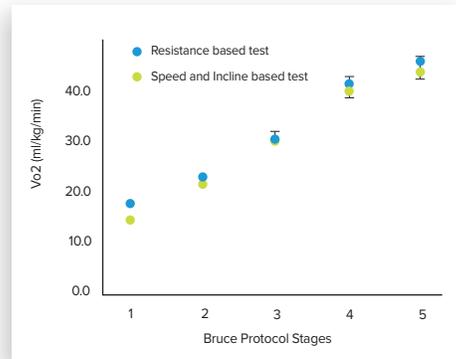


Resist^x Force-Induced Treadmill

ALLIANCE FOR INNOVATIVE MEDICAL TECHNOLOGY – AIMTECH / REHAB ENGINEERING



Treadmill and harness provide a safe environment to perform exercise testing and prescription on a level surface, at a speed that is self-selected by the individual. Specialized equipment and customized algorithms allow determination of cardiorespiratory fitness by matching workrates to standardized exercises protocols.

■ **Technical Readiness Level**

TRL 6 (Prototype demonstration in a relevant environment)
Fully functional prototype has been built and evaluated with healthy volunteers. Prototype contains automated resistive force control and safety features. Demonstrated testing protocols that match a person's workrate and VO₂ to that of standard treadmill protocols, such as Bruce Protocol.

■ **Competitive Advantages**

Individuals can perform exercise testing and training at their own pace while experiencing resistive forces applied at the waist. This may be advantageous for patient populations with limited gait speed or balance impairments. Several features of the treadmill create a safe environment to perform aerobic testing and training: The safety harness, the flat surface, and the ability to walk at a constant speed minimize the risk of falling and desire to grab the handrails for support, which will enable patients to challenge themselves to a greater extent. This may be especially advantageous for individuals with common musculoskeletal and neurological impairments.

■ **Market Overview**

Target patient populations are those who have gait and balance impairments that limit functional mobility. These populations include but are not limited to older individuals or those aging with neurological or musculoskeletal impairments such as individuals poststroke, those who have Parkinson's disease, or osteoporosis. Our team has conducted interviews to obtain feedback from clinicians, rehabilitation specialists and end target users.

■ **Inventors**

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