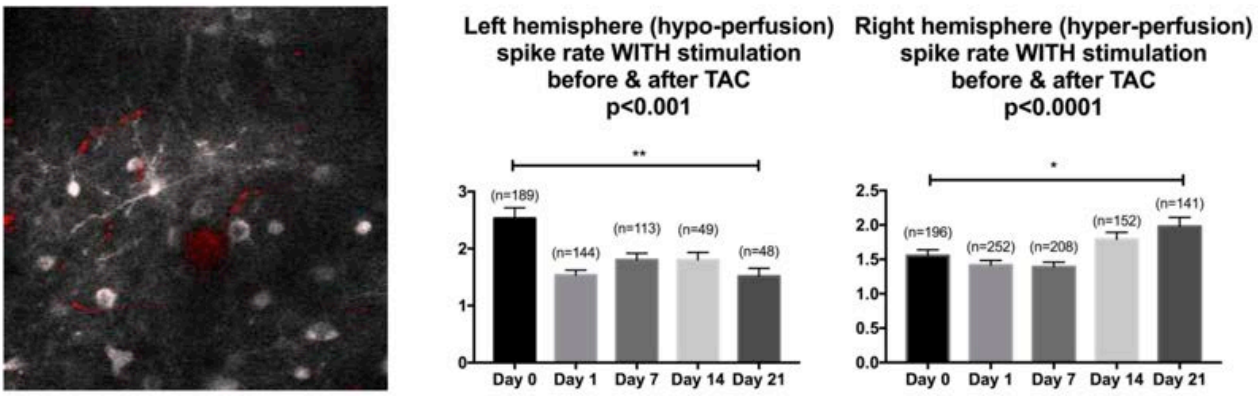

Figure 1 - Neuronal activity following TAC. Left panel: a field of view over the somatosensory cortex of a mouse expressing GCaMP6s under the Thy1 promoter allows to longitudinally probe neuronal dynamics. Center and right panels show changes in neuronal activity (total firing rate) over a period of 21 days (n represents number of neurons).

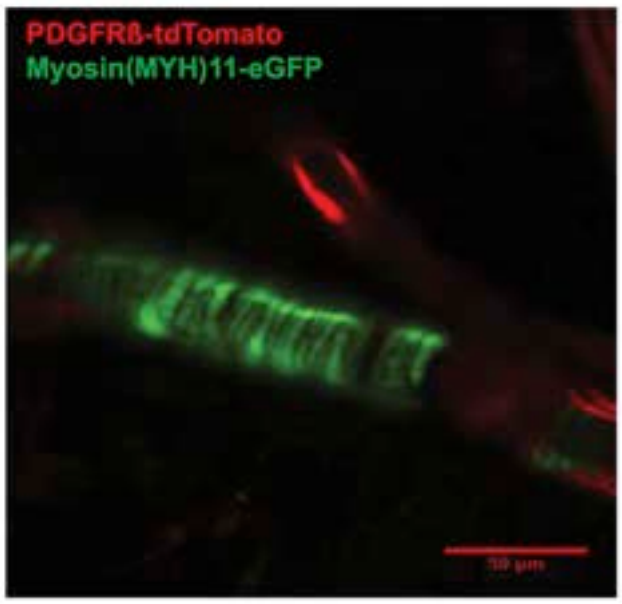

Figure 2 - New chimeric transgenic line expressing eGFP (green) in smooth muscle cells and tdTomato (red) in pericytes.

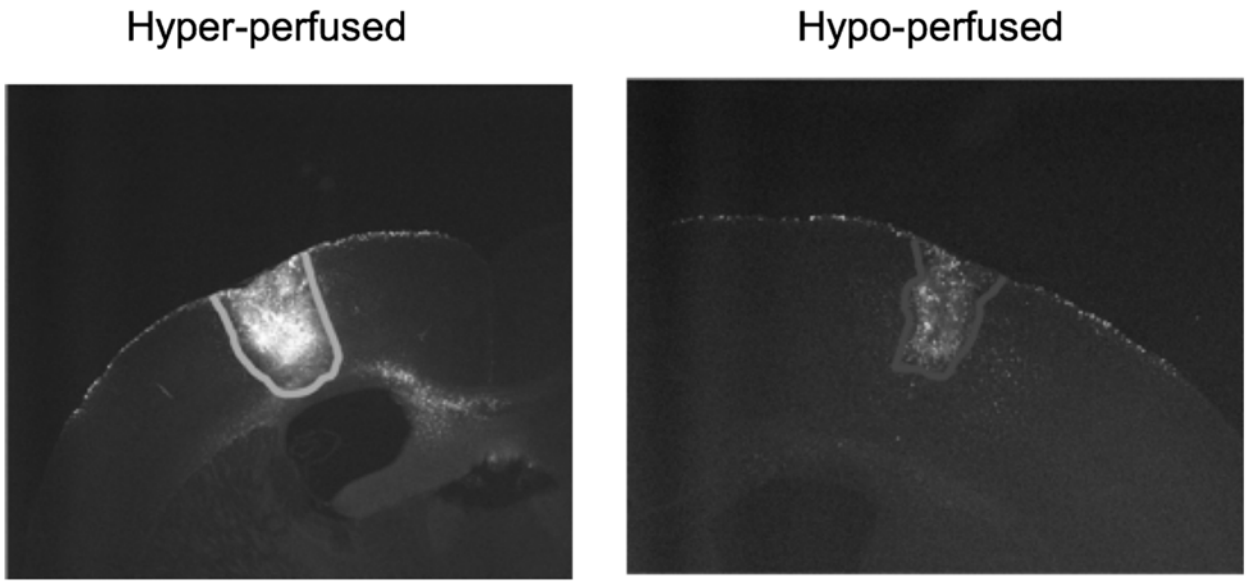

Figure 3 - Targeted photo-thrombotic occlusion under different brain perfusion regimes

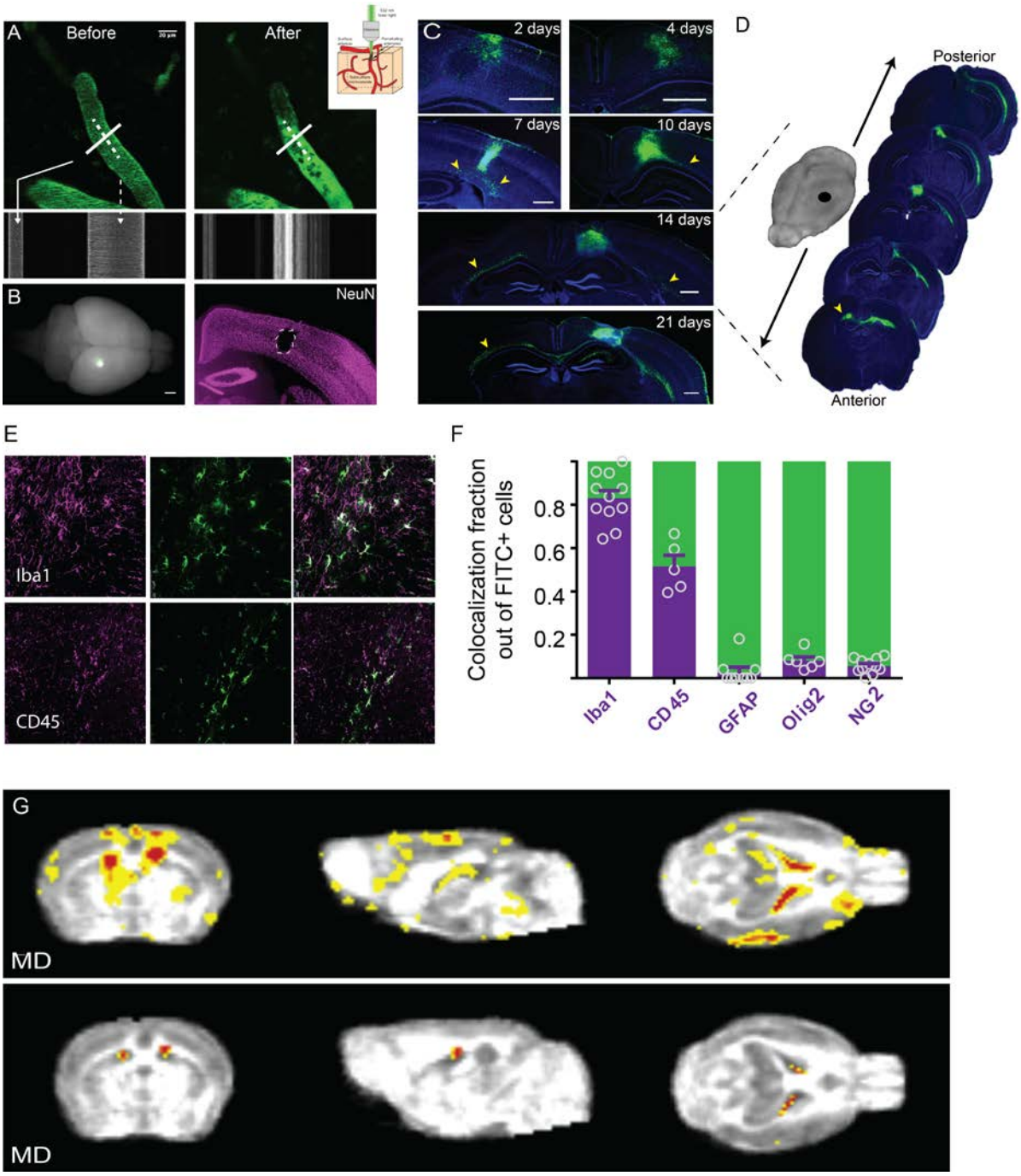

Figure 4 - Cortical micro-infarct have a long range effect with a clear involvement of microglial cells. A-B) Experimental setup to generate targeted photothrombotic occlusion of single cortical penetrating arteries. The same penetrating artery image before and after the occlusion shows a cessation of flow both in a raster (top) and linescan (bottom) images. B) Extracted brain showing the site of the occlusion (accumulated green vascular label, left) and subsequent histological damage (as observed with NeuN, right). C-D) Animals scarified at 2, 4, 7, 10, 14 and 21 days post photo-thrombotic occlusion show the development of a tracer (2000KDa FITC-dextran, injected at the time of the occlusion only). Notice the spread of the trail over a large extent of the sub-cortical white matter tracks over the external capsule at 14 days post-occlusion (D). E-F) Example and quantification of histological survey to determine identity of cells that uptake the tracer. Microglia made up to 80% of the tracer-positive cells in the trail. G) Example of MRI measurements (mean diffusivity clusters) showing significant changes ($p<0.0001$, top row and after correction for multiple-comparison bottom row) across wide areas of the brain (n=8 animals).