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| ***Enhancing language learning in ageing with exercise:*** ***An fMRI investigation.*** | |
| **Project duration** | * 6 weeks * 20 hours per week |
| **Description** | Ageing is associated with cognitive changes such as memory decline, which influences the ability to learn new words. Acute exercise (one single session of exercise) is thought to influence cognition through a temporary increase in biomarker levels or through a generalized effect on arousal, however the neural correlates of exercise-induced new word learning have yet to be explored in healthy adults. The aim of this research project is to understand how exercising affects learning and to identify underlying brain activity by training people to learn new words in a magnetic resonance imaging (MRI) scanner immediately after they have exercised. This interdisciplinary research project combines the fields of language neuroscience, ageing and exercise physiology. This project will consist of recruiting 80 healthy adults aged 60-85 meeting specific eligibility criteria. Participants will be asked to attend three visits and will undergo a cognitive and fitness assessment, blood draws, a stretching or exercise session (of either moderate or high intensity), in scanner word learning tasks, and recall and recognition tasks. This research will provide information about whether exercise can improve learning, especially word learning, and identify which parts of the brain participate in this process. Different diseases and conditions can have a negative impact on the way people use language to communicate, due to changes in the structure or function of their brain. Understanding how exercise affects language learning and the regions of the brain that support this may lead to development of new approaches to improving language re-learning in people with these conditions (e.g., stroke, Parkinson’s disease, Alzheimer’s disease). |
| **Position/s available** | 1 |
| **Primary supervisor** | Professor David Copland  [d.copland@uq.edu.au](mailto:d.copland@uq.edu.au) |
| **Further information** | All applicants to contact the project supervisor and Ms Marie-Piere McSween ([m.mcsween@uq.edu.au](mailto:m.mcsween@uq.edu.au)) prior to submitting an application.  Apply via [UQ Advantange](http://www.uq.edu.au/uqadvantage/wr-info-for-applicants). |

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| ***Predicting and promoting post-stroke aphasia recovery.*** | |
| **Project duration** | * 6 weeks * 20 hours per week |
| **Description** | The aim of this NHMRC funded project is to determine whether brain activity and structure observed after stroke predict subsequent language symptom recovery and response to treatment. Participants with post-stroke aphasia will be tested on a clinically meaningful language battery and scanned at 1, 3 and 6 months post-onset, with half the participants receiving treatment at 1 month. Imaging will be used to identify language-related brain activity, white matter tract integrity, and lesion-symptom mapping.This research will determine the best clinical and imaging predictors of language improvement and treatment response in the critical subacute phase of brain recovery. |
| **Position/s available** | 2 |
| **Primary supervisor** | Professor David Copland  [d.copland@uq.edu.au](mailto:d.copland@uq.edu.au) |
| **Further information** | All applicants to contact Prof Copland and Dr Tracy Roxbury ([t.roxbury@uq.edu.au](mailto:t.roxbury@uq.edu.au)) prior to submitting an application.  Apply via [UQ Advantange](http://www.uq.edu.au/uqadvantage/wr-info-for-applicants). |