

Lay Summary

BRAIN UK Ref: 13/006

Characterizing microglia/macrophage polarization in paediatric brain injury

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Our research centres on finding out more about how brain damage develops in babies with cerebral palsy and investigating the natural processes that are involved in brain repair. We focus on the role of cells called macrophages in damage to, and repair of, a substance called myelin. Myelin forms a protective coating around nerve fibres in the brain to allow nerve function and health, but it can be damaged in babies with cerebral palsy. Our previous studies investigating myelin repair in the brain of adults showed that macrophages need to be activated in a specific way in order for this repair to occur. In this study, we are investigating whether damage in brain tissue of babies who would likely have gone on to develop cerebral palsy is linked to low levels of these activated macrophages. We also aim to identify substances released by macrophages that stimulate brain repair, as it's possible these substances could form the basis of new medicines.