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Unilateral breathing when swimming

When a competitive swimming or triathlete comes to see me with a shoulder problem one of the questions I ask is do you breathe on both sides proficiently. It has been my belief that unilateral breathing increased risk of developing a repetitive use injury. On face value this opinion seems logical; however, as a clinician I am obligated to seek scientific evidence to support opinions.

Research by Toshimasa Yanai (2000) concluded the use of a unilateral breathing swimming technique was often associated with high incidence of shoulder impingement on the breathing side. Yanai used three dimension video motion analysis of swimming 11 collegiate male swim team members. He concluded swimmers with a high incidence of shoulder impingement had three faulty stroke techniques.

One fault was a large amount of internal rotation of the arm during the pull phase. This happens when entry of the hand into the water is thumb first instead of finger first. Having a high elbow during the pull phase is associated with relative internal rotation of the arm.

The second fault was late initiation of external rotation of the arm during the recovery phase. This occurs when the elbow of the recovery arm precedes the wrist as the arm comes out of the water.

The third fault is not tilting and rotating the trunk and shoulder girdle. If a line between the shoulders stays perpendicular to the line of a progression through the water, it increases the likelihood of the arm impinging against the collar bone and shoulder blade when reaching to enter the hand onto the water. There is diminished tilting and rotating of the trunk on the non-breathing side, and this leads to increased risk of shoulder problem on the non-breathing side. Illustrations of these faults can be found at www.physsportsmed.com/issues/2003/0103/johnson.htm

Additionally in my experience treating triathletes there often is a correlation with unilateral breathing and low back and pelvic pain. I have not found scientific studies to support this, yet.

The limitation of breathing only on one side makes a competitive triathlete vulnerable. During open water swims waves may be perpendicular to the direction of the swim. If you're breathing side is in the direction the waves an open mouth facing a crashing wave

leads to a lot of swallowed water. Having the option of turning the back of your head towards the waves can be a lot more pleasant. Turning your head to the right and left also allows you to see when fellow swimmers are encroaching on your space.

Learning to be a bilateral breather can be challenging, but it is well worth the effort.