

# **Assessment of retinal structural and functional changes in silicone oil filled eyes**

Thesis submitted for partial fulfillment of  
M.D. Degree in ophthalmology

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## **List of Abbreviations**

<b><i>Abbreviation</i></b>	<b><i>Full term</i></b>
<b>AAO</b>	American Academy Of Ophthalmology
<b>AMD</b>	Age related macular degeneration
<b>BVO</b>	Branch vein occlusion
<b>CFT</b>	Central foveal thickness
<b>CME</b>	Cystoids macular edema
<b>CSF</b>	Contrast sensitivity function
<b>CRVO</b>	Central retinal vein occlusion
<b>ELM</b>	External limiting membrane
<b>EOG</b>	Eelectro-oculogram
<b>ERG</b>	Electroretinogram
<b>FA</b>	Fluorescein angiography
<b>FIELD MD</b>	Field mean deviation
<b>FIELD PSD</b>	Field pattern standard deviation
<b>GCL</b>	Ganglion cell layer
<b>INL</b>	Inner nuclear layer

<b><i>Abbreviation</i></b>	<b><i>Full term</i></b>
<b>IOP</b>	Intraocular pressure
<b>IPL</b>	Inner plexiform layer
<b>IS/OS</b>	Photoreceptor inner and outer segment junction
<b>NFL</b>	Nerve fiber layer
<b>NSR</b>	Neurosensory retina
<b>OCT</b>	Optical coherence tomography
<b>ONL</b>	Outer nuclear layer
<b>OPL</b>	Outer plexiform layer
<b>PVD</b>	Posterior vitreous detachment
<b>PVR</b>	Posterior vitreoretinopathy
<b>RD</b>	Retinal detachment
<b>RPE</b>	Retinal pigment epithelium
<b>SO</b>	Silicone oil
<b>SRF</b>	Subretinal fluid
<b>VA</b>	Visual acuity
<b>VEP</b>	Visual evoked potential
<b>VER</b>	Visual evoked response

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## **Introduction**

Since its introduction by Cibis et al. in 1962, vitreous replacement by silicone oil has become an increasingly accepted treatment for severe and complicated retinal detachment (*Cibis et al., 1962*).

Silicone oil is optically clear and possesses physical properties that promote retinal tamponade. It is an active instrument for the reposition of the mobile retina, and it makes internal tamponade, stabilization and fixing of retina after vitrectomy (*federman and Schubert, 1988*).

The tolerance of various eye tissues to the oil is, however, a matter of ongoing controversy (*McCuen et al., 1985*). Eyes that have been treated with silicone oil sometimes lose vision due to corneal decompensation, cataract, glaucoma, or possibly oil-induced retinopathy (*Ziliset et al., 1989*).

Because of possible complications, as described in the literature, the silicone oil should be removed from the operated eye with a precondition that retina is stable and well fixed (*Blodi, 1971*).

***Aim Of The Work***

*The aim of this study* is to evaluate the retinal functional and structural changes in silicone oil filled eyes in successful cases of pars plana vitrectomy with silicone oil tamponade. These changes will be studied during the presence of the oil in the eye and after its removal.