Máster en Investigación Biomédica

Project Nº 28
Title: Resting-state fMRI in presurgical mapping

Department/ Laboratory *Biomedical Imaging Laboratory, Department of Radiology, Clínica Universidad de Navarra*

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Summary *Task-activation fMRI has been successfully used in presurgical mapping of eloquent brain areas prior to the performance of brain surgery. With dedicated task paradigms the regions involved in language and motor functions can be located in the individual patient. However, this method requires cooperation of the patient in the performance of the task. Resting state fMRI has appeared as an alternative strategy that does not require any task performance because it can identify functional networks using correlation analysis of resting state data.*

In this project, we propose to compare both techniques in a group of healthy volunteers to evaluate their performance. To that end, the student will have to: (1) design adequate tasks for mapping of language and motor areas, (2) perform task and resting state experiments in a group of healthy volunteers, (3) analyse the data to determine eloquent areas with both techniques and compare the results obtained with both methods.

The student will learn to use the 3T MRI system located at Clínica Universidad de Navarra and the analysis methods required to complete the project.

yes		**Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?**
no	x	