

Personal Fitness 12: My Mobility Game Plan

Playing badminton requires the use of the following major muscles:

- The muscles of the lower leg; the gastrocnemius, the soleus and the anterior tibialis.
- The muscles of the upper legs and hips; the gluteals, the hamstrings, and the quadriceps.
- The muscles of the hip; the gluteals, the adductors and abductors, and the hip flexor.
- The muscles of the shoulder girdle; the latissimus dorsi, the teres major, the pectorals, and the deltoids.
- The core muscles; the rectus abdominus, obliques, and the spinal erectors.
- The muscles of the forearm and upper arm; the wrist flexors and extensors, the biceps and the triceps.

Most Common Badminton Injuries

Badminton is not a contact sport, but due to the fast pace it can result in traumatic injury. Ankle sprains, Achilles tendon strains, anterior cruciate ligament sprains, and rotator cuff injuries are all common among competitive badminton players.

- **Ankle Sprains:** The sudden change in direction, especially once a player becomes fatigued, can easily result in the ankle “rolling.” This rolling of the ankle causes tears in the ligaments that support the ankle. This results in pain and tenderness at the injury site, swelling, and difficulty bearing weight. A popping sensation may be felt with the injury, as well. Ice, immobilization, and compression may help reduce the discomfort. An x-ray should be taken to rule out a fracture. Usual recovery time is about 4 to 6 weeks for a moderate sprain.
- **Achilles Tendon Strain:** The Achilles tendon connects the calf muscles to the heel bone (calcaneus.) When the calf muscle contracts forcefully this tendon is under a great deal of stress. If the muscle is tight or not properly warmed up, a tear may occur in the tendon. This is called a strain. The amount of the tendon involved in the tear will

determine the severity of the injury. A complete tear (or rupture) will take much longer to heal and may require surgical intervention. Minor tears can be treated with rest, ice, NSAIDs, and in some cases immobilization. The low blood flow to tendons complicates the recovery and lengthens the process.

- **Anterior Cruciate Ligament (ACL) Sprain:** The anterior cruciate ligament is the main stabilizing ligament in the knee. When the foot is planted and the upper leg begins to rotate the ACL is put under tremendous stretch, and may result in a tear. This reduces the structural integrity of the knee and results in a great deal of pain. Immobilization, ice, and rest are keys to treating an ACL injury. In cases of complete rupture of the ligament, surgical intervention may be needed to reattach the ligament. This, of course, increases overall recovery time. The knee may be loose and lose some structural strength, requiring rehabilitation to get it back to pre-injury condition.

- **Rotator Cuff Injuries:** The swinging motion places the shoulder in an exposed position and if the arm rotates out of the natural path of movement the shoulder may be injured. The rotator cuff muscles are designed to stabilize the shoulder and if they are stretched or torn due to an acute, unnatural movement, they will not be able to provide that support. Acute injury to the rotator cuff can be minor, a simple strain of the muscles, to severe, with a complete rupture of the muscular structure. Chronic injury to the rotator cuff muscles and tendons may also occur if improper body mechanics are used in the swing repetitively. Rest, ice and NSAIDs may help chronic conditions, while immobilization and even surgery, may be needed to repair acute injuries.

Rehabilitation is common with this type of injury

Common Badminton Mobility Issues

- Lunging without keeping back straight can cause strain on hip flexors, and back
- Lunging and landing on the toe, instead of heel-toe causes strain on the knee
- Swinging to the side instead of bringing shoulder back causes “Tennis Elbow”
- Common lunging side, more flexible than the other due to always lunging with the dominant side (left or right)

Injury Prevention Strategies

Overall conditioning is essential to the badminton player to help reduce injuries on the court.

- Playing on well manicured outdoor courts or indoor courts with well maintained surfaces will reduce lower extremity injuries.
- Strong muscles, especially in the lower extremities, will prevent many injuries caused by the constant change in direction and explosive movements.
- Good endurance will help delay the onset of fatigue, which contributes to a high percentage of sports injuries.
- Quality equipment and body mechanics training will help prevent chronic injuries that develop due to misalignment issues.
- Proper warm-up and a good flexibility program will reduce injuries from tight and inflexible muscles.



My Dynamic Warm-Up

1 hour prior to Match/ Beginning of Practice (Length of Gym and Back two times)

- Jogging
- Shuffles/Chasse's
- Crossovers small
- Crossovers large
- High Knees
- Butt Kicks
- Hip Rotation
- Arm Circles
- Heel, and Wrist Rolls
- Calve Sweeps
- Squat Drops
- Lunges
 - Hip Rotation
 - One arm raised
- 45 degree shuffles
 - Forwards
 - Backwards
 - Reaching

- Footwork to 4 corners




20 minutes before match

- Fast feet until breaking a sweat
- Imagery/Visualization

My Cool Down (each exercise hold for 60 seconds)

- One leg Hamstring and Calf Stretch
- Quadriceps Stretch
- Inner Thigh Stretch feet together
- Glute Stretch One leg over the other
- Lying on back, one leg on knee glute stretch
- Lower and MidBack stretches
- Neck Stretches
- Lying on Back, leg in the air hamstring stretches
- Arm and Shoulder Stretch against a wall
- Reaching to the sky Abdominal Stretch

Specific to Me

Injury Specific to Me	Exercises Specific to my Injury
Tennis Elbow from Side-swinging	Self Massage (hands)
Tightness in my left calf	Self Massage (roller) Posterior and Anterior Calve Stretch
Lower Back Pain	Lie on Back Knees to Side (left and right) Lie on Back Knees to chest Lie on Back one knee over (left and right)
Ankle Roll	Ankle Rolls Stretch Ankle Push and Pull Stretch Ankle Resistance Bands (side to side and push)  Kneeling (toes pointed, good posture)

Personal Flexibility Assessment

chapter 4

As you've already learned from the previous chapters, it is not in any athlete's best interest to engage in a stretching program without first evaluating what needs to be stretched. Without an assessment, at best, you may get lucky and experience improved athletic performance from increased flexibility. At worst, you may stretch a part of your body that is already hypermobile and irritate the area by making it too flexible. You can avoid this gamble by creating your personal flexibility assessment (PFA). In doing so, you will learn how to take your personal history, perform a postural evaluation, identify trigger points and create a body map of them, test your range of motion, and test your functional movement patterns. This process will help you clarify any doubts or questions you have about your flexibility, such as why you seem to get tight or sore in the same places. The PFA has been instrumental in helping our clients better understand the causes and effects of their flexibility limitations. This assessment also serves as a personal training record that you can use to reevaluate your progress from time to time.

We've designed the PFA for the healthy, currently uninjured athlete. If you fall outside this category, then we recommend that you seek appropriate guidance from a health professional so that you can get a safe and accurate Stretch to Win evaluation and plan for treatment. Once your injury has been stabilized and treated and you are medically cleared, using the PFA on your own is appropriate and will help prevent problems in the future. While we typically conduct a flexibility specialist assessment for our clients in our facility, for the purpose of this book we have modified it and created the PFA for use by individuals.

The PFA is a fundamental element of the Stretch to Win system of individualized flexibility training. Once your assessment is complete, in the following chapters you can learn key stretches and how to build a stretching routine, how to connect the key stretches to the fascial line, and how to reassess and adjust your program for your sport-specific needs and as your flexibility changes. In this chapter we focus on mastering the PFA.

Before you begin your self-assessment, make several photocopies of the PFA form at the end of this chapter, pages 76 to 80, or download a copy from our website at www.stretchtowin.com. Use your copies of the self-assessment to write down your findings and answers to the questions. In the future, you can use these as a reference for checking your progress weekly, monthly, or at whatever frequency works with your schedule and goals, and for modifying your program as needed.

In chapter 5 (pages 84 to 94) are two sample completed assessments to help you see how to record the information. Take a moment now to glance over these examples so that when you complete your own assessment, you'll be able to use the symbols and notations that simplify the process.

The PFA has seven steps:

1. Take a brief personal history.
2. Describe any symptoms you are experiencing.
3. Perform a postural evaluation.
4. Test sport-specific movements.
5. Assess your active range of motion (AROM).
6. Identify and map your body's trigger points.
7. Review your findings and look for patterns and correlations.

Personal Flexibility Assessment

Name Olivia McClair Date March 5 2016

History

See pages 50 to 51.

- A. List any injuries, surgeries, or physical problems you have experienced in the past. If more than one, list them chronologically, starting with the most recent.
- pressure in calves - self massage it out
 - sore lower back
- B. List any current health problems, complaints, injuries, or current diagnoses made by a health professional.

n/a

Symptoms

See page 51. Describe what you are feeling in terms of soreness, tightness, pain, or any other discomfort during daily activities or athletic performance.

- sore lower back
- tennis elbow from side swinging

Posture and Alignment

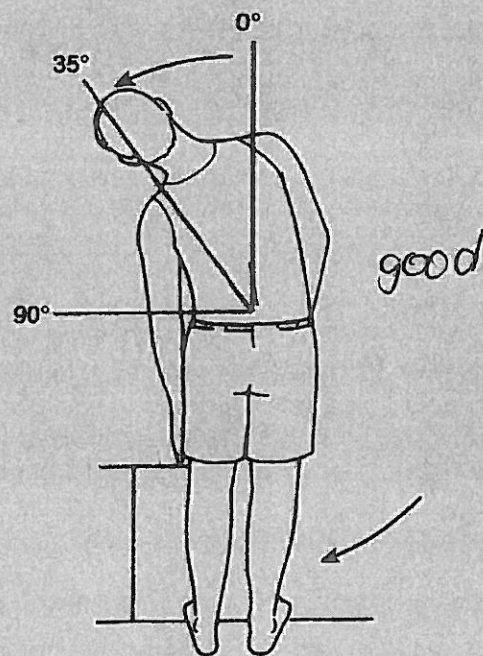
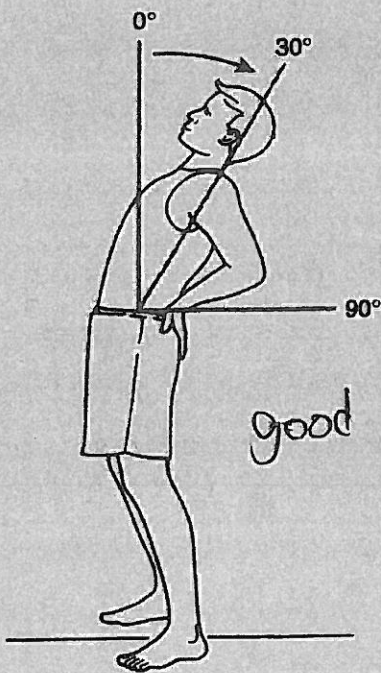
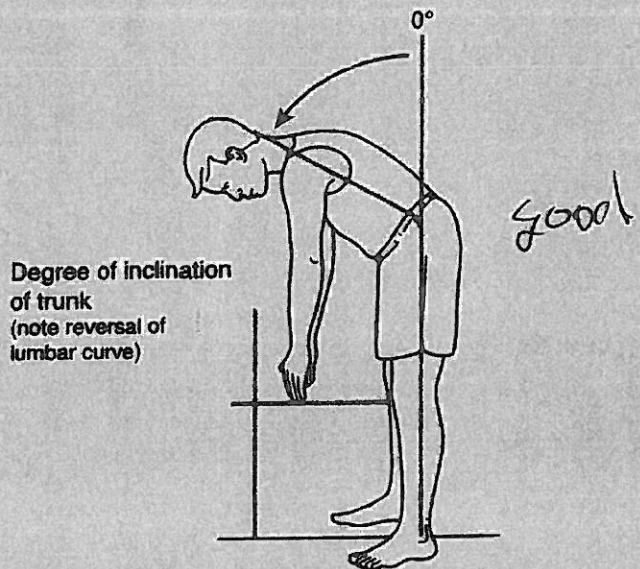
See pages 52 to 56. List here all areas that you can see that are out of alignment, (e.g., lower shoulder, higher hip, rotated foot).

- right thigh has larger muscle than left thigh

Active Range of Motion (AROM)

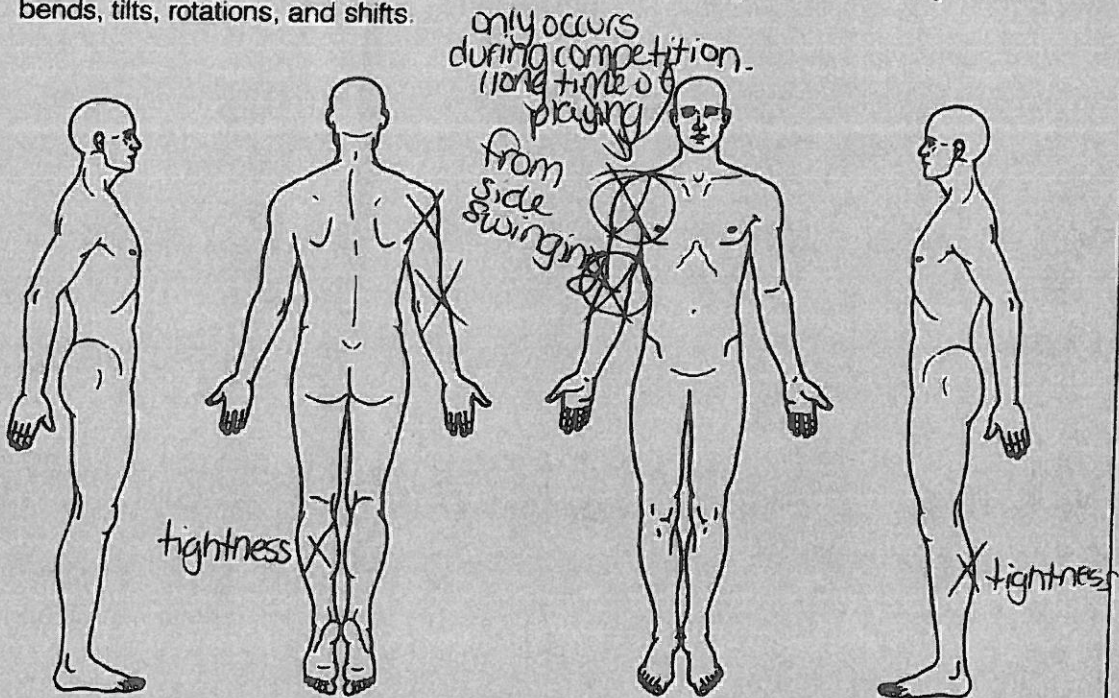
See pages 57 to 67 and perform all of these movements in front of a mirror. Note where restrictions are in your active range of motion for each test:

1. General spine
 - Flexion
 - Extension
 - Side bending
 - Full body rotation



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Mark on the body map diagrams any areas that are out of alignment. Note any obvious bends, tilts, rotations, and shifts.



Sport-Specific Movement

See pages 56 to 57. Select several body positions your sport requires. List them here and then describe how you feel getting into and out of these positions.

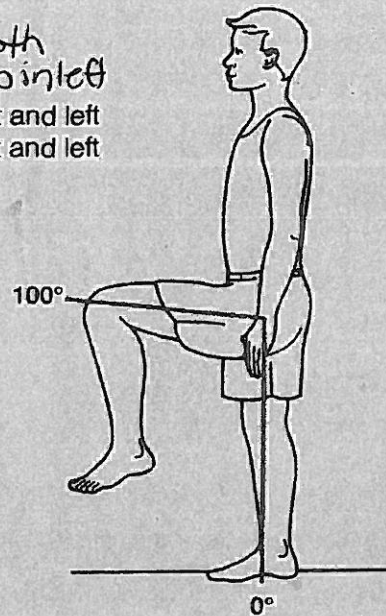
- lunging - pushing back is slower than going to
- squatting - mostly in mixed, feel fine
- Arms above my head swinging - feels natural.

Choose a dynamic sport movement for your sport and note below how smooth it feels when you perform this movement.

- lunging - seems very smooth on the right side - left side is a little more awkward.
 - ↳ required for backhand singles defense.
- chasséing - feels smooth, but would like larger strides to come more easily (faster)

3. Lower extremity

- ✓ Standing hip flexion, right and left 100° both
- ✓ Standing hip extension, right and left pop in left
- ✓ Standing hip abduction, lateral lunge right and left
- ✓ Standing hip adduction, lateral lunge right and left
- ✓ Standing hip rotation, right and left



4. Combination movements

- ✓ Spine
- ✓ Upper extremity
- ✓ Lower extremity

Trigger Points

See pages 67 to 75. List below the trigger points you have found. Mark the body diagrams with an X to show where on the body you have located your trigger points.

- In my left calf there is a little tender/tightness, I will self massage my quads, ham and calves cause they are the muscles that are used the most frequently in my sport

Review Findings

Review your findings and note them here. Look for correlations between your past and current histories and any present areas of complaint that may be impacting your athletic performance. For example, are the trigger points that you have found located on or near regions that are bothersome or that do not move well?

- Overall I have no mobility issues
- I have experienced very little injury

Keep this as a record of self-evaluation so that you may repeat it in one week to document your progress.

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