



MÁSTER EN INVESTIGACIÓN BIOMÉDICA

Research Project Proposal

Academic year 2024-2025

Project Nº 10

Title: Changes in brain perfusion after habitual physical exercise

Department/ Laboratory Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc.

Mind-Brain Group (Institute for Culture and Society, UNAV)

Faculty of Education and Psychology (UNAV)

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Summary

The main goal of this project is to analyse fMRI arterial spin labelling (ASL) data that we collected in a sample of 19 sedentary participants who joined a physical activity program. We assessed brain perfusion before and after the program. Hence, the specific goals of the project are as follows: 1) Learn basic and advanced notions of fMRI scanning, especially regarding ASL; 2) Analyse brain perfusion of 19 participants before and after a 3-month physical activity program; 3) Correlate brain perfusion changes with behavioural measures such as effort discounting. Regarding methodology, all data have already been collected. The student will learn how to perform data analyses, including software handling, coding in Matlab, visualisation of results, etc. Depending on the relevance of the results, this project could entail a scientific publication, so the student may also gain expertise in the publication process. The ideal candidate should have an interest in neuroimaging and some experience (or at least a strong motivation in learning) in data analysis and/or coding.

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| yes | |
| no | X |

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?