Single Leg Hop and Stick

Aim: Plyometric and dynamic control. Ideal in late stage rehab.

Technique

* Stand upright on the leg you wish to exercise, with your knee slightly bent; the other knee is bent to 90° with the knees opposite each other thereby keeping your pelvis neutrally aligned, legs hip width apart
* Keep your lower tummy gently pulled in and chest raised to straighten the spine with the head up, arms at your sides (A)
* Perform single-leg jumping exercises on the spot but progressively turn in mid-air before landing through 45° / 90° / 180° to your starting position gently squeezing the Gluteals just before landing (B)
* Initially perform the jump, stop to regain balance, then jump again and so on = jump and “stick”

Reps 6 Sets 2

Progression:

* Increase the load (hold dumbbells) in your hands
* Increase both height and distance of the jump
* Once very good control is achieved, a full 360° turn can be attempted
Straight Knee Leg Swings

Aim: Dynamic warm up mobility drill, improves balance during single leg stance.

**Technique**

* Stand upright on one leg, lower tummy gently pulled in, spine lengthened, arms at sides
* "Quickly" bend your other leg at the hip keeping the knee as straight as possible to swing the leg up to waist height (A)
* Then swing your leg downwards and backwards until your leg is straight and behind your body (B)
* Your knee should be completely straight at the end of this backswing and from here pull your leg forward until your thigh is again in front of you and parallel with the ground with the leg as straight as possible
* Repeat this motion up and forward, backward and down, while progressively increasing the speed and range of motion of the movement
* Finish the set on one side before repeating on the other

**Reps 10 Sets 2**

**Progression:**

* Perform the swings at faster speeds (faster movement are more difficult and need greater coordination and power)
* Increase the range of motion (ROM) of your swings
**Lateral side hops**

**Aim:** Advanced plyometric training. Proprioception and dynamic control of the lower limb.

**Technique**

* Stand upright on one leg furthest away from an immovable object with a resistance band around the immovable object at waist level and looped around your waist
* The foot is directly under your shoulder, lower tummy gently pulled in and knee slightly bent and the other leg bent at the knee and parallel and opposite the exercising leg
* Perform a one leg side hop away from the immovable object, against the resistance (A)
* As you land comfortably on the hopping leg, concentrate on maintaining a level pelvis each time you land by tightening your buttock muscles (B)
* Repeat the hop back to the starting position to complete a repetition

Reps 10 Sets 2

**Progression:**

* Perform the exercise with progressing the speed and range of movement of the action
* Increase the load (using a greater tension on a resistance band, using a thicker resistance band, jumping higher and further)
Star Excursion Balance test

Aim: Improve balance and equilibrium or righting reactions. Functional stability.

**Technique**

* Mark out 2 lines on the floor in the shape of a cross, with the lines perpendicular to each other as well as 2 further diagonal lines between the horizontal lines and the back vertical line – these lines run at about 45° to the horizontal and vertical lines

* Stand upright, barefoot, on 1 leg in the middle of the star pattern so formed, shoulders broad, lower tummy gently pulled in and hands on hips to help your awareness of holding the pelvis stable; the non support knee to a right angle and hold it opposite to the knee of the leg you are standing on with your legs hip width apart (A)

* Once you have steady, maintain your balance on the one leg and reach out as far as possible with the other leg touching each of the lines in succession with your big toe – in front, to the left, to the right and diagonally back to the left and right (B)

* Repeat each of these leg movements 3–5 times to complete the rep before putting your leg down, then alternate sides to complete the set

Reps 4 Sets 2

**Progression:**

* Increase the load by performing the test on an unstable surface such as a balance pad, wobble board, bosu ball or dynadisc

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Bounding

Aim: Functional plyometric and dynamic control exercise. Progression from jumping and hopping.

**Technique**

* Stand upright on both legs, lower tummy gently pulled in, chest raised to straighten the spine
* Bound forward by jumping for distance from your one leg to land on the other leg (A)
* As you land, explosively push off again to bound forward to land on the original push off leg (B)
* Continue this series alternating forward jumps between legs for 6-8 steps
* Keep your knees slightly bent and focus on gently squeezing the Gluteals just before landing
* Vary the movement sequence by stopping and holding a balanced position every now and then

Reps 4 Sets 2

**Progression:**

* Aim to progressively increase both height and distance of the hops / jumps
* Add catching and throwing actions while hopping
* Change direction as you bound
* Increase the instability of the surface
Mat Balance
Aim: Improve balance and equilibrium or righting reactions.

Technique

* Stand upright on one leg (the side you wish to exercise) on the edge of the mat with only the 3rd, 4th and 5th toes in contact with the mat, the 1st and 2nd toes should be hanging unsupported off the end of the mat.
* Bend the non support knee to a right angle and hold it opposite to the knee of the leg you are standing on with your legs hip width apart.
* Place the non-exercising leg behind with the toes lightly touching the ground if your balance is not very good, keep the shoulders broad, lower tummy gently pulled in and hands on hips (A).
* Now, slightly raise the heel to engage the calf muscles and hold the position for 5-10 seconds (B) and slowly lower down to the starting position.

Reps 6 Sets 2

Progression:
* Move the non weight bearing foot around in circles or doing the above with your eyes closed.
* Additionally, swing your arms back and forth vigorously, mimicking the arm action associated with running, as you stand on one leg.
* The softer the mat, the tougher the exercise.
Aeroplane standing
Aim: Balance training to improve equilibrium or righting reactions and endurance while standing on 1 leg working the buttock, hamstring and calf eccentrically.

Technique

* Stand upright, lower tummy gently pulled in and spine lengthened and bow forward to an almost horizontal position with your arms out at shoulder height
* To bow, push your pelvis back and bend at the hips, maintaining a slightly arched lower back and knees slightly bent (A)
* In the bow position, shift your weight onto one leg and move the other leg backwards as a counter balance until your thigh is almost parallel to the floor (B)
* Maintain this "Aeroplane" position for 5-10 seconds before returning to the bow position and then straighten up using primarily the buttock muscles and then repeat the same sequence to complete the set

Reps 6 Set 2

Progression:

* Increase the length of the hold by graduating the hold periods from 20 to 30/45/60/90 second intervals
* The sets can increase from 2 to 3/4
* Further progressions include doing the above with your eyes closed

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Indian Hops
Aim: Plyometric training requiring strong balance and proprioception to ensure dynamic control.

Technique

* Jog for a few strides and when your right foot hits the ground, hop (over a cone/ marker) in place of running
* When your right foot comes down from this single hop, explosively hop diagonally to the left, landing on your left foot (A)
* When your left foot strikes the ground, hop once and then explode diagonally to the right (B)
* Your right foot will then land, hop and explode diagonally to the left and so on
* Indian hop for 45 seconds, rest for 15 seconds, and then Indian-hop for 45 more seconds to complete 1 rep

Rep 4 Set 2

Progression:
* Perform the exercise with progressing the speed and range of movement of the action
* Increase the length of time per rep
* Add more sets – up to 4/5
**Bear Crawl**

**Aim:** Advanced warm up and conditioning exercise for the shoulder girdle and core muscles

**Technique**

* Start in the push-up position, hands below your shoulders, feet together, chest lifted to straighten the spine and lower tummy gently pulled in at all times to prevent your lower back from arching (A)
* At the same time move your left leg and right arm (opposite arm and leg) forward to place the ball of the left foot on the floor outside relative to the position of your stabilising hand (B)
* Perform the same movement with the opposite arm and leg thereby walking forward on hands and feet in the push-up position
* Once you have performed 2-3 steps forward, perform the same sequence of opposite arm and leg movement while walking backwards on your hands and feet to the starting position

Reps 6 Sets 2

**Progression:**

* The number of repetitions can be increased from 6 to 8/10
* The sets can increase from 2 to 3
* Can also be performed by adding in a static hold at the start or end position of the movement
* Increase the length of the hold by graduating the periods from 5 to 10/20 second intervals
* The number of repetitions is decreased from 6 to 4/2 reps as the load is progressed
* The sets can increase from 2 to 3/4

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**Lunge and chop**

Aim: Closed chain strength, endurance and stabilising for the quadriceps and buttocks. They maintain pelvic and lower limb stability and control.

![Lunge and chop images](image)

**Technique**

* Stand upright side-on to a pulley cable machine or next to a support that a resistance band has been fastened to, at head height, lower tummy gently pulled in, chest raised to straighten the spine, feet parallel and hip width apart
* Hold the free end of the cable / resistance band in both hands at head height
* Step forward a comfortable distance with the leg furthest away from the side of the cable / resistance band and bend at both hips and knees to lower your back knee and body vertically down to the floor (A)
* Once in the lunge position, with the front knee vertically above the heel, pull the cable/ band with straight arms, across your body until the hands are pulled over to the opposite hip (B)
* Slowly return the arms to the starting position and rise up, pushing with the thigh and buttock muscles using mainly the front leg

Reps 12 Sets 2

**Progression:**

* Increase the load (heavier weights or thicker resistance bands or greater tension on the resistance band)