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Postural Sway Measurement Tool and Method

A low-cost, easy-to-use mobile system utilizing smartphones and custom image processing software provides accurate, daily assessments of human movement and postural sway for balance disorder management and concussion screening.

Postural sway controls the body's weight distribution around its center of mass. Its deviation from normal can be a symptom of a variety of neuromuscular and vestibular disorders. Despite the importance of sway assessment, current technologies used to collect these movements are either too expensive and/or too difficult for the general public to operate outside of a lab environment. Wearable devices that measure human movement can enable daily sway assessment using inexpensive and easier to use sensors.

Researchers at Purdue University have developed a mobile system based on a widely available platform (smartphones) and a custom-designed image processing software for human movement and sway assessment. This is a low cost, easy-to-use design that is portable and provides accurate assessments. Older adults, athletes, and others suffering from balance disorders, such as Parkinson's disease, can use this technology. An additional use includes as a screening tool for concussion and/or traumatic brain injury for both athletes and military personnel. It offers the advantages of daily measurement by the end-user.

Advantages:

-Easy-to-use

-Low cost

-Accurate

-Daily measurements

Potential Applications:

-Older adults

Technology ID

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Category

Artificial Intelligence & Machine Learning/Computer Vision & Image Recognition

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-Balance disorders such as Parkinson's disease

-Screening tool for concussions and/or traumatic brain injury for both athletes and military personnel

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Intellectual Property:

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