

## **Lay Summary**

**BRAIN UK Ref: 17/014**

### **The Dynamics of Microglia in the Human Brain**

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Microglia, the brain's immune cells, have been proposed to play key roles in brain development and function. Microglia have been described in the brain from the 3<sup>rd</sup> gestational week, completing their colonization of the embryonic brain by the 22<sup>nd</sup> week. In adults, it is widely assumed that these brain immune cells are long-lived and are locally replaced. However, the origin and maintenance of the human microglial population is not clear and their precise pattern and growth in the developing and mature human brain are unknown. Therefore, we are proposing to map the microglial population across the human lifespan starting from early embryonic development until old age. Studies of this nature are non-existent and we would be the first to thoroughly describe how these cells populate different brain areas and how age and sex might affect their growth, proliferation and distribution.