

A Novel Test for Suppression and Anomalous Correspondence

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Abstract

The test device described diagnoses suppression or anomalous correspondence AC in binocularity patients. The test is based on the principle of colour filtration. The target is a drawing of a human face wearing a 'red and green' goggle in the conventional way; and during examination the patient wears a 'red and green' goggle in the conventional way also. Not seeing the left eye (green goggle) of the target means that the patient suppresses his left eye. Not seeing the right (red goggle) of the target means that the patient suppresses his right eye. AC in a strabismic very much compares to normal retinal correspondence in a patient with alignment i.e a normal binocular observer. Thus the strabismic seeing the two eyes (red and green goggle) of the target demonstrates AC. The strabismic who has neither suppression nor AC will have diplopia and the target will show/have more than 2 eyes. When compared to other devices like Bangolini striated lenses and Worth 4 dot tests for suppression and anomalous correspondence, the device is simple to interpret by clinicians. The patient by himself knows his binocularity status. So easily it can be employed in visual screening exercises for the illiterate/non verbal who cannot tell colours and angles; and the very young that vision therapy can be most beneficial find the target interesting.

Keywords: Suppression; Anomalous correspondence; binocularity; Red-Green goggle; Strabismic; Diplopia

BACKGROUND INFORMATION

Having the doctrine of "corresponding points" in mind, the strabismic who cannot afford bifoveal

fixation avoids double vision by employing the phenomena – suppression, amblyopia or anomalous correspondence [1].

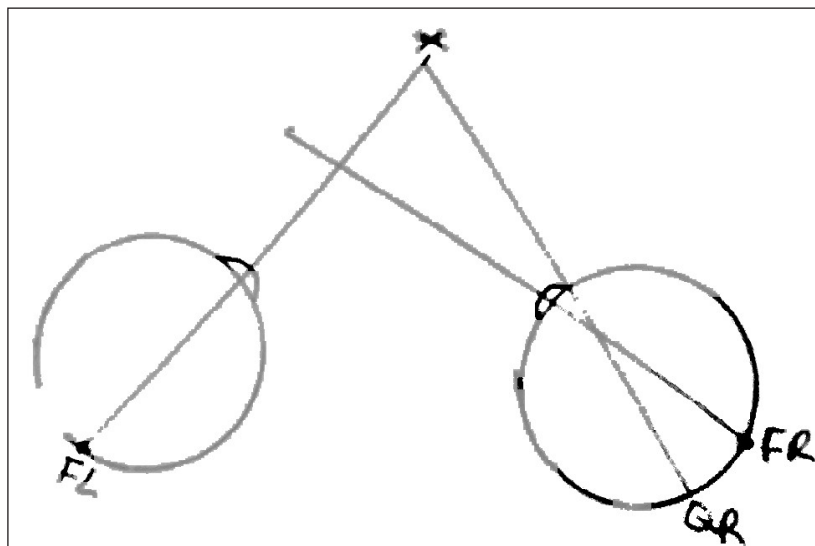


Figure1. Right eye esotropia

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Considering a case of right eye esotropia (figure1), there are 2 main areas in the retina of the deviating eye which are suppressed [1,2]. The fovea (FR) to prevent confusion and the peripheral retinal point (QR) stimulated by the fixation object (X), which is suppressed to prevent diplopia.

Suppression in an intermittent squint occurs only when the eye is deviating [2,3]. In alternating squints suppression only exists in the deviating eye [4]. In refractive, for example in Antimetropia the hyperopic eye will fixate at far while suppressing the other eye [4]. Likewise, the myopic eye will fixate at near while the hyperopic eye will be Suppressed [4].

In a constant unilateral squint, suppression is however a continuous process since deviation is perpetually present in such eye. This type of suppression inevitably leads to amblyopia the result of deprived visual sense [5].

In anomalous correspondence [6,7], QR is not suppressed. But used in conjunction with fovea of left (FL). That is a correspondence is established between a highly developed area in one retina (the fovea) and a

peripheral point in the other, with comparatively poor visual acuity. This is an anomalous form of binocular vision which is inferior.

THE DEVICE

On presentation of a strabismic patient for assessment, the device described diagnoses suppression or anomalous correspondence AC in the patient (giving information on which phenomeom used to avoid double vision).

The test is based on the principle of colour filtration.

- 1) Red lens (filter) absorbs all wavelengths of light but red (therefore green light will not be seen with red lens).
- 2) Green lens (filter) absorbs all wavelengths of light but green (therefore red light will not be seen with green lens).

The target is a drawing on a card of a human face (who is dark skinned) wearing a 'red and green' goggle in the conventional way (figure2).

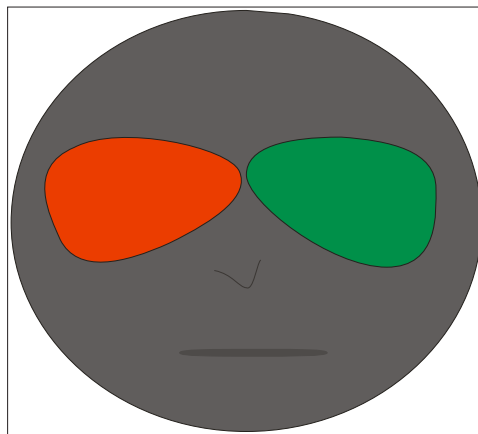


Figure2

During examination, in a bright illumination, the patient as well wears a 'red and green' goggle

(figure3) on the right and left eye respectively the conventional way.



Figure3. Red-Green goggle

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The patient in front of the target observes the target (the face).

It is a subjective examination and the report of the patient of the dark background face could be:

- (1) Only one of the eyes of the target is seen
- (2) The two eyes are seen
- (3) More than two eyes are seen.

THE INTERPRETATION

- (1) Not seeing the left eye (green goggle) of the target means that the patient suppresses his left eye.
- (2) Not seeing the right (red goggle) of the target means that the patient suppresses his right eye.
- (3) AC in a strabismic very much compares to normal correspondence in a patient with alignment i.e a normal binocular observer. Thus the strabismic seeing the two eyes (red and green goggle) of the target demonstrates AC.
- (4) A strabismic who has neither suppression nor AC will have diplopia and the target will show/have more than 2 eyes.

THE ADVANTAGES

When compared to other devices like Bangolini striated lenses and Worth 4 dot tests for suppression and AC [6,8]

- (1) The device is simple to interpret by clinicians.
- (2) It can be used at far and near distances.
- (3) The patient by himself knows his binocularity status.
- (4) So easily it can be employed in visual screening exercises for the illiterate/non verbal who cannot tell colours and angles.

- (5) The very young who vision therapy can be most beneficial find the target interesting.

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