Q.

HOW DO YOU TREAT MACULAR DEGENERATION AND DIABETES?

One of the major challenges of modern medicine is diagnosing and treating chronic diseases. These include Alzheimer's, high blood pressure, coronary artery disease, macular degeneration, glaucoma, diabetes, obesity and others are very similar to each other biochemically. It's just the target tissues of these diseases are different. In macular degeneration and diabetes/diabetic retinopathy, the goal is to address the underlying, fundamental biochemical changes that cause the disease. Nearly all drugs that are prescribed, including those used by us as retina specialists, are for symptom relief. They rarely treat the disease's root cause.

For example, as retina specialists, we do injections for patients who have wet macular degeneration or diabetic macular edema. These medicines are like sponges; they absorb one of the major proteins that's involved in leaky blood vessels. What studies have shown is that these medicines are effective for a period of time, but they don't treat the root cause of the disease. Indeed, there are other studies showing long-term injections result in thinning out the blood supply to the retina and the vision eventually declines. What this suggests is that we've not addressed the underlying biology of the disease even with our current understanding.

The idea is if you treat the disease at its root cause while treating the symptoms at the same time then there is a real chance we can reduce the progression of the disease and stabilize the retina and, in some cases, reverse the disease. This type of thoughtful, evidence-based integrated approach to retinal diseases is something that our practice, Comprehensive Retina Consultants (CRC), has pioneered.

So, what are the components of such an approach? The first is a careful examination. Along with this, CRC has some of the finest diagnostic equipment to determine the structure and function of the retina. For some of these instruments, we're the first practice in the country to have them. Such multimodal testing allows us to have a robust, more complete understanding of the nature and extent of a patient's retinal or macular disease.

As it turns out, the retina has the largest blood supply per unit weight in the body and has the most metabolically active tissue per unit weight in the body as well. Consequently, it's a sensitive barometer of health and nutrition. Indeed, nearly every human disease has a retinal manifestation.

The second component of our understanding of a patient's retinal disease, especially macular degeneration, diabetes/diabetic retinopathy and glaucoma, is we want to have a biochemical/metabolic snapshot of the patient. This means obtaining appropriate blood work. In all these chronic diseases, including macular degeneration diabetes/diabetic retinopathy and glaucoma, there's low-grade inflammation in the retina and in the body, so there are blood tests you can do for that. There also are problems of glucose disposal and metabolism. You don't have to be a diabetic, per se, to develop these diseases, but if you're eating a high-glycemic diet like white sugar, white flour, white rice, fried foods—that will contribute to and hasten the development and progression of these disease. There are a set of blood markers for that. In addition, we also check for oxidative stress and also how well the energy factories of the cell (mitochondria) are working. Collectively, this blood work is different than what patients typically obtain at their yearly exam.

The third component is genomics. As we all know, we're genetically and biochemically different from each other. With the remarkable advancements of genetics and genomic medicine, it is now possible to obtain genomic analysis of patients efficiently and in a cost-effective manner. Most genetic "weaknesses" affect certain important biochemical pathways that are important for eye and overall health. Additionally, they can be overcome with thoughtful nutraceuticals and supplements. Many of these genetic weaknesses are important for the functioning of the eye and retina.

Finally, as the fourth component, we assess the overall health of our patients. For example, there are about 40 essential vitamins and minerals, and 80 percent of Americans are deficient in at least a set of those. That tells us our diet is extremely poor. It's calorie but not nutrient-dense. Foods and nutrients are our medicine. We literally are what we eat. So, we educate patients about healthy diet and other aspects of nutritional medicine in recommending appropriate vitamins and supplements.

What we are doing is taking a comprehensive, global approach to understanding not only the patient's retinal disease but their overall biochemical/metabolic/genomic health. I'm passionate to provide care through a thoughtful partnership with my patients. Our patients have the unique opportunity for achieving better overall health and maximizing their vision.

At Comprehensive Retina Consultants, we're going to examine your eyes with the finest instruments in the world to quantitatively determine the structure and function in the retina. We will also obtain appropriate blood work, we will discuss nutraceuticals and supplements, and we've begun doing genomic testing. We're the first in the world utilizing such a comprehensive approach. Perhaps even more meaningful to patients, they're not only getting the standard of care, but actually beyond the standard of care. Indeed, my staff and I consider it an honor and a blessing to provide this kind of care to help our patients' overall health and their vision.

COMPREHENSIVE RETINA CONSULTANTS

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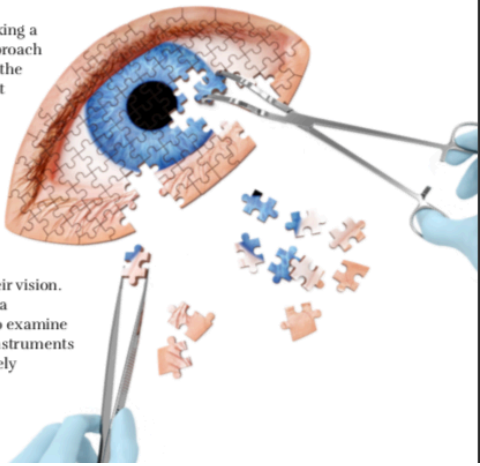
FOR MORE INFORMATION

Dr. Shalesh Kaushal
Comprehensive Retina Consultants
1501 N. U.S. Highway 441, Bldg. 1100, Ste. 1106
The Villages 32159
352.775.1010
comprehensiveretinaconsultants.com



Dr. Shalesh Kaushal → A nationally and internationally recognized board-certified ophthalmologist specializing in vitreoretinal diseases. His practice offers advanced diagnostics and treatments of retinal conditions. He obtained a bachelor of science degree in Molecular Biophysics and Biochemistry from Yale University, medical degree at Johns Hopkins, doctorate at MIT with the Nobel Laureate, Dr. Har Gobind Khorana. Additionally, he completed his residency at Doheny Eye Institute/University of Southern California Department of Ophthalmology, medical and surgical training at Barnes Retina Institute/Washington University St. Louis and spent an additional year training at the world renown Moorfields Eye Hospital in London. He is the former head of retina at the University of Florida and was most recently chairman of ophthalmology at UMass medical school before returning to Florida.