# The Eye Exam Explained

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## Learning Objectives

1. Explain why **capturing good history** on a patient is important to the patient care.
2. List the **common components of the technician work-up,** including the **purpose** of each test, a quick overview of **proper technique**, common errors, and how to trouble shoot for the most accurate results.
3. Explain how to **properly document** the results into the patient's medical records.
4. Describe what constitutes **normal and abnormal readings** for common exam components, things the technician should consider if the results are abnormal, including consulting with the provider before proceeding.


## Importance of History Taking

COLLECTING CLUES TO ASSIST THE PROVIDER WITH PATIENT CARE

## History Taking GOALS


1. Capture an accurate history so that all patient complaints may be addressed
2. Use the History Taking to drive the exam… HPI questions, testing, imaging
3. Provide accurate/relevant information to the doctor so that he/she may more efficiently diagnosis and determine a plan for treatment
4. Document adequate information in the chart notes to bill at appropriate levels (avoid over-billing)

## Technician Work-up Components

TESTS, PURPOSE, COMMON ERRORS, AND HOW TO TROUBLESHOOT

## Tech Work-up Components

| Pre-Screening | Testing With Connection | Testing Without Correction | Histories |
|---|---|---|---|
| Review summary page | Visual Acuity | CVF | Primary Care Provider |
| DOB/Patient verification | Dominant eye | Refraction | Pharmacies |
| Autorefraction | Amsler Grid | Glare | Medications |
| Lensometry | Color Vision | Pupils | Medical History |
| Allergies | Stereopsis | Angles | Surgical History |
| Ocular History | Motility and Alignment | Blood pressure | Family History |
| CC/HPI | Contact lens use | IOP | Social History |
| | | Dilate | |

# Pre-Screening

## Initial Patient History

- **Introduce** who you are, what you'll be doing, how long it will take
- **Patient Verification-** Do the patient and the chart match?
- Testing on the way to the Exam Lane
  - **Auto-Refraction**
  - **Lensometry**
- **Summary Page** (EMR may have an overview page)

## Initial Patient History

- **Chief Complaint/ HPI:**
  - CC: Reason for visit (condition, diagnosis, sign, or symptom)
  - HPI: Details that support the reason for visit
  - HPI questions and diagnostic testing and imagining should be relevant to the CC

## Qualifiers for HPI


- Location
- Frequency
- Duration
- Onset
- VA Affected
- Timing
- Severity
- Quality
- Context
- Associated signs & symptoms
- Pertinent Negatives (Patient denies…)
- Previous Treatments (prescribed or self-care)

## Initial Patient History

- **Ocular History-** What else is going on with the eye over time?
- **Allergies-** Important to update at every visit, especially before instilling (or prescribing) medications

# Testing with Correction

## Tests Performed with Correction

**Visual Acuity** (DVA, NVA, IVA, PH, Low Vision)- Assess vision clarity

**Amsler Grid-** Assess central 20° of visual field

**Color Vision-** Assess for any color deficiencies

**Motility & Alignment**
- Cover tests assess alignment
- Big H/Double H assess motility

**Stereopsis**- Assess ability to see in 3-D, fusion, suppression

**Dominant Eye-** Determine dominant eye, important for mono-vision

## Testing Without Correction

## Tests Performed without Correction

**Confrontation Visual Fields-** Assess peripheral visual field

**Refraction (DV, NV)-** Assess best corrected vision
- **Glare Test-** Assess amount of decreased vision resulting from glare source
- **Contrast Sensitivity Testing-** Assess amount of decrease in vision resulting from decreased contrast

**Pupillary Assessment-** Assess size, shape, symmetry, reaction to light, accommodation, and presence of a RAPD

**Angles Assessment-** Determine if angles are open, narrow, or closed; important for determining safety of dilation

**Tonometry-** Measures the intraocular pressure; important for determining safety of dilation

**Dilation-** Widens the pupils so that physician may examine the back of the eye (retina, vitreous, optic nerve, retinal/choroidal vasculature)


## Detailed Patient History

While the patient is dilating….

## Patient History- Other Key Caregivers

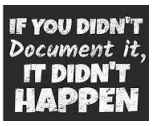
- **Referring Doctor-** important for 2-way correspondence, patient care
- **PCP/ Specialists-** important for correspondence, questions
- **Pharmacy-** Able to send in prescriptions to correct pharmacy

## Patient History- Systemic Interactions

- **Medication Reconciliation-** Update names, strength, dose, route
- **Medical History-** Important for medical/surgical treatments
- **Surgical History-** May be relevant to future surgeries

## Patient History- The Rest of the Story

- **Family History-** Some conditions at higher risk if runs in the family
- **Social History-** Tobacco Use, etc. (MIPS Measures?), vision needs for hobbies and occupation




## Proper Documentation

COMPLETE, ACCURATE, IN REAL TIME

## **COMPLETE** Documentation

- Documentation should include all final results
- May include multiple readings
- May be an average of results, eliminating outliers
- Additional relevant details documented as needed


## **ACCURATE** Documentation

- Documentation should reflect actual readings
- Double check your work, avoid transcription errors
- Documentation should never be fabricated or falsified

## **REAL TIME** Documentation

Documented Results SHOULD:
- Documented by the person who performed the test
- Be the results of TODAYs visit

Documented Results should NOT:
- Be pulled forward from previous exam



## Documentation of Test Results

| | **Relevant HPI Questions:** |
|---|---|
| **Visual Acuity:** | •20/xx$^{+/-\#}$ (ex. 20/40$^{+2}$ or 20/20$^{-1}$), CF, HM, LP, LPP, NLP |
| **Motility:** | •Ortho or RE Esotropia or Exophoria (At least… abnormal OD) |
| **Alignment:** | • Full (Full range of motion) or misalignment in L gaze |
| **CVF:** | • FTFC or FTFM or note defect(s) |
| **Angles:** | •Deep, open or… shallow, narrow, or… closed |
| **Pupils:** | •Dim: 6, 6, Bright: 4, 4, Equal, Round, Reactive, No RAPD or… note any irregular shape, note which eye has RAPD if present |
| **Tonometry:** | • ## mmHg (ex. 14, 16 mmHg) |
| **Refraction:** | •Ask about difficulties seeing at night, driving into oncoming headlights, or in the rain |


# Normal vs. Abnormal Results

DISTINGUISHING THE DIFFERENCE AND MAKING DECISIONS

## Normal vs. Abnormal

| | Normal | Abnormal |
|---|---|---|
| **Visual Acuity:** | ▪ Stable, "20/Happy" | ▪ Significant change, Less than happy |
| **EOM:** | ▪ Smooth, Full range of motion, Aligned | ▪ Restricted movement, Misalignment, Jerky movements |
| **CVF/ Amsler Grid:** | ▪ FTFC (or FTHM), Normal | ▪ Defects noted, Missing/Distorted |
| **Angles:** | ▪ Open, Deep | ▪ Narrow, Closed |
| **Pupils:** | ▪ Equal, Round, Reactive | ▪ APD, Anisocoria, Irregular shape |
| **Tonometry:** | ▪ 10-21 mmHg | ▪ ≤ 5 mmHg or ≥ 25 mm Hg |
| **Refraction:** | ▪ Improves vision to satisfactory level (within reason) | ▪ Unable to improve vision |
| **Glare/ Contrast Testing** | ▪ Does not significantly affect VA | ▪ Glare or Contrast tests significantly worsen vision |

## If Abnormal, What Should You Ask?

| | Relevant HPI Questions: |
|---|---|
| **Visual Acuity:** | ▪Ask about vision changes, when, timing, severity |
| **EOM:** | ▪Ask about history, start dates, related injury, changes in meds |
| **CVF/ Amsler Grid:** | ▪Ask about history, start dates, any other symptoms, describe defects |
| **Angles:** | ▪Any headaches, History of glaucoma or Ocular HTN |
| **Pupils:** | ▪Ask about history, start dates, related injury, changes in meds |
| **Tonometry:** | ▪Ask if taking any IOP reducing meds, any previous eye surgery |
| **Refraction:** | ▪Ask about vision changes, start dates for change |
| **Glare/ Contrast Testing** | ▪Ask about difficulties seeing at night, driving into oncoming headlights, or in the rain |

## If Abnormal, What Should You Do?

| | Relevant Testing: |
|---|---|
| **Visual Acuity:** | ▪Pinhole, verify glasses made to Rx (lensometry) |
| **EOM:** | ▪Perform additional tests, note for doctor, check for prism |
| **CVF/ Amsler Grid:** | ▪ Defects noted, Describe details |
| **Angles:** | ▪ Narrow- Do NOT dilate, ask doctor (or point person) |
| **Pupils:** | ▪ New abnormal- Do NOT dilate, ask doctor (or point person) |
| **Tonometry:** | ▪ Low- Ask doctor, High, Do NOT dilate, ask doctor (or point person) |
| **Refraction:** | ▪ Recheck starting point, ask for help, make note for doctor to check |
| **Glare/ Contrast Testing** | ▪ Make note of it |


# Parameters

GLASSES ON OR OFF? LIGHTS ON OR OFF? OTHER CONSIDERATIONS

**Parameters and Settings for Ophthalmic Skills**

| Test Name | Glasses on/off? | Which eye(s)? | Lights on/ off? | Target | Equipment | Cleaning Method |
|---|---|---|---|---|---|---|
| Auto-Refraction | Off | OD, OS | NA | Test Target | Auto-Refractor | Chin rest/ Forehead rest- alcohol wipe |
| Visual Acuity Assessments- Distance | On (or off depending on pt's vision) | OD, OS, (OU) | Off | Distance | Visual Acuity Chart, (Remote), Occluder | Occluder- alcohol wipe |
| Visual Acuity Assessments- Intermediate | On (or off depending on pt's vision) | OD, OS, (OU) | On | Near card at 28-30 inches | Near Vision Card, Occluder | Occluder- alcohol wipe |
| Visual Acuity Assessments- Near | On (or off depending on pt's vision) | OD, OS, OU | On | Near card at 14-16 inches | Near Vision Card, Occluder | Occluder- alcohol wipe, NV Card- gentle cleaner |
| Pinhole Visual Acuity | On (if helps for DV) | OD, OS | Off | Distance | Distance Visual Acuity Chart, remote, occluder | Occluder- alcohol wipe |
| Dominant Eye Testing | On (if helps for DV) | Both eyes open | On | Distance | Distance target | NA |
| Amsler Grid | On (if helps for NV) | OD, OS | On | Dot in center | Amsler Grid chart | NA |
| Color Vision Testing | On (if helps for NV) | OD, OS | On | Test page | Color Vision Test booklet | NA |
| Ocular Motility | On | Both eyes open | On | Head still, eyes follow Examiner's moving target | NA | NA |
| Ocular Alignment- Cover Tests | On | Both eyes open | On | Distance | Distant Target | NA |
| Stereo Acuity Testing | On (if helps for NV) | Both eyes open | On | Test page | Stereo Fly Test, Polarized glasses | Polarized glasses- alcohol wipe, lenses use lens wipe |
| Confrontation Visual Fields | Off | OD, OS | On | Examiner's eye, mirror image | None | NA |
| Auto-Lensometry | Off | OD, OS | NA | NA | Lensometer | NA |
| Manual Lensometry | Off | OD, OS | NA | NA | Lensometer | NA |

See Handout

| Test Name | Glasses on/off? | Which eye(s)? | Lights on/ off? | Target | Equipment | Cleaning Method |
|---|---|---|---|---|---|---|
| Refraction | Off | OD, OS, OU | Off | Distance, Near if checking NV Add power | Phoropter (or trial frames), DVA chart, remote, astigmatism auxiliary lenses | Phoropter forehead rest, nose guards- alcohol wipes- do NOT use alcohol on lenses |
| Pupillary Assessments for Size, Shape, Equal, Response | Off | Both eyes open | Off | Distance | Transilluminator, pen light | Transilluminator/ pen light - alcohol wipe |
| Pupillary Assessment for APD | Off | Both eyes open | Off | Distance | Transilluminator, pen light | Transilluminator/ pen light - alcohol wipe |
| Pupillary Assesment for Accommodation | Off | Both eyes open | On | Distance AND Near | Distance and Near Target | NA |
| Angles Assessment with the Slit Lamp | Off | OD, OS | Off | Examiner's ear | Slit lamp | Chin rest, forehead rest- alcohol wipe |
| Angles Assessment with the Transilluminator | Off | OD, OS | Off | Distance | Transilluminator, pen light | Transilluminator/ pen light - alcohol wipe |
| Institution of Eye Drops | Off | OD, OS | On | Look up | Drops | Wash your hands or hand sanitizer, keep bottle lids clean- do not set them down on the counter |
| Tonometry by Applanation Tonometry | Off | OD, OS | Off | Examiner's ear | Fluorescein, Slit lamp, alcohol wipe | Chin rest, forehead rest- alcohol wipe. Tonometer tip, alcohol wipe (DIRED!), or 1:10 bleach solution (or hydrogen peroxide) soak for 10 min, rinsed x 2 min, dried |
| Tonometry by iCare Tonometry | Off | OD, OS | On | Distance | iCare tonometer, one-use probes | Dispose of probe after each patient. Forehead rest- alcohol wipe. Handle- gentle cleaner |
| Tonometry by TonoPen Tonometry | Off | OD, OS | On | Distance | TonoPen, one-use covers | Dispose of Tonopen cover after each patient. TonoPen- alcohol wipe |
| Pachymetry | Off | OD, OS | On | Distance | Pachymeter | Wipe down pachymeter as needed- alcohol wipe |

See Handout

# After the Tech Work-up

TESTING, DOCTOR EXAM, SURGERY SCHEDULING

## Additional Testing

**Cornea**: Corneal Topography, Pachymetry, Endothelial Cell Counts, Anterior OCT, variety of Dry Eye Tests, Refraction

**Cataract:** Optical Biometry, A-scans, Corneal Topography, Keratometry, OCT, Dominant eye, Refraction (Glare and Contrast Sensitivity), PAM

**Glaucoma**: Visual Fields, OCT (Optic Nerve), Stereo Disc Photography, Pachymetry, Applanation Tonometry, Gonioscopy

**Retina**: OCT (Macula), Fluorescein Angiograms, Fundus Photography, ICG Angiography, ERG, B-Scans, Color Vision Tests, Amsler Grid

**Plastics**: Goldman Visual Fields (Normal and Lids taped), Facial Scanners, Exophthalmometry, MRI, MRA, X-rays

**Pediatrics/Strabismus:** Advanced level motility testing, Hirshberg, Krimsky Test, Stereopsis, Worth 4-Dot, Maddox Rod

**Neuro**: Advanced level motility testing, Pupillary exam, Optokinetic Drum, MRI, MRA, blood work

## The Doctor's Exam

- **Patient Interview**: Acknowledge patient complaints, review history
- **External Exam** findings: General exam of the face and eyes, overall appearance of the patient
- **Slit Lamp Exam** findings: Microscopic examination the adnexa and anterior segment (lids, lashes, cornea, conjunctiva, sclera, anterior chamber, iris, lens)
- **Dilated Fundus Exam** findings: Dilated examination the posterior segment (vitreous, retina, optic nerve, retinal vasculature)
- **Test result interpretations**: Review test results

## Impression & Plan

- **Impression**: Documentation of diagnoses found on exam
- **Plan**: Documentation of discussed options for treatment and follow-up for each diagnosis listed

Example: **Impression**: 1. NS Cataracts- OU
2. Dry eyes- OU

**Plan**: 1. Cataract surgery with IOL, OD first
2. Continue PFAT OU PRN, Return if worsens

## Billing & Coding Documentation

- **Diagnosis Codes**: List of codes that match diagnoses documented
- **Procedure Codes**: List of codes that match testing and procedures (or surgery) performed that day. (Also may need to document for planned upcoming procedures for insurance pre-authorization and appeals)
- **Modifiers**: List of sub-codes added to the procedure codes to clarify and justify exceptions

## Counseling

- **Patient Education**: Educate the patient on their condition, medical and surgical options, drop instructions, explain recommended appointments, etc.
- **Patient Assistance**: Connect patient with Patient Assistance programs for discounts, financial assistance, and delivery of medications, visual aids, and self care
- **Surgical Counseling**: Discuss details of surgery, elective options, costs, scheduling, pre- and post-operative care and appointments
- **Financial Counseling**: Provide patient with financial assistance options to help cover costs of procedures, medications, injections, appointments, testing, and surgery


Any Questions?

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