

# Visual Acuity, Intraocular pressure and Sac syringing

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# VISUAL ACUITY

- It is defined as the reciprocal of the minimum resolvable angle measured in minutes of arc for a standard test pattern.
- It is a retinal function.
- It is concerned with the form sense.
- It is tested separately for distance and near.

# COMPONENTS

- Minimum visible
- Minimum separable
- Minimum resolvable

|                          |    |        |
|--------------------------|----|--------|
| <b>E</b>                 | 1  | 20/200 |
| <b>F P</b>               | 2  | 20/100 |
| <b>T O Z</b>             | 3  | 20/70  |
| <b>L P E D</b>           | 4  | 20/50  |
| <b>P E C F D</b>         | 5  | 20/40  |
| <b>E D F C Z P</b>       | 6  | 20/30  |
| <b>F E L O P Z D</b>     | 7  | 20/25  |
| <b>D E F P O T E C</b>   | 8  | 20/20  |
| <b>L E F O D P C T</b>   | 9  |        |
| <b>F D P L T C E O</b>   | 10 |        |
| <b>P E Z O L C F T D</b> | 11 |        |

# PROCEDURE

1. Select (and document) appropriate Test-(Consider age, language, literacy, and general faculties of patient)



2. Check distance acuity (for each eye)  
-Unaided  
-With distance prescription  
-with pinhole



3. Check near acuity (for each eye)  
(where appropriate)  
-Unaided  
-With near prescription

# PROCEDURE

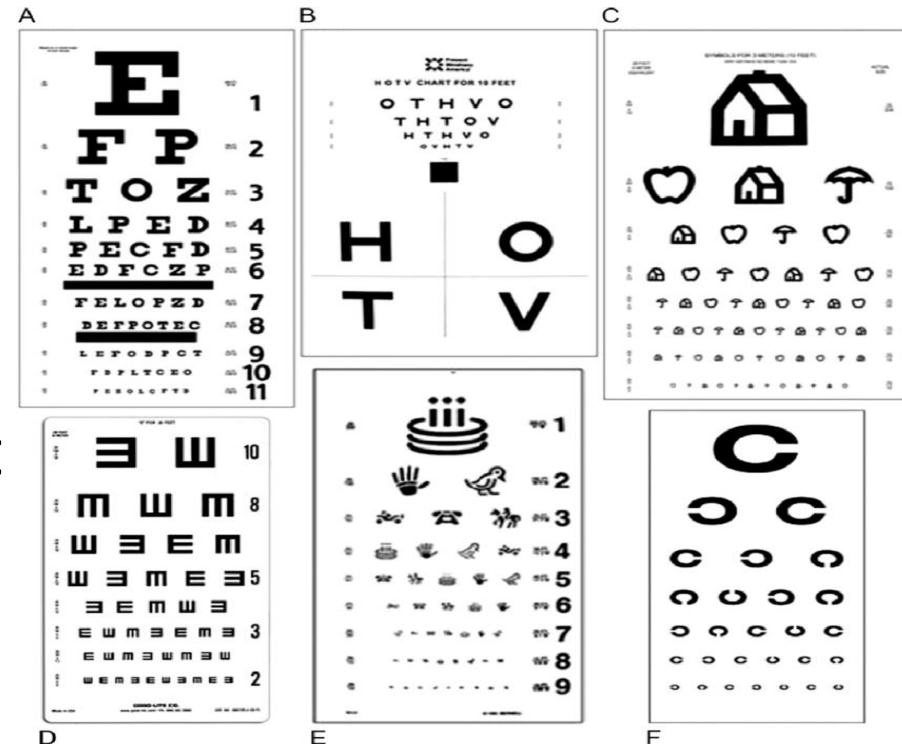
- Patient is seated at 6m distance.
- Chart should be properly illuminated.
- VA is a function
  - Numerator: Distance of patient from chart
  - Denominator: Smallest letter that is read
- If patient can read from 6m line- VA is 6/6
- Depending on the smallest line patient can read, VA is 6/9, 6/12, 6/18, 6/24, 6/36 or 6/60

- If the patient cannot read the top line, he is asked to move towards the chart
- Depending on distance visual acuity is recorded at 5/60, 4/60, etc.
- Finger counting- patient is asked to count fingers and vision recorded as the distance from where the patient can read them.
- Hand Movements close to face
- Perception of light- ability to note the presence or absence of light stimulus
- Projection of rays- recognize the direction of light rays and recorded in all 4 quadrants



# NEAR VISUAL ACUITY

- Demonstrates person's ability to see clearly at normal reading distance
- Measured at 25-33cm
- Types of charts used
  - Jaeger's chart
  - Roman test types
  - Snellen's near vision test



# INTRAOCULAR PRESSURE

- IOP is the fluid pressure inside the eye, measured by a procedure called tonometry.
- Normal IOP is 10-21mm of Hg.
- Factors that determine IOP
  - rate of aqueous secretion
  - resistance to outflow
  - Episcleral venous pressure

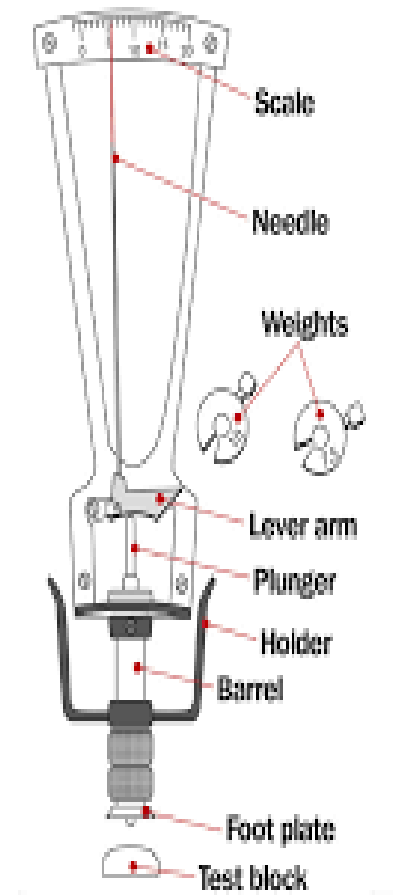
# DIGITAL TONOMETRY

- Rough estimate of IOP
- Ask patient to look down
- Palpate eyeball using index finger of both hands
- One finger is kept stationary which feels the fluctuation produced by indentation by other finger.
  - firm or hard eyeball : raised IOP
  - soft eyeball : low IOP



# INDENTATION TONOMETRY

- Done using schiotz tonometer.
- Based on the concept that a plunger will indent soft eye more than hard eye
- Parts
  - Handle
  - Footplate
  - Plunger
  - Lever
  - Weights



# IOP using Schiötz Tonometer

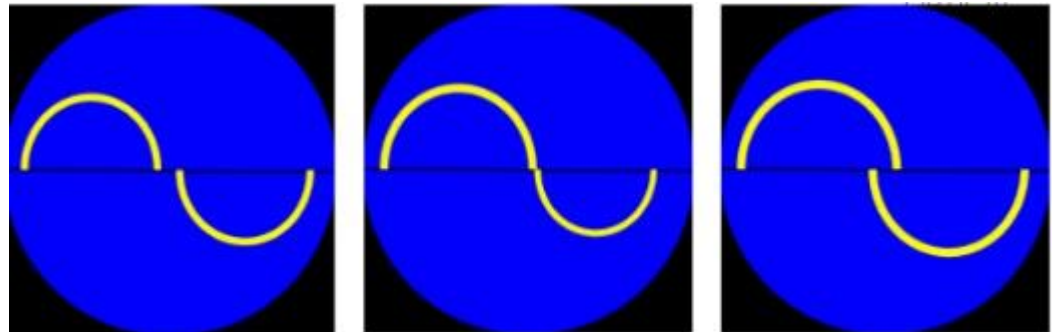
1. Test the tonometer using the spherical mould in the box and the 5.5 g weight
2. Clean the plunger and disc of the tonometer
3. Lie the patient flat with his or her head supported on a pillow.
4. Wash and dry your hands.
5. Position yourself correctly: stand upright, behind the head of the patient, with your hands level with the patient's head.
6. Instil local anaesthetic eye drops and wait about 30 seconds

7. Ask the patient to look at a fixed object and to keep absolutely still.
8. With the thumb and index finger of one hand, gently hold open the patient's eyelids, taking care not to put any pressure on the eye
9. With the other hand, hold the tonometer between the thumb and index finger and place the plunger on the central cornea
10. Allow the disc to lower gently onto the corneal surface.
11. Note the scale reading.
12. Clean and dry the tonometer head.
13. Repeat the whole procedure for the other eye.

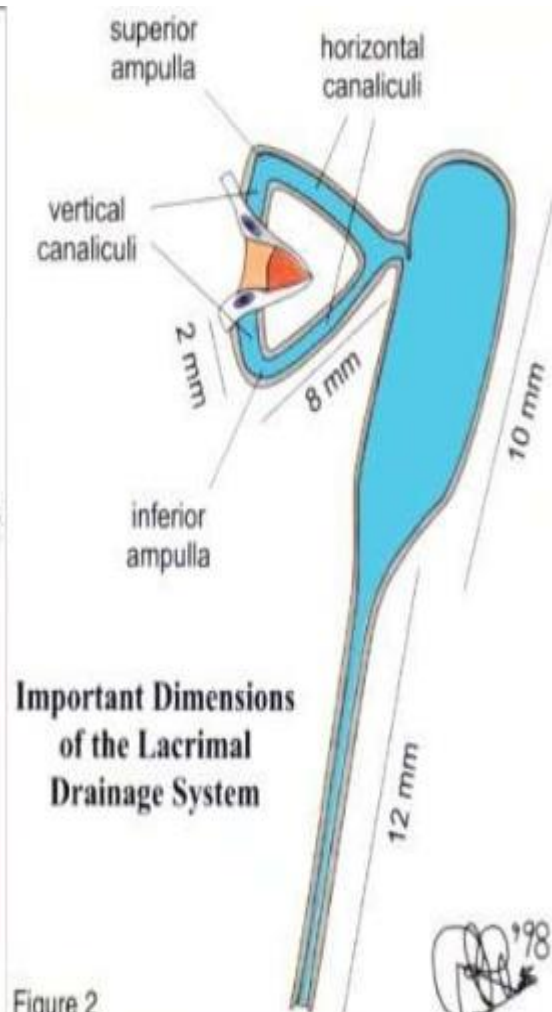
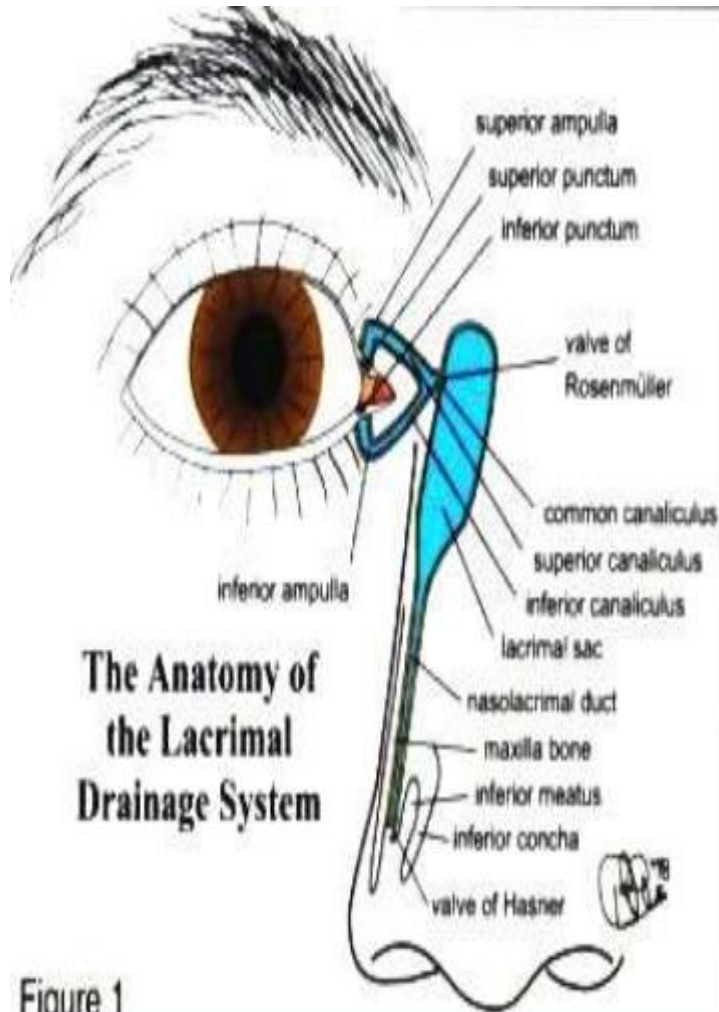
# APPLANATION TONOMETRY



- Based on Imbert Fick law.  
 $P = W/A$ .
- Anaesthetize the eye.
- Stain with fluorescein dye.
- Illuminate the biprism with cobalt blue light and just touch the apex of cornea.
- Two semicircles are seen
- Adjust the force till inner edges of semicircles just touch.
- Note the reading.



# LACRIMAL SYSTEM



# SAC SYRINGING

- It is done to locate the site of blockage in patients with epiphora.
- Explain the patient that he will feel water trickling down his/her throat.
- Topical anaesthesia
- Dilate the punctum.
- Insert lacrimal cannula into lower canaliculus
- Irrigate with saline.

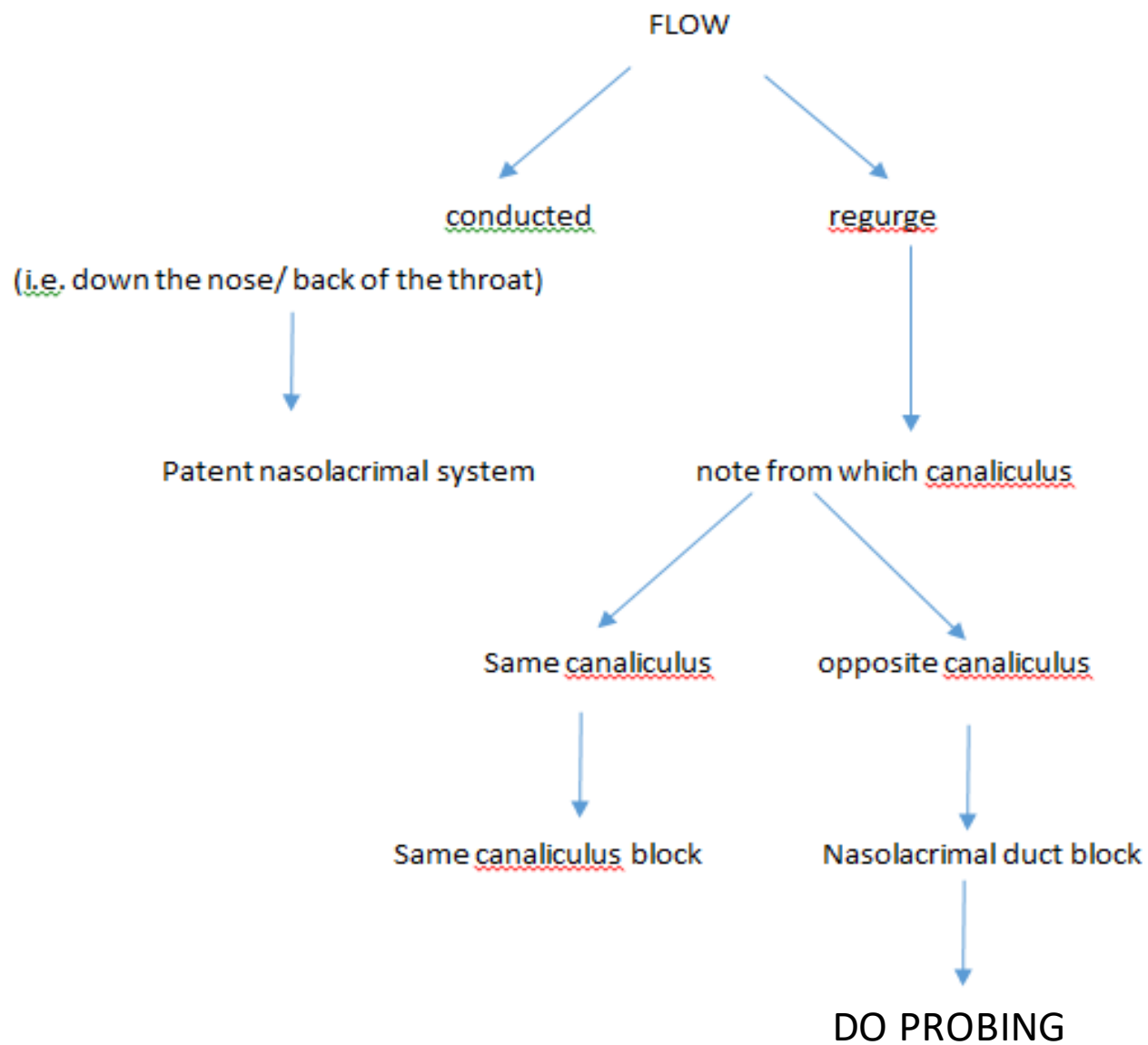




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***THANK YOU***