

# Evaluation of Computer Based Primary Visual Cortex Training After Aspheric Monofocal, Multifocal, and Accommodating IOL Implantation

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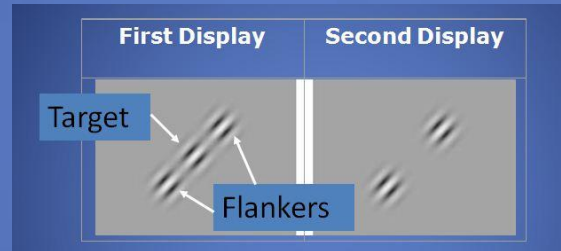
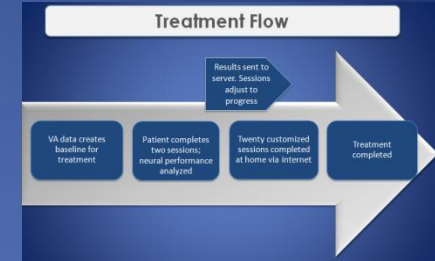
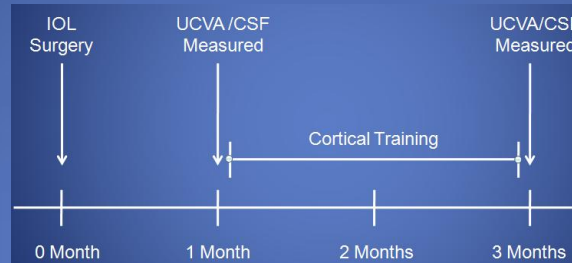
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**Background:** Computer based cortical vision training (RevitalVision, Prairie Village, KS) is a server based algorithm that improves visual acuity and contrast sensitivity. Collinear Gabor patch stimulus and flankers target lateral neuronal interactions resulting in improved contrast sensitivity due to reduction of noise and increased signal strength in the visual cortex.

**Purpose:** To evaluate the efficacy of computer based primary Cortex Vision Training (CVT) in improving vision after aspheric monofocal, multifocal and accommodative Intraocular Lens (IOL) implantation.

**Methods:** A prospective, multicenter study investigating efficacy of CVT after implantation of 5 different IOL styles including aspheric monofocal, multifocal and accommodative IOLs in 60 eyes. Uncorrected EDTRS distance visual acuity (UCDVA), near (UCNVA), distance and near contrast sensitivity function (CSF) was tested one month and three months after IOL implantation. Subjects were administered twenty sessions of CVT during the intervening two months. One month and three month data were compared.



## Study Results - Summary

	No. of Eyes	Distance VA Improvement	Near VA Improvement	Distance CSF Improvement	Near CSF Improvement
ReZoom	24	1.4 Lines	0.7 Lines	135%	123%
Restor	10	1.5 Lines	1.1 Lines	148%	163%
Crystalens	6	0.3 Lines*	1.7 Lines	72%	287%
Alcon Monofocal	10	1.3 Lines	0.7 Lines	159%	189%
AMO Monofocal	10	1.4 Lines	1.3 Lines	265%	289%
<b>Total</b>	<b>60</b>	<b>1.3 Lines</b>	<b>1.0 Lines</b>	<b>156%</b>	<b>210%</b>

\* Patients Baseline VA 20/15 – No room to improve

**Results:** Mean age of all subjects was 68 years. After CVT, mean improvement in UCDVA and UCNVA for the entire group was 1.3 ( $p < 0.0001$ ) and 1.0 lines ( $p < 0.0001$ ), and mean improvement in distance and near CSF were 156% ( $p < 0.0001$ ) and 210% ( $p < 0.0001$ ) respectively.

Results for individual lenses are represented graphically and summarized in the chart below.

**Conclusions:** Computer based primary visual cortex training improves uncorrected visual acuity and contrast sensitivity function at both distance and near after aspheric monofocal, multifocal and accommodative intraocular lens implantation.

