The organisation

- 21.2. - presentation
- 7.3. - presentation at 13:00
- 23.3. at 9 o´clock - examination room
- 11.4. at 8:30 o´clock - presentatinon
- 20.4. at 9 o ´clock - examination room
- 4.5. - at 9 o´clock - last presentation

- Conditions of subject: homeworks

Screening tests – part II

Entrance tests/screening tests

Extraocular motility

Cover test

The check of habitual correction

Test of colour vision

Hirschberg test

Interpupillary distance

Reading (working) distance

Extraocular motility

- To assess the patient´s ability to perform conjugate eye movements

- The tentative monocular and binocular test

- Procedure: move the light to the eight additional position (letter H), the patient fixes the light without moving his head

- Ask the patient if he sees the light double, feels any pain, strain or discomfort while moving the eyes, we find out the nystagmus or disorder of some eye muscle
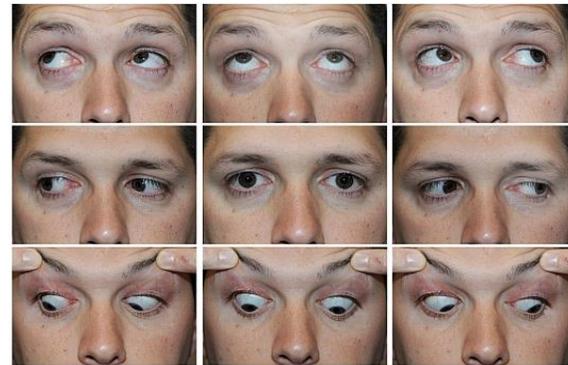
Extraocular motility

Two tests:

- **duction** – movement of one eye

  ▪ The measurement in the eight directions of each extraocular muscle with the other eye occluded – from the distance 0,5 m (the letter H), the testing eye fixes the target (the pen)

- **version** – movement of both eyes

  ▪ The examination of the version is more conclusive to detect the disorder of the eye muscles, because the mobility of both eyes can be compared with each other

Test of colour vision

- approximately 8 % of the general population will have colour vision abnormalities – most of the patients are males.
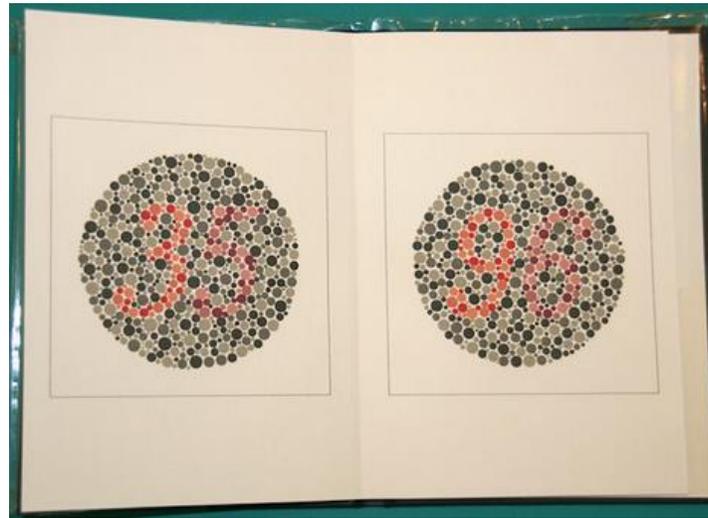
Pseudoisochromatic plates – ask to patient to identify the symbol (number, letter…) on the colour background
• the object is distinguished from the background by color, the brightness of the colours are the same
• many types: *Ishihara, Stilling, Rabkin, Velhagen*

Pseudoisochromatic plates (tabs)

- The examination distance – 50-100 cm according to the tables, each eye separately (with near correction)

- It is also important to provide good light for testing, the patient should not be to tired and his visual acuity should be at least 6/18

- We record the number of correctly market images / tested images

Test of colour vision

- ## *Holmgren´s test*

  - test with colour wool

- ## *FARNSWORTH D-15*

  - consists of 15 colour caps

  - the patient arranges the colour caps in the linear sequence according to the first reference cap located at the beginning of the test

Test of colour vision

- <u>Homework</u>: please, describe the other possibilities of colour testing (for example with devices)

Colour vision deficiencies

- <u>Homework:</u> please, describe the colour vision deficiencies.

Interpupillary Distance (PD)

- The distance in millimeters between the centres of the pupils of the two eyes

- Is important for the right centration of glasses and ensuring their corrective effect in the glasses

- The tools:
  - PD ruler
  - marking the position of the pupil on the foils placed in the spectacle frame
  - digital PD meter
  - autorefractometer (necessary to be checked)
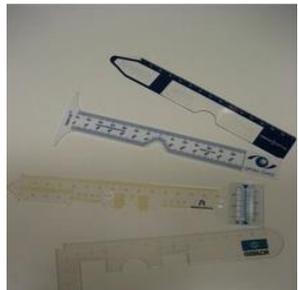
Interpupillary Distance (PD)
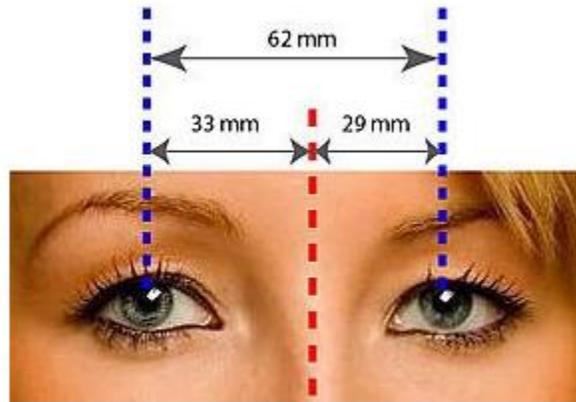
Interpupillary Distance (PD)

Digital PDmeter
- binocular digital PDmeter
- it is possible to measure the PD value for each eye (PDR 33,5 mm, PDL 33,5 mm) or the total value in both eyes (PD = 67,0 mm)

Cover test

- To assess the presence and magnitude of a phoria or a tropia (strabismus)
- It assess the presence or absence of motor fusion
- The screening for binocular vision anomalies - for distance, for near (40 cm)
- <u>Procedure</u>: place the occluder in front of the eye
- The basis of the test is the covering and uncovering of the eye, while the other eye fixes a distant or near point (at a distance of 5–6 m and 40 cm)

Two phases of cover test
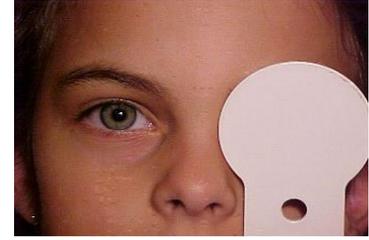
- **the cover-uncover test**
– slowly covering and uncovering of one eye
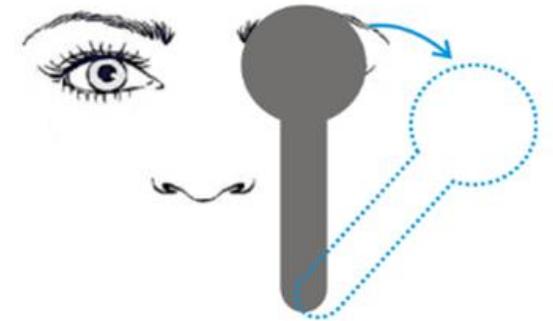
- **alternating cover test**
– quickly move the occluder from the patient´s right eye to the left eye
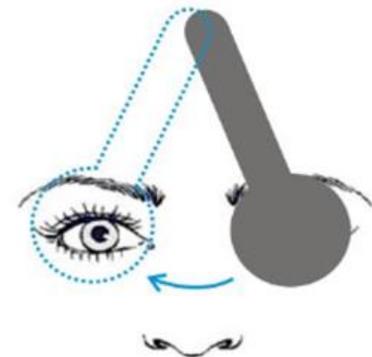
The results of cover test

Eyes straight (maintained in position by fusion).

Position of eye under cover in orthophoria (fusion-free position). The right eye under cover has not moved.

Position of eye under cover in esophoria (fusion-free position). Under cover, the right eye has deviated inward. Upon removal of cover, the right eye will immediately resume its straight-ahead position.

Position of eye under cover in exophoria (fusion-free position). Under cover, the right eye has deviated outward. Upon removal of the cover, the right eye will immediately resume its straight-ahead position.

The check of habitual correction

• finding the current spherical-cylindrical correction for all available glasses

Reading Distance
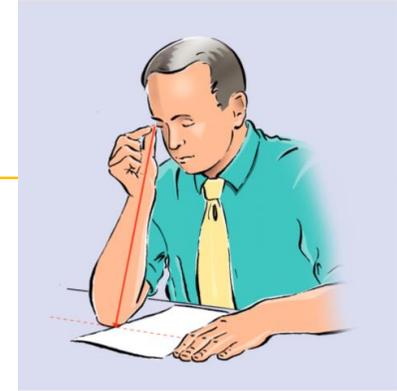
• It is important to know the patient´s usual or required working distance

• It varies in accordance with patient ´s tasks and habits

• This may vary considerably from one person to another (25 cm – close precision work, work with different computer screen positions...)

• It is important the demonstation by the patient (we will adjust the correction to the patient´s need)

• To check a patient ´s habitual reading distance ask them to hold a reading test card where it feels comfortable, measure the distance from the eye to the card and it is comparable with Harmon ´s distance (the distance from the elbow to the tip of the index finger when it is touched to the thumb)

Hirschberg test

- To determine the approximate position of the visual axes of the two eyes under binocular conditions at near, this test is used to identify a strabismus
- Procedure: direct the penlight toward the patient´s eyes from distance of 50 to 100 cm, instruct the patient to look at the light
- Compare the locations of corneal reflexes and the centres of pupils in each of the two eyes
  - Three possible positions for the corneal reflex:
    - The center of the pupil (if the reflexes are in the same relative positions in each of two eyes, the patient does not have a strabismus)
    - Slightly nasal to the center of the pupil
    - Slightly temporal to the center of the pupil
- The most of the patients have the symetry corneal reflexes with approximetly 0,5 mm nasal decentration