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Photobiomodulation (PBM) for (dry) AMD and Electroretinography (ERG)

Photobiomodulation (PBM) also known as low level light therapy is used to stimulate retinal cell function to reverse the progress of dry age related macular degeneration (AMD). Clinical trials in Europe has succeeded in EU approval and current retinal trials in the US are concluding with promising results. AMD is caused by mitochondrial dysfunction and oxidative stress. PBM works by the absorption of photons by photoreceptors in the targeted tissue. Once absorbed, secondary cellular effects include increases in energy production and changes in signaling modalities such as reactive oxygen species (ROS), nitric oxide (NO) and cellular Calcium.

Heretofore there has been no treatment for dry AMD except the AREDS nutritional NIH approved. Wet AMD has been successfully managed with anti-vegf therapy with moderate success but only represents 10% of AMD. Currently studies are underway with PBM to treat wet AMD and diabetic retinopathy (DR) . With our rapidly ageing population AMD is the major cause of worldwide blindness. PMB provides hope. Lumithera has designed a modest treatment device (Valeda) that delivers the precise low light in the range of low red to almost infra-red. Repeated office visits are required as the effect slowly fades and must be restored periodically. Current studies in the USA have been using the Diopsys Electroretinogram system as the sole objective evidence of the results in addition to the subjective ones, contrast sensitivity and BCVA

Biography

Herbert Gould graduated from Bowdoin College and received an MD from Columbia's College of Physicians and Surgeons. He served his internship at the 1st Medical Division, Bellevue Hospital and was a resident at the Manhattan Eye, Ear & Throat Hospital, where, as senior resident, he initiated the Contact Lens Clinic. He continued his medical studies at the Institute of Ophthalmology (London), Harvard Medical School, and the Downstate Medical Center, NY, where he received a corneal fellowship which included Moorfields Eye Hospital, London. Gould was the founder and first president of the New York Kerato refractive Society. He has been a Teaching Fellow at State University of New York, was Assistant Clinical Professor in Ophthalmology at State University of New York (Downstate), Associate Clinical Professor at New York Medical College, and served as an Instructor at the American Academy of Ophthalmology. He has several articles and abstracts publications.