Visual Acuity Testing
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Define Visual Acuity

- The measurement of the ability of the eye to see detail

Vision

- The ability to see

The procedure

- Lighting
- Patient position
- Distant/near
- Occluder
- Pin-hole... what makes it better?
- Plus lens
The Hardest Acuity

- What is the most difficult acuity you have ever taken?
- Were you prepared for it?
- Are children difficult?
- What do you do with the parents?
- What happens when it is taking too long?

Documentation

- Test distance
- Test target
- Pupil reaction
  - Constriction/dist
  - Dilation/near
- Correction
- Reproducible results

Robots

- Don’t be a robot
- Know why you are testing a patient
- Know how the test is to be performed
- Know what is WNL
- Know how to document the findings
- Know when to test
- When in doubt...test it out

Visual Acuity

- Baseline data
- Quantification of visual status
- Sets criteria to help patient achieve better vision

Types of Acuity Charts

- Snellen
- Metric (Bailey-Lovie)
- Low Vision Charts
- Illiterate Charts
  - Landolt “C” or rings
  - Tumbling “E”
- Lighthouse charts

Visual Acuity

- Types
  - Near
  - Distant
- Charts
  - Snellen
- Alignment
- Conversions
- Test Distances
Procedure

- Always observe patient.
- No squinting. Why?
- When do you obtain pinhole acuity?
- Visual acuity better with one eye or two?
- Note any consistent pattern in the letters missed by the patient. Why?

Preschool Children

Allen Picture Chart

Snellen Fraction

- Numerator
  - Represents the testing distance in feet or meters
  - 20/___; 6/_____
- Denominator
  - Represents the distance at which the letter subtends a 5-minute angle or arc in distance or meters. Also referred to as the letter size

Techniques for Testing

- Monocular and binocular
- With and without Rx
- Distance and near
- Pinhole acuity (20/30)
- Testing errors
- What happens when a patient can’t see the largest letter at 20 feet?

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Different Methods

- Patient unable to see the big “E”
  -- Walk up method (15/400, 10/400, 5/400)
  -- Count Fingers- CF @ _____ ft
  -- Hand Motion- HM @______ ft
  -- Light Location
  -- Light Perception
Near VA’s

- Test distance is 16 inches or 40 cm
- Proper lighting

Pinhole

- The pinhole test is used to confirm whether or not refractive error is the cause of decreased visual acuity.
- With and without correction
- Documentation

Pinhole Acuity

- What happens during the pinhole test?
- Why is it necessary
- Who should it be performed on

Connect the Dots!

- Listen to the patient
- Watch the patient when testing pt
- You need to know what direction to go

Case History

- This is a legal document... write everything
- Use the components of case Hx
  - Chief complaint
  - Medical and ocular history
    - Patient
    - Family
    - New medications or changes in health
  - Occupation and avocation
  - Hobbies... piano teacher-vs-cross stitching

Chief Complaint

- Reason for the patient visit recorded in Patient’s own words.
- Ask all the questions necessary to aid your doctor in discovering the root cause of the patients current condition (ie. Who, what, where, how, how long, How old is patient, pain assessment, is there anything that brings relief, last eye exam, last physical exam, illicit and legal drug use, dosage/frequency, alcohol use/amount, and patient/family medical history)
Refractive History

- Past history of corrective lenses
- Current corrective wear...recent Rx?
  - age of correction
  - state of correction
  - quality of vision
  - corrective surgery

Ocular History Cont...

- Rule out specific ocular problems or conditions... ie. DES
  - surgery
  - injury
  - vision training
  - Medications (new)
  - Allergies
  - refractive history

A great question: Are you wearing your most current Rx?

Story of the Truck Driver

- Conditions
- Timelines

Anatomy

- Everything on the visual axis blocking light can cause a change in acuity
- Light must travel from the front to the back of the eye for good vision

Ocular Surface Disease

- Can impact vision up to 2 diopters
- Can cause unstable vision acuity

Two Primary Forms of Dry Eye

The two primary forms of dry eye are Evaporative Dry Eye, also known as Meibomian Gland Dysfunction or MGD and Aqueous Dry Eye. The majority of dry eye sufferers have MGD.
What is in a blink?

• Normal blink rate is 24k a day
• Lateral side higher than medial side
• Starts laterally and moves towards the medial and goes down the punctum
• The lid continues to close depressing the lacrimal sac and pushing tears towards the nasal duct
• This action also causes a suction for new tears

Dry Eye Syndrome/Disease

• Approximately 25% of all visits to Eye Care Professionals
• Up to 40 million Americans have symptoms or risk
• Dry eye increases with age
  • 5.7% of women under age 50 (3.2 million)
  • 14.6% of patients age 65 and older (post menopausal)
  • 9.8% of women age 75 and older
• Despite prevalence, dry eye remains under-diagnosed

Pre-Testing

• Visual Acuity
  - Aided and Unaided
  - Distance and Near
• Eye Alignment is vital
• Letter size calibration
  - 20/200 = 87mm at 20 feet

Ocular Symptoms

- Ask open ended questions and document what the patient says
  - itching
  - dryness
  - burning
  - tearing
  - redness
  - irritation
  - other symptoms

Ocular History Cont...

• Rule out specific ocular problems and conditions, such as:
  - glaucoma
  - cataracts
  - keratoconus
  - surgery
  - previous injuries

SOAPP Format

• Subjective... Chief Complaint
• Objective... test results
• Assessment... for the O.D. only
• Plan... for the O.D. only
• Prevention... duty to warn/counseling
Document Pain Assessment

- If the patient is in pain, you must evaluate the level of pain
- Ask if anything relieves the pain
- Ice
- Pain associated with trauma
- Penetrating injuries

Recording Visual Acuity

- Verify with your doctor
- DVA 20/ NVA 20/

Thank you

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