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Letter To Editor
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Central Nervous System Guides Different Impairments Regarding Some Dysmetabolic Diseases

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Letter To Editor

Dear Editor,

In diabetes, color function loss can occur before the appearance of clinical diabetic retinopathy. In the retina, short wavelength (L) cones encode the information for red-green and blue-yellow components and luminance through functionally and anatomically distinct retinal-genicular-cortical pathway. The ganglion cell axons carry the filtered and encoded visual information as action potentials to the lateral geniculate nucleus. L and M cones mainly project to the koniocellular lateral geniculate nucleus layer responsible for blue-yellow color vision components. According to a disordered metabolism of neural cells, diabetes may damage the nerve directly or indirectly through changes in the microcirculation. Retinal functions damaged by diabetes in the first instance by a nutritional deficit which affects the neurons and later by vascular disturbances associated with micro-aneurysms. In general, blue losses are most severe. They stressed the fluctuating nature of some color vision difficulties, in the event of variation of blood sugar level. No correlation existed between the duration of diabetes and the number of errors by tests. The positive polarity of the abnormal error scores (range, 226,6-390,0) in six out of 11 patients was determined by no ambiguity in the axis of color confusion that was distinguished sharply by the City University test. Diabetes increases apoptosis in neural cells in human retina early in the course of the disease. Conventionally, pigment epithelium and cone receptor disorders have long been associated with tritan defects. While "outer" neurons frequently induce protanomalous defects, disorders of the "inner" neurons frequently give rise to deutan acquired defects. Tritan defects are often classically associated with outer layers of the retina and red-green defects with inner layers. Acquired tritan color deficiency, or blue-yellow deficiency, in diabetes occurs in association with reduced sensitivity in the short wavelength (S cone) pathway. Generally, in later stages of the disease, red-green mechanisms are involved. This differentiation can be based on the different answers by our brain when some insults or diseases are present. The brain analyzes and thus determines the color of a surface by determining the color of every point in it by an additive mechanism, that is, by gauging the amounts of long, middle, and short-wave light reflected from each point. The reason is to be found in the anatomical connections between the eye and the brain. These are organized topographically, with every point in the primary visual cortex which, until the last two decades, was considered to be the sole visual perceptive cortex and remains perhaps, even today, the more extensively studied part of the visual cortex.

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