

Thursday, January 15, 2009

Can Magnetic Resonance Imaging Detect Electrical Currents in a Nerve?

Can **Magnetic Resonance Imaging** detect electrical current associated with a nerve **action potential**? Some researchers have suggested that it is possible by taking advantage of the **Lorentz force** (the force on a current in a magnetic field) to produce motion of the nerve. Professor **Brad Roth**, of the **Department of Physics**, and his colleague **Peter Basser** at the **National Institutes of Health** analyzed the problem in a paper published in the January 2009 issue of **Magnetic Resonance in Medicine** (**Volume 61, Pages 59-64**). They concluded that "this displacement is orders of magnitude too small to be detected by conventional MRI methods."

SUMMARY

Can Magnetic Resonance Imaging detect electrical current associated with a nerve action potential? Some researchers have suggested that it is possible by taking advantage of the Lorentz force (the force on a current in a magnetic field) to produce motion of the nerve.

Created by Heather Mattiello (heather.mattiello@caretech.com) on Tuesday, March 10, 2009
Modified by Brad Roth (roth@oakland.edu) on Thursday, March 12, 2009
Article Start Date: Tuesday, March 10, 2009