

THE POWER OF CONTRAST SENSITIVITY AND NUTRITIONAL INTERVENTION IN PRIMARY EYE CARE

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Purpose: This paper discusses the proper use of visual acuity measurement and its limitations in assessing a patient's ability to perform daily activities. It demonstrates that Contrast Sensitivity (CS) testing, when measured at intermediate spatial frequencies, is a powerful tool useful in providing unique and important information for both patients with healthy eyes and those with ocular pathology. The results of CS testing enable the practitioner to provide more accurate guidance regarding nutritional intervention with macular carotenoids as shown in recent research, and for other interventions as indicated.

Method: The proper methods for measuring CS are described with a comparison of sine wave gratings and letter charts. The Harris Contrast Test for measuring CS with an electronic device is discussed and compared to the Pelli-Robson Chart for assessing letter CS. Normal letter CS threshold ranges are presented for patients with no ocular pathology with a suggested action diagram. The effect of ocular disease on letter CS is also detailed with suggestions for appropriate action with monitoring or referring a cataract patient. New research showing the positive effect of nutrition on visual performance in patients with early Age-Related Macular Degeneration is also reviewed.

Results: Case illustrations show that the techniques presented for measuring CS provide a powerful tool for proper assessment and appropriate management of patients with impaired CS in the clinic setting. The practical application of nutritional intervention utilizing the latest research findings is demonstrated for patients with no apparent ocular pathology and for those with ocular disease.

Conclusions: Eye Care Practitioners cannot effectively help a patient unless they truly understand the patient's visual world. This requires the use of both visual acuity testing and accurate CS measurements at intermediate spatial frequencies for the best patient care.

BIOGRAPHY

Mark W Roark is graduated with High Honors from Indiana University with a Doctorate in Optometry and founded Allisonville Eye Care Center in Fishers, Indiana in 2003. He is certified in the treatment and management of ocular disease by the International Association of Boards of Examiners in Optometry and is a Member of the American and Indiana Optometric Associations. He is also a Fellow of the American Academy of Optometry and a Member of the Ocular Nutrition Society. He has a special interest in educating his patients about ocular nutrition and has lectured to other eye care professionals in several states on the importance of macular carotenoids in optimizing eye health and visual performance. In response to increasing demand, he has also developed a large and growing Dry Eye Clinic in his private practice. Since 1991, he has been involved in providing mobile eye care services to the poor in several third world countries including Bolivia, Honduras, Jamaica, Haiti and Dominica. Additionally, he has provided eye care services to assisted-living residents of Indianapolis for over 15 years.

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