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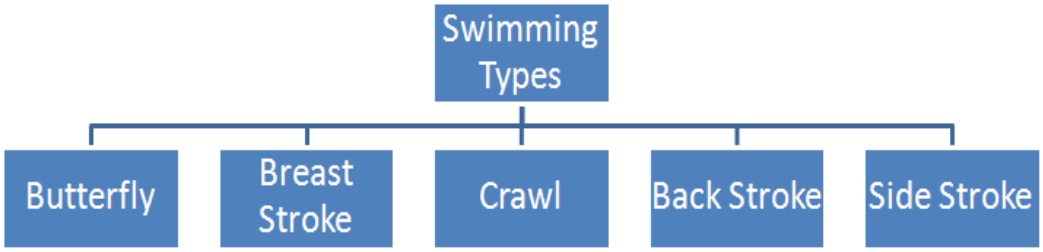
The Importance of Vision in Swimming

Swimming is one of the most famous water sports among people of all age group. People with varying abilities participate at varying levels in swimming. Swimming can be played indoors or outdoors, in chlorinated pools or fresh water or ocean beaches or lakes. The athlete moves the arms and legs to push against the water and propel him forward. The speed with which he pushes himself forward is the critical element to measure the difference between the performances of the two athletes. In this respect it is a dynamic sport. The following chart shows the different types of swimming, the classification is based upon stroke type.



In all the swimming types except the backstroke, the eyes mostly remain under the water. Hence, most people are of opinion that vision is not very critical in swimming except backstroke. But this is probably not precisely true. Like any other sports swimming is also a social event where it is important to be able to see fellow competitors, to be able to read body language and expression of fellow competitors. Lack of this information can have adverse effect on the result of the race. Besides, accurate binocular vision is very important for swimmers as they need to judge turn and anticipation is predominant. The swimmer needs to be able to adjust to anticipate very accurately, the distance from the turn and his own position in relation to other competitors. Backstroke swimming involves alternate over the head arm strokes and flutter kick in a supine position. In backstroke, to judge their position in relation to the ceiling joists. This is very important in backstroke swimming to swim in a straight line. If the swimmer is swimming in indoor pool, it may be easier to sight on something overhead, like a railing or the line where the walls and the ceiling meet each other. However, if you are swimming backstroke in an outdoor pool, it gets a little tougher to swim in straight line. Although it is hard to avoid, but try and not to sight on clouds, birds or jet planes flying over the pool. You will be definitely in trouble. Instead, look for something that runs parallel to the direction you are swimming. It could be a power line or a telephone line, the top of a fence or wall or a row of bleachers. At lower eye levels, possibly right at the water level, you will need to use your peripheral vision to see the opponent's position. Therefore, in swimming central –peripheral awareness coupled with efficient visual reaction time is very important. Visualization is of great performance also helps to develop the skill. It is also important to be able to see other competitors before and during the race. In most of the strokes the swimmer must keep his head above the surface of the water except underwater swimming. The only time he swims under the water is the first stroke after the start and each turn.

Swimming is a difficult area of sport so far as vision correction is concerned. Spectacles are certainly not the optimal form. Swimming goggles may block the peripheral vision which can wreak havoc on the performance. Moreover, wearing swimming goggles also affect the oxygen supply to the eyes. Prescription-swimming goggles are not generally worn because of their tendency to mist up, retain water droplets and reduce peripheral vision. Contact lens and LASIK both will correct and eliminate a number of vision performance related issues induced by eyeglasses correction. But most practitioners refrain from dispensing contact lenses for any water sports

because of the classical concern of acanthamoeba. Protection from chemical conjunctivitis and water born microbes are also very important. Those swimmers who require vision correction ideally should worn contact lenses with plano swim goggle over it. Some swimmers are more comfortable with prescription swim goggle rather than contact lenses. Keeping the chlorine water off their cornea while underwater provides clearer vision and a better safety profile. Every swimmer knows that the water gets in at some point during the training session and generally they do not take their contact lenses out to have a shower afterwards, so this is another area where best clinical practice needs to be tempered with common sense. One of the generally not appreciated properties of soft lenses is that in fresh water (hypotonic) the lenses will literally stick to the cornea. This is an osmotic effect due to the passage of water into the cornea. Conversely, in salt water (hypertonic), the lenses float away freely. The sticking effect will reversed after 20 to 30 minutes out of the pool, when the normal saline content of the tears returns and no attempt should be made to remove the lenses before this happens. The properties of the soft lenses can be used to advantage. As long as the lenses remain sticked to the cornea in the right place, no amount of splashing will remove it, giving it a very stable position. A well clean lens when it was inserted reduces the risk of acanthamoeba. Typically, daily disposable lenses are very effective in this respect. Arguably, the protective effect of the soft lens will reduce the effect of chemical keratitis which is almost unavoidable in swimming pools. The soft lens will of course absorb the contents of the water and if it remains in contact with the cornea could prolong the effects long after the swim, making daily disposable a lens of choice for swimming. Refractive surgeries eliminate the need to wear either the prescription spectacle or goggles over contact lenses, and therefore, can improve the peripheral vision of the athletes. But swimming must be avoided strictly for at least 4 to 6 weeks post LASIK as it can cause problems with eyes healing procedure. Given the risk of wearing contact lenses in the water, clean or otherwise, the athletes must always be fully informed of danger and possible signs of infections. Working as a team, the optometrist and the athlete will then be able to optimize the visual solution.

References:

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