Measuring movement during functional magnetic resonance imaging can be challenging. At Neuroimaging Solutions, we produce custom fiber optic force transducers for measuring forces produced inside the MRI scanning environment.
All fiber optic sensors are hand-crafted using state-of-the-art fiber Bragg grating technology
Calibrated and linear in range
Sensors are available in 700N, 150N, 50N, and 1N range
Precisely measure isometric force contractions inside and outside of the MRI and MEG environment
No interference on MRI and MEG signals
3D printed housing to protect and temperature insulate each sensor
Upper and lower limb applications

PRECISE HUMAN FORCE PRODUCTION

How does it work?

Patient produces force against transducer
Force signal is transmitted via fiber optic wire to an interrogator outside the MRI environment.
Interrogator digitizes force data
Customized software collects force data and provides biofeedback
>> Inside the magnet, patients use the visual display to produce a variety of forces as chosen by the researcher
SOFTWARE

- Customize experimental paradigms by manipulating text files
- Precise control of the visual display to set the amplitude and duration of force production
- Record from multiple sensors at once
- Visual feedback can be driven by recordings from individual or multiple sensors
- High sampling frequency
- MRI trigger capability for precise timelocking of MRI data and experimental paradigm

What our customers say

“The Neuroimaging Solutions staff provided timely support and delivered a quality product.”
~ Dr. Matthew Mosconi, University of Kansas Clinical Child Psychology Program and Life Span Institute

“This technology opens several possibilities for research into sensorimotor control.”
~ Dr. Daniel Corcos, Northwestern University Feinberg School of Medicine Physical Therapy and Human Movement Sciences

“Precise measurement of force is just not available anywhere else using MRI compatible sensors.”
~ Dr. Scott Frey, Washington University in St. Louis Professor of Occupational Therapy and Neurology
PUBLICATIONS


