

Chapter 2 - Fundamental Body Coordination Skills

There are fundamental movement skills that are needed to be able to achieve technical excellence in the golf swing, as well as provide basic building blocks upon which all future training is based. The ability to perform these movement skills requires the athlete to have control of the deep stabilising muscles of the spine, pelvis, hips and shoulder blades, as well as to be able to coordinate independent movement of adjacent body segments. They also require the golfer to have adequate strength and flexibility to perform the skill.

Mastery of these movement skills should be the initial step taken in the physical development of the golfer, and should be reviewed regularly to ensure ongoing competence. These movement skills can be likened to the grip, stance and alignment of the golf swing, basics that must be constantly checked so as not to cause compensations elsewhere in the swing.

The fundamental movement skills that need to be mastered are:

- 1.1. Upper Body Rotation
- 1.2. Hip Rotation
- 1.3. Pelvic Tilt
- 1.4. Hip Hitch
- 1.5. Standing Hip Flexion
- 1.6. Deep Overhead Squat
- 1.7. Upper Body Postural Control

These movement skills will be individually described and drills provided that allow the development of these skills. These drills also help with the development of the required strength and flexibility to be able to perform the skill.

Upper Body Rotation

This movement skill looks at the golfer's ability to rotate the upper body on the lower body, which is important to allow correct rotation in the backswing, as well as through impact and into the follow through. This skill is also very important to allow the correct sequencing of body parts during the swing to produce consistency and power.

To perform this movement skill the golfer must be able to coordinate their abdominal muscles to produce rotation, as well as have adequate flexibility in your lateral trunk muscles and upper back to allow the movement. Many common training regimes include exercises that teach people to brace their abdominal muscles, producing a rigid abdominal wall, however this does not allow the development of the required control to allow rotation.

How to perform this skill

- ▶ *the golfer lays on their back with feet comfortably on the ground, arms straight, finger tips together*
- ▶ *the golfer rotates their chest side-to-side maintaining the triangle between their arms and chest*
- ▶ *the golfer keeps their knees pointing up at all times*
- ▶ *maintaining control at all times, the golfer rotates as far as they can while maintaining correct form*

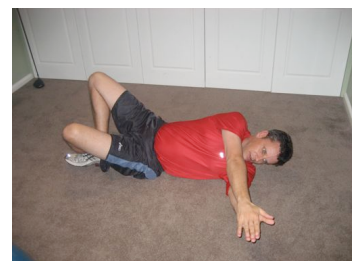


The golfer can improve their competence in this skill by increasing the difficulty of the skill. This is best done by decreasing the stability of the lower body and thus increasing the challenge on the control of the upper body rotation. The golfer should not progress to the next level until they are competent at the previous level.

The following drills will help them achieve this:

Feet Crossed

- ▶ *from the same starting position as above, the golfer crosses their feet over one another*
- ▶ *perform the same movement as before, maintaining control at all times*



Feet on Swiss Ball

- ▶ *now rest the legs on a swiss ball as shown*
- ▶ *perform the same movement as before, keeping the legs relaxed and the ball still at all times*



Hip Rotation

This movement skill looks at the golfer's ability to rotate the hips independently of the upper body, which is very important if the golfer wants to achieve the correct hip action during the golf swing. This skill is also important to allow the correct sequencing of the body during the swing, as well as the development of power. The ability to perform this skill will greatly assist the golfer in performing a correct transition move from the backswing into the downswing.

To perform this skill, the golfer must be able to coordinate the deep abdominal and pelvic muscles to produce rotation, as well as have adequate flexibility in the hips and gluteal muscles to allow rotation.

How to perform this skill

- ▶ *the golfer stands in golf posture with hands resting on the back of a support*
- ▶ *keeping the upper body stable, the golfer rotates the hips in a swivelling motion*
- ▶ *the golfer must maintain their posture at all times*
- ▶ *the hips must rotate about the spine, not tilt side-to-side*



As the golfer gets better at this movement skill, they can increase their competence by placing their hands across their chest and repeating the movement, keeping the upper body stable at all times.



It is important with this skill that the golfer maintains their posture at all times and move their hips in a rotary direction, rather than tilting side-to-side.

Pelvic Tilting

This movement skill involves the golfer's ability to tilt, or rock, the pelvis in relation to the trunk. This movement is very important as it helps develop a balance between the abdominal and back muscles, as well as allowing the golfer to position their spine correctly in their address position.

To perform this exercise the golfer must be able to coordinate their abdominal and back muscles to produce tilting of the pelvis. They must also have adequate flexibility in their hip flexors, gluteals and back muscles to allow tilting.

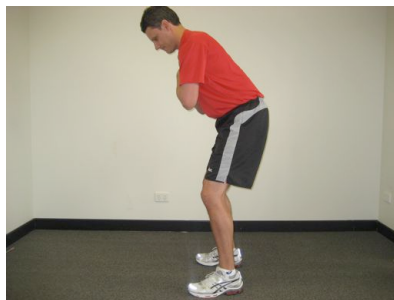
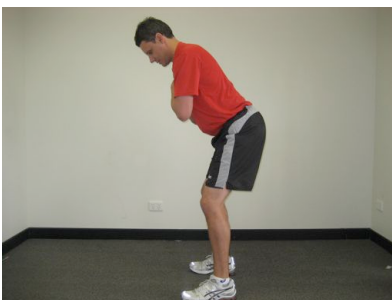
This skill is also important as a foundation to allow effective, safe training to improve strength as the golfer develops. The ability to be aware of the position of the spine and pelvis is very important, as the golfer must be able to position their spine and pelvis in neutral, and keep it there, as they perform strengthening exercises to reduce the risk of injury. This will also make training more effective and help the golfer get into powerful positions in their golf swing.

How to perform this skill

- ▶ *stand in golf posture with hands resting on the back of a support*
- ▶ *keeping their upper body steady, the golfer tilts their pelvis under and back*
- ▶ *the golfer must keep their legs still and maintain their golf posture at all times*



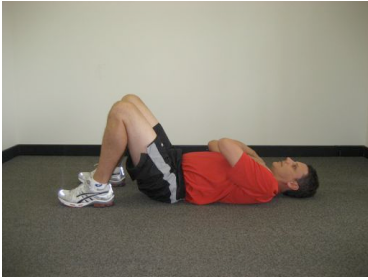
As they get better at this movement skill, they can increase their competence by placing their hands across their chest and repeating the movement, keeping their upper body stable at all times.



Some golfers have great difficulty performing this movement either due to flexibility or control issues. If the golfer cannot do this, try the following to help promote the correct movement patterns.

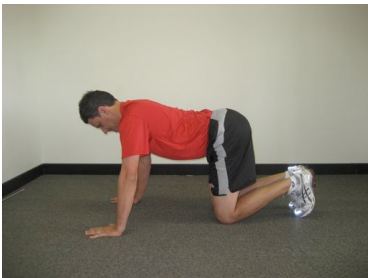
Supine curl ups:

- ▶ *the golfer lays on their back with hips and knees bent and feet resting flat on the ground.*
- ▶ *the golfer rolls their spine off the ground 1 vertebrae at a time, until all vertebrae of the lower back are off the ground*
- ▶ *return to start position, lowering each vertebrae 1 at a time.*



4 Point pelvic tilts:

- ▶ *starting on hands and knees, the golfer arches their lower back as far as possible.*
- ▶ *the golfer then flattens their back by tucking their pelvis under as far as possible.*
- ▶ *the golfer continues this pattern until they feel comfortable with this motion*



Hip Hitch

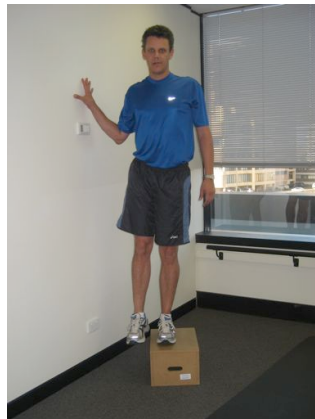
This movement skill tests the golfer's ability to hitch their hip up and down in a controlled, stable manner. The golfer's ability to do this has implications for their ability to transfer their weight efficiently, both in the back swing and into the follow through.

To be able to perform this exercise effectively the golfer must have adequate strength in the lateral hip muscles, as well as good balance to be able to perform the exercise on 1 leg. The lateral hip muscles provide the stability needed to generate power during the swing without excessive sliding and swaying, in this way they create a stable base for the golf swing.

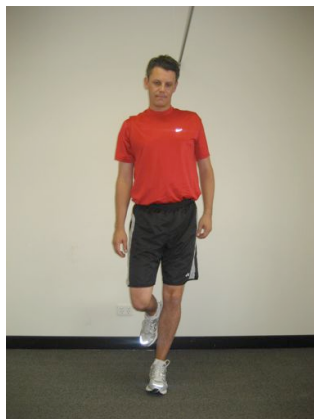
Strength and control in these muscles also take stress off the spine and helps the golfer maintain posture during the golf swing, important for both performance and injury prevention. Strength and control of these muscles is also an important pre-requisite for more advanced training as the golfer develops.

How to perform this movement skill

- ▶ the golfer stands on the edge of a step with 1 leg hanging free, resting a finger on a wall for support
- ▶ without letting the stance knee bend or straighten, the golfer lowers and raises the free foot
- ▶ the golfer should keep their upper body relatively steady the whole time
- ▶ the movement should happen at the stance hip, and they should feel the muscles in the stance hip working



Once the golfer is competent with this exercise, they can progress to doing it on level ground with the free leg bent to 90° at the knee, moving the knee up and down as they did previously with the free foot.



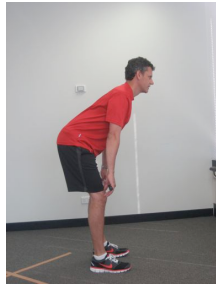
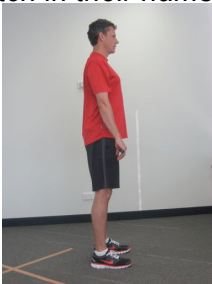
Standing Hip Flexion

This movement skill looks at the golfer's ability to bend forward correctly at the hips. This is an important skill for golfers as it allows them to adopt a correct address posture, as well as maintain their posture throughout their swing. This relatively simple movement is often poorly controlled and can be an underlying cause of many problems, both technical and physical, and is an essential skill to master before moving on to more advanced training. The ability to perform this skill also reduces the risk of developing back pain, as it teaches the golfer how to keep their spine in a neutral position and reduce excessive stress through the lower back.

To be able to complete this skill successfully, the golfer must have good control and strength of the large gluteal muscles in the back of the hip, as well as good control of the deep spinal stabilising muscles in order to keep the spine in a neutral position throughout the movement.

How to perform this movement skill

- ▶ *the golfer stands holding a golf club at either end with the club resting across their thighs.*
- ▶ *maintaining the position of the spine, the golfer slowly bends forward at the hips, looking straight ahead at all times*
- ▶ *the golfer's knees may bend slightly as they go down*
- ▶ *the golfer should go as far as they can without losing the position of their spine, they should feel a stretch in their hamstrings*



Some golfers have great difficulty performing this movement either due to flexibility or control issues. If the golfer cannot do this, try the following to help promote the correct movement patterns.

Kneeling Hip Flexion

- ▶ *the golfer kneels on all fours with hands under their shoulders and knees under hips.*
- ▶ *the golfer arches and rounds their back and then finds the mid-position, this is the neutral position of your spine.*
- ▶ *maintaining this position, the golfer rocks their hips back towards their heels as far as possible.*



Deep Overhead Squat (DOHS)

This movement skill tests the golfer's ability to perform a squat with their arms above their head. This is important as the ability to do this will allow the golfer to adopt, and maintain, correct posture during the swing. This will also improve the golfer's ability to sequence their body correctly to improve consistency and power. Being able to squat correctly, especially with arms overhead, will also reduce stress through the lower back and therefore reduce injury risk. As the golf swing requires the golfer to lift the arms above shoulder height while maintaining their golf posture, it is important to develop this movement skill early.

This basic movement pattern is often poorly performed, often as a result of poor postural habits in every day life. If you watch a small toddler move around, especially when picking up toys from the floor, you will notice that they squat beautifully. But as we get older, and spend more time sitting in front of television and computers, we lose the ability to do this well.

To do this skill, the golfer must be able to coordinate their gluteal and abdominal muscles to bend at the hips and maintain the correct position of their spine. The golfer will also need to have adequate flexibility in the hips, knees, ankles, lateral trunk muscles and upper body.

How to perform this movement skill

- ▶ *the golfer stands with feet shoulder width apart, holding a golf club overhead with elbows bent to 90°*
- ▶ *the golfer presses the club up as high as possible without changing the position of the hands.*
- ▶ *keeping the club directly over the ankles and heels on the ground, have the golfer squat down as low as possible*



There are many reasons why the golfer may have difficulty with this movement skill. The following drills will help to identify the reason for the limitation and how to correct it.

If the golfer reports tightness of the lower body, especially around the ankles, as the reason why they cannot perform the squat, the following drills will help.

Plantarflexed Deep Overhead Squat

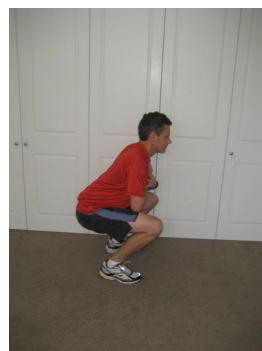
- *have the golfer repeat the DOHS, but this time place a small raise under their heels*
- *if they can now perform a DOHS, then they need to improve their calf muscle flexibility*
- *they can continue to practice the DOHS with the towel under their heels while working on their calf flexibility*



If the golfer leans excessively forward while performing the DOHS, they will likely have tightness of the upper body limiting them. The following drill will help determine this.

Hands Across Chest Squat

- *Have the golfer place their hands across their chest and repeat the squat*
- *If they can now easily squat down, they need to improve their upper back and lateral trunk muscle flexibility*



In this case the golfer can also practice the following drill to help coordinate the improved flexibility into their DOHS

Swiss Ball Squat with Arm Elevation

- stand with a swiss ball between the golfers back and a wall, holding a golf club in front
- squat down keeping the ball between the back and the wall
- as the golfer squats down, have them raise the club above shoulder height



Some people lack control through their core muscles to perform this correctly. The following will help them to improve their technique.

Weighted squat

- the golfer stands holding a small weight in front of them
- the golfer attempts to squat as before
- the weight acts a facilitator for the core muscles and can actually improve their activation and make the squat easier - if the golfer can now squat more easily, they need to improve core control to help them perform the DOHS



Upper Body Postural Control

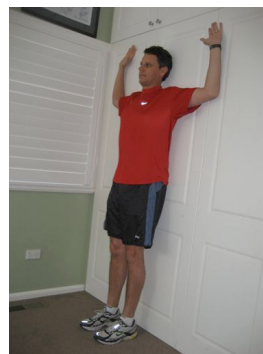
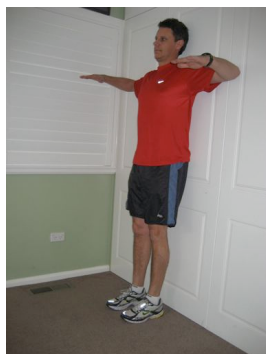
This movement skill tests the golfer's ability to control postural position of the upper body, including the neck, upper back and shoulders. This allows the golfer to adopt, and maintain, correct posture during the swing, as well as to maintain correct swing plane, especially on the backswing and transition into the downswing.

This basic movement pattern is often poorly performed, often as a result of poor postural habits in every day life, such as sitting in front of computers, in cars and watching television, as well as playing and practicing golf. The consequence of this sustained posture is tightness of the muscles at the front of the body, such as the pectoral muscles of the chest, biceps and muscles in the front of the neck, and weakness of the muscles that sustain good posture, such as the muscles that stabilise the shoulder blades and maintain posture of the neck. The resultant posture will also increase the stress through the neck and increase the likelihood of injury to the neck or shoulders.

To do this skill, the golfer must have adequate flexibility through the upper back, chest, shoulders and neck, as well as have strength and control of the muscles that position the shoulder blades, the upper neck and shoulders. The golfer also needs to be able to control the position of the entire spine and pelvis to be able to perform this correctly.

How to perform this movement skill

- ▶ *the golfer stands against a wall with feet approximately 10cm away from the wall, back resting on the wall*
- ▶ *the golfer flattens the lower back against the wall and maintains this position throughout the movement*
- ▶ *the golfer raises their arms 90° to the side, elbows resting on the wall, elbows bent 90° with palms down*
- ▶ *keeping the shoulder blades back and down, the golfer rotates their forearms back to the wall*
- ▶ *once the back of their hands are on the wall, the golfer draws their head back to the wall, keeping their eyes looking straight ahead.*



If the golfer has difficulty completing this movement skill it may be due to several reasons. If they have difficulty flattening their back on the wall, they may have trouble with coordination of the abdominal muscles to tilt the pelvis, if this is the case, they need to refer back to the Pelvic Tilting section.

If the golfer has trouble getting their forearms and hands back to the wall, they may have tightness of the upper back and chest muscles. They can address this with the following drill.

Upper Back Stretch

- *the golfer lays on their back with a rolled up towel placed across the base the shoulder blades*
- *the golfer places their hands behind their head and lays back*
- *the golfer can stay in this position for up to 10 minutes*



They may also have trouble because of poor strength and control of the muscles of the shoulder, or rotator cuff, and the muscles that control the position of the shoulder blades. To help correct this the golfer can perform the following drill.

Prone External Rotation

- *the golfer lays face down with forehead resting on a rolled up towel, arms 90° to the side and elbows bent 90°*
- *the golfer squeezes their shoulder blades together and holds throughout the drill*
- *keeping their elbows on the ground, the golfer raises forearms up off the ground and holds*

