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caused by the eye's optics, AO systems enable precise visualization of individual photoreceptors, retinal pigment epithelium (RPE) cells, and microvascular networks. This level of resolution not only facilitates early detection of subtle retinal changes but also aids in monitoring disease progression and evaluating treatment responses. Such capabilities are crucial in managing conditions like macular degeneration, diabetic retinopathy, and glaucoma, where early intervention can significantly impact visual outcomes.

Secondly, AO has revolutionized refractive surgery by tailoring treatments to address each patient's unique optical imperfections. Wavefront-guided procedures, guided by AO measurements, improve