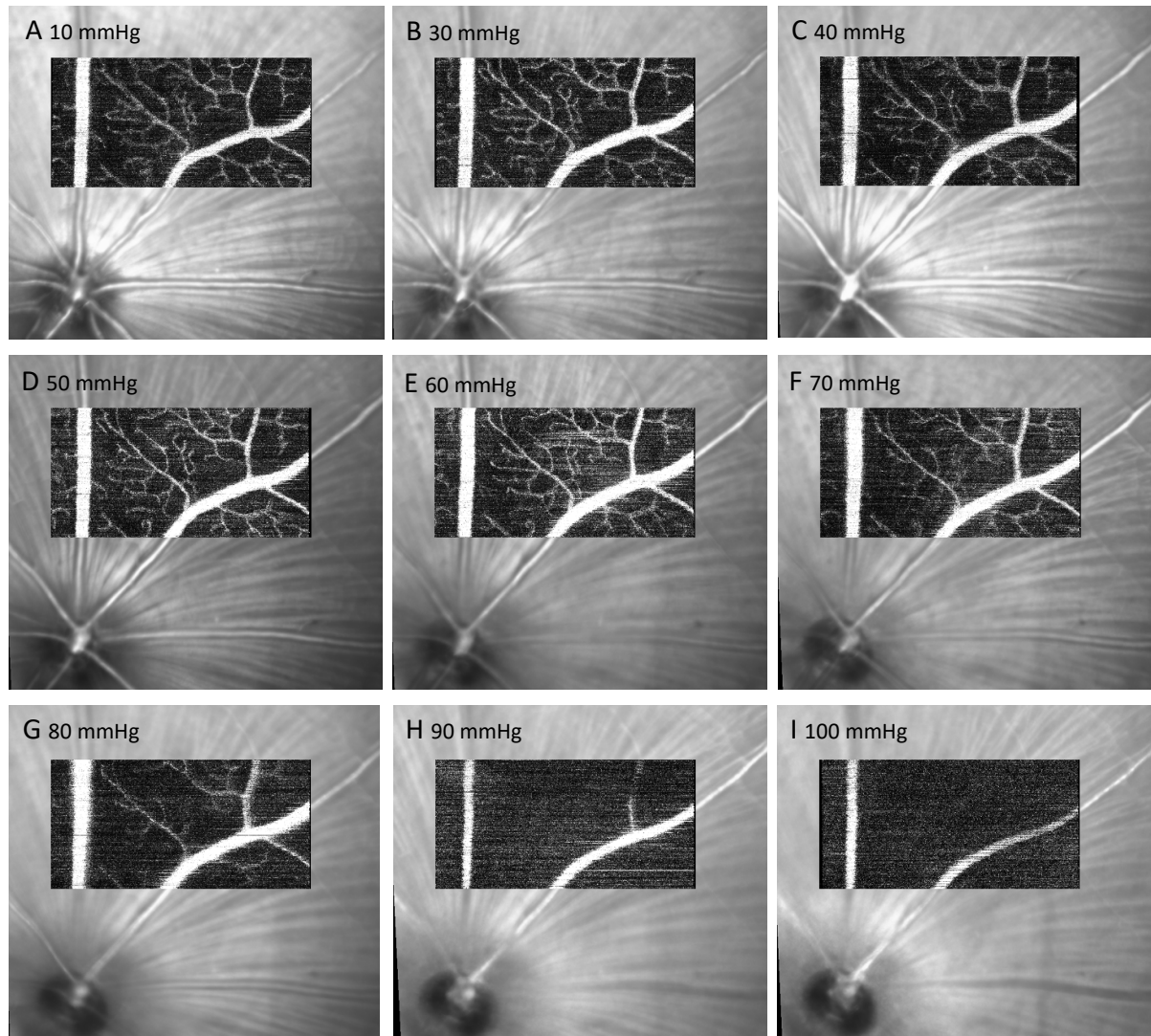
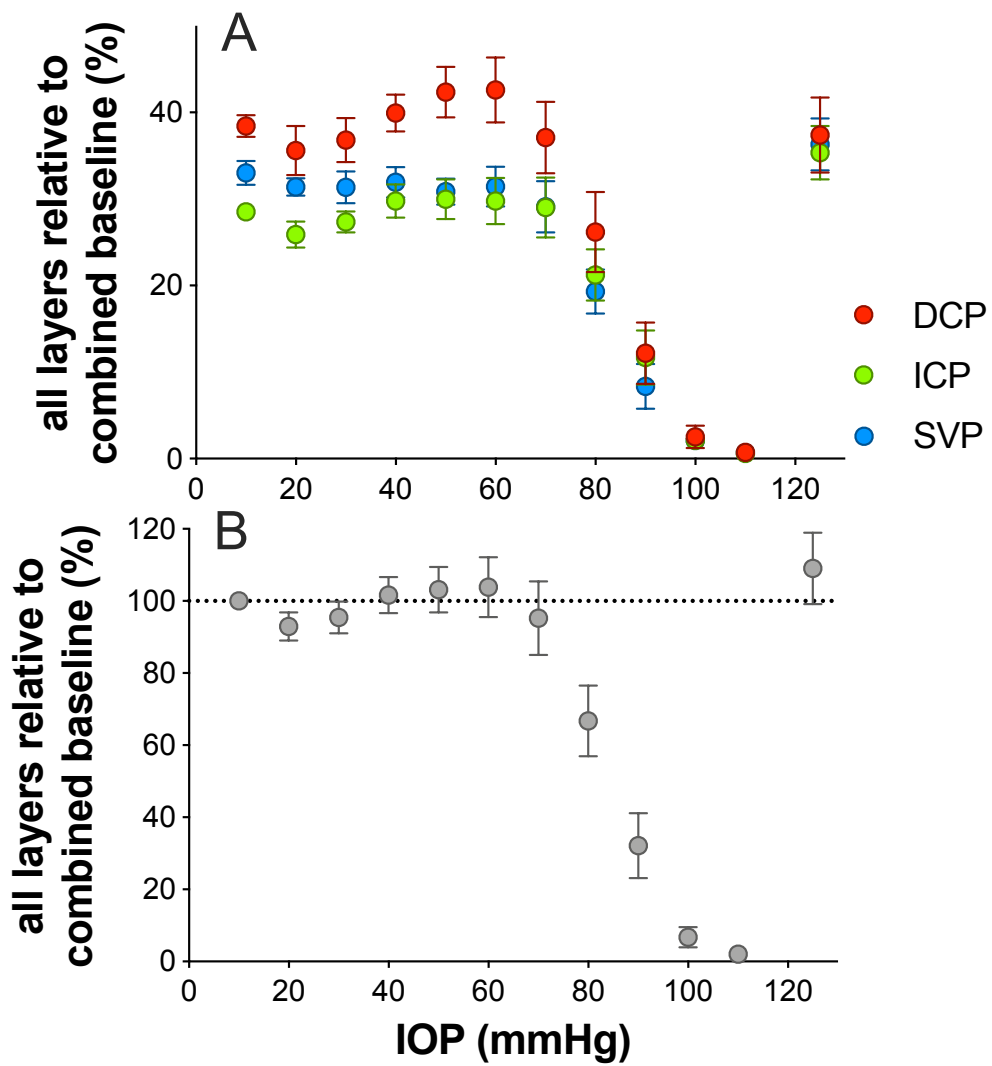


**Figure 1:** Comparison of vessel density (%) determined using independent analysis with ImageJ (NIH) compared against Angiotool. There is a strong correlation between these two measures returning a slope close to one and a correlation coefficient of 0.74.



**Figure S2:** Fundus appears with intraocular pressure elevation from 10 to 100 mmHg (A – I). With high IOP elevation the surface of the optic nerve shows posterior deformation, with the scleral canal becoming more visible and the larger vessels become less visible around the optic nerve.



**Figure S3:** Comparison of vessel density expressed relative to the combined vessel area at baseline. For each eye, at baseline the %area for the superficial vessel complex, intermediate capillary plexus (ICP ) and deep capillary plexus (DCP) were combined (i.e. 100%). The response to IOP elevation was then expressed relative to this combined baseline. A. Average ( $\pm$ SEM, n=14) response for each layer. A. the combined response for all layers, showing that across the three layers blood flow remained constant for IOPs below 80 mmHg.