VISUAL FIELDS

 

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Amblyopia Exanopsia is a term long used and over worked, covering a multitude of conditions creating a state of poor perception from any or all portions of the retina. Most authors refer to it as a dimness of vision from the non-exercise of the seeing function. Roughly, it is a dimness of vision from disuse, but the term is frequently-used to cover other types and causes of amblyopia.

To the modern Optometrist an analytical approach to visual problems cannot justify this definition, with all its implications, as being complete. It is a clinically observable phenomenon that the visual acuity of resolution will become diminished if one eye of a young child is occluded from the visual act for weeks or months at a time, but whether this is true of adolescents, or older, is questionable. It is also observable that if this amblyopic condition has been produced in children from occlusion, or disuse, that good vision may be restored by forcing the use of the eye and occlusion of the other. There is, however, something more far reaching than this.

Most visual troubles hinge on an interference in the operation of binocular coordination. After a satisfactory pattern of neurological organization has been developed in the child to accomplish and maintain clear and single binocular vision an interference (fatigue, etc.) may take place in the pattern network. Some kind of an adjustment or compensation must be made when this occurs. As pointed out in Volume 3, Number 1, one of these concessions is an inhibition of a sensory impulse.

Different persons attempt different methods. Some produce an inhibition of sensory impulses from the macular and perimacular areas. We have called these macular and perimacular suppressions. Others produce an inhibition of portions of the

peripheral retina, usually around the normal blind spot. When these are temporary, coming on only during periods of visual concentration, we call them transitory visual aphasia. It is observed usually before the age of puberty. If the former (macular suppressions) become more permanent in their nature, and more intense, we classify them as amblyopia. When the second type (inhibition of sensory impulse from peripheral retina) becomes more permanent it is known as scotomatous areas and is difficulty differentiated from scotomas created by toxic conditions.

It is not uncommon to find evidences of both macular and peripheral amblyopia in the same person, and sometimes this dual situation is accompanied by a squint.

The cases of squint that are results of muscular deficiencies are as few as the number of people who have muscular deficiencies and imbalances in arms and legs causing them to turn crooked and remain that way. The numbers of people who have amblyopia from faulty conduction of nervous impulses from retina are as few as a sensory paralysis from any other part of the body. The loss of the integrity of these visual skills is a matter of adaptation, or learning, the same as the skills were learned in the first place if they ever were acquired.

It must be remembered that the whole purpose of the organism is to eliminate the trouble created by an interference in the binocular act of seeing. The end result is the goal regardless of the method or methods used to accomplish it. When we firmly establish this in our minds, we will have a firm hold on the keys to analysis of amblyopia, enlarged blind spots, squint, etc.

A boy, age twelve, was referred for visual service from his school because "his eyes weren't right." His mother brought him and hastened to explain that one eye was "weak" but the other "could see fine," and for that reason no care had been sought for him. She also said that occasionally the "weak" eye turned inward.

At the time the examination was made no strabismic effect was noticed, but a cover test revealed a nasal deviation which was eliminated when binocular vision was permitted. It was obvious from simple tests that there were restrictions in the useful area of peripheral vision. For this reason, blind spot measurements were made before any other tests were taken. They are recorded in Figure I.

Let us recall that no maintained visual task had been performed for hours, indicating that this blind spot enlargement was of greater duration than for a period following a few minutes of reading.

Naked vision in the right eye was 20/20 at far and Jaeger #1 type at 16 inches. The left eye permitted 20/80 distant vision and Jaeger #6 type at 16 inches.

The analytical routine disclosed a “B” type fatigue problem, presumably a "B-2.” A11 recoveries in duction findings were below 4 prism diopters. Base-in recovery at near was -2 prism diopters. Hyperopic reserves were ample at far and near allowing the use of plus lens to change the patterns and eliminate fatigue. It was also deemed advisable to do something to assist in elimination of amblyopia exanopsia and enlarged blind spots. The copyrighted technique of Dr. T. A. Brombach* was used.

After attendance at one performance of the talking motion picture with the better eye occluded, vision was improved to 20/40 at distance, and blind spots were reduced (Figure 2). Within the next week two more talking motion picture shows were attended keeping the better eye covered. No progress reports were made after the second movie, but after the third the b11nd spots were reduced to normal size. Distant vision remained at 20/40 plus A, T & D on the 20/30 line. Jaeger #2 print could be read at 16 inches.

In addition to the motion picture technique the better eye was occluded each evening luring the dinner hour, and some work was done in school using only the poorer eye.

During this period covering eleven days a convex, sphere for reading was given him. At the end of this time when blind spots were normal and vision was good in either eye, an increase in convex spherical power was prescribed for near, retaining the same lens power as before for distance, in a dual focus lens. A small amount of cylinder was also incorporated in the pre-scription.

Seventeen months have passed at the time of the preparation of this material. No more strabismic tendencies have been observed and blind spots have remained normal. Reading achievement has improved in school.

*COPYRIGHTED TECHNIQUE FOR USE OF TALKING MOTION PICTURES IN

AMBLYOPIA EXANOPSIA AND TRANSITORY VISUAL APHASIA
by DR. T. A. BROMBACH

"****** it is evident that the key to success is to engage the patient's interest and attention on occurrences transpiring before him just as if he were using his better eye, the mental urge, to use the previous visual experiences and memory associations that, resulting from the use of the better eye, will attend to use the more defective one."

"The talking picture at once presents a most admirable method to employ *****. Here we have presented in perfect continuity the occurance of interesting events of great variety motion of various speeds, directions, durations and character. A variety of shapes, forms, and sizes in various positions, the purpose of which is shown, or inferred as the story proceeds, all of this engaging an intense mental urge to see. In addition an association with auditory impressions is set up creating still greater anchorage of the new visual experiences."

"The talking pictures certainly offer an unexcelled form of Visual Exercise under ideal conditions presenting:

(1) A blended series of events that engage the visual and auditory interest.

(2) In their depiction of many varied occurrences, while separate, yet are co-related, showing purpose of various forms of activities.
(3) They show various forms and types of motion
(4) They present many varied objects

of interest that reveal proper size, shape, position, etc., all relating to the story being shown and usually given in their proper environment as rural, nautical, industrial civic scenes.

(5) The auditory stimulus associated with the visual experience intensifies the urge to "see."

(6) The shadow effects, foreground and background, offer splendid training in judgment of distances.

(7) Many such talking pictures also present color effects, which further enhances the visual exercise.

The salutary effect of the method of visual training cannot be over estimated and is hereby recommended for all cases of

Amblyopia of the Exanopic type."

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