Core and hip strength.

By Darryl Leech

There isn't a Tae Kwon Do practitioner on the face of the planet that couldn't do with a solid core and a strong set of hips. Core and hip strength is essential to any athlete (or person for that matter) to help support the spine during movement or to help absorb shock from impact. Most back, neck, shoulder and knee injuries can be traced back to a dysfunctional core and unstable hips, with this in mind let's get to strengthening them up.

Hard-Core: Inner and Outer Units

The core, which is divided into two functional units – the *Inner* and *Outer* units – acts as the body's own protective shield for the spine, organs and nervous system. The Inner Unit (which is made up of the transverse abdominis, diaphragm, multifidus and pelvic floor) has the role of stiffening the spine, rib cage and pelvic girdle during movement so that the head, arms and legs have a strong base to work from. Having a strong Inner Unit is essential to all martial artists. The Outer Unit (which is made of the rectus abdominis, internal and external obliques, and erector spinae) has the role of protecting the Inner Unit and moving the torso. The reason the core is divided into two units is because each unit is activated on separate neural pathways, but having a functional core will mean that both of these units will work together. Unfortunately it is quite common today for people to have weak inner units due to poor nutrition and other lifestyle factors, research shows that poor posture caused from inactivity and also consuming foods that your body has intolerance to (which causes inflammation of internal organs) will cause inner unit dysfunction, which means your spine will have no support.

To give you a better idea of what it means to have a dysfunctional inner unit take an empty water bottle, take the lid off and squeeze it – the bottle will crush in your hand. If you have a weak inner unit then this is basically what will happen to you when you move suddenly or take a hit.

Take another water bottle but leave the lid on and then try to squeeze it – it won't budge much at all. This basically resembles a functional core.

Now take a third bottle filled with water, freeze it and then try to squeeze it – it definitely won't budge, you may even hurt your hand trying. This will basically resemble your core after the following workout.

Test Your Core

A simple way to test your core function is to lie on your back and place your finger tips under your lower back so that you can feel your spine – just above your hips. Bend your knees and lift your feet off the floor (figure 1a), now keep the pressure of your spine pressed into your fingers and lower your feet to

the floor in a slow, controlled motion while maintaining that pressure. Lower your feet to the point where the pressure on your finger tips lightens (for some people this may mean the legs move only an inch) once at this point (figure 1b) slowly return your legs to the start position, going passed this point will cause the core to switch off and other muscles to switch on. Tension should be felt in the lower abdominals – not the lower back. Also remember to keep your shoulders relaxed.

Figure 1a

Figure 1b

This is just a simple way to test core function with leg movement – which is needed for Tae Kwon Do.

Note: If you struggle with this exercise or just feel tension through the lower back when attempting it then do not try the following exercises – work on resolving why your core is inactive first. Email me if you need some points on improving your core activation – darryl@activered.com.au

Uneven Loading

Uneven loading is a great way to force activation of the core and is an extremely under utilized tool in gym workouts. Putting your body under an uneven load will help your core activation as your body tries to balance itself and stay upright. The idea when performing these exercises is to resist against the pull of the uneven load and perform the exercise as steadily as if you were loaded evenly. Watch how much you have to drop the weight just to maintain your form and imagine the strength you'd have if you could build that up your regular weight.

Note: Please do not attempt the following exercises if you currently suffer from back, neck, shoulder or knee pain.

Barbell Lunge

The lunge is a great exercise for Tae Kwon Do'ists. Take a barbell and load weights on one side only. Now perform a lunge and alternate legs with each step (steps can be done forwards or backwards). Remember when lunging to keep the weight through the leading foot and also be mindful of how your foot lands on the floor, the heel should land first followed by the ball of your foot and big toe and while you are balancing try to keep your foot planted by spreading the load over those three points – push off your heel to return back to start position.

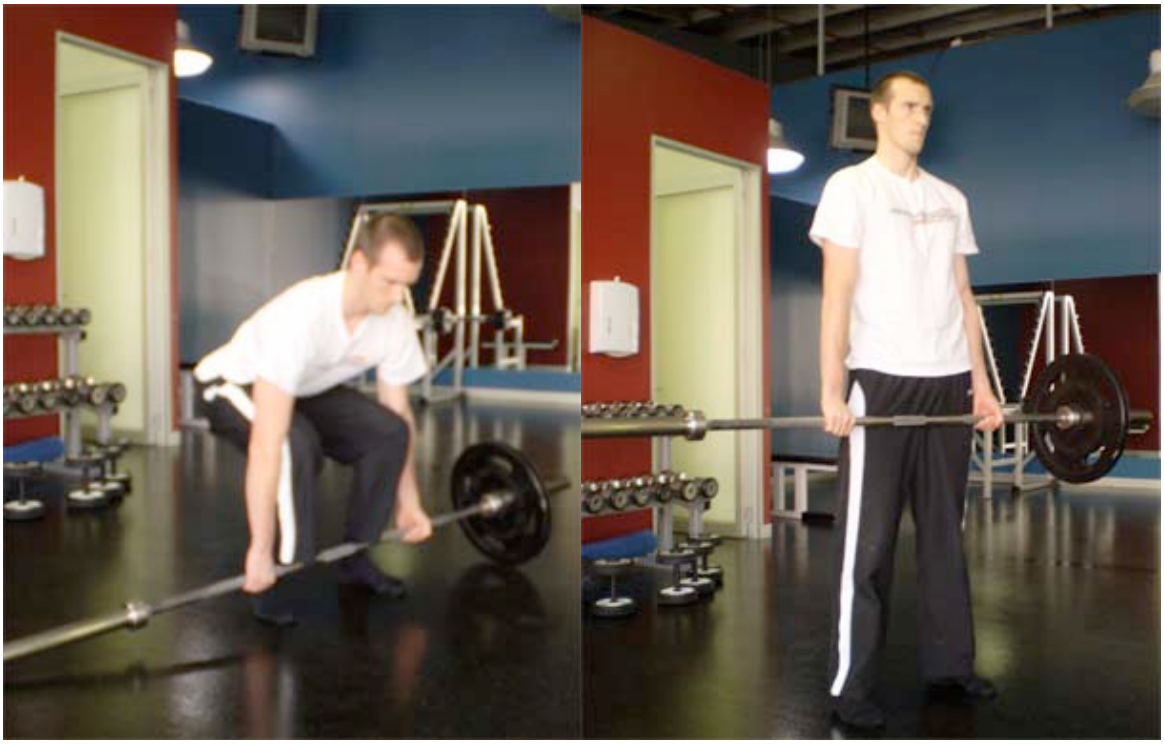
When pushing off the floor try to imagine you are not just pushing yourself back but rather you are trying to push the floor away from you, this will help you generate more force against the floor and if you've done it correctly you'll feel your hips and thighs work much more.

Deadlift

The deadlift is a great exercise to promote ideal posture but is often avoided for fear of injuring the lower back – if you are afraid of picking things up from the floor then strengthening your core and improving your flexibility should become a top priority. Back problems really only come from poor lifting technique or existing mobility problems – just because you deadlift doesn't mean you're destined to have a bad back.

First of all the deadlift IS NOT an exercise designed to specifically target and load the lower back – as is commonly believed. It is a full body movement and thus all parts of the body will be working together, when you correctly complete a good lift you should feel warm all over, one muscle group won't bare the entire load – unless you have an existing imbalance issue.

Begin by standing with your shins close to the bar, bend over and grip with one hand over and the other under. Drop your hips and lift your chest to flatten your back – keep your arms straight the whole time and do not shrug your shoulders. From this lowered position push your feet into the floor and begin to stand while keeping your chest up tall. Lifting the bar should be done from the ground up not your lower back.



Note: When lifting, bring your whole body up at once – DO NOT let your hips push out behind you.

Note: Forget all the things you've heard about tracking the bar over your thighs and shins – just let the bar go in a straight line. Bringing the bar in and out to lead it over your shins and thighs will change the angle the load is placed on the body instead of loading it evenly.

Another variation of an uneven deadlift is to perform the exercise with the bar to one side. This exercise is also called a 'Suitcase Squat' but the movement closely resembles a deadlift. Remember to keep your chest up and core on.

Squat

The squat is one the body's most basic movement patterns it's great for promoting ideal posture and core and hip strength – funnily enough.

Squat with your butt going all the way down to the floor, cutting your squat short will overtime cause an imbalance issue – which can lead to back and knee pain. Also, research has proven that full range squats cause less damage to the knee than half range squats – although if you still experience knee pain or clicking joints while doing them then you obviously have an imbalance issue that will need to be addressed.

Because we all have different body shapes and are different in height and flexibility, we aren't all going to squat exactly the same way. Someone quite flexible may be able get their hips all the way to the floor with their feet only hip width apart, while an inflexible person may have to space their feet much wider apart – the point is you should find the most comfortable position for you to squat from. To find out where you should be squatting from first drop into a squat on your toes (figure 2a), from here shuffle your feet apart until you can sit flat footed with your torso resting on your thighs and your chest up (figure 2b) – this position is where you will be squatting from.


Figure 2a 
Figure 2b

Note: if you have trouble getting into this position and sitting comfortably you can try holding onto something in front of you for balance. If you still have trouble then you may have to work on your flexibility. Common tight spots are the calves, hip flexors and spinal erectors, common weak spots are the glutes and thoracic extensors.

Fitballs

The great thing about training with fitballs is that they highlight the instabilities of the user and force the core and other postural stabilisers throughout the body to activate and strengthen. A lot of people shy away from using fitballs as part of their training because they believe that they are too unstable, when in actuality it is the user who is unstable and not strong enough to balance themselves. The fitball is a great tool for martial artists to challenge their stability and learn how to spatially orientate themselves.

Hip Adduction Pushup

This exercise is tougher than it looks, great for activating hip adductors and core and makes the standard pushup a little more interesting.

Begin in a pushup position with your feet on the ball, take your feet apart and shuffle them towards the floor until they are about half way down the ball. Lightly squeeze the ball with your feet and don't let go, activate your core and maintain neutral spinal curves, then perform a pushup. When pushing away from the floor squeeze as hard as you can on the ball with your feet.

Note: If you have trouble with this exercise try to grip the ball with your shins or even just practice building strength by holding the starting position. For an advanced alternative try doing clapping pushups.

Fitball Frog Kick

This is a great fitball exercise for Tae Kwon Do as it helps build coordination of the hips and inner unit. Because the movement practically resembles a kicking motion it's a great exercise to encourage inner unit activation when actually kicking.

It's easiest to begin with your hands on the floor and then placing your feet onto the fitballs, one at a time. When moving your leg remember to be conscious of the stationary leg so that you can maintain balance.

Note: This is quite an advanced exercise and is really tricky to maintain correct posture while performing it. A spotter or trainer is very handy for letting you know when you are losing the neutral position of your spine.

2 x Fitball Prone Hold

Begin with your chest on one fitball and then place your feet on the rear fitball the same way as in the Hip Adduction Pushup. With your chest still on the fitball activate your core and find your center of balance, once comfortable in this position put your hands on the ball and push your chest up so that you are now in a pushup position balanced on the two fitballs.

Kicking:

Here's a good drill that will help activate the core and hips and help improve your balance, also it can be done in the dojang.

Pair up and have one partner hold there hand out in front of them. The other partner will perform a controlled turning kick to the inside of the first partner's palm then do the same on the opposite side (the partner holding their hand out will also change hands).

Once you have completed 1 turning kick on each leg you will then perform 2 kicks on each leg, but don't let your foot touch the floor or let your thigh drop – you will just extend the lower leg (fig 1 and 2). You will then perform 3 kicks on each leg, then 4 all the way up to 10-15 kicks on each leg. Remember not to let your thigh drop once you start kicking and to keep your balance.

Once you have finished change over with your partner, when they are done then you can try the drill again but perform the kicks starting with 10 on each leg and work your way back down to one. When you are done you'll feel your glutes working like crazy!

Figure 1 Figure 2

A strong core and solid pair of hips is essential to the Tae Kwon Do practitioner. Building your core and hip strength will improve the posture, balance and coordination of your body and increase the speed, accuracy and strength of your kicks!