Many golfers and golf fitness professionals are using 'rotational flexibility' exercises in their programs to increase range of motion but many of these exercises could be the cause of injuries rather than the solution to a golfer's problem.

By Mike Boyle - Posted February 19, 2008

Training for golf has clearly moved from a sagittal plane orientation (think most exercise machines) to an emphasis on unilateral training and multi-planar training. Part of this process, particularly for golfers, has been a push toward developing flexibility in rotation. Any athlete competing in a sport that required rotation, like baseball, hockey or golf, was blindly urged to develop more flexibility in rotation. Like many performance coaches, I initially fell victim to this same flawed concept. I was one of the lemmings that I dislike so much, blindly following the recommendations of others and using exercises that I would now consider questionable or dangerous. Interestingly enough, as a back pain sufferer, I simply wrote off my discomfort as age-related and continued to perform rotary stretches and rotary dynamic warm-up exercises.

Reading the work of physical therapist Shirley Sahrmann made me reconsider my position and eventually eliminate a whole group of stretches and dynamic warm-up exercises that were once staples of our programs. Sahrmann in her book Diagnosis and Treatment of Movement Impairment Syndromes, states “during most daily activities, the primary role of the abdominal muscles is to provide isometric support and limit the degree of rotation of the trunk...A large percentage of low back problems occur because the abdominal muscles are not maintaining tight control over the rotation between the pelvis and the spine at the L5-S1 level. “ (2002 p.71)

The lumbar range of motion that many personal trainers and coaches have attempted to create is probably not even desirable and is potentially injurious.

For golfers the ability to resist or to prevent rotation at the lumbar spine may in fact be more important than the ability to create it. Instead, golfers need to increase movement in the hips and upper torso (thoracic spine), while sparing the lower back. Porterfield and DeRosa in another excellent book, Mechanical Low Back Pain, come to the same conclusion as Sahrmann. Porterfield and DeRosa state “Rather than considering the abdominals as flexors and rotators of the trunk- for which they certainly have the capacity- their function might be better viewed as antirotators and antilateral flexors of the trunk.” (1998, p99)

Sahrmann goes on to note a key fact that I believe has been overlooked in the performance field. “The overall range of lumbar rotation is ...approx 13 degrees. The rotation between each segment from T10 to L5 is 2 degrees. The greatest rotational range is between L5 and S1, which is 5 degrees...The thoracic spine, not the lumbar spine should be the site of greatest amount of rotation of the trunk... when an individual practices rotational exercises, he or she should be instructed to “think about the motion occurring in the area of the chest” “ (Sahrmann, p61-62). Think about this. What segment of the low back is the most vulnerable? The one with the greatest amount of motion, L5-S1.

Sahrmann places the final icing on the cake with these statements; “Rotation of the lumbar spine is more dangerous than beneficial and rotation of the pelvis and lower extremities to one side while the trunk remains stable or is rotated to the other side is particularly dangerous.” (Sahrmann p. 72) Sahrmann continues; “During most activities, the primary role of the abdominal muscles is to provide isometric support and limit the degree of rotation of the trunk which, as discussed, is limited in the lumbar spine.”
What does all this mean for the golfer? It means that golfers should eliminate many stretches that have previously been blindly used to increase lumbar range of motion. This includes Seated Trunk Rotational Stretches (Fig 2) and Lying Trunk Rotational Stretches (Fig 3-4).

Figure 1- Seated Trunk Twist- a Bad idea

Figure 2- 90/90 Stretch- More lumbar than thoracic?
I have also eliminated dynamic flexibility exercises designed to increase trunk range of motion such as Dynamic Bent Leg Trunk Twists (Fig 3), Dynamic Straight Leg Trunk Twist (Fig 4), and Scorpion (Fig 5).

![Figure 3- Long lever 90/90 - too much torque](image)

![Figure 4- Scorpion- A back killer](image)

My conclusion. Most people don’t need additional lumbar spine range of motion. The evidence from the experts seems to be clear that what we really need is to be able to control the range that we have and develop greater mobility in the hips and thoracic spine to, in the words of low back expert Stuart McGill, “spare the spine”. Although this may seem extreme to some, I have seen a significant decrease in the complaints of low back pain since eliminating these exercises. In fact, a great deal of our emphasis is now placed on developing hip range of motion in both internal and external rotation. I think the future will see coaches working on core stability and hip mobility instead of working against themselves by simultaneously trying to develop core range of motion and core stability.
So, with this in mind, our next step after foam rolling and stretching (emphasizing the hips not the lumbar spine) is to activate the muscles around the hips, not develop lumbar range of motion. In essence:

- We roll to be able to stretch
- We stretch to be able to move
- We activate to “wake up” the right movers

Some experts frown on so-called “activation” exercises. These are usually the same experts who showed you the stretches I just told you not to do. Saying we don’t need activation is like saying aging doesn’t happen. The reality is that as we age posture changes. Muscles get longer on the back side of our body from our consistent bad posture. To make it worse, the same poor posture causes the muscles on the front side of our body to get shorter. Our head goes forward, our stomachs stick out, our upper back rounds. As we age big muscles work overtime, small muscles tend to shut down.

I have a wonderful personal training client who is a business school professor. As we worked out one day he made a brilliant observation. “My problems are all where my limbs attach to my body”. Out of the mouths of babes. Where are our problems? Where our head attaches. Lots of adults suffer with neck pain. Where our arms attach. How often have we heard about the torn rotator cuff? Guess what, that’s what attaches your arm to your body. Where our legs attach. Sciatica, low back pain, hip replacements. Guess what? That’s where our legs attach. The problem? The stabilizers of these joints weaken as we age. Activation work or “low load training” attacks and “turns on” these critical weak areas.

Give your self a test in front of the mirror. This is what you should be able to do at forty years old.

-Externally rotate your shoulders without shrugging.
-Suck in your gut. Think make yourself skinny.
-Lift your knee above your hip without leaning forward, back or to either side.
-Balance on one foot for 10 seconds without touching the ground from the previous position.

Bet you failed at least two tests. Probably all four.

The bottom line. If the right joint won’t move, another will take its place.

Bibliography

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