

## LOW VISION

### Evaluating training

**Implementation of a Precision Teaching Data Collection System in a Program for Multiply Handicapped, Visually Impaired Children**, John Merbler and Randall Harley. *Educa. Vis. Handicapped*, 8(4), Winter, 1976-77.

The authors describe a simple way for teachers to graph their progress with multiply handicapped, visually impaired children. The key is that the graph forces the teacher to pinpoint one aspect of behavior he wants to work on, and to concentrate on this area rather than trying to normalize the child in every way all at once.

It's a thought-provoker for any practitioner working with any special population in an educational training session.

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## PHYSIOLOGICAL OPTICS

### Optic nerve drusen

**The Pathogenesis of Optic Nerve Drusen, A Hypothesis**, Joel G. Sacks, Richard B. O'Grady, Earl Choromokos and Jan Leestma. *Arch. Ophthalmol.*, 95:425, 1977.

Ocular histological findings and fluorescein angiography in patients with optic nerve drusen suggest that the disease has a vascular origin. This is due to a leakage of non-cellular blood elements into the perivascular spaces of blood vessels on the optic nerve head. These elements form deposits which increase in size and progressively coalesce to become visible ophthalmoscopically.

Abnormal vasculature of the optic nerve appears, with fluorescein angiography, as: (1) Early branching of the vessels around the disc; (2) Abnormal vessels connecting the superficial and deep circulation at the disc, and (3) Increased capillarity of the disc. Formation of drusen may result from an inheritance of such an abnormal vascular pattern which affects the pressure of the microvasculature of the

optic nerve head and leads to leakage.

### Tear inserts

**Soluble Artificial Tear Inserts**, Stephen Bloomfield, Michael Dunn, Terie Miyata et al. *Arch. Ophthalmol.* 95:247, 1977.

Diseases characterized by unstable tears may be treated with the insertion in the inferior cul-de-sac of a wafer containing succinylated collagen, a protein polymer with appropriate wetting and viscosity properties. Polymers have been shown to thicken and stabilize the precorneal tear film. Viscosity plays a role in polymer stabilization of precorneal tear film, and wetting properties decrease the surface tension and contact angle.

Solubilization of the wafer on the eye releases the collagen polymer into the tear film with an initial rapid dissolving, followed by a more "slow pulse" delivery. The soluble inserts last on an average of about seven hours, with a residual effect on increased tear break-up time (BUT) of an additional hour.

There was no objective change in visual acuity, and if positioned properly the wafers were universally comfortable with no removal necessary. A minimum amount of tear volume is necessary for proper solubilization and diffusion of the insert.

### Interpreting BUT

**Interpretation of Tear Film Breakup**, Gregory Vanley, Irving Leopold and Terrence Gregg. *Arch. Ophthalmol.* 95:445, 1977.

Tear film breakup time (BUT) was measured eight times over a period of one month in 25 normal subjects in order to determine the reproducibility of this test. A wide variation in BUTs was found with 46 per cent of the subjects showing marked variations from day to day. Most standard deviations were from 10 to 30 seconds. Several factors that may influence this variation would be: (1) Standardization of techniques; (2) Non-uniform spreading of the tear film during blinking; (3) Time lag between the appearance of a dry spot and its notation with the biomicroscope, and (4) The time of day at

which the test is performed.

No difference was found between the right and left eye and no relationship with age or sex was apparent. Due to these extreme variations in findings, BUT may be of supportive value in diagnosing certain dry eye syndromes, but of itself has no conclusive value.

### Corneal sensitivity

**Influence of Age on the Sensitivity of the Cornea**, Michael Millodot. *Invest. Ophthalmol.* 16:240, 1977.

Corneal touch threshold (CTT) was measured in 205 individuals ranging in age from seven to 80. The cornea was stimulated at the six o'clock position by the Cochet-Bonnet aesthesiometer. CTT was defined as the length of the nylon monofilament at which the subject responded for 50 per cent of the number of stimulations.

The CTT continued to increase with age so that by the eighth decade it was almost twice as great as at age seven. The fact that young children may have noticeably more sensitive corneas than adults may be clinically significant in selecting the type of contact lens utilized. Reasons for this decrease in corneal sensitivity with age were not discussed.

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## OCULAR PATHOLOGY & DISEASE

### Studies in keratoconus

**Immunological Studies in Keratoconus**, P. D. Davies, D. Lobascher, A. H. S. Rahi, and M. Ruben. *Trans. Ophthalmol. Soc. of the U.K.*, 96:173, April, 1976.

"Immunological Studies in Keratoconus" represents an important addition to our knowledge of keratoconus. The histological picture of keratoconus is well known, but little is known about the biochemistry that effects these changes.

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