions and helpful links. Happy hunting!

1. SACH Foot (Solid Ankle Cushion Heel)

Simple foot with a neoprene/urethane shell molded over a wooden keel and rubber heel to simulate plantarflexion. The foot provides movement when it bends or flexes around the rubber areas when the amputee puts weight into it.

Advantages

- Inexpensive
- Durable
- Stable especially during midstance when all the body weight is going through the prosthesis.
- Great option for secondary leg for pool/beach/shower.

Disadvantages

- Little shock absorption.
- Not much ability to customize to the amputee's needs (such as heel height, resistance).
- Not good option for active individuals.
- Rigid keel does not bend.

Who is it for?

- Low activity individuals.
- Those looking for a stable foot for transfers and walking short distances (household ambulation).

2. Single Axis Foot

The Single Axis foot has one axis and allows for plantarflexion and dorsiflexion (moving your ankle up and down motion).

Advantages

- Durable and decently waterproof
- Good stability for AK when in stance (when body weight is on socket).
- Provides good stability on uneven terrain.
- Gives better function compared to SACH feet.
- Ability to modify heel height.
- Good option for pool/beach secondary foot.

Disadvantages

- Considered to be a heavy foot for the minimal function it provides.
- Movement is only available in dorsiflexion/plantarflexion.
- Limited in customization (when compared to Multi Axial and Dynamic Response).

Who is it for?

- Low to moderate activity individuals.
- Someone who needs stability but has a little more mobility than those who use a SACH foot.

3. Multi Axial Foot

This foot allows for movement in plantarflexion/dorsiflexion as well as inversion and eversion (side to side ankle motion) and a little rotation.

Advantages

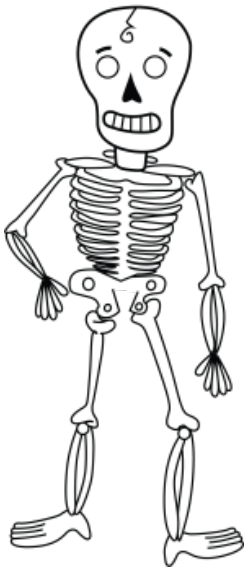
- This foot can be customized to the individual with options for heel height and...
- Better function when compared to SACH/Single Axis feet.
- Allows the amputee to negotiate uneven surfaces with stability.

Disadvantages

- Bumpers can be prone to wear and tear, may need maintenance
- Heavier foot, more expensive
- Does not provide good shock absorption or energy return

Who is it for?

- Suited for those with moderate to high activity level
- Folks who are negotiating uneven terrain in their daily life



4. Dynamic Response AND

5. Energy Storing and Response or Energy Storing and Return Foot (ESAR)

The Dynamic Response foot is typically made from carbon fiber materials that will deform under a load (when you put your weight into it) and will return to its original shape when off loaded (when you roll off the foot). The Energy Storing and Response foot actually stores potential energy in the keel when you put weight into it and then returns that energy to you when you push off the foot. Both similar in that they return energy to the user just with different delivery systems!

Advantages:

- Lightweight approximately the same to Multi Axial feet.
- Shock absorption.
- Good foot for uneven terrain as it adapts well to these changes.
- Very sturdy feet.
- Many come with split toe options to allow for more inversion/eversion "wiggle room."

Disadvantages:

- More expensive than Multi Axial feet.
- Stiffness with lower activity levels---ie you really have to be able to put your weight into it to appreciate the benefits.

Who is it for?

- Moderately to very active individuals.

6. Hydraulic Foot

This foot has a hydraulic component which helps passively control the plantarflexion and dorsiflexion---it absorbs the energy that is then dissipated as heat into the hydraulic fluid. The hydraulic unit allows for more contact on the ground therefore increasing your stability and taking it to another level.

Advantages

- Gives the user a more "connected" feeling to the ground when walking.
- Easier to negotiate ramps and slopes.
- Allows for more smooth rollover (from loading response through heel off) without the "dead space" experienced by some ESAR/Dynamic Response.
- Less wear and tear on the skin and residual limb.

Disadvantages

- It is generally a heavier foot which means the prosthetist has to be on his/her game with fitting the socket and making sure the suspension is spot on.

Who is it for?

- Moderately active to active individuals.
- Folks who negotiate uneven terrain (many of my hunters like this foot).

7. Hybrid Foot

Now this is a classification I made up myself about 10 years ago. Many manufacturers now have feet that combine the above classification. *If you ask your prosthetist for a Hybrid foot, they will look at you with a puzzled expression because remember, this is a term I created! If you feel that both the Dynamic Response foot and Multi Axial foot have features that would benefit you---then ask your prosthetist which feet on the market have this particular combination*.

Advantages

- This is a great foot for those who really want the best of both worlds when it comes to the Multi Axial and Dynamic Response/ESAR feet.
- More freedom of movement and stability.

Disadvantages

- It might be too much of a good thing for folks with lower activity levels. More movement may not necessarily be good for someone who is struggling with balance/.

Who is it for

- Active individuals who want movement and energy return.

8. Microprocessor Foot

An MP foot is a Hydraulic foot with a microprocessor (computer) inside. This microprocessor uses sensors to analyze the environment to determine how much the friction in the foot needs to be adjusted.

There are other MP feet out on the market that feature multi axial components as well as feet that use the MP technology as propulsion.

Advantages

- More energy efficient and not as "tiring" to walk in for the user.
- Smoother gait and feels more like the natural foot.

Disadvantages

- Expensive but don't let this deter you if this is the right foot for you! Talk to your insurance!
- Is not meant for high impact activities.
- Most are not waterproof.
- It's a heavy foot. Therefore prosthetist needs to create a well fitting socket with great suspension to make sure it doesn't feel heavy to the user.

Who is it for?

- Here is where I find the widest range of users. Folks who would normally do well with a Dynamic Response foot will try a Hydraulic Microprocessor foot system and fall in love.
- Someone who wants to reserve more of their energy throughout the day.
- Not meant for very active individuals who are "beating up" their foot with their daily activities.

9. Running Blades

The name says it all. Please read my blog for a full description if you are interested in a running blade!

Advantages

- Truly designed to allow for smooth running mechanics.
- Allows for improved shock absorption and energy return during the running gait.
- It just looks really cool.

Disadvantages

- Kinda pricey (it's a financial commitment).

- **Not meant for daily walking (you might end up with back pain).**
- It can be challenging to find a prosthetist who truly understands how to properly align a socket for running (it's different than walking alignment!).
- You need to create another socket for this foot as the alignment will be different.

Who is it for?

- Anyone who is serious about running. This can be the hardcore marathon/racing athlete OR
- The weekend warrior who likes to run a few miles a week and wants to make sure they are doing so with a well fitting socket and comfortable foot made for this purpose.
- Anyone who wants to run and cannot do so with their current daily walking foot.

10. Stubbies

The Stubbie is a small, rectangular shaped foot that can attach directly to the bottom of a socket without a pylon (the long metal pole that connects the socket to the foot).

Advantages

- Durable foot that allows bilateral AKA's to start gait training with more stability.
- Good option for bilateral AKA's as secondary feet after they complete gait training with full length prosthetics. (Household ambulation, chores etc).
- Great option for unilateral and bilateral amputees for beach and pool and rock climbing.
- The College Park Sidekicks Stubbie foot also has a Multi Axial component for better movement and stability.

Disadvantages

- Not recommended as a daily walking foot for unilateral amputees.
- Not recommended as a daily walking foot for bilateral amputees using full length prosthetic legs.

Who is it for?

- Bilateral above the knee amputees.
- Folks who want a beach/pool/rock climbing foot.