

# **Measurement of macular thickness by Optical Coherence Tomography in Women with Gestational Hypertension**

*Thesis*

**Submitted for Partial Fulfillment of MD Degree In  
Ophthalmology**

**By**

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## **Abstract:**

**Purpose:** To evaluate the macular thickness and retinal volume alterations by using spectral-domain optical coherence tomography (SD-OCT) in patients with pregnancy induced hypertension (gestational hypertension and mild preeclampsia) and compare with healthy pregnant controls.

**Settings:** This study was done as a collaborative work between ophthalmology department and the department of Obstetrics and Gynecology in Ain Shams University, Cairo, Egypt

**Design:** A prospective cohort observational non-randomized comparative study

**Methods:** pregnant women 18-45 years were included. Pregnant women with mild Preeclampsia (n= 12), gestational hypertension (n=9) and normal pregnant women with no associated other ocular or systemic disease were included

**Results:** Macular thickness and retinal volume were thicker during pregnancy than after delivery in all groups. While during pregnancy, central subfield thickness was thinnest in preeclampsia group and thickest in the gestational hypertension group (statistically non-significant difference)

**Conclusion:** Both macular thickness and retinal volume changes during and after delivery. Changes are not significant.

**Keywords:** Preeclampsia, gestational hypertension, maculat thickness, retinal volume



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## List of Abbreviations

Anterior ischemic optic neuropathy	AION
Antiphospholipid antibody syndrome	APS
Average Foveal Volume	AFV
Best Corrected Visual Acuity	BCVA
Central subfield Thickness	CSF
Complete blood count	CBC
Computerized tomography	CT
Counting Fingers	CF
Diastolic Blood pressure	DBP
Disseminated intravascular coagulation	DIC
Early Treatment Diabetic Retinopathy Study	ETDRS
Enhanced Depth Optical Coherence Tomography	EDI-OCT
Fourier domain Optical Coherence Tomography	FD-OCT
Foveal thickness	FT
Foveal Volume	FV
Fundus fluorescein angiography	FFA
Gestational Hypertension	G. HYT.
Human chorionic gonadotropin	HCG
Hypertension	HTN
Inner limiting membrane	ILM
Intracranial hypertension	IIH
Intracocular Pressure	IOP
Magnetic resonance imaging	MRI
Mean arterial blood pressure	MABP
Ocular perfusion pressure	OPP
Optic nerve head	ONH
Optical Coherence Tomography	OCT
Parafoveal Inferior quadrant	PaInf
Parafoveal Nasal quadrant	PaNasal

Parafoveal superior quadrant	PaSup
Perifoveal Inferior quadrant	PiInf
Perifoveal Nasal quadrant	PiNasal
Perifoveal superior quadrant	PiSup
Perifoveal Temporal quadrant	PiTemp
Placental growth factor	PlGF
Preeclampsia	PEC
Retinal nerve fiber thickness	RNFL
Retinal Pigmented Epithelium	RPE
Serous retinal detachment	SRD
Society of Obstetricians and Gynecologists of Canada	SOGC
Soluble endoglin	sEng
Spectral domain Optical Coherence Tomography	SD-OCT
Subfoveal choroidal thickness	SFCT
Swept-source Optical Coherence Tomography	SS-OCT
Systolic Blood pressure	SBP
Total macular volume	TMV
Transforming growth factor beta 1	TGF- $\beta$ 1
Unaided visual Acuity	UAVA
Vascular endothelial growth factor	VEGF