Improving Vision and the Resolution of Retinal Images by Measuring and Correcting the Wave Aberration of the Eye

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Technology description

Summary

Wavefront measurement of all the aberrations in the human eye can make possible correction of vision which goes beyond conventional spectacles and contact lenses, and can enable better diagnostic imaging of the eye.

Description

Wavefront measurement of all the aberrations in the human eye can make possible correction of vision which goes beyond conventional spectacles and contact lenses. This correction of higher order aberrations can be applied in custom laser refractive surgery, intraocular lenses and improved custom c contact lenses. In addition, the measurement and correction of aberrations improves the quality of retinal imaging, used to diagnose diseases in the back of the eye, in such instruments as scanning laser opthtalmoscopes and optical coherence tomography (OCT). With the complete wavefront information on the aberrations, it is possible to correct aberrations beyond defocus and astigmatism, allowing improved vision. Removing the aberrrations of the eye also improves imaging of the inside of the eye.

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