

# Ankle-foot orthosis

## World FSHD Alliance Quarterly Meeting

March 5<sup>th</sup>. 2022

V0.2

Ricardo Gerpe

# Ankle-Foot Orthosis

## Introduction

### Reason for this presentation

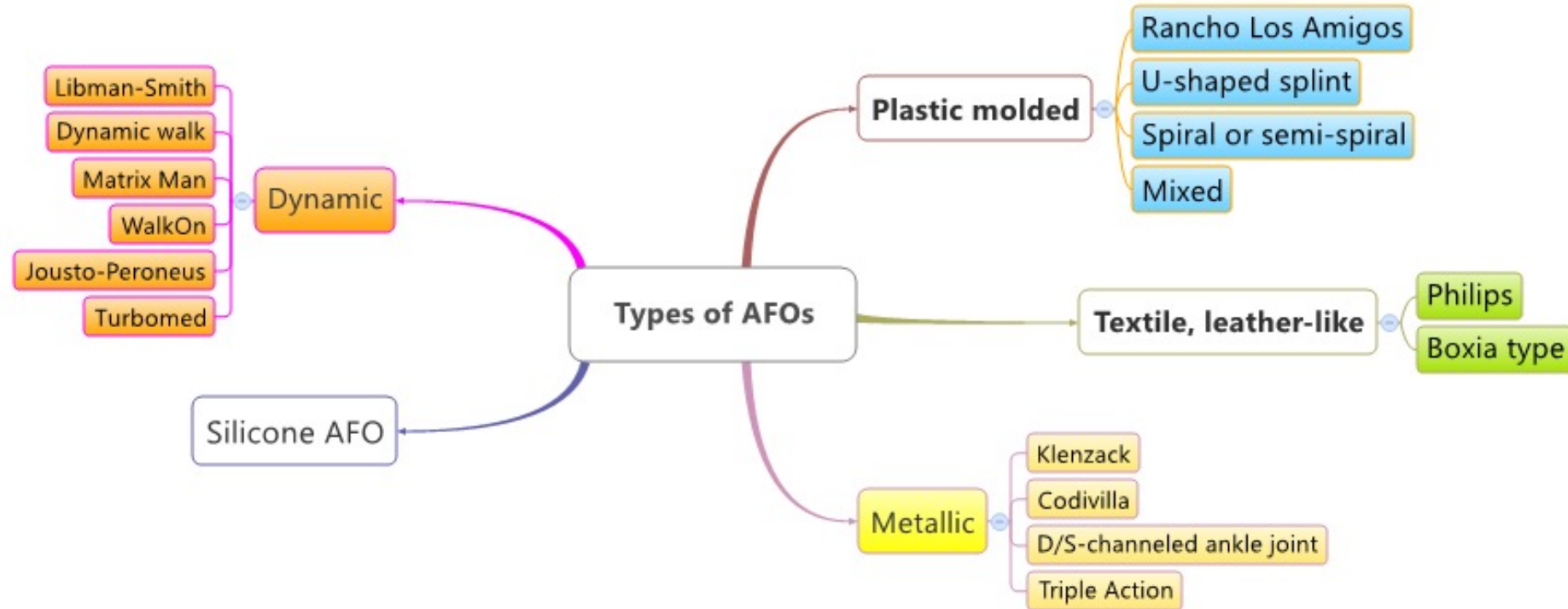
#### Notes:

I am not a specialist in AFOs or anything similar. This is my own research and categorization, not a scientific or industry  
All the sources used here are publicly available on the web or orthopedic shops.

It probably doesn't have an exhaustive list of AFOs nor of vendors.

The use of wrong or not prescribed AFOs may have a negative impact on users.

# Ankle-Foot Orthosis

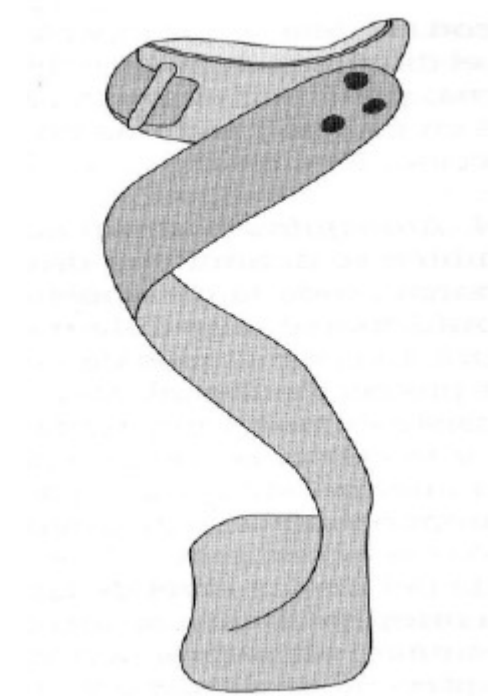
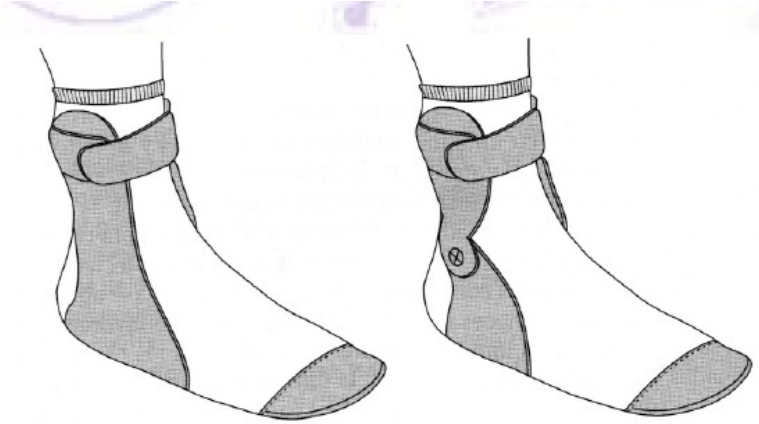


# AFO: Plastic molded

- Good prevention of tripping
  - Adjustable to each person within a certain range
  - Some degree of dynamism during walking
  - Not too expensive
- 
- Not indicated in case of hindfoot valgus or varus, or spasticity
  - Can cause wounds
  - Low usage of muscles during walking
  - Not good for driving
- 
- Keep ankles in a blocked position (except the mixed one)



# AFO: Plastic molded



# AFO: Textile, leather-like

- More freedom of movement
  - Walking is more natural
  - Easy to put on and off
  - Less prone to cause wounds
  - More discreet
  - Indoor versions
  - Good for driving
  - Not very expensive
- 
- Require lace-up shoes
  - More prone to ankle-twist



Dictus



Boxia Orliman



# AFO: Textile, leather-like



Philips

Saebo step



Dictus



Boxia Orliman

# AFO: craftwork in Argentina





# AFO: Metallic

- Springs and joints assist dorsiflexion
- Feet are not in contact with AFOs parts, except in “Triple Action”
- Indicated for severe affection
- Good for permanent usage



# AFO: Metallic



# AFO: Dynamic

- Made with modern materials like carbon fiber: light, easy to mold
  - High degree of movement
  - High return of energy
  - All types of shoes
- 
- Not indicated if spasticity
  - Not easy to drive with
  - Some are expensive





# AFO: Dynamic



Dynamic walk

- Better with lace-up and wide shoes
- Don't have stripes
- Good for active patients



- Vertical axis can be rear or side ways

# AFO: Dynamic



Walk On

- Open heel
- Help in case of ankle twist
- More physiological gait
- Indicated for mild to moderate foot-drop



Walk On flex



Matrix Max



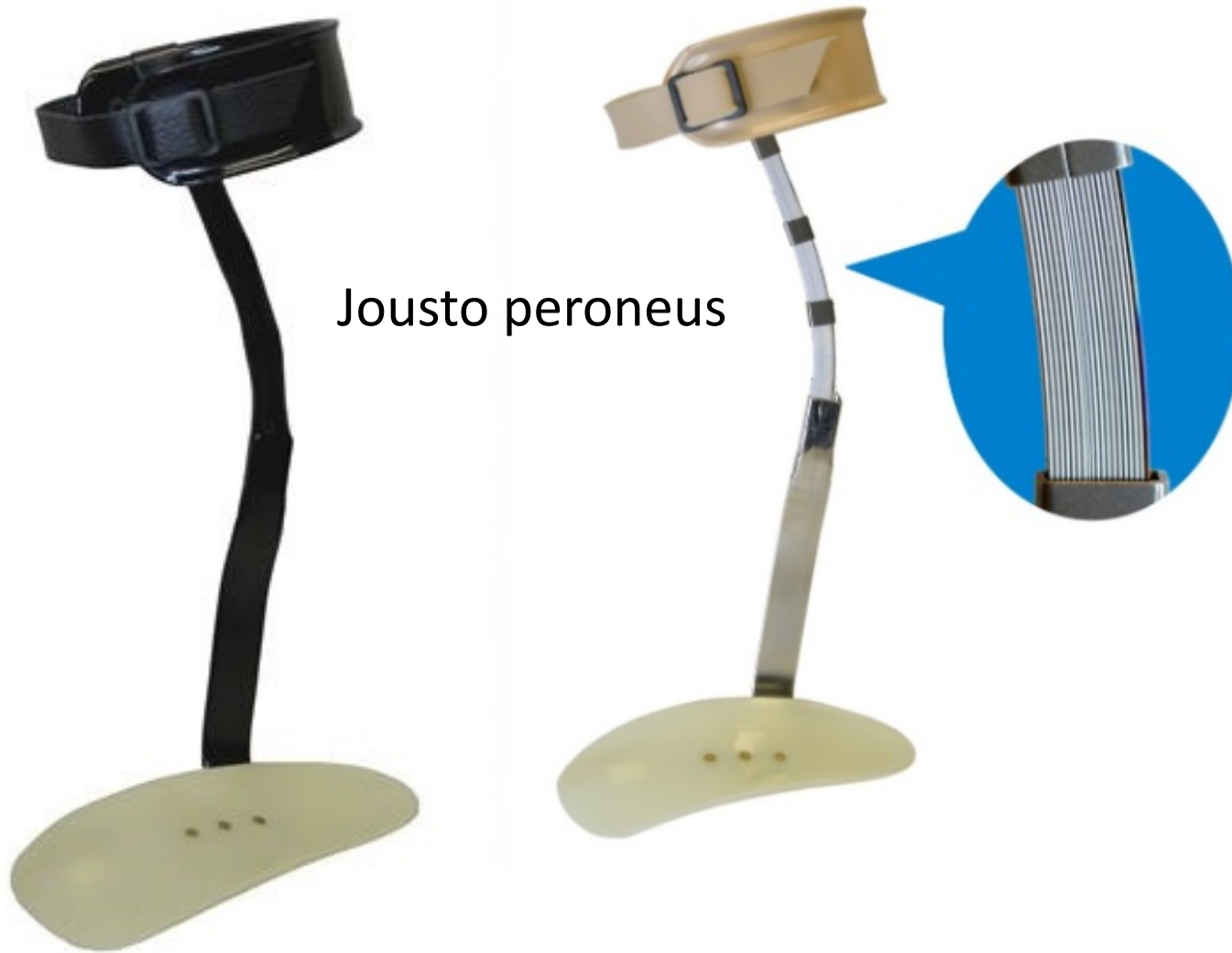
# AFO: Dynamic

Turbomed 3000



- Acts as an exoskeleton
- Thermoplastic
- Hiperflexible
- Doesn't prevent ankle plantarflexion or limit dorsiflexion
- Lace up shoes or sandals
- Easily conforms to uneven ground and slopes
- Indicated for active patients
  
- Not so easy to assemble or change from one shoe to another

# AFO: Dynamic

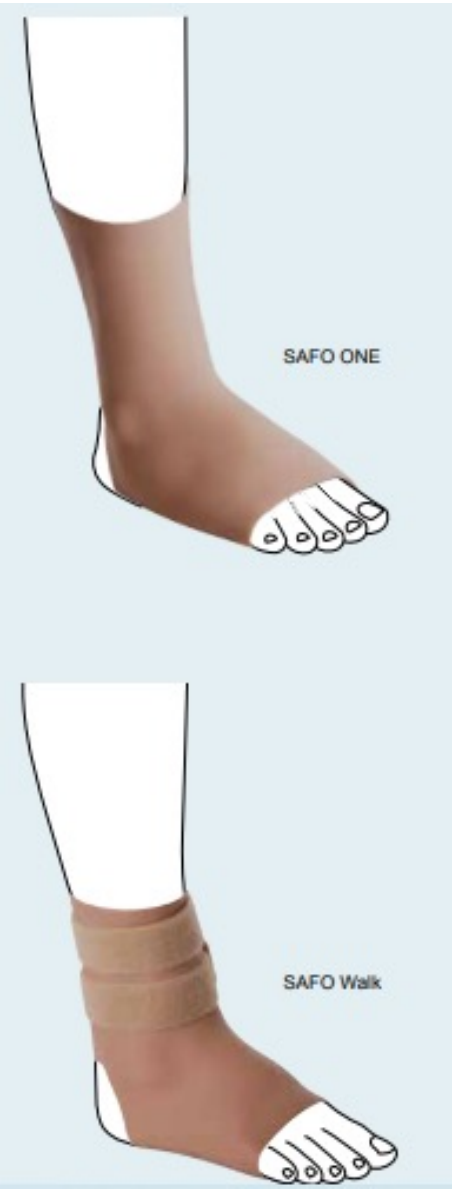


- It swings thanks to a leaf spring
- Plastic-covered metal bar and plastic base
- Easier to wear inside the shoe
- Discreet
- Bar can be adjusted to prevent friction with malleolus

- Silicon made
- Water-proof
- UV-resistant
- Any type or no shoe
- Over or under socks
- Multiple skin colors
- Hand-made for each person
- Very expensive



# SAFO



i-fit, for suitability  
test

# Ankle-Foot Orthosis

- Websites of major vendors
  - [www.Orliman.com](http://www.Orliman.com)
  - [www.Ossur.com](http://www.Ossur.com)
  - [www.Saebo.com](http://www.Saebo.com)
  - [www.Beckerorthopedic.com](http://www.Beckerorthopedic.com)
  - [www.Ottobock.com](http://www.Ottobock.com)
  - [www.Turbomedorthotics.com](http://www.Turbomedorthotics.com)

## Main sources

- “Tratamiento ortopédico para el pie equino adulto (PDF)”. Ortopedia Aeropuerto, Córdoba, Spain
- [MMII Antiequinos - \[PPT Powerpoint\] \(fdocuments.es\)](http://fdocuments.es/MMII-Antiequinos-PPT-Powerpoint)
- Thanks to Alejandro Villalba at Zaraorto Ortopedia, Zaragoza, Spain for high-quality photos, to Raj Badiani for revision and introduction of SAFOs and to Nahuel Bulian for sharing his leather AFO



## CUSTOM AFO DESIGN FROM NAHUEL BULIAN, FSHD ARGENTINA

