

Human Need

- Stroke ~ 4.7 million US
- Spinal Cord Injury ~ 200 Thousand US
- Multiple Sclerosis ~ 400 Thousand US
- Cerebral Palsy ~ 100 Thousand US
- Post Polio ~ 1 million US
- Amputation ~ 1.5 million US

National Stroke Association
National Spinal Cord Injury Database
Multiple Sclerosis society
National Center on Birth Defects
World Health Organization
National Limb Loss Information Center



Amputee Patient Numbers

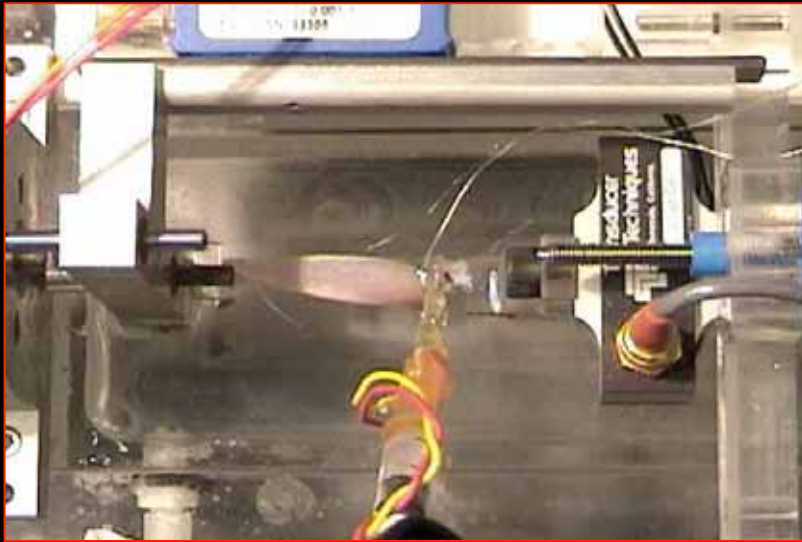
24 April 2007

LEVEL	TOTAL
Unilateral LE	348
Bilateral LE	96
Unilateral UE	114
Bilateral UE	6
Combined UE/LE	16
TOTAL	579

Total LE Limbs Lost	560
Total UE Limbs Lost	144
Total Limbs Lost	704

The MIT Biomechatronics Group

Muscle Biomechanics & Control



Organismal Biomechanics & Control



Human Rehabilitation & Augmentation Technology



The Rheo: Magnetorheological Knee Prosthesis



Variable-Damping

Metabolic Cost of Ambulation



Johansson J., Bonato P., Riley P., Herr H. Transfemoral Knee Prostheses: A Clinical Comparison Between Electronic and Passive Devices. *American Journal of Physical Medicine and Rehab.* 2005.

Rudy Garcia

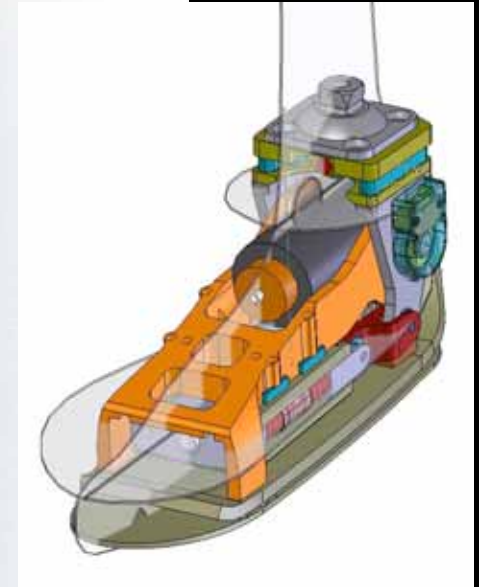
Center for Restorative and Regenerative



University



Illustration by Bryan Christie



MIT



Ankle Dorsi/Plantar Flexion Power

