



رقم المحاضرة الاولى

SYNOPTOPHORE

Definition, parts and uses

جامعة ساوة

كلية التقنيات الصحية والطبية

قسم تقنيات البصريات

المرحلة الرابعة

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What is a Synoptophore?

- A medical instrument used to diagnose and treat binocular vision disorders like strabismus.
- Enables measurement of eye alignment and eye coordination

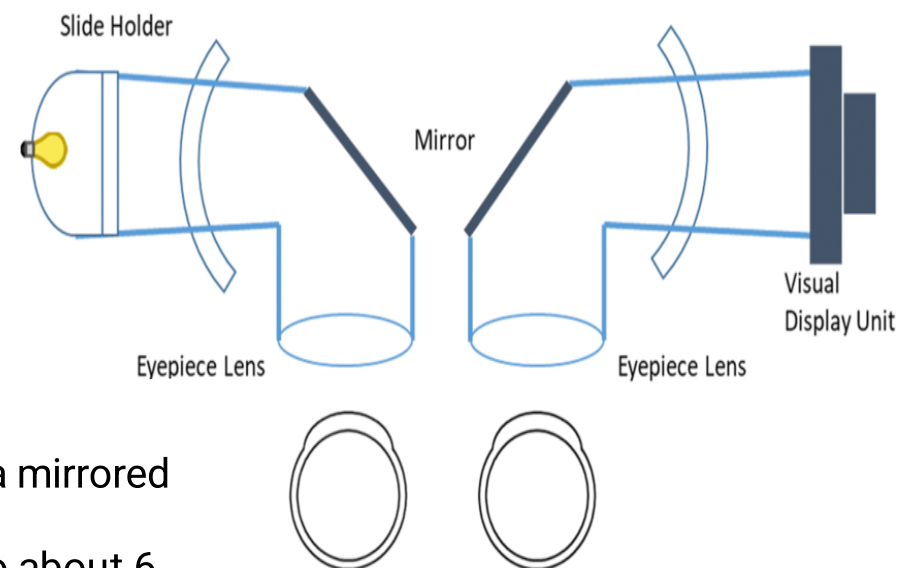


Parts of a Synoptophore

- A summary of the main components of the synoptophore.

Part 1: Eyepieces

- Adjustable eyepieces to accommodate different patients .Used to view different images presented to each eye.



The instrument consists of two cylindrical tubes with a mirrored right-angled bend and a +6.50 D lens in each eyepiece. This optically sets the testing distance as equivalent to about 6 metres.

Part 2: Slides or Targets

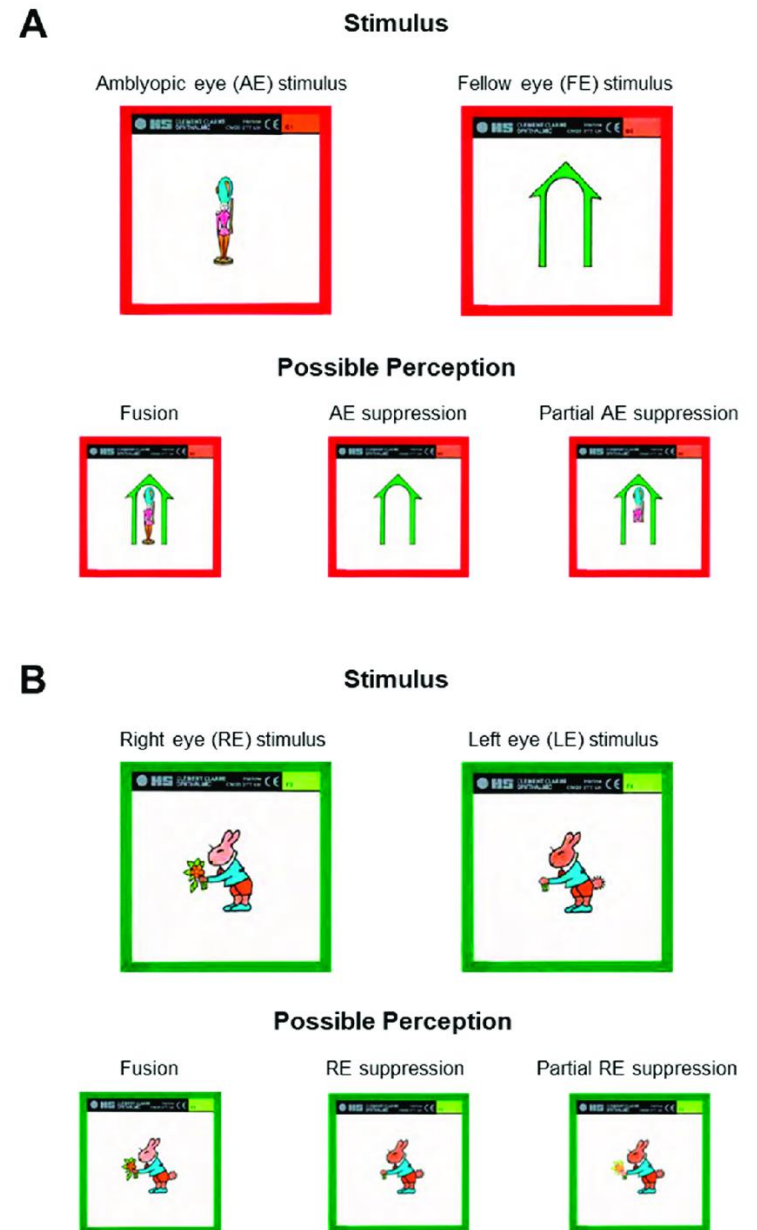
- Variety of slides (pictures, symbols) used for visual stimuli.

What are synoptophore slides used for?

It is ideal for the assessment and treatment of ocular motility disorders by reliably performing the most comprehensive binocular vision assessment available today. Synoptophore slides are beautifully hand-crafted and have been produced for Clement Clarke for nearly a century.

Part 3: Movable Arms

- Allows independent adjustment of each eye's target.
- Horizontal and vertical adjustments for precise alignment.



Part 4: Light Source

- Illumination system for clear viewing of slides.
- Enhances visibility and accuracy in diagnosis.

Part 5: Control Mechanisms

- Levers, dials, and scales to control slide movement.
- Used to record deviation angles during diagnosis.

Diagnostic Uses of Synoptophore

- Measurement of ocular deviations in cases of strabismus (heterophoria, heterotropia).
- Testing for fusion, suppression, and stereopsis (depth perception).

Therapeutic Uses of Synoptophore

- Orthoptic exercises to improve binocular coordination.
- Treatment of convergence insufficiency and other vision problems.

Assessing Fusion and Retinal Correspondence

- Differentiating normal and abnormal retinal correspondence.
- Fusion types: sensory fusion (image integration) and motor fusion (eye movement).

Advantages of Using Synoptophore

- Non-invasive, accurate, and versatile.
- Useful for both diagnosis and therapy of binocular vision disorders.
- Suitable for patients of all ages.

Detection of abnormal retinal correspondence

ARC is detected on the synoptophore as follows:

- The subjective angle of deviation is that at which the SP slides are superimposed. The examiner determines the objective angle of the deviation by presenting each fovea alternately with a target by extinguishing one or other light and moving the slide in front of the deviating eye until no movement of the eyes is seen.
- If the subjective and objective angles coincide then retinal correspondence is **normal**.
- If the objective and subjective angles are different, **ARC is present**. The difference in degrees between the subjective and objective angles is the angle of anomaly.

ARC is said to be harmonious when the objective angle equals the angle of anomaly and inharmonious when it exceeds the angle of anomaly. It is only in harmonious ARC that binocular responses can be demonstrated.