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Come On In, The Water's Fine!

Bronson W. Hamada, OD

The weather forecast is 78 degrees and sunny! It's the siren's call for Southern Californians to pack their sunscreen and water gear and flock to the beach, lake, river, or pool. Our unique geography makes it possible to "surf the pier" at sunrise, wakeboard on a brisk mountain lake at noon, and enjoy the backyard pool and jacuzzi at sunset. I'm stoked to share insight on water sports!

Examples of water sports performed **on the water** are sailing, kayaking, fishing, jet skiing, and paddle boarding. Examples of sports performed **in the water** are surfing, swimming, diving, and water polo. Examples of sports performed **under the water** are scuba diving, free diving, snorkeling, and underwater photography.

Polarization is one of the key points in optimizing visual comfort for athletes on the water. Engineered tints utilize wavelength specific filters (light architecture) to enhance hues and improve contrast sensitivity, even during low light or overcast conditions. Some manufacturers have floatable sunglass options.

The first time swim goggles were allowed in an Olympic pool was 1976, in Montreal. Now swim goggles are an essential piece of sports vision equipment to help swimmers see under the water, to protect their eyes from chlorine, and to minimize hydrodynamic drag.

Specialty tints or Rx can be added to swim goggles. Some swimmers wear two caps to make sure the swim goggles stay secure on top of the first cap. Competitive swimmers need great reaction time to launch off of the starting blocks. They utilize central vision to maintain a straight course and peripheral vision to know where their opponents are in the water.

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Spatial localization is used to execute “flip” turns and to touch the wall to finish the race. Excellent eye/hand/foot coordination is needed to synchronize the upper body and lower body, and a robust vestibular system is needed to stabilize perception during arm movement and head rotation, during the stroke, and while taking a breath of air. Flip turns can exacerbate vestibular problems, especially in concussed athletes.

Water Polo Increasing in Popularity

With over 43,000 high school water polo players nationwide, water polo is one of the fastest growing sports in America. It is the quintessential team water sport. Water polo is considered a contact sport, and goggles are not allowed to be worn during the game. That essentially means that vision correction for water polo athletes is limited to contact lenses; you may be surprised at how many water polo athletes are visually uncorrected while competing.

I recommend wearing swim goggles whenever possible for (pre-game) warm-up laps to minimize contact time with the pool water. I recommend preservative free lubricating drops immediately after the competition is over to neutralize tear pH and to stabilize tear osmolarity. The cumulative benefit over the course of a tournament is to reduce corneal edema and maintain crisp vision. If the athlete wears contacts, they should rehydrate lenses prior to removal, since the tonicity of pool water causes soft lenses to tighten on the eye. Daily disposable contacts are recommended.

Water polo is a dynamic reactive sport with both the ball and the athletes in perpetual motion. Elite level ball speed reaches 50 mph, so concussions are not uncommon, especially for goalkeepers. Make sure to offer pre-season baseline concussion testing. Sports vision training for water polo athletes should include peripheral vision, split attention (central and peripheral), reaction time, eye/hand coordination, anticipation timing, situational awareness (i.e., shot clock, game clock, exclusions), pursuits, saccades, multiple object tracking, dynamic acuity, visual processing speed and contrast sensitivity. Incorporate resistance training such as stroboscopic, balance and stability, or cardiovascular load. Goalkeepers can benefit from visualization training.

Surf's Up!

The American Optometric Association has teamed up with USA Surfing to promote eye health on the water (#EyeDeserveMore). The ability to read subtle undulations and ocean swells with comfort and clarity is critical for surfers. Macular Pigment Optical Density (MPOD) can be enhanced with carotenoid supplementation. This can reduce the glare off the water and increase contrast sensitivity while providing a neuro-protective factor to the retina/macula. Acuvue Oasys with Transitions (photochromic) contact lenses have the highest UV filtration and provide seamless adaptation to lighting conditions. It provides 33% better color contrast and actively blocks up to 50% of blue light.

For sports vision training with surfers, I use balance board (X and Z axis), walking rail (hard and foam), strobe glasses, dynamic acuity and pursuits, stability balls, eye foot coordination, and I've found that incorporating motion sickness desensitizing therapy is beneficial.

This column is by no means a deep dive into water sports; we are barely skimming the surface. Whether the athlete is on, in, or under the water, and whether the athlete is elite or recreational, all water sport athletes seek solutions to perform better. Water sport athletes present myriad opportunities to expand your sports vision practice and to provide premium sports vision solutions. So come on in, the water's fine!



Dr. Bronson W. Hamada, of Surf City Optometry in Huntington Beach, CA is the Director of Vision Performance for the Los Angeles Rams and Team Optometrist for the Los Angeles Angels. Dr. Hamada has served as the optometrist for USA Water Polo since 2012. The USA Water Polo Women's National Team has won three consecutive Olympic gold medals.



SAVE THE DATES

Elevating Athletic Performance, the 6th Annual International Sports Vision Association (ISVA) conference, will take place February 10-12, 2022 at the Embassy Suites by Hilton Orlando Lake Buena Vista South in Kissimmee, FL.

The ISVA annual conference is a leading event for eyecare professionals, athletic trainers, coaches, and others interested in helping athletes reach their maximum potential. The 2022 conference is scheduled to offer over 20 COPE-approved CE credits and include a diverse offering of pre-conference lecture style and hands-on workshops and general conference educational sessions.

Agenda and registration information will be announced soon. To join ISVA, visit www.sportsvision.pro.

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