



Assistive Movement Adjustable Loading Device for Impaired Lower Extremities

This innovative assistive movement device expedites recovery from lower limb injuries by providing variable weight adjustability, encouraging stronger union, and increasing patient mobility.

Studies conducted in 2011 show that approximately 864,000 people suffered from fractures requiring the use of crutches. Of those, approximately 319,000 occurred at or below the knee affecting the ankle, foot, tibia, fibula, and/or knee. It is known that the healing process can be made more efficient by gradually restoring load to an injured limb; however, there are no existing products that provide variable loading throughout the healing process. Therefore, there is a need for an assistive movement device that compliments the optimal recovery process below the knee injuries.

Researchers at Purdue University have developed an innovative assistive movement device to aid those affected with lower limb impairments. This technology expedites the recovery process using variable weight adjustability on the injured limb. This device allows users to move freely in their everyday activities without the limitations of normal crutches. The total recovery time is further decreased by encouraging a stronger union through axial compressive dynamization of the limb.

Advantages:

- Reduces recovery time
- Encourages a stronger union through axial compressive dynamization
- Allows users to be more mobile during recovery period

Potential Applications:

- Medical/Health
- Orthopedics
- Physical therapy

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-Lower limb injuries

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