

**1. HISTORY TAKING**

- A. Presenting Complaint and History of Presenting Illness**
  - Signs and symptoms
  - Triage
  - Refractive status
  - Injury
  - Contact lenses
  - Confidentiality
- B. Past Ocular History**
  - Refractive status problems
  - Injury
  - Diseases and prescriptions
  - Surgery and laser
  - Contact lenses
- C. Family History**
  - Diabetes
  - Glaucoma
  - Hypertension
  - Ocular diseases and dystrophies
  - Strabismus
  - Other
- D. Systemic Illness, Past and Present**
  - Hypertension
  - Diabetes
  - Cardiac problems
  - Pulmonary problems
  - Arthritis
  - Sickle Cell disease
  - Surgical procedures
  - Major infections
  - Other
- E. Medications**
  - Aspirin-containing medications
  - Diuretics
  - Blood pressure medications
  - Birth control pills
  - Steroids
  - Other
- F. Allergies and Drug Reactions**
  - Penicillin
  - Sulfa
  - Local anesthesia
  - Fluorescein
  - Other
- G. Partially Sighted Patient**
  - Onset of visual loss
  - Use of low vision aids
  - Problems/goals
  - Home/family/community support

**2. BASIC SKILLS AND LENSOMETRY**

- A. Method of Measuring/Recording Acuity**
  - Distance acuity
  - Near acuity
  - Children
  - Low vision
  - Illumination of target and background
  - Pinhole
  - Artifacts
  - Recording
- B. Color Vision Testing**
  - Color plates
  - D-15
  - Farnsworth-Munsell
  - Physiology
  - Children

**C. Lensometry**

- Sphere
- Cylinder power/axis
- Prism
- Multifocal power
- Multifocal induced prism
- Base curve
- Lensometer
- Lens “clock”
- Estimation with loose lenses
- Aphakic lenses
- Recording prescription
- Transposition
- D. A-scan Biometry**
- E. Exophthalmometry**
- F. Amsler Grid**
- G. Schirmer Tests**
- H. Evaluation of Pupils**
- I. Estimation of Anterior Chamber Depth**

**3. PATIENT SERVICES**

- A. Ocular Dressings and Shields**
  - Indications
  - Proper use
- B. Drug Delivery (Advantages/Disadvantages)**
  - Drops
  - Ointments
  - Sustained release
  - Injections
  - Systemic
  - Complications
- C. Spectacle Principles**
  - Interpupillary distance
  - Frames
  - Multifocals
  - “Safety” lenses and frames
  - Adjustments and repair
  - Care of spectacles
  - Lens materials
- D. Assisting Patient**
  - Physically disabled
  - Visually disabled
  - Pediatric/children
- E. Minor Surgery**
  - Assisting surgeon
  - Instructing patient

**4. BASIC TONOMETRY**

- A. Applanation**
  - Principles
  - Errors
  - Cleaning and sterilizing
  - Advantages/disadvantages
  - Technique
- B. Non-Contact**
- C. Complications and Contraindications**
- D. Scleral Rigidity**
  - General concepts
  - Methods of assessing scleral rigidity
- E. Factors Altering Intraocular Pressure**
  - Squeezing eyelids
  - Heartbeat
  - Breath holding
  - Tight collar
  - Body position
  - Other

**5. INSTRUMENT MAINTENANCE**

- A. Acuity Projectors**
- B. Ophthalmoscopes**
  - Direct
  - Indirect
- C. Retinoscopes**
- D. Lensometers**
- E. Perimeters**
- F. Tangent Screen**
- G. Phoropters**
- H. Slit Lamps**
- I. Ultrasound**
- J. Keratometers**
- K. Lenses**
- L. Tonometers**
- M. Muscle Light**
- N. Special Instruments (Equipment)**
- O. Surgical Instruments**

**6. GENERAL MEDICAL KNOWLEDGE**

- A. Cardiopulmonary Resuscitation**
  - Fainting
  - Cardiac arrest
  - Acute drug reaction
- B. Anatomy**
  - Cardiovascular
  - Respiratory
  - Endocrine
  - Nervous
  - Ocular
- C. Physiology**
  - Cardiovascular
  - Respiratory
  - Endocrine
  - Nervous
  - Ocular
- D. Systemic Diseases**
  - Diabetes
  - Hypertension
  - Cancer
  - Atherosclerosis
  - Blood
  - Infections
  - Blood dyscrasia
  - Infectious disease
- E. Ocular Diseases**
  - Refractive errors
  - Infection
  - Injury
  - Red eye
  - Presbyopia
  - Other common disorders
- F. Ocular Emergencies**
  - First aid
  - Management in the absence of the physician
- G. Metric Conversions**
- H. Fundamentals of Microbial Control**
  - Sanitation
  - Disinfection
  - Sterilization
  - Contamination

*Continued*

**7. CLINICAL OPTICS**

**A. Optics**

- Geometric
- Clinical
- Physiologic

**B. Retinoscopy**

- Principles
- Techniques

**C. Refractometry**

- Fogging
- Astigmatic dials
- Cross cylinder
- Duochrome
- Accommodation
- General principles

**D. Advanced Spectacle Principles**

- Vertex distance
- Prism correction
- Bicentric grinding (slab off)
- Aphakic spectacles

**E. Low Vision Aids**

**8. BASIC OCULAR MOTILITY**

**A. Extraocular Muscle Actions**

**B. Strabismus**

- Phoria/tropia
- Horizontal deviations
- Vertical deviations
- Pseudostrabismus
- Paralytic (including primary and secondary deviations)

**C. Amblyopia Detection**

**D. Evaluation Assessment Methods**

- Cover/uncover, alternate cover tests
- Krimsky/Hirschberg
- Diagnostic positions of gaze
- Maddox rod
- Worth 4-dot
- Stereopsis
- Near point of convergence/accommodation
- Ductions and versions, head tilt
- Vergences
- Risley prism
- Diplopia (e.g., Red glass)
- Fusion (e.g., Bagolini lens)

**9. VISUAL FIELDS**

**A. Visual Pathways**

- Retina
- Retinal nerve fiber layer
- Optic nerve
- Chiasm
- Optic tract
- Lateral geniculate body
- Optic radiation
- Occipital cortex

**B. Visual Fields**

- Visual field terminology (isopters, threshold, apostilb, decibel)
- Definition of the visual field
- The "island of vision" analogy

**C. Methods of Measuring the Visual Field**

- Screening (single stimulus, multiple stimuli, Harrington-Flocks screener, others)
- Threshold perimetry

**D. Techniques**

- Manual (confrontation, tangent screen, autoplot, arc perimeter, Goldmann)
- Automated (Humphrey, Octopus, Dicon, others)
- Kinetic perimetry
- Static perimetry

**E. Errors in Visual Field Testing**

- Machine calibration
- Recording and printing results
- Correcting lens (power and positioning)
- Stimulus selection
- Patient preparation (instructions, positioning, comfort, special situations, e.g., low vision, wheelchairs)
- Test selection
- Catch trials, fixation losses, and fluctuation
- Artifactual loss

**F. Visual Field Defects from Disease**

- Retinal disease
- Optic nerve disease (glaucoma, drusen, optic neuritis)
- Neurological
- Non-organic

**10. CONTACT LENSES**

**A. Basic Principles**

- Hard lenses
- Soft lenses
- Toric lenses
- Astigmatism
- Bifocal
- Aphakic
- Extended wear
- Gas permeable
- Truncated
- Bandage lenses
- Oxygen permeability
- Lens characteristics
- Rigid lenses

**B. Fitting Procedures**

- Keratometry
- Corneal diameter
- Pupil diameter
- Tear secretion
- Eyelid tightness and fissure size
- Fluorescein pattern
- Spectacle prescription conversion
- Over-refraction
- Pediatric
- Contraindications

**C. Patient Instruction**

- Insertion
- Removal
- Cleaning
- Storage
- Hygiene
- Solutions
- Wearing time

**D. Troubleshooting Problems**

- Tight
- Loose
- Vascularization

- Ulcers
- Spectacle blur
- Giant papillary conjunctivitis
- Deposits
- Pain
- Keratoconus
- Edema
- Solutions
- Modifications
- Vision

**E. Verification of Lenses**

- Power
- Base curve
- Diameter
- Central thickness
- Edge profile

**11. INTERMEDIATE TONOMETRY**

**A. Aqueous Humor Dynamics**

**B. Glaucoma**

- Basic mechanisms
- Angle closure
- Open angle
- Cupping
- Basic medical management
- Basic surgical management

**C. Indentation**

- Principles
- Errors
- Cleaning and sterilizing
- Advantages/disadvantages
- Technique

**12. OCULAR PHARMACOLOGY**

**Types, Strengths, Actions, and Complications**

- Anesthetics
- Mydriatics and Cycloplegics
- Epinephrine
- Beta-Blockers
- Miotics
- Steroids
- Antibiotics
- Carbonic Anhydrase Inhibitors
- Vasoconstrictors
- Antihistamines
- Osmotic Agents
- Nonsteroidal Anti-Inflammatories
- Others

**13. PHOTOGRAPHY**

**A. Basics of Photography**

- Film
- Exposure
- Focal length
- Depth of field
- Synchronization
- Beam splitters
- Reticles
- Ocular
- Focus
- Video
- Stigmatic correction

**B. Fundus Photography**

**C. Defects/Artifacts**