

<i>Contributors</i>	<i>xi</i>
<i>Preface</i>	<i>xiii</i>
<i>Introduction</i>	<i>xv</i>
<i>Acknowledgments</i>	<i>xix</i>

## **1 Patient Communication 1**

Introduction to Patient Communication 2

Case History 5

Presenting Examination Results to a Patient 11

Verbal Presentation of Your Patient to a Colleague,  
Preceptor, or Attending Supervisor 15

How to Write a Consultancy or Referral Letter 19

Reporting Abuse 23

How to Write a Prescription for Medication 25

## **2 Entrance Tests 29**

Introduction to the Entrance Tests 30

External Observation 34

Visual Acuity (VA): Minimum Legible 36

Visual Acuity (VA): Minimum Legible Using  
a LogMAR Chart 43

Visual Acuity (VA): Minimum Legible Using the  
Massachusetts Visual Acuity Test With Lea Symbols 51

Pinhole Visual Acuity 58

Amplitude of Accommodation: Push-Up Method and  
Pull-Away Method 60

Color Vision 63

Cover Test 67

Stereopsis 75

Screening Stereopsis Using the Random  
Dot E and PASS 78

Worth 4 Dot 82

Near Point of Convergence (NPC) 86

Hirschberg Test and Krimsky Test 89

Brückner Test 92

Extraocular Motilities (EOM) 95  
Pupils 98  
Screening Visual Fields 101  
Finger Counting Visual Fields 104  
Interpupillary Distance (PD) 107  
Summary of Expected Findings 110

**3 Refraction 111**

Introduction to Refraction 113  
Lensometry 116  
Keratometry 121  
Introduction to the Phoropter 127  
Static Retinoscopy 130  
Routine Distance Subjective Refraction with  
the Phoropter 136  
Step-by-Step Procedure for the Routine Distance  
Subjective Refraction with the Phoropter 137  
I. Monocular Distance Subjective Refraction 138  
Initial MPMVA (Maximum Plus to Maximum Visual Acuity) 138  
Initial Duochrome (Bichrome, Red-Green Test) 139  
The Jackson Cross Cylinder (JCC) Test 142  
Second Monocular MPMVA 147  
II. Binocular Balance 149  
Binocular MPMVA 152  
Use of the Trial Frame to Modify a Prescription 156  
III. Side Trips from the Routine Distance Subjective Refraction 159  
Clock Chart (Sunburst Dial) 159  
Jackson Cross Cylinder (JCC) Check Test for Uncorrected  
Astigmatism 161  
Prism-Dissociated Duochrome Test 162  
Sighting-Dominance Check 164  
Trial Frame Refraction 165  
Stenopaic Slit Refraction 171

Cycloplegic Refraction	174
Delayed Subjective Refraction	177
Convergence Controlled Refraction	179
Binocular Refraction with the Vectographic Slide	181
Humphriss Immediate Contrast Method	185
Infinity Balance	188
Mohindra's Near Retinoscopy	190
Determining the Add for the Presbyope	192
Septum Near Balance	197
Near Refinement of Cylinder Axis and Power Using the Borish Binocular Nearpoint Card	202
Modified Humphriss for Near Refinement of Cylinder Axis and Power	204

#### **4 Functional Tests 207**

Introduction to Functional Tests	208
Distance Lateral Phoria by von Graefe Technique	210
Distance Vertical Phoria by von Graefe Technique	213
Horizontal Vergences at Distance	216
Vertical Vergences at Distance	220
Near Lateral Phoria by von Graefe Technique	223
Near Vertical Phoria by von Graefe Technique	227
Horizontal Vergences at Near	230
Vertical Vergences at Near	233
Fusional Vergence Facility at Near	235
Fused Cross Cylinder	236
Negative Relative Accommodation/Positive Relative Accommodation (NRA/PRA)	239
Accommodative Facility	241
Dynamic Retinoscopy: Monocular Estimation Method (MEM)	245
Dynamic Retinoscopy: Bell Retinoscopy	248
Amplitude of Accommodation: Minus Lens to Blur	251

Associated Phoria    253  
Maddox Rod Phoria    257  
Modified Thorington Phoria    261  
4Δ Base Out Test    266

**5 Ocular Health Assessment    271**

Introduction to Ocular Health Assessment    273  
Biomicroscopy (Slit Lamp)    278  
Special Slit Lamp Procedures    289  
Examination of the Anterior Chamber    290  
Eversion of the Upper Lid    292  
Corneal or Conjunctival Staining    294  
Specular Reflection Technique    297  
Sclerotic Scatter Technique    299  
Instillation of Drops    301  
Gonioscopy    304  
Tear Breakup Time    313  
Schirmer Tests: Schirmer #1 Test and Basic Lacrimation Test    315  
Cotton Thread Test    318  
Fluorescein Clearance Test (or “Dye Disappearance Test”)    320  
Jones #1 (Primary Dye) Test    323  
Direct Ophthalmoscopy    325  
Binocular Indirect Ophthalmoscopy    328  
Scleral Depression    335  
Fundus Biomicroscopy    338  
Nerve Fiber Layer Evaluation    341  
Retinal Evaluation With the Goldmann 3-Mirror Lens    343  
Goldmann Applanation Tonometry    348  
Pachymetry    355  
Noncontact Tonometry    357  
Amsler Grid    363  
Tangent Screen    366  
D-15 Color Test    370

Brightness Comparison Test	372
Photostress Recovery Time Test	374
Red Desaturation Test	377
Exophthalmometry	380

## **6 Contact Lenses 385**

Introduction to the Contact Lens Examination	387
Contact Lens Case History	390
Contact Lens External Examination	392
Inspection and Verification of Gas Permeable Contact Lenses	396
Base Curve Radius: Radiuscope or Radiusgauge	397
Base Curve Radius: Lensco-Meter	401
Back Vertex Power and Optical Quality	403
Lens Diameter and Optic Zone Diameter	405
Center Thickness	408
Surface Quality	410
Surface Wettability	413
Insertion, Removal, and Recentering of Gas Permeable Contact Lenses	415
Fit Assessment of Gas Permeable Contact Lenses	420
Inspection and Verification of Soft Contact Lenses	426
Back Vertex Power	427
Surface Inspection: Films and Spots	429
Surface Inspection: Tears, Nicks, and Scratches	432
Insertion and Removal of Soft Contact Lenses	434
Fit Assessment of Soft Contact Lenses	439
Insertion and Removal of Scleral Contact Lenses	445
Fit Assessment of Scleral Contact Lenses	449
Over-Refractive: Phoropter	451
Over-Refractive: Spectacle Trial Lenses	453
Evaluation of the Multifocal Contact Lens Patient	456
Distance Over-Refractive	458
Evaluation of the Monovision Patient	460

**7 Systemic Health Screening 465**

- Introduction to Systemic Health Screening 466
- Blood Pressure Evaluation (Sphygmomanometry) 467
- Carotid Artery Evaluation 473
- Orbital Auscultation 478
- Lymph Node Evaluation 482
- Paranasal Sinus Evaluation 487
- Glucometry 493

**8 Cranial Nerve Screening 499**

- Introduction to Cranial Nerve Screening 500
- Muscle Field with Red Lens, Ductions, and Saccades 501
- Test for a Paretic Horizontal Muscle 504
- Park's 3-Step Method for a Paretic Vertical Muscle 506
- Dim–Bright Pupillary Test 508
- Near (Accommodative) Response of the Pupil 511
- Pupil Cycle Time 513
- Pharmacological Tests of the Pupil 515
- Trigeminal Nerve Function Test 518
- Facial Nerve Function Test 522
- Screening Tests for Cranial Nerves I, VIII, XI, and XII 525

*References* 531

*Index* 561