MACULA & RETINA INSTITUTE
— KENT W. SMALL, MD —
Innovative experienced and highly personalized retinal care

Kent W. Small, MD

Board-Certified:
American Board of Ophthalmology

Fellowship:
Vitreoretinal Diseases and Surgery, Duke University Eye Center, Durham, NC;
Molecular Genetics, Duke University School of Medicine, Durham, NC

MD: Tulane University School of Medicine, New Orleans, LA

Specialized care for retinal diseases:

- Macular degeneration
- Diabetic retinopathy
- Retinal tears & detachments
- Inherited retinal diseases
- Retinal vascular disease
- Macular holes
- Macular puckers
- Macular edema
- Proliferative vitreoretinopathy/ scar tissue

State-of-the-art diagnostic exams:

- Fluorescein & indocyanine green (ICG) angiography
- Fundus photography
- Scanning laser ophthalmoscopy (SLO)
- Ultrasound A & B scans
- Visual field testing
- Microperimetry
- Optical coherence tomography (OCT)

Clinical Applications of Electrodiagnostic Tests

Opthalmic electrodiagnostic tests provide information about the function of the visual system from the retina at the abck of the eye, through the visual pathways to the visual center in the brain. Information from electrodiagnostic tests can assist the eye specialist with the diagnosis and recommendations for treatment for patients with retinal and visual pathway disorders. The tests also provide the specialist with information from which the prognosis and inheritance pattern of their disorder can be made.

Electroretinogram (ERG)

The eletroretinogram (ERG) is the most direct and objective test available for evaluating the function of the retina. Electrodes are placed on the skin around the eye and a soft gold foil electrode is positioned over the lower lid to be in contact with the cornea through the tear film. This is readily tolerated by adults and children as young as 4 years old. Babies can be tested with electrode taped to the lower lid. Flashes of light are presented under the dark and light adapted conditions to separate the rod (night vision) and cone (colour vision) sytems of the retina. Both the timing and the size of the ERG responses give valuable information about the extent and nature of the retinal abnormalities.

By changing the stimulus to a flickering chequer-board pattern on a TV monitor screen a pattern ERG is obtained. The resulting waveform reflects central vision or macular function and enables diagnosis and a quantitative assessment of early macular disease as well as the differentiation between localized macular disease and more widespread retinal disease.

The ERG has been the gold standard for evaluating night blindness, pigment changes in the retina, and color vision disorders, enabling the diagnosis of inherited retinal diseases before changes are seen in the eyes. It is also recognized as an important tool for the diagnosis and management of a wide range of common retinal diseases. The ERG can help to distinguish peripheral retinal disease from diseases localized to the central retinal or optic nerve.

The ERG is being used increasingly to identify vision-threatening changes in diabetes and in central retinal vein occlusions. The potential of the retina can be assessed through opacities such as advanced cataracts, vitreous hemorrhage or in eyes after severe trauma and early toxic damage from various causes involving the retina can be detected with the flash ERG or pattern ERG.

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