

Stretch And Stretch Alike

Well faithful **BTM** readers it is time to wrap up our three-month segment of stretching exercise which aim to limber your swing and improve your physical game. So far we have delved into the finer point of stretching including: flexibility, range of motion, static stretching, the hamstring and shoulder muscles, slow progressive stretches, and the relationships among all these and your bowling performance. This month allow us to briefly review the static stretching principle, stretch the wrist joint, and bring stretch training to a close for you.

For years stretching has been overlooked as a legitimate form of exercise. Though not as vigorous as aerobic training or as strenuous as strength training, stretching has its proper place in the training routine. Stretching has been frequently labeled as "unnecessary" or "a waste of time," yet many current professional athletes have accepted and bought into the stretching philosophy. It is somewhat ironic that bowlers, professional bowlers, and even top collegiate and amateur players alike haven't embraced the stretching principle as a bolster to their performance. Progressing forward, I want to educate our readers on the finer points of static stretching, stretch the wrist joint, and then elaborate specifically as to the true benefits of stretching to the bowler.

Stretch Properly, Stretch Often, And Stretch Together

Stretching as exercise is easy to perform and virtually requires no apparatus or excessive amounts of time and space. Stretching allows the exerciser to lengthen a muscle safely and effectively through the complete range of motion with or without assistance from others. The physiological make up of a muscle provides it with extreme amounts of elasticity, therefore, enabling stretching to occur.

The **static stretching principle** is one of many stretching techniques incorporated by exercisers and athletes alike. Static stretching, synonymous with its name, requires the specific joint held motionless in the stretched position for a specific length of time enabling semi permanent changes in muscular length. The most widely recommended time span for the stretch is currently 15 seconds. Each specific muscular stretch should be performed three times a session provided nutrient and water intake are sufficient and the body receives the required rest for recovery. The stretch should be performed upon completion of a one to two minute relaxations period. Relaxation can be accomplished through the dimming of lights, quietness of sound, stillness of body, and mental imagery of the stretch. Breathing should also begin to soften as the heart rate slows to its resting state. The stretch begins after the relaxation period. Move the chosen body part to its farthest point, then using self-resistance, apply minor pressure to increase the stretch within the pain free range of motion. Hold the stretched position for 15 seconds relaxing before another count.

The Wrist Joint

The wrist joint to a bowler can make or break the delivery of every ball we roll. If the wrist is weak, the release position is compromised. If the wrist is stiff and inflexible, the variability of delivery is hindered. On the other hand, if the wrist is strong and flexible, the release and deliver can be maximized to its fullest potential. Therefore, it is in the best interest of bowling and bowlers alike to strengthen, increase flexibility in, and care for the wrist.

The wrist is a **condyloid joint** moving in the **frontal** and **sagittal planes**. The bony make up of the wrist includes eight carpal bones and the ulna and radius of the forearm. There are many small but highly important muscles that produce the various movements of the forearm. The most important of these muscles are the flexor and extensor carpi radialis and the flexor and extensor carpi ulnaris. The specific motions of these muscles include flexion, extension, ulnar flexion and extension, and radial flexion and extension.

Stretching the wrist joint not only increases flexibility (range of motion) but also improves efficiency within the muscles of the wrist. Though stretching has yet been proven outright to increase strength (to my knowledge), it is widely theorized that minimal strength improvements occur because of a consistent stretching program. For those of us serious bowlers, one of our primary concerns should be aimed at increasing flexibility and efficiency of the wrist joint. Why? Each shot thrown taxes the musculoskeletal system and the energy systems fueling those movements. Our wrist, as small and tiny as it is, must support the weight of a bowling ball from the instance we lift it from the return to the moment it clears the hand at the release. Granted other forces and muscles do aid in subtracting and adding extra pressure during the approach. It must be noted the wrist is forced to perform a majority of the work. Now, multiply this amount of force or pressure over the many shots of a single game and then of many games and watch the numbers add up. Tremendous pressure. Tremendous force. Tremendous strain on one of the smallest, yet most vital parts to our athletic success.

I could stress to you until I'm blue in the face concerning the importance of strength and flexibility of the wrist joint. Rather than preach, recite, and reference various occurrences and instances of career ending wrist injuries to various professional athletes, allow me to educate you on a simple home remedy. By implementing two specific stretches you will:

1. Improve joint specific flexibility, therefore enabling you to increase the variability of your many deliveries.
2. Increase muscular strength, therefore prolonging the onset of fatigue while bowling.
3. Improve joint stability, therefore decreasing the chances of incurring a wrist injury. Three very important variables that will promote your bowling, prolong your career, and prevent the early onset of muscular fatigue.

The Wrist Stretch

Though the wrist joint moves in four specific directions, flexion and extension of the sagittal plane are the two primary movements bowlers need be concerned with at this time. Not to neglect any specific motion or muscle, my study of bowling mechanics and human anatomy has lead me to the understanding that ulnar and radial flexion and ulnar and radial extension are produced by the same muscles that cause flexion and extension. Therefore, by exercising in flexion and extension all four joint specific movements will be covered.

The following two wrist stretches should be incorporated into the regular training routine. Follow the previously described static stretching guidelines during the routine.

Horizontal Flexion Stretch

Relaxed, seated in a comfortable position, start with the non-bowling hand. Extend the arm in front of the body parallel to the ground palm facing upward. Use the opposite hand as the self-assistance and place it one inch (1") above the base of the fingers as not to push directly on the fingers (figure #1). Using the self-assistance, slowly apply minimal resistance and stretch the hand into the extended pain free position. Hold the stretched position for 15 seconds, then slowly release the stretch and relax the wrist to the regular position. Repeat the stretch two additional times, then switch hands.

Horizontal Extension Stretch

Relaxed, seated in a comfortable position, start with the non-bowling hand. Extend the arm in front of the body parallel to the ground palm facing downward. Use the opposite hand as the self-assistance and place it one inch (1") above the base of the fingers as not to push directly on the fingers (figure #2). Using the self-assistance, slowly apply minimal resistance and stretch the hand into the flexed pain free position. Hold the stretched position for 15 seconds, then slowly release the stretch and relax the wrist to the regular position. Repeat the stretch two additional times.

Remember, each stretch should be done in a relaxed mode and can be performed at work, during lunch, on the road, or during your regular exercise routine. It is important to hold the stretch in the pain free position for the 15-second count to maximize the exercise. If any physical complications arise during or due to the routine, cease the exercise and consult your medical provider immediately. Next month, a hot topic during hot times.

Jeff Briggs is an exercise specialist and a doctoral student at The Florida State University. He can be reached at 904-575-8885 or E-mail: bowlfit@home.com.