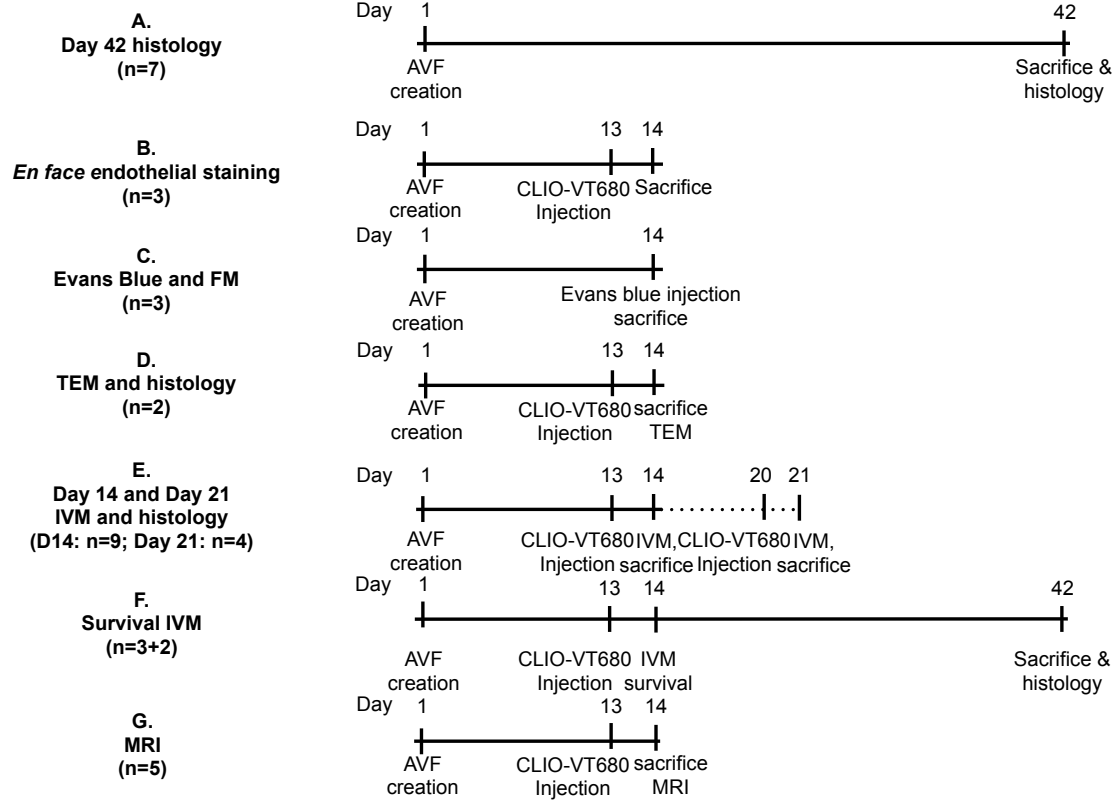


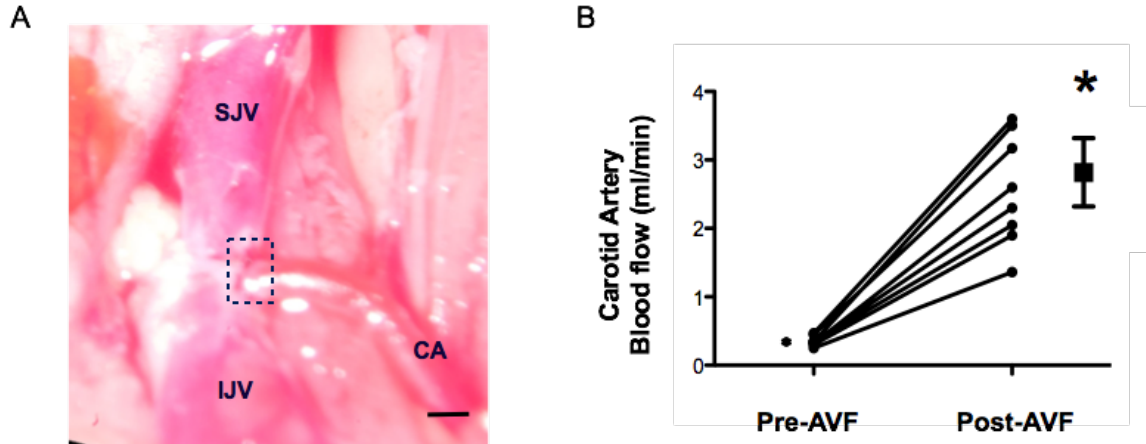
SUPPLEMENTAL MATERIAL

SUPPLEMENTAL FIGURE I



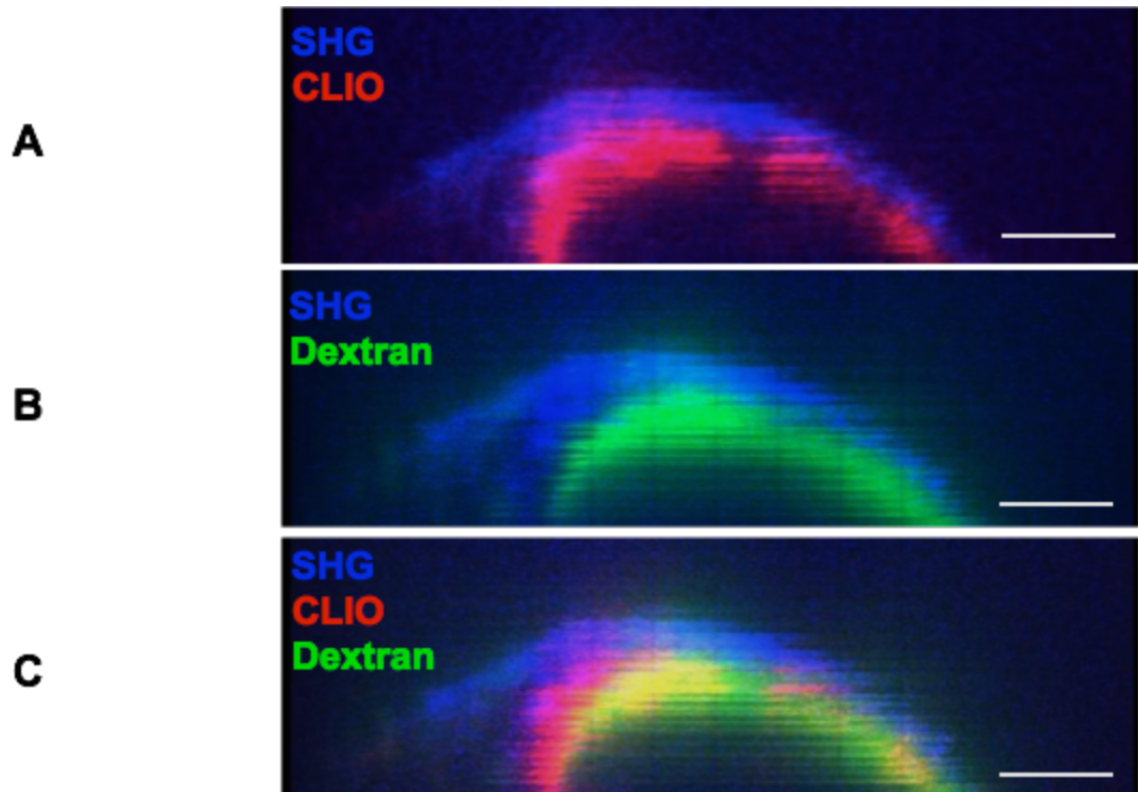
Supplemental Figure I. Study protocol for all *in vivo* and histological studies.

SUPPLEMENTAL FIGURE II



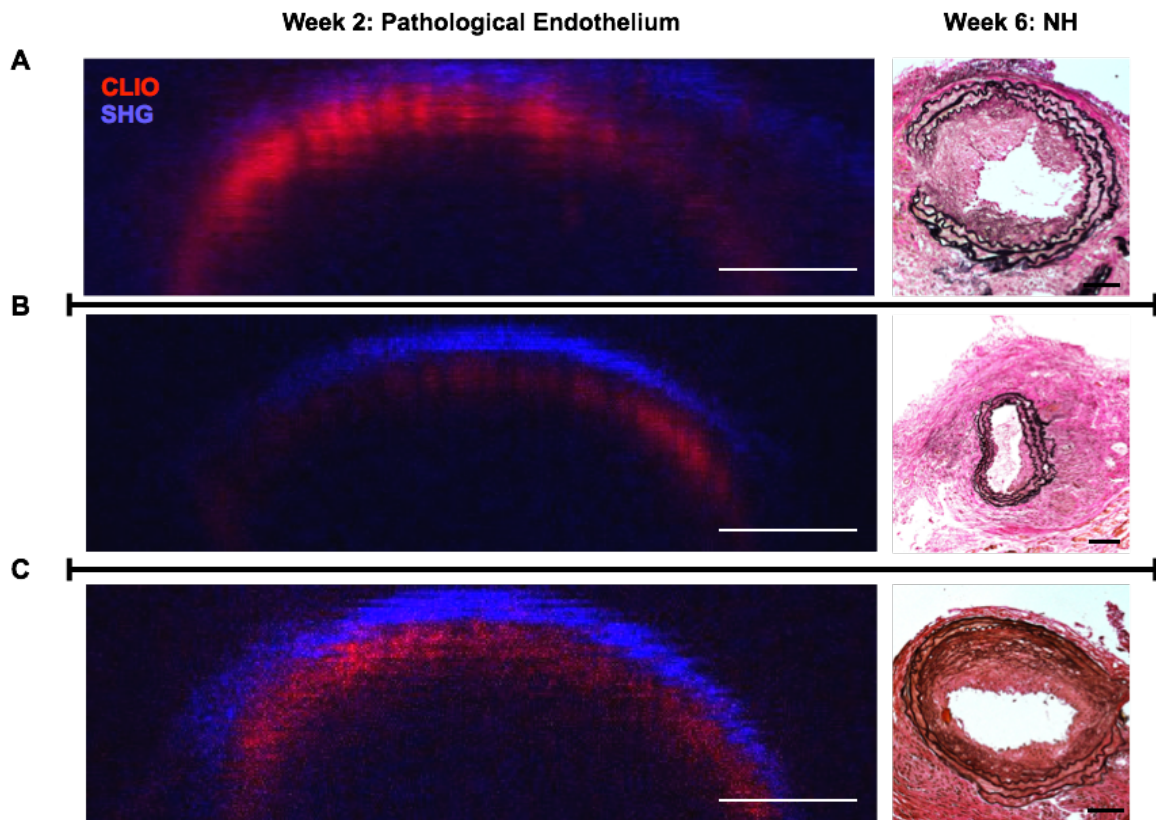
Supplemental Figure II. Creation of AVF in mice. **A.** AVFs were created in C57BL/6 mice by mobilizing the carotid artery and then anastomosing it end-to-side to the ipsilateral jugular vein (SJV: superior jugular vein; IJV: inferior jugular vein; CA: carotid artery). The dotted box shows the centered imaging field during IVM studies. **B.** The carotid artery blood flow measured by Doppler ultrasound in mice (n=8) increased 7-fold after AVF creation (*p < 0.01). Scale bar, 1 mm. Error bars depict the S.E.M.

SUPPLEMENTAL FIGURE III



Supplemental Figure III. Representative axial intravital microscopy (IVM) images of day 14 murine AVF. **A.** The section was 120 μ m away from the anastomosis. CLIO-VT680 (red) localized below adventitial arterial wall collagen (SHG, Blue). **B.** FITC-dextran, a blood pool agent outlined the arterial lumen (green). **C.** Fusion image demonstrates that CLIO-VT680 signals are within the imaging illumination field on confocal microscopy. Pulsatile motion artifact likely explains why CLIO-VT680 appears to colocalize with the lumen (green), while in reality localizing to the intima as shown in figure 2. Scale bar, 100 μ m. SHG, second harmonic generation.

SUPPLEMENTAL FIGURE IV



Supplemental Figure IV. Additional examples of week 2 CLIO endothelial IVM signals and the corresponding week 6 neointimal hyperplasia (NH) from matched sections. The confocal IVM images assess approximately the top 1/3rd of the vessel. (A, B) AVF examples show that the week 2 IVM CLIO signals and week 6 neointimal patterns are roughly similarly asymmetric. (C) An AVF example with more symmetric week 2 IVM CLIO signals and week 6 neointimal hyperplasia. Red=CLIO-VT680 (pathological endothelium); blue=second harmonic generation signal (SHG, type I collagen). IVM images were processed and windowed identically. IVM Scale Bar: 100 μ m.