

Séminaire

Département des sciences de
l'imagerie médicale et des
radiations

Pregnancy transforms the female brain: neuroimaging evidence of cerebrovascular remodeling



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Pregnancy is characterized by profound physiological adaptations to support a developing fetus while maintaining maternal health. While recent research highlights significant maternal brain volume reductions, the maternal cerebrovascular system remains critically under-explored. This knowledge gap is particularly concerning given that the risk of neurovascular disorders, such as stroke, increases threefold during pregnancy and the postpartum period – frequently occurring in women who lack traditional risk factors. These clinical observations suggest that unique, pregnancy-specific mechanisms drive this cerebrovascular vulnerability.

To address this, our study employs non-invasive MRI techniques to quantify structural changes in intracranial arteries during the third trimester. By characterizing these normal cerebrovascular adaptations, we aim to establish essential baselines for maternal health. Understanding these structural shifts is vital for identifying precursors to vascular complications and improving clinical outcomes in obstetric care. This research provides a foundational step toward characterizing the maternal brain and its resilience during gestation.