CHANGES WITH AGE IN SCHIOTZ, GOLDMANN AND AIR-PUFF READINGS

THESIS

SUBMITTED FOR PARTIAL FULFILLMENT OF M.SC. DEGREE IN OPHTHALMOLOGY

BY

MOHAMED FAROUK KAMEL M.B., B. CH.



617.71 M.F

SUPERVISED BY

51386

PROF. DR. SHAKER AHMED KHEDR

PROFESSOR OF OPHTHALMOLOGY
AIN-SHAMS UNIVERSITY

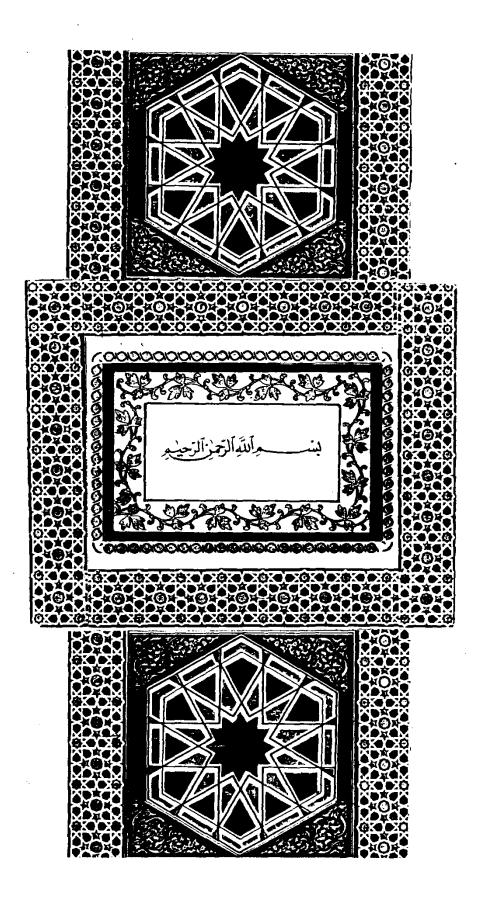
DR. MAGDY MOHAMED EL-BARBARY

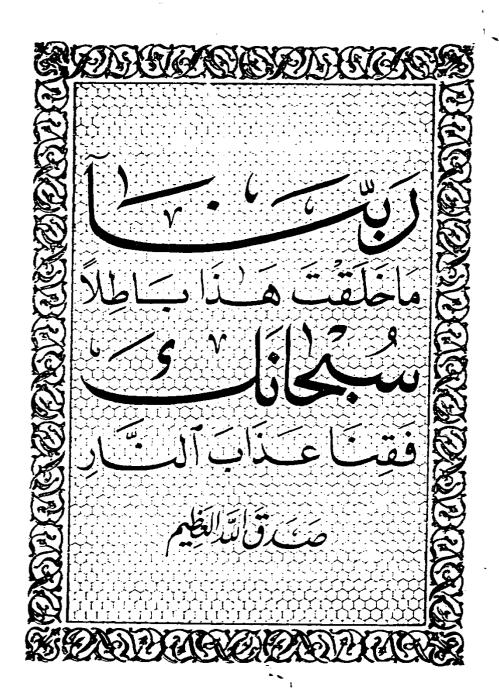
ASSISTANT PROFESSOR OF OPHTHALMOLOGY
AIN-SHAMS UNIVERSITY

FACULTY OF MEDICINE
AIN-SHAMS UNIVERSITY
1995
CATRO









ع. د. عملاما من منصر فا جمهان المرب مي د الحلي المحالي المحالي المحالي المحالي المحالي المحالي المحالي المحالي المحالي المحالية المحالية

ACKNOWLEDGEMENTS

It is with pleasure and gratitude that I acknowledge those who deserve credit for the evolution of this work.

I am particularly grateful to my PROF. DR. SHAKER KHEDR, who constantly supervised, supported and supplied me with much valuable advice for my thesis.

I wish to express my deep gratitude and thankfulness to DR. MAGDY EL-BARBARI for his great help, supervision and guidance, as well as for the care and affection he offered.

I am highly indebted to all my professors and to the staff of ophthalmology department, Faculty of Medicine, Ain-Shams University for the fruitful education with which they provided me.

I would like to thank the staff of community medicine department for their help in achieving the statistical part of this thesis.

Lastly, I am very grateful to my family for their encouragement and help.

MOHAMED FAROUK

CONTENTS

Subject	Page
1) Acknowledgement.	i
2) List of Abbreviations.	ii
3) List of illustrations	ili
4) Introduction.	1
5) Physiological considerations.	2
6) Ocular rigidity.	11
7) Different methods of tonometry.	17
8) Subjects and methods.	52
9) Results.	63
10) Discussion.	77.
11) Summary.	88
12) References.	92
13) Arabic summary.	

LIST OF ABBREVIATIONS

AC: Anterior chamber.

A X S: Air-puff NCT versus Schiotz IT.

AT: Applanation tonometer.

D: - Diopter.

G X A: Goldmann AT versus Air-puff NCT.

G X S: Goldmann AT versus Schiotz IT.

IOP: Intraocular pressure

IT: Indentation tonometer.

NCT: Noncontact tonometer.

NPE: Nonpigmented epithelium.

N.S.: Non significant.

SD: Standard deviation.

Sig.: Significant.

V.A.: Visual acuity.

LIST OF ILLUSTRATIONS

			Page.
Fig.	1:	Hypothetical diagram of aqueous production.	3a
Fig.	2:	Schematic diagram of hydrostatic forces	
		involved in ultrafiltration.	3a
Fig.	3:	Anatomic features of anterior chamber angle.	3b
Fig.	4 :	Curves of experimental data on distensibility	
		of eyeball.	12a
Fig.	5 :	Curve of frequency distribution of ocular	
		rigidity.	12a
Fig.	6 :	Curves of frequency distribution of ocular	
		rigidity in different age groups.	13a
Fig.	7:	Curve of relation of rigidity to axial	
		refraction.	14a
Fig.	8:	Curve of relation of rigidity to corneal	
	•	astigmatism.	14a
Fig.	9:	Curve of relation of rigidity to mean	
		corneal curvature.	14b
Fig.	10:	Curves of effect of eserine and homatropine on	
		rigidity.	16a
Fig.	11:	Schiotz tonometer.	24a
Fig	12.	Principle of Schiotz tonometer	245