



## Recording of EEG during fMRI experiments: patient safety

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Titre	Recording of EEG during fMRI experiments: patient safety
Type de publication	Article de revue
Auteur	Lemieux, L [1], Allen, P J [2], Franconi, Florence [3], Symms, M R [4], Fish, D R [5]
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Année	1997
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Résumé en anglais	<p>The acquisition of electroencephalograms (EEG) during functional magnetic resonance imaging (fMRI) experiments raises important practical issues of patient safety. The presence of electrical wires connected to the patient in rapidly changing magnetic fields results in currents flowing through the patient due to induced electromotive forces (EMF), by three possible mechanisms: fixed loop in rapidly changing gradient fields; fixed loop in a RF electromagnetic field; moving loop in the static magnetic field. RF-induced EMFs were identified as the most important potential hazard. We calculated the minimum value of current-limiting resistance to be fitted in each EEG electrode lead for a representative worst case loop, and measured RF magnetic field intensity and heating in a specific type of current-limiting resistors. The results show that electrode resistance should be <math>&gt;</math> or <math>= 13 \text{ k}(\omega)</math> for our setup. The methodology presented is general and can be useful for other centers.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua5717">http://okina.univ-angers.fr/publications/ua5717</a> [13]
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