Screening Tests – part I

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The organisation

- 21.2. - presentation
- 7.3. - presentation at 13:00
- 23.3. at 9 o´clock - examination room (It is not correct for student)
- 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

Measuring of the eyes

- **Methods of optometric measuring of the eye:**

1. **Anamnesis**
2. **Entrance tests/ Screening tests**
3. **Objective refraction**
4. **Measuring of visual acuity – natural, habitual, objective refraction**
5. **Subjective refraction**

Entrance tests/screening tests – part I

- Dominant eye
- Near point of convergence
- Screening visual field
- Pupillary reaction

Dominant Eye

- it is the preference of one eye over the other when fixating on a target
- it is useful to know which of the patient ´s eyes is dominant
- knowing which eye is dominat has these interest:
  - some examiner preferable to start refraction with non-dominant eye

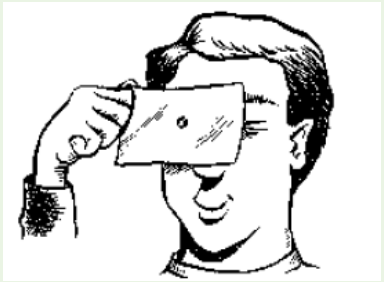
  (in the Czech Republic we usually start with the right eye)

  - during binocular balance, if the perfect balance cannot be obtained, the dominat eye shoud be favoured

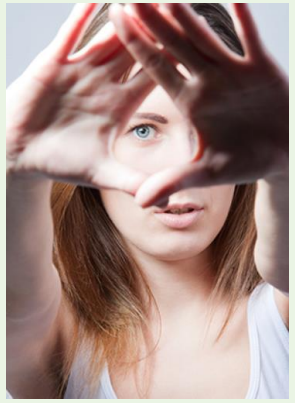
Aids of Dominant eye determination

- CheckTest

- Hole – in – card test



- The hands of the patient



To determine Dominant eye with hands of the patient

- Face your palms away from your body and put your arms out in front of your body.
- Form a small hole with your hands, crossing the forefingers and thumbs.
- Look at object (the symbol of the optotype) that is about 5 m in the distance (the infinity).
- Keep both eyes open and look at it via the hole made with your hands (don´t move with your hands).
- Close one eye and then open it. This should show the object you are focusing on either jumping to the side or disappearing from the hole you made with your hands.
- If the object does not jump when one eye is covered, this is your dominant eye.

Near point of convergence (NPC)

• to determine the patient´s ability to converge the eyes while maintaining fusion
• instruct the patient to look at the target (pen) until the patient reports that the target appears double (or until you see on eye lose fixation on the target)
• we notice if the convergence is fluent and symmetrical

Try an easy test with the pen.

Tests of visual field (tentative)

- **Test of light projection**
- **Test „handshake“**
- **Finger counting visual field**
- **Confrontational method**
- **Amsler grid**

Visual field (VF)

- is defined as the area that is perceived simultaneously by a fixating of the eye (without movement of the head and with the eyes fixed on the single spot)
- <u>The range of normal VF</u>: 90 – 100° temporally

  60° nasally and up

  70° down
  - It is individual according to the anatomical proportions of the patient

Light projection

- We perform by patients with low vision (by patients with low vision of light or moving in front of the eye)
- Holding a penlight at a distance approximately 20 cm away from the patient, find out the position the light in different areas of the patient ´s visual field
- result: we note the areas of the field in witch the patient has light perception

Test „handshake“

- the simplest and the fastest orientation method
- binocular test
- The examiner offers both hands to the patient with the question „take my hand“
- The patient with the normal visual field hesitates and asks for which hand, while a patient with visual field defect (homonymous hemianopia) without hesitation touchs the examiner ´s hand, which he/she sees only

Finger counting visual field

- Monocular test
- The patient occludes one eye and the second eye fixes the eye of the examiner
- The examiner shows the fingers in some of the locations (8 places)
- The examiner has to check the right fixation of the patient

Finger counting visual field

- An example of finger counting visual field. The examiner is exposing two fingers in the inferior temporal field of the patient´s right eye.

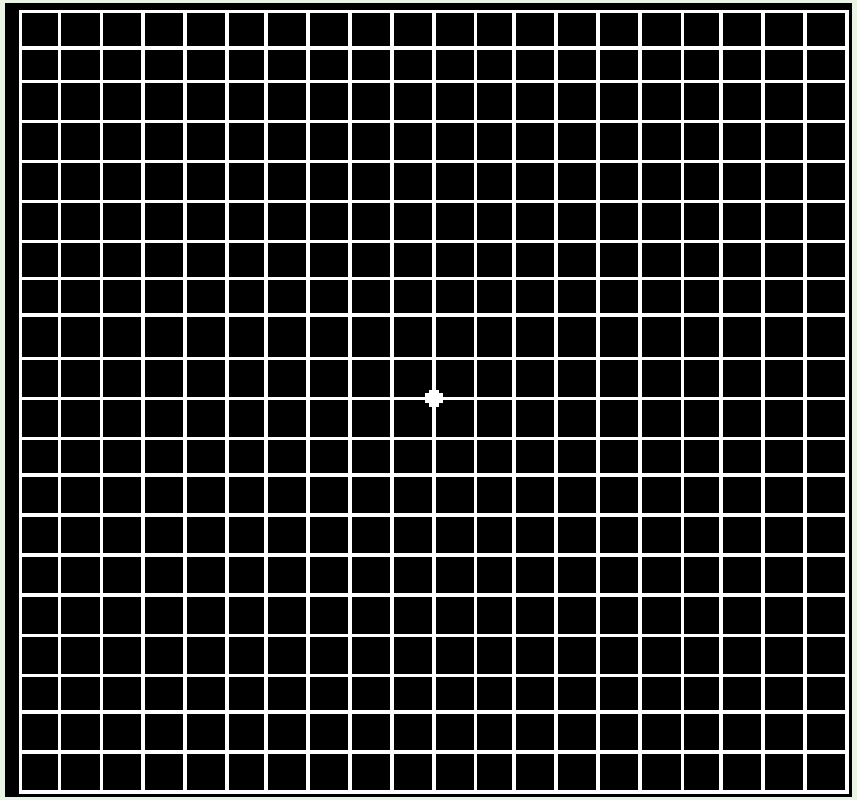
Confrontational method

- **Homework**: The first homework – please, describe this method.
- Deadline: 3.3.

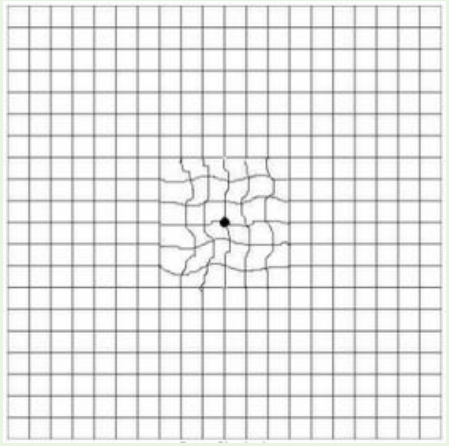
Amsler grid

- To assess the integrity of central visual field corresponding to the macular region of the retina (tests the visual field up to 10° around the fixation point)
- It should be performed with patients who have macular disease
- One of the square´s sides is 10 cm, each square of the grid is 5 mm
- Viewing distance (reading distance) is about 30 cm
- The patient with his/her best near correction observes with one eye at the central dot and notice the grid in every place originally
- If there is a disease we can find small scotoma or metamorphopsia

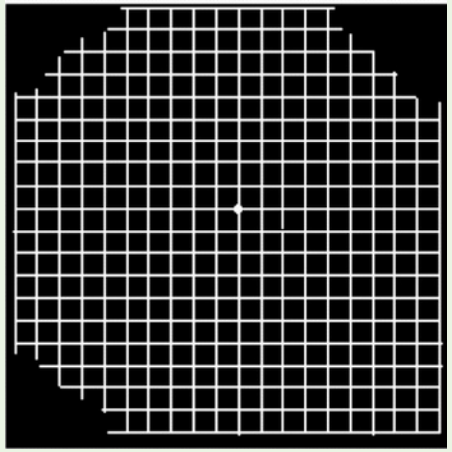
Amsler grid



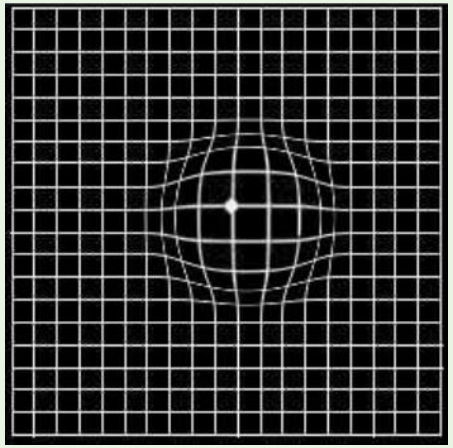
Amsler grid



Metamorphopsia

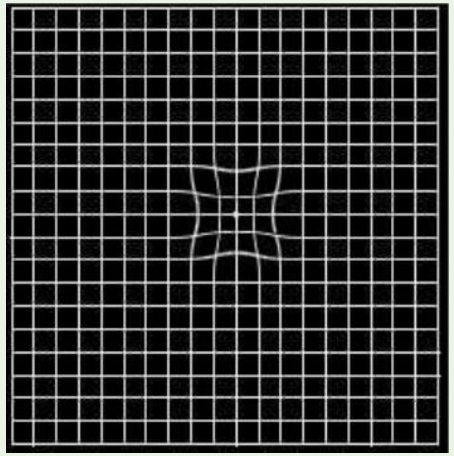


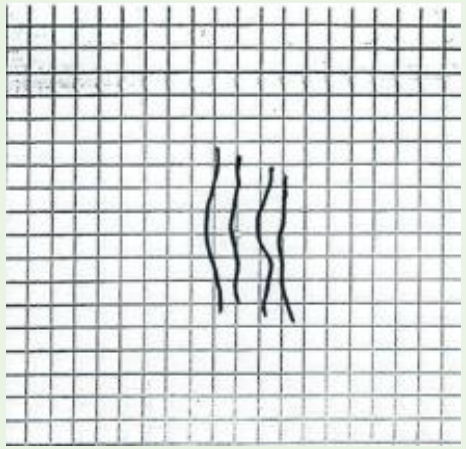
Glaucoma



Tumor

Edema





Selfexamination

Pupils reaction

- Assessing the afferent and efferent neurological pathways responsible for pupillary function
- If the pupils have the same size, are round and to assess the speed of the pupillary constriction
- The first test: **photoreaction:**

- shine the light in the right eye and observe:

photoreaction direct – we observe the constriction of the illuminated pupil

photoreaction indirect – we observe the constriction of the unilluminated pupil (the second eye)

Pupils reaction

- The second test: **Swinging Flashlight Test – the second homework for you. Please, describe the test and its procedure.**