

Supplemental Video and Figure Legends.

Supplemental Figure 1: Shows example images of a line scans of a capillary vessel segment from sickle cell mouse. Vessel segment in (a) shows the appearance of a vaso-occlusive event and (b) shows the appearance of a rolling or arrested red blood cell.

Supplemental video 1: Shows a typical line scan. In this case, the line scan was from a control mouse.

Supplemental video 2: Shows 3D reconstruction of high resolution z-stacks of cortical vessels and micro-vessels of control (2a) and sickle cell (2b-d) mice.

Supplemental video 3: Blood flow in cortical micro-vessels in control (3a) and sickle cell (3b) mouse brain. Blood flow in the sickle cell mouse cortical micro-vessel was temporarily stopped by a vaso-occlusive event labelled “thrombus” in this video. Although we note here that we did not label for fibrin or platelets and thus cannot definitively draw a conclusion about the nature of these substance.