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**School of Health and Rehabilitation Sciences**  
**NHMRC Centre of Clinical Research Excellence**  
**on Spinal Pain, Injury and Health**

**HONORARY SENIOR RESEARCH FELLOW**

Hugo Massé-Alarie PhD PT

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**ISSLS Research Committee members**

Institute of Clinical Sciences,  
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**RE : Progress report ISSLS Research Grant sponsored by Taisho Pharmaceutical**

To whom it may concern,

First of all, we would like to express our gratitude to ISSLS and particularly to Taisho Pharmaceutical for funding our study entitled "*The role of neuroimmune response on sensorimotor function in different classes of chronic low back pain*". The grant will provide the opportunity to address important questions about the impact of different classes of chronic low back pain on the function of the brain.

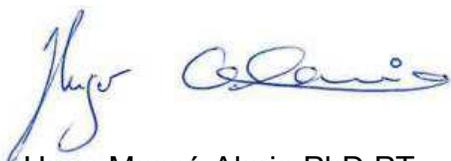
During the last year, we undertook multiple pilot studies to ensure the quality of the data. First, we developed a transcranial magnetic stimulation (TMS) rapid mapping protocol adapted to back muscles specificities at University of Queensland, in Brisbane. Adapting the protocol was essential since rapid TMS mapping had been only done for distal muscle representation. Once the TMS protocol was ready, we performed TMS pilot studies at the Monash Biomedical Imaging center (MBI) laboratory in Melbourne where the study will be ran. Second, we performed multiple pilot studies to determine the best strategies to produce pain in the scanner environment. We tested different mechanic and electric

devices but finally chose to use a noxious thermal stimulation that is MRI compatible from the Medoc system. Third, we tested how much head movement different types of trunk movements induced. Since trunk movements will be tested this was essential to select the movement producing the least head motion for adequate interpretation of the data. Although there was inevitably some movement, pelvic tilt produced the least movement and will be used during the study. On May 23<sup>rd</sup>, we will pilot the fMRI tasks at MBI in Melbourne. After this final step, we will be ready to start the recruitment and data collection.

Some issues delayed the beginning of the recruitment phase of this project. First, I obtained an academic position in Canada. However, to be able to continue the project a PhD student (Muath Shraim) took over the project under Paul Hodges' and my supervision. To do so, my affiliation with the University of Queensland was prolonged as Honorary senior research fellow allowing to pursue Mr. Shraim supervision. Second, although we had an MRI-compatible thermode, it was not compatible with the MRI system at MBI. To manage this issue, the thermode had to be sent to the factory in Israel to be upgraded. This issue postponed the beginning of MRI piloting by 2 months. We recently received the upgraded MRI-compatible thermode.

Since we overcame the issues that postponed the beginning of the study, we are confident to start data collection in next June. Again, we are grateful to ISSLS and Taisho Pharmaceutical for funding the research and preliminary results should come out soon. Results have the potential to understand better how different clinical representation of pain influences brain function and provide important insights to improve management of individuals presenting different classes of CLBP.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Hugo Massé-Alarie'.

Hugo Massé-Alarie PhD PT

*Honorary senior research fellow*

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