



## Tactile Feedback Device for Movement Control in Exercise and Sports

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**Inventors:**

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**Patent Status:**

Patent-Pending

### Description of Technology

During exercise, sports, and daily activities, certain movement patterns are encouraged or discouraged in order to accomplish goals, enhance performance, or decrease risk of injuries. For example, certain knee movements during walking or jumping tasks can lead to an increased risk of knee osteoarthritis and ligament injuries. While performing lifting tasks there can be an increase for lower back injuries. These types of injuries can be avoided or mitigated if an individual receives feedback regarding their movements and therefore adjust their movements accordingly.

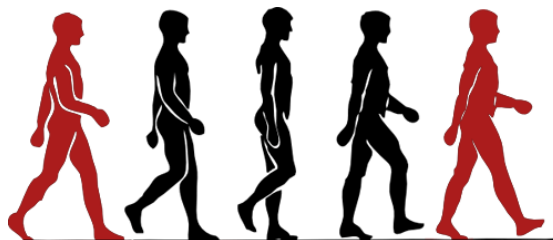
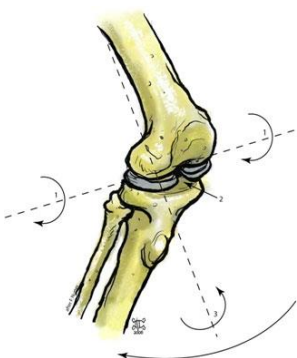
Researchers at the University of Wyoming have developed a tactile feedback device to show body segment movements during dynamics tasks. There are three components included in the device: a belt, a horizontal component, and a vertical component. The device can be placed on a body segment, and by adjusting the location of the belt and the length and orientation of the vertical component, the tip of the vertical component will touch another body part to provide tactile feedback when a certain movement pattern is achieved. This will allow for individuals to adjust their movements to prevent future injury and enhance movement performance.

### Applications

- Individuals can be instructed to receive or avoid certain feedback to control their body movements to prevent injury.
- Different feedback models, including verbal, audio, and visual feedback can be used for movement control.

### Features & Benefits

- The tactile feedback from the device may have advantages in practical applications because the feedback is in real-time.
- The device has a simple design and low cost. This makes it more affordable and accessible compared to other equipment available.
- The device can be calibrated using a regular goniometer or ruler and executed by an individual user or his/her trainer.



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