

**Comparing Adaptive Optic Systems and Entoptic Images Using Capillary  
Vasculature**  
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The alarming rise in diabetic retinopathy, a disease that causes microaneurysms and the leakage of blood from capillaries, has generated a renewed importance for routinely observing the retinal microvasculature. When looking into the eye, however, these vessels are blurred by the ocular aberrations of the eye and are of poor contrast due to weak tissue reflections. A leading technique that effectively bypasses these obstacles is entoptic imaging, but it depends on the patient to describe what they see severely limiting its effectiveness in clinical settings. As an objective non-invasive alternative, we have developed a retina imaging system that corrects the aberrations of the eye using a technique coined adaptive optics that is highly sensitive to weak reflections. To assess the utility of this system for detecting capillaries, images within the foveal center were collected on several subjects and compared to entoptic drawings obtained on the same eyes. Results indicate strong correlation between images and drawings, and provide supporting evidence for the clinical benefit of an adaptive optics retina imaging system.