

## Altius Vision's Performance CLs Respond to Demands of Athletes On and Off the Field

### Tinted Contact Lenses Are Designed for Motion, Precision and Protection

BY SARAH MCGOLDRICK / CONTRIBUTING EDITOR

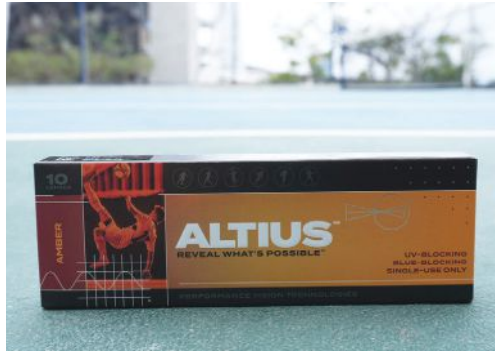
Ultimate performance is not just based on the movement of the body but the movement of the eyes too, and this is the driving factor behind **Altius Vision's** contact lens technology. The company, which has been developing vision technology for more than two decades, helps athletes achieve their performance objectives with contact lenses that are comfortable both on and off the field. These goals, based on years of on-the-field research and product development, formed the genesis of the Altius Performance-Tinted Contact Lenses, the company said.

"The 'light architecture' of patent-pending Altius is scientifically engineered to address the critical visual and environmental demands of users by balancing both the quantity (brightness) and quality (color) through a fully immersive visual experience," said Alan Reichow, OD, MEd, FAAO, company founder and CEO.

This is accomplished by a uniform performance tint across the entire lens, independent of factors such as vision correction, unequal refractive errors between eyes, pupillary dimensions and response, eye movements, angles of ocular gaze, head position, or facial morphology, Dr. Reichow noted.

Altius provides 100 percent UV and 99 percent protection against harsh blue light filtration, while selectively transmitting other critical wavelengths to enhance visual performance, including target recognition, Dr. Reichow said. Creating the "ultimate in performance-tinted eyewear" was the mission when he began R&D efforts with his research partner Karl Citek, OD, more than 25 years ago, he said.

"It was quickly determined that placing the tint directly on the cornea in the form of a soft contact lens was the answer. With the Altius 360° To-



*Altius edge-to-edge total tint immersion with uniform coverage across the entire cornea, eliminates compromising peripheral light leakage inherent with tinted spectacle lenses.*

tal Immersion technology, the compromising limitations of spectacle-based sunglasses, including photochromic lenses, are virtually eliminated," Dr. Reichow said. "As a result of Altius coverage of the entire cornea, the myriad optical issues inherent with eyewear, such as visual field interference of the frame, lens distortions, including prismatic shift with varying visual angles of gaze that provides false spatial awareness, and lens surface reflections are completely solved."

There are many environmental problems associated with sunglasses, such as compromising peripheral light leakage, frame discomfort and instability, lens fogging, scratches, debris build-up, sweat and water splatter, which Dr. Reichow said are eliminated with Altius.

Complete 360° Total Tint Immersion responds to the individual's pupillary responses that are unique to them relative to the dynamic and ever-changing lighting surroundings, independent of age, pigment density, pupillary size, or vision correction, he explained.

"Unlike the slow and limited Photochromic Lens Visible Light Transmission (VLT) changes, which rely on invisible UV exposure, with Altius, pupillary response speed and accuracy are based



*Alan Reichow, OD, MEd, FAAO,  
Altius founder and CEO.*

on the actual lighting conditions in the wearer's visual world, whether bright with highly reflective glare or in changing conditions of shadow or low light. The wearer's pupil changes diameter based on their visual needs," he said.

Finding the right tint required extensive research and development before the company locked in on amber. Dr. Reichow said that published university research has shown improved target tracking with amber, and with the improved visual clarity and contrast, it speaks to the value of the Altius Amber in dynamic, reactive target tracking sports.

#### Designed With Athletic Risk in Mind

One of the most significant risks an athlete faces on the field is eye injury. Dr. Reichow noted that chromatic aberration, the most powerful image-degrading optical aberration, is reduced by 53 percent in both Altius tints. He said this means that whether a user has a vision correction, Altius can improve visual clarity and contrast.

He added that based on years of clinical investigations, it is the only contact lens cleared by the FDA for enhanced visual clarity and contrast relative to the naked eye.

**Continued on page 88**

## Altius Vision's Performance CLs Respond to Demands of Athletes On and Off the Field

Continued from page 86

"This is further supported by the fact that more than 75 percent of Altius lenses sold by independent eyecare practitioners are plano, meaning many are emmetropic, have never worn a vision correction or contact lens, but 'See The Difference,'" he said.

Many new contact lenses and traditional lenses claim to offer therapeutic properties. Altius has worked to develop lenses that enhance performance and respond to athletes' needs.

"Vision, the guiding sense for most of human performance, is first and foremost dependent upon the quality of the visual signal leaving the eyes to the brain to better enable the most efficient and accurate visual information processing. It all begins with visual clarity and contrast," Dr. Reichow said. "With the 53 percent reduction of chromatic aberration by Altius, most of the harsh blue light, also called visual noise, is eliminated. Besides the increased visual comfort, clarity, and quickness, wearers of Altius frequently report a relaxed focus with a perceived brightening effect."

Dr. Reichow explained this is achieved with the critical wavelengths around the peak sensitivity of ipRGCs (photosensitive retinal ganglion cells) being nearly 100 percent filtered, and with no peripheral light leakage inherent with spectacle systems, clinical studies indicate reduced light sensitivity.

"Unlike custom-tinted contact lenses, which are planned replacements requiring cleaning, disinfection, and storage and are prone to tint variability due to the low-volume tinting, Altius Lenses are manufactured in a high-volume, state-of-the-art production line, which is the only such line in existence. Altius are entirely produced on one line," Dr. Reichow said. The line required years of research and development to design, build, and test under the strictest of regulatory requirements and quality control. This has allowed the company to create a lens that offers a five-year shelf life.

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- Alan Reichow, OD, MEd, FAAO.

Reichow noted that since the introduction of daily disposable soft contact lenses to the market in 1993, comfort, health, and safety for contact lens wear have been significantly improved.

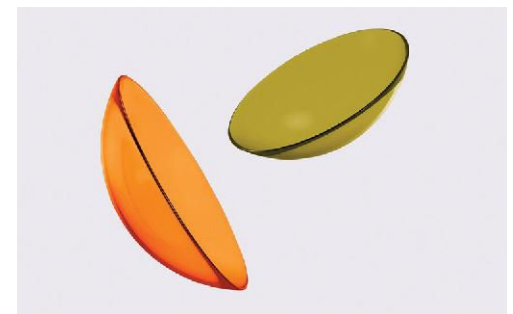
He said that Altius Single Use Performance Tinted Soft Contact Lenses are manufactured under strict guidelines for quality control, resulting in consistency and comfort.

"Knowing that a high percentage of Altius lenses would be worn by emmetropes, the lenses were designed as single-use for ease of handling, comfort and performance," he said.

Altius has been shown to reduce photosensitivity oftentimes associated with the more than 50 million sufferers of migraine, concussion, traumatic brain injury (TBI), and certain ocular conditions, he noted.

"Many athletes recovering from concussion, who experience light sensitivity, often wear Altius Amber during recovery/return to play, as that may be the tint they'll continue to wear for their sport. We've found that Altius Grey-Green is more often utilized by neuro-rehab specialists for TBI and concussion photophobia patients, but again, sometimes it depends on the activities they participate in/want to participate in and personal preference through their eyes," he said.

Dr. Reichow believes that eye injury prevention must be a top priority for ECPs. Altius and eyewear are not mutually exclusive but complement each other and are based on environmental demands and risks and have appropriate uses in isolation or in combination with each other, he concluded. ■



*Altius technology blocks harmful UV and blue light, while also amplifying the brightness of the remaining color spectrum.*