

Points of Interest

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Eye Care Newsletter

Omni Eye Specialists • Madison Street Surgery Center
Spivack Vision Center

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The Importance of UV Protection

Coming from Indiana where the number of overcast days mimics our days of sunshine in Colorado, I love to boast about our sun. Though we are lucky to enjoy the sunshine year-round, its rays can have damaging effects on the health of our eyes.

Most people are aware of the impact that ultraviolet radiation has on their skin, but many do not recognize the effects UV exposure has on eyes and vision. UV levels increase by 4-5% with every 1000ft gain in altitude, which poses a year-round concern for Coloradoans¹. As summer is upon us and we subject ourselves to increased UV exposure, now is a great time to remind all patients about the importance of protecting their eyes from the sun's harmful rays.

Ocular structures impacted by UV exposure include the conjunctiva, cornea, lens, and retina. 20% of those living in Mexico at higher elevations will have a pterygium -- linked to ultraviolet light exposure, as well as air pollution, dust, and wind. This is double the amount of some American populations².

Though their impact is most commonly cosmetic in nature, pterygium can encroach the pupillary axis creating an irregular astigmatism that is not correctable by glasses or contact lenses. Small, inflamed pterygium can be treated with topical steroids and ocular

lubricants, while larger pterygium, threatening an individual's line of sight, should be surgically removed. Intense, acute UV exposure poses the biggest threat to the cornea -- most commonly causing photokeratitis. Symptoms of a corneal "sunburn" often manifest 6-12 hours following exposure and include painful, red, watery eyes, foreign body sensation and photophobia. Fortunately, this is a short-lived condition commonly alleviated with ocular lubricants. Topical anesthetics should be used sparingly and perhaps avoided altogether. While they provide quick-acting relief, their effect is not long-lasting, and prolonged use can have detrimental side effects. By relaxing ciliary muscle spasms, cycloplegics can offer pain relief, as well as oral analgesics and topical NSAIDs. UV exposure can also pose an increased risk of corneal haze following refractive surgery. Patients should be informed of this risk and advised to wear ocular protection following LASIK and PRK.

Long-term UV exposure does not come without consequence to the crystalline lens and retina. An inherently clear crystalline lens will absorb UV wavelengths up to 400nm providing natural protection for the retina. However, the more the lens is exposed to UV radiation the less transparent it becomes, eventually

Elizabeth Failla, O.D.

creating a cataract necessitating removal. Removal of the crystalline lens during cataract surgery can increase retinal exposure to UV light. Patients receiving a lens implant should know that not all intraocular lenses offer UV protection. Patients should be reminded to continue wearing sunglasses even following cataract surgery.

While the majority of UV light will be absorbed by the anterior ocular structures, harmful energy can still penetrate the retina causing oxidative stress. Nutritional supplements such as lutein and zeaxanthin are increasingly popular in the management of age-related macular degeneration, a leading cause of blindness in Americans over the age of 653.

Minimizing exposure to harmful UV rays thereby reducing the risks of short-term and long-term sun exposure is simple. All it takes is a reminder to patients that wide-brimmed hats in combination with sunglasses that block 99-100% of UVA and UVB light are recommended to provide many years of healthy sight.

Sources:

1. The World Health Organization. *What Is UV Radiation and How Does It Increase With Altitude.* <http://www.wrh.noaa.gov/fgz/science/uv.php?wfo=fgz>
2. Jan Bergmanson, O.D., PhD; James E. Walsh, MSc, PhD; Laura Vrazel Koehler, BS; Julie Harmey, PhD. *When a Contact Lens Is the Healthier Choice.* *Contact Lens Spectrum.* May 2007
3. Leo Semes, O.D., and Diana L. Shechtman, O.D. 'Newtrition.' *An Update on Dietary Supplements for AMD.* *Review of Optometry.* 6/16/2010

A Long Journey

The nine hour drive to Mizan Teferi seemed like it lasted for days. I remember thinking to myself that if the world was instead flat, we were in serious jeopardy of falling off the edge. Could we have found a more distant place to volunteer-perhaps the moon? This remote part of Ethiopia was not an easy place to reach. Perhaps that is why the people of the Western Highlands of Ethiopia do not have access to ophthalmic care, and as a result, the prevalence of cataract blindness is appallingly high.

Donna and I sat behind the driver, in front of a half dozen other passengers in the cramped Toyota minivan. The “bus” made frequent stops along the way to pick up and drop off passengers. Each new rider had to negotiate a price with the 12 year old “attendant”. He sat on a rusty car part of some sort, adjacent to the sliding door to let passengers on and off the “bus”. He chewed chat, a native plant which apparently has amphetamine-like stimulant effects similar to that of coca leaves, and chased it down with a fistful of sugar he kept rapped in newsprint tucked under the front passenger seat. Every now and again he would take a swig from a bottle of soda. I remember thinking to myself “shouldn’t this child be in school?!”

An Unpaved Highway

The dirt roads were barely passable thanks to the recent rainfall, and there were a half dozen cars and buses stuck in the mud or in the ditch alongside the road. We had to get out and push every so often, for which I was more than happy to oblige. The thought of being stranded along that road made me feel mosquito bitten and hungry. It was hard to believe that it was our 4th day in transit and we still hadn’t arrived. Any further delay would seriously compromise our mission.

A Safe Arrival

We finally arrived in Mizan Teferi in the early evening and met up with our Australian counterparts at the local hospital. They had set up a room in the hospital to allow myself and another surgeon to perform as many sight saving cataract operations as possible in the ensuing 5 days. Donna and I were both thrilled to have finally arrived, and eager to get to work.



Over the course of the next several days we provided care to patients of the region, and for some who had traveled from more distant places. One patient, upon hearing of our planned arrival weeks ago, had made the trek from the capital, which was a few hundred miles away. Blind and destitute, he was led by his young son, somehow making the journey with hope that his sight could be restored. I am not sure how he got to Mizan Teferi, but we helped this gentleman, and approximately 100

other cataract patients over the course of our trip. The need was so immense, and we barely scratched the surface in addressing the overwhelming lack of access to good ophthalmic care. Nonetheless, and in spite of the long journey we had to endure, we left satisfied that we had positively impacted the life of some of the people of this region who were not only destitute, but blind. We all agreed, without question, that we would have no problem making this arduous journey again in the future.



Meet Our Doctors



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Cataract, Cornea, Refractive Surgeon

LAWRENCE D. SPIVACK, M.D.
Refractive Surgeon



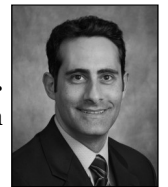
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Glaucoma, Cornea, Cataract & External Disease Consultation

JASON J. WANG, M.D.
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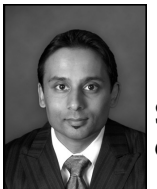
GARY A. BELEN, M.D.
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