Bio-Mechanical Composites Inc
1300 Keo. Way
Des Moines, Iowa 50309
(515) 554-6132

Energy Storage

Prosthetics has been utilizing this technology over the past 20 years and it has revolutionized the industry.

Mass Production

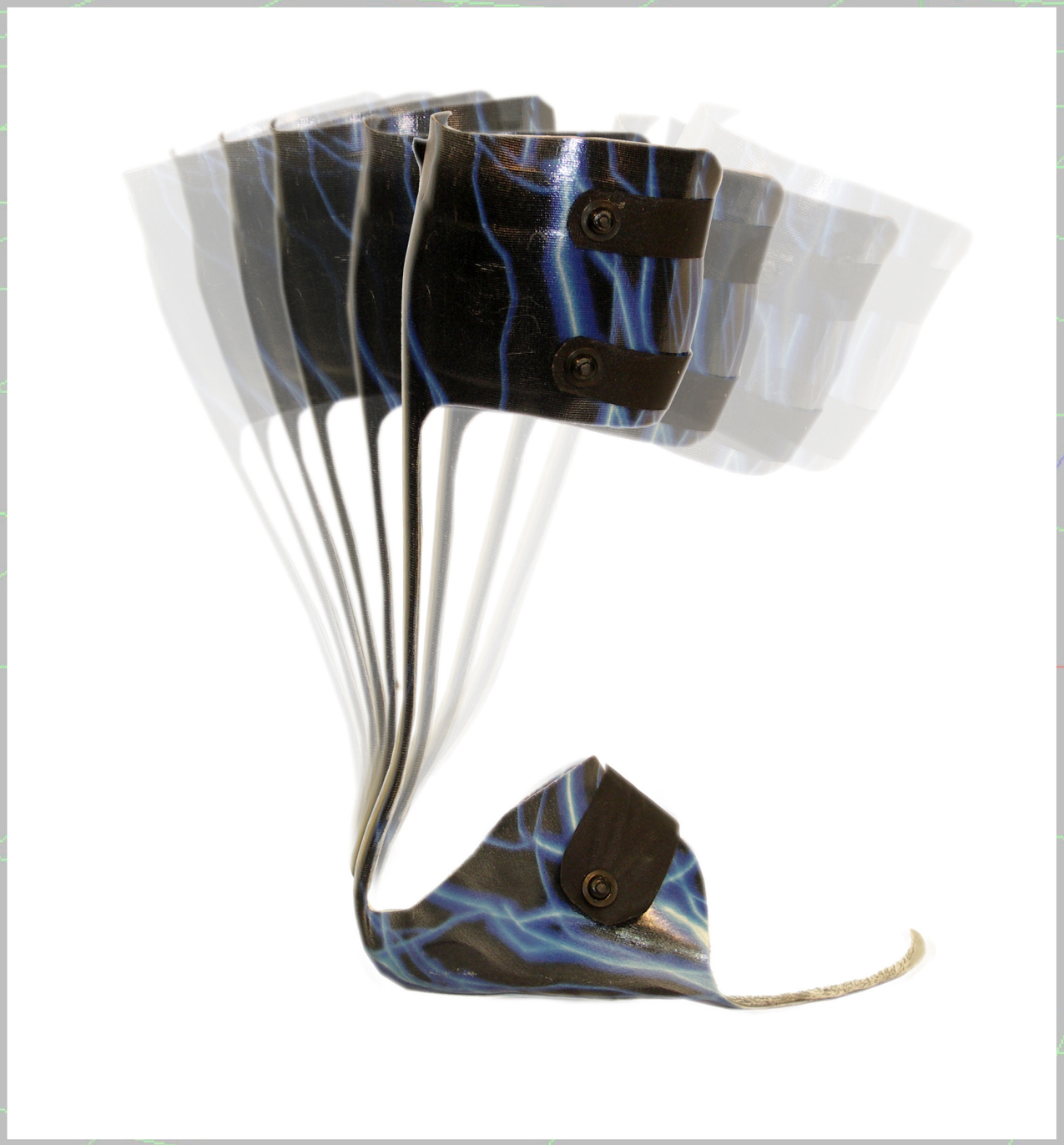
Orthotics has been slow to adopt the technology due to the need for a customization.

A custom shaping is required to produce a low profile orthosis.

Each orthosis requires “One-Off Engineering” to produce the specific resistance strength for each patient level of pathological deficit

The
“Dynamic Response“
Orthotic System

The only custom energy storing
AFO



Dynamic Response

It produces much more than just energy return

Proprioceptive Balance

This system replaces the calf muscle group function while allowing the patient to maintain proprioceptive balance

Patient Testimonial

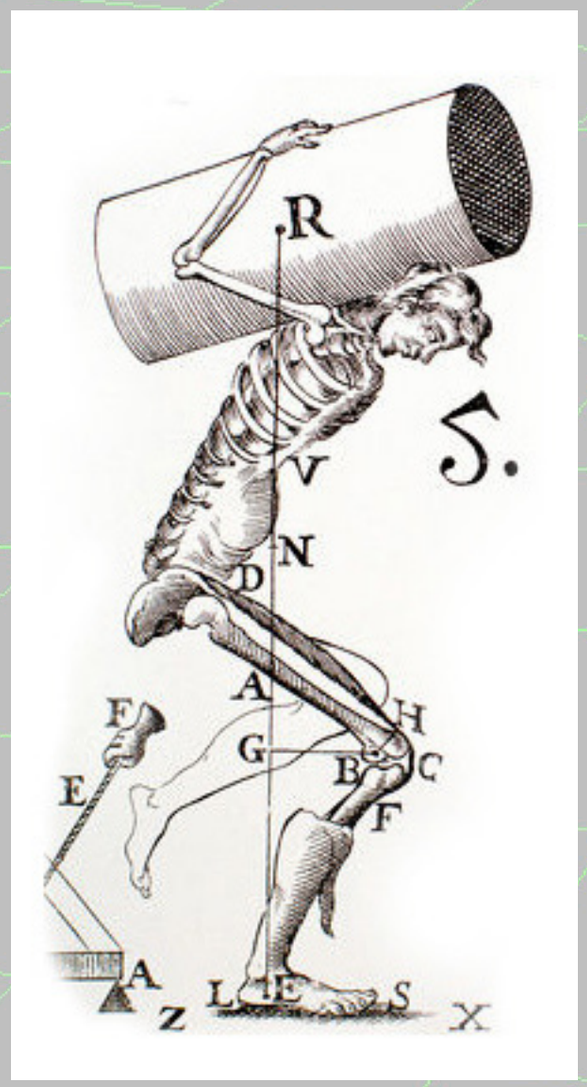
Click video to play

Evaluating Plantar Flexion Strength

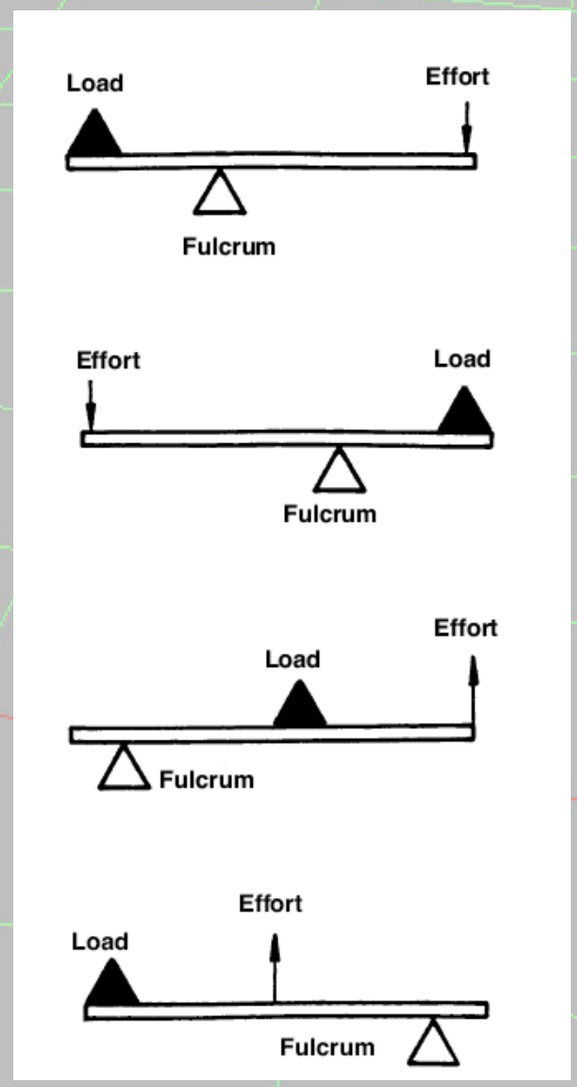
Gastrocnemius and Soleus against full weight bearing

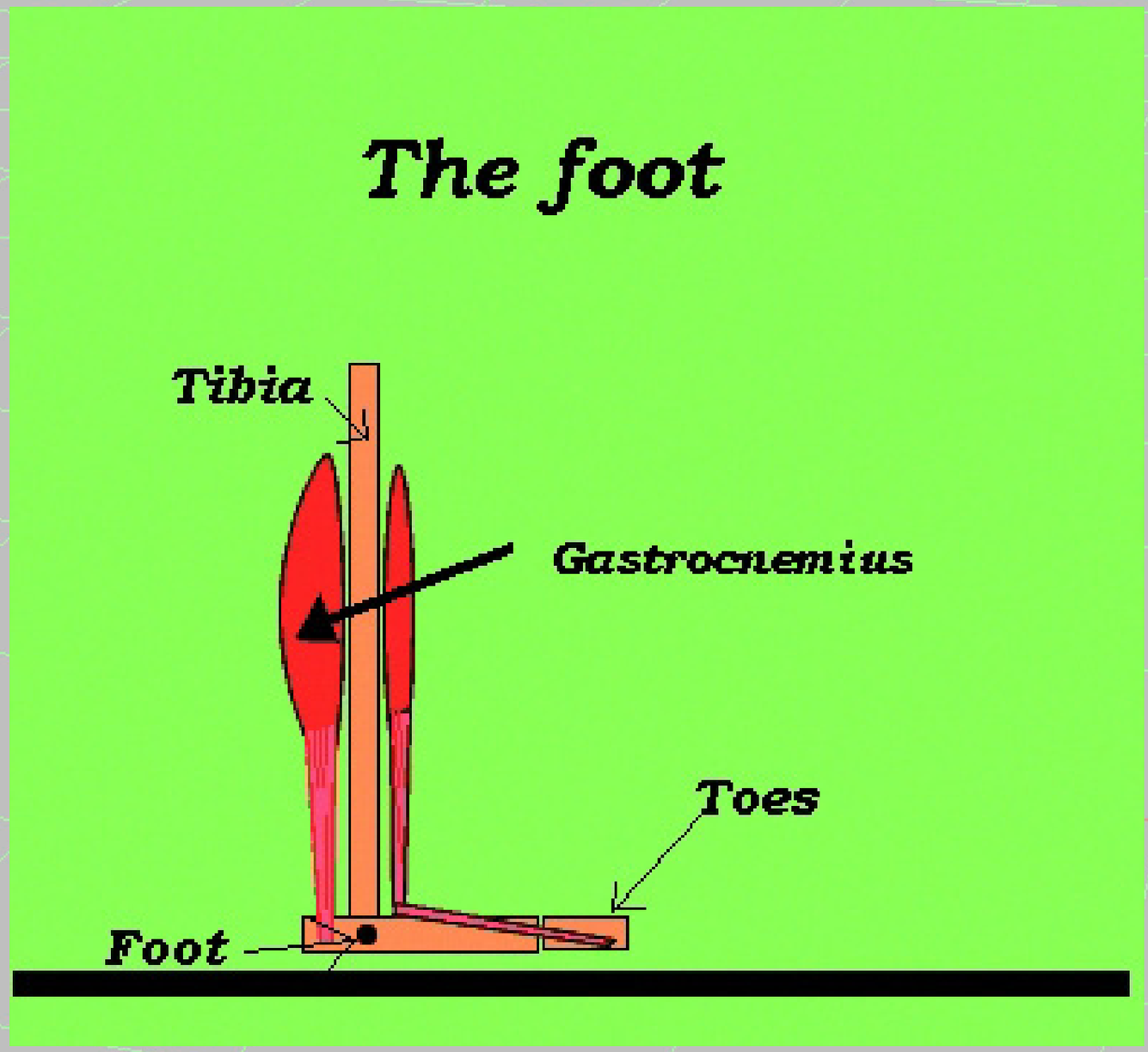
Replacement of absent strength or supplement of weakness requires grading

Ankle Lever Systems



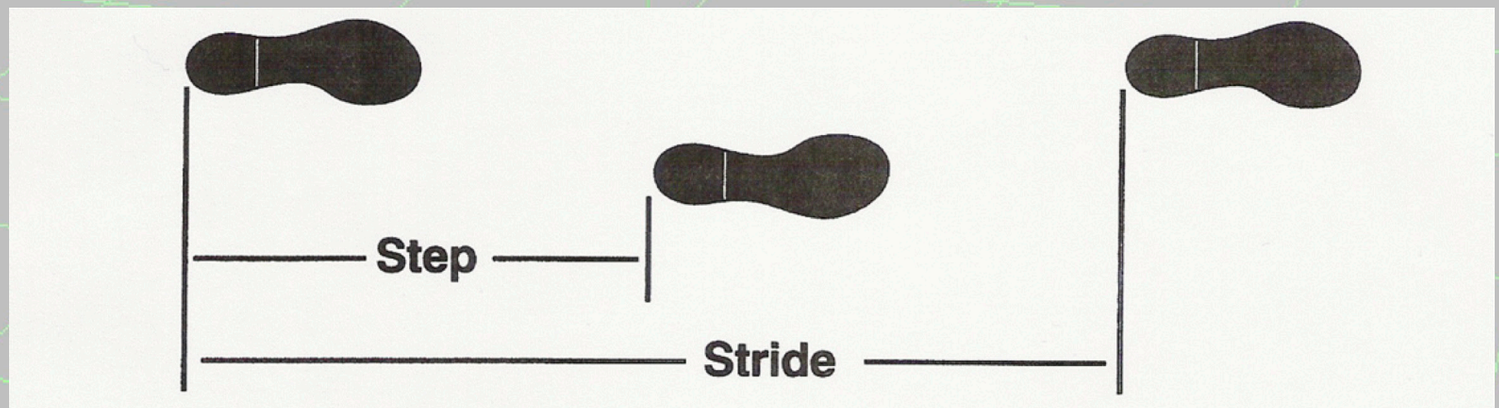
Picture from De Motu Animalium (1680), by Giovanni Borelli.





The lever system of the ankle enables propulsion and standing balance

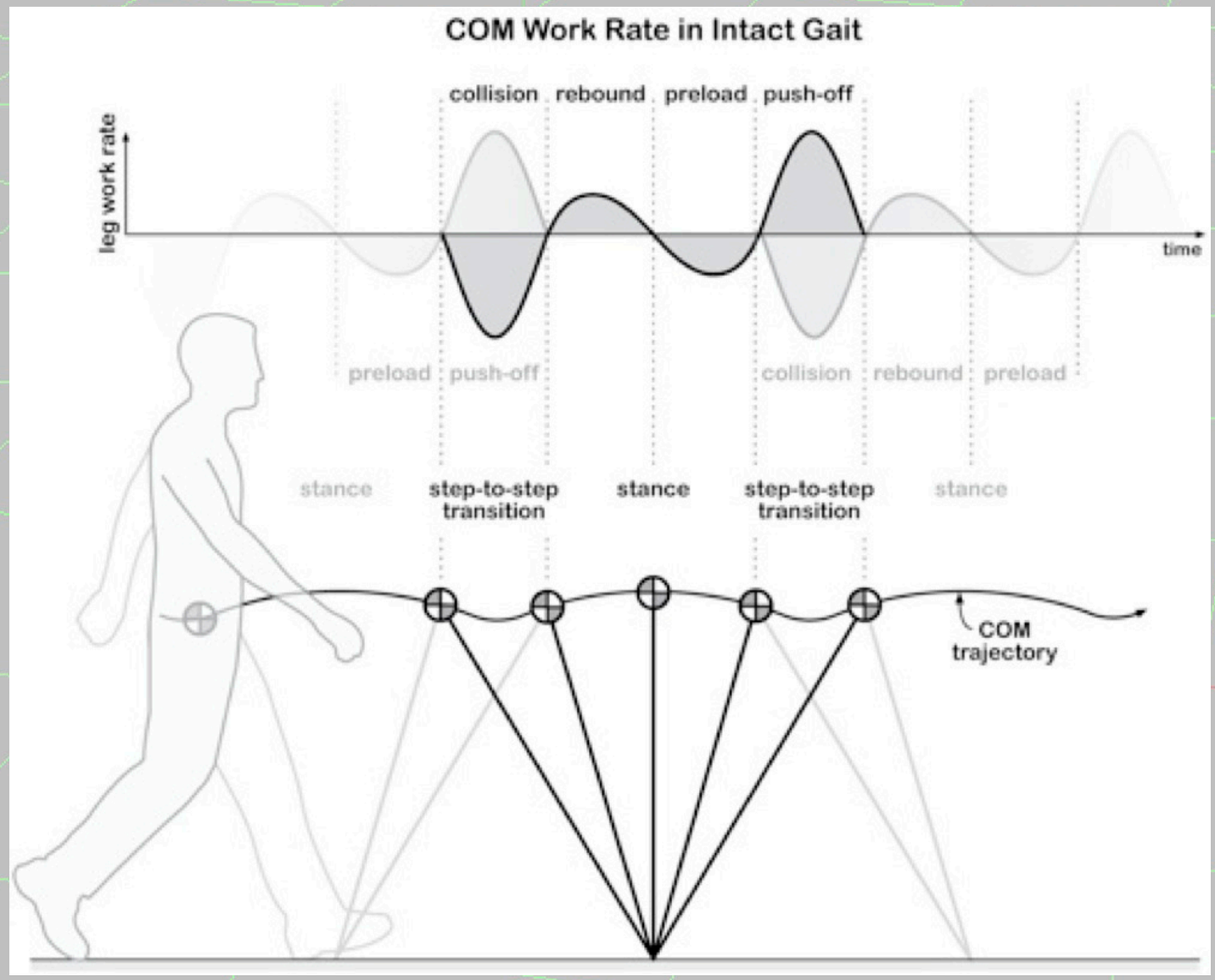
Improving Patient Function



Increasing Stance-Phase stability allows the patient to spend more time on the extremity

The foot needs to be maintained in the line of progression of the knee for the lever system of the ankle to be effective

Center of Mass



When the patient feels stable on both extremities their gait becomes fluid and their energy expenditure reduces

Energy Storing & Proprioceptive Balance

A stable acceptance of weight to each extremity increases the time on each extremity and returns the patient to a fluid gait

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