

IPRO 309- Educational and Technical Support of Orthotics and Prosthetics Education in Latin America and The United States

Intense Need of O & P Devices

IN LATIN AMERICA...

- Approximately 2.5 million people in Latin America who need this type of care
- Only one ISPO accredited program
- Two unaccredited programs
- Only 50 certified and 1500 uncertified practitioners in entire region

IN COLOMBIA...

- 250,000 people with unmet needs for orthotic and prosthetic care
- 3000 new cases of spine deformities each year
- Fewer than 10 certified O&P practitioners



Goals

To address the need for O & P devices in Latin America and the United States. To assist in the accreditation process, IPRO 309 students created educational modules to be used for the classroom portion of the educational program at Centro Don Bosco and Joliet Junior College.

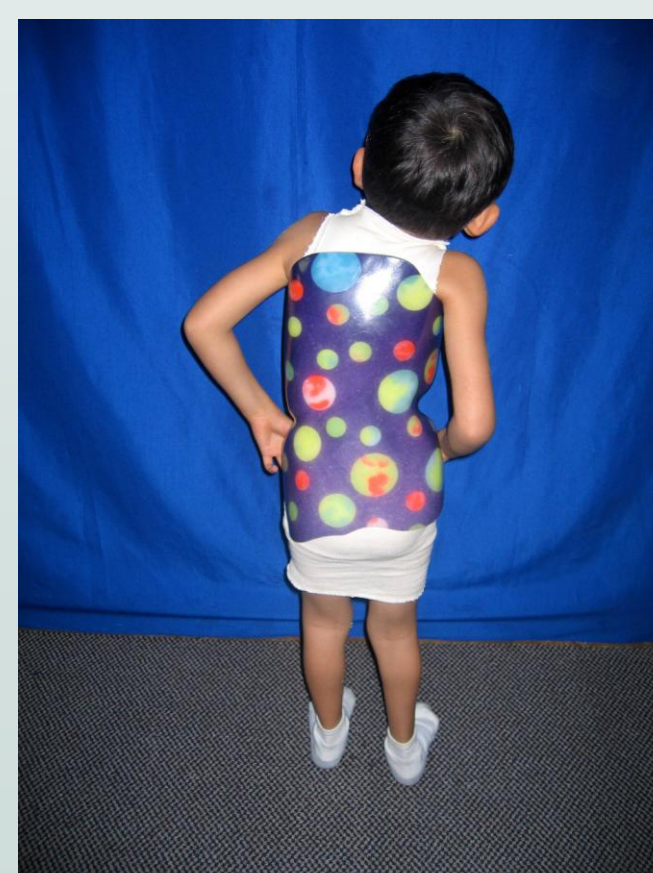


Previous IPRO groups have focused on biomechanics, common O & P devices, and pathologies. This semester the focus has been turned to common medical conditions and the orthotic devices used to treat them. Special attention was placed on fabrication of the devices.



Collaborating Organizations

- Universidad de los Andes; Bogotá, Colombia
- La Escuela Colombiana de Rehabilitación; Bogotá, Colombia
- Centro Don Bosco, Bogotá; Colombia
- Laboratorio Gilete, Bogotá; Colombia
- Bioconcepts, Inc.; Burr Ridge, IL
- Dynamic Orthotics and Prosthetics; Houston, TX
- Children's Memorial Hospital; Chicago, IL
- Joliet Junior College Tech Prep Program; Joliet, IL
- Northwestern University Prosthetics and Orthotics Center (NUPOC); Chicago, IL
- Illinois Institute of Technology, Chicago, IL



Approach

The team was divided into groups to create 3 modules to cover general evaluative topics and how they relate to an entry level O & P technician in training.

For our own educational benefit in creating the modules, we looked to professionals in the field for information. We attended a tour of NUPOC to gain a better understanding of how these devices are made and saw students in action. We also visited Children's Memorial Hospital to see the implementation of the devices.



Modules

Cerebral Palsy

The cerebral palsy subgroup has created a module which describes the causes and physical effects of the disease. The group has focused on the use of ankle-foot orthotics, wrist-hand orthotics and spine orthotics to help relieve the physical effects of CP. The module provides substantial information regarding the manufacture of these orthotics.

Diabetes and Club Foot

Contains background information on diabetes and the O & P care that can be used to treat it.

Osteoporosis

The Osteoporosis training module gives a brief description of Osteoporosis, as well as goes into further detail about the O & P treatment of the common types of fractures due to this disabling disease. Hip, wrist, and vertebral compression fractures were emphasized.



ISPO Accreditation

The International Society for Prosthetics & Orthotics (ISPO) accredits its educational programs on a scale from I to III, with III being the lowest. The programs are design to be cumulative; successive accreditation requires the previous level of training.

Category III: Manufacture prosthetic and orthotic devices. 2 year vocational training. No patient interaction.

Category II: Category III plus self clinical practitioner training. 3 year program. Involves direct patient care.

Category I: Equivalent to a masters degree in orthotics and prosthetics. Involves research and development of orthotics and prosthetics.



Example: Charcot's Foot

Bones weakened due to nerve damage causing fractures. The muscles cannot support the body, ligaments loosen, joints become dislocated.

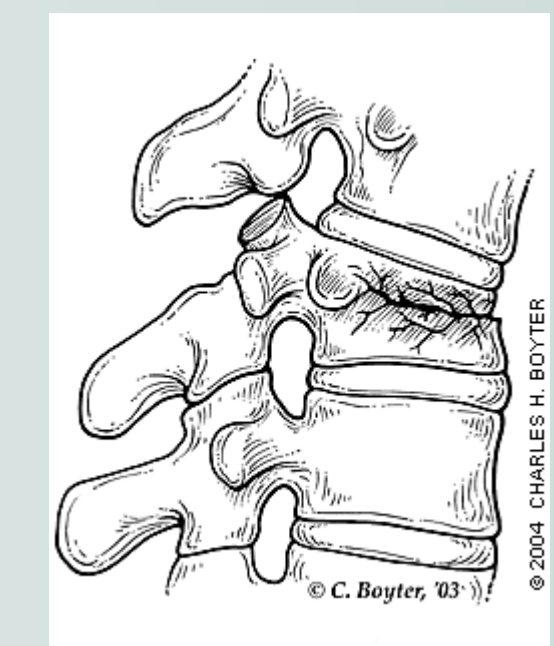
Treatment stabilizes the foot, redistributes weight, and provides comfort:

- Total contact cast (TCC)
- Charcot Restraint Orthotic Walker (CROW)

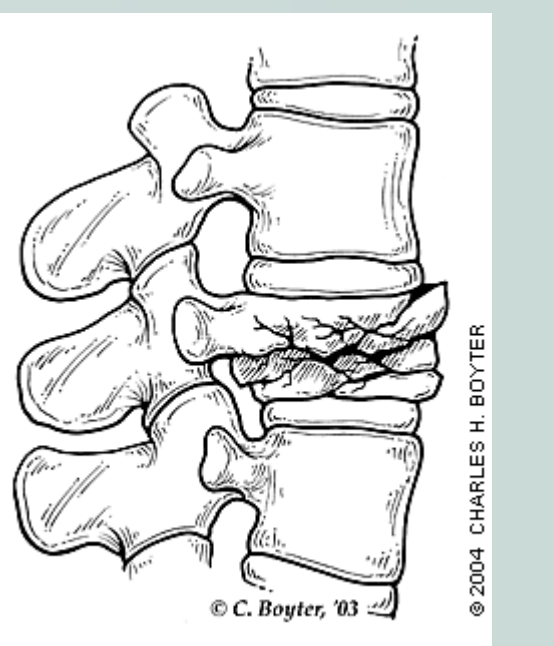


Example: Vertebral Compression Fractures (VCF)

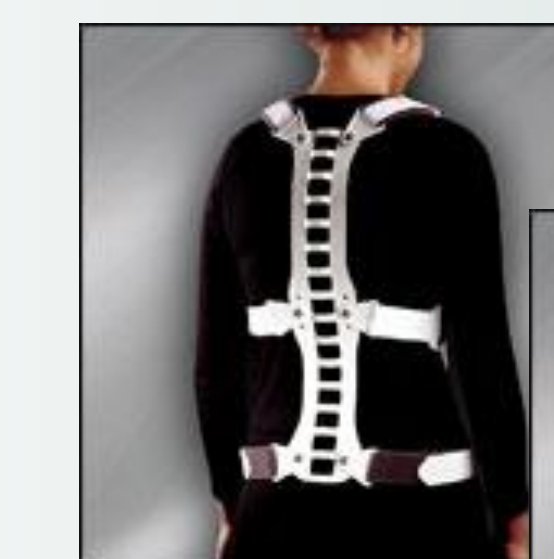
Fracture resulting when the upper body exceeds the ability of the bone within the vertebral body to support the load. There are two types, the wedge and burst fracture.



Wedge



Burst



One option for orthotic treatment is Spinomed®. It activates back muscles to straighten the dorsal spine and decrease kyphosis

Example: Crouch Gait

Crouch gait is caused by the constant flexion of the knee and hip, as well as internal rotation and adduction of the hip.



The preferred method of treatment is a floor reaction ankle foot orthosis (FRAFO). The FRAFO serves to properly align the ankle and knee as well as provide knee extension.

