

Spinal Cord Function Imaging System

With magnetic resonance imaging, doctors and researchers are able to identify areas of the spinal cord that have been damaged. However, the ability to map spinal neural activity through nerve stimulation would significantly improve the comprehension and treatment of spinal cord trauma and disease. At the moment, no adequate and reliable system is widely available for the non-invasive imaging of spinal cord function.

Description:

Researchers at Queen's University have developed a novel and innovative thermal stimulation and analysis system that, in combination with MRI, enables researchers and clinicians to view images of the spinal cord that depict where the cord is working to process a sensation or impulse to move. The system includes a peripheral sensory stimulation device, a stimulation control box and proprietary spinal fMRI analysis software. It is the first spinal fMRI system that can effectively map the function in the spinal cord while providing a reference database with spinal fMRI images of healthy test subjects for comparison purposes.

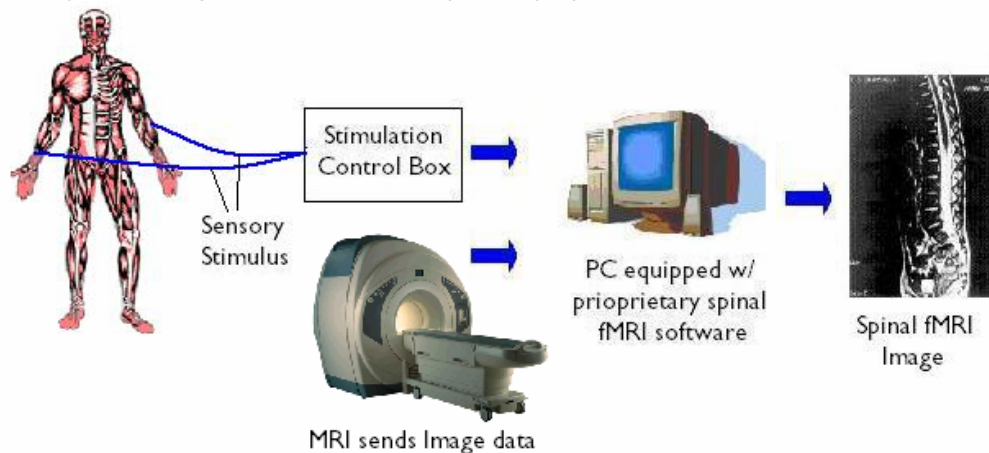


Figure 1: Spinal Cord Function Imaging System

Potential Areas of Application:

- Clinical Research
- Pharmacologic Investigations

Main Advantages:

- Easily integrated in standard MRI imaging session with near real-time output.
- Provides a fixed pattern of stimulation so that it always consistent and requires little user intervention.
- Easy to use, low cost and user-friendly software.
- Provides flexibility with the choice of either thermal or vibratory stimuli.
- Brings spinal fMRI analysis into the clinical environment.

Stage of Development:

A fully functional prototype has been designed and tested. The system provides superior spinal cord imaging which would enable anyone to study spinal trauma with a new perspective.

Status of Commercialization

PARTEQ Innovations is a non-profit organization that commercializes Queen's University research. We have an exclusive, worldwide, royalty-bearing license to make, use and sell intellectual property owned by Queen's University. We are interested in commercializing this technology with an experienced company in the medical sensory device industry.

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