

Posture and injury-free: Essential exercises for children & sports-people

Schooling and office work places are not great for our bodies. Sitting for prolonged periods at a desk leads to small postural adjustments in the body that, when superimposed on sporting patterns, significantly elevate the risk of an injury. Too much sitting also causes muscles to switch off and weaken. The basic biomechanical faults are common place and simple to identify and remedy:

- Tight chest and upper trapezius muscles – shoulder slumped forward with elevated/ bunched neck muscles:
 - Lengthen (stretch) chest muscles and relax the upper trapezius muscles (improve posture and massage the muscles)
- Weak shoulder and shoulder blade (scapula) stabilisers:
 - Strengthen external shoulder rotators, scapula retractors (mid trapezius and rhomboids) and scapula anchoring muscles (lower trapezius and serratus anterior)
- Tight hip flexors, and weak core and hip stabilisers:
 - Lengthen (stretch) hip flexor muscles
 - Strengthen the core stabilisers and deep gluteals

CONDITIONING ROUTINE:

One leg pushaways/ heel touches x 25-50/side (2legs x 25-50 for more advanced participants)

Prone bridge x 30-60s (90-120s for advanced participants)

Clams x 25-50/side

Side bridge with leg raise x 5-10/side

No shoes { Aeroplane x 5-10/side (eyes closed to advance the exercise)
1leg short knee bends x 5-10/side

External shoulder rotation x 10-20/side

Scapula retraction (rear delt flyes or moneys) x 6-20

1arm overhead shoulder flexion x 10-20/side

Press-up+ x 6-10

The tempo for all exercises is slow to very slow – controlling the motion of joints (stabilisation) is a primary target for strength conditioning

Some exercises require exercise tubing of a suitable grade (level of resistance)

Read: 'foot and ankle strengthening' (<http://sportperformance.co.nz/>) for more information about the importance and role of not wearing shoes

1-3 CIRCUITS REGULARLY, plus stretches:

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Sleeper stretch x 45s/side

Pec major stretch x 45s/side

Hip flexor stretch x 45s/side

Piriformis/ lumbar stretch x 45s/side

Seated torso rotation stretch x 45s/side

Tennis ball massage for the upper traps x 60s/side

The stretches must be done daily

THE KEY TO INJURY-FREE AND BIOMECHANICAL STRENGTH CONDITIONING IS HIGH FREQUENCY; A SMALL AMOUNT COMPLETED REGULARLY HAS A FAR GREATER EFFECT THAN A LOT DONE ALL AT ONCE

THE EXERCISES AND STRETCHES:

Pushaways/ heel touches:

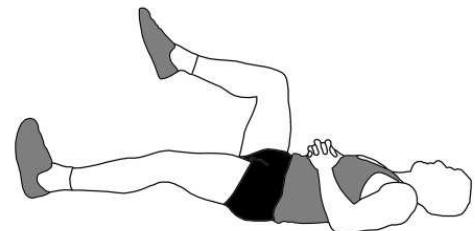
Target: TVA core stabiliser

Lie on your back with both knees pulled back so that your lower back is in contact with the floor. Slowly extend one leg. Move only to your barrier point; the point beyond which you cannot maintain the downward position of your lower back. Gently touch your heel to the floor.

The only moving part should be your hip joint and leg.

PROGRESSIONS: 2leg pushaways/ heel touches, long levers (straight legs) vs short levers (bent legs)

10-50 REPS/SIDE



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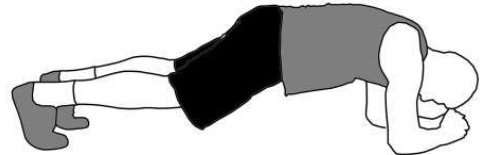
Prone bridge:

Target: TVA core stabiliser

Set bridge with shoulders directly over the elbows and feet shoulder width apart. Set your pelvis neutral and hold throughout.

NOTE: prone bridges should never be held to failure. The purpose of all core strengthening/ stabilising is to prevent lumbar collapse not to encourage it!

HOLD FOR 30-120S



Clams:

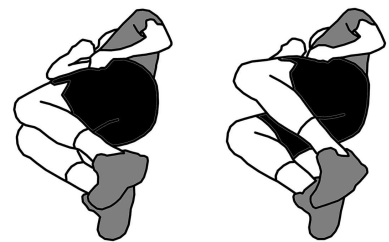
Target: hip stabiliser – posterior gluteus medius

Sit with your knees together and wrap exercise tubing/band above the knees to provide resistance. Lie on your side with knees bent at 90 degrees. Pull your feet up to be in line with your body.

Slowly lift your knee upwards against the tubing.

The only moving part should be your hip joint and leg.

20-50 EACH LEG



Side bridge with leg raise:

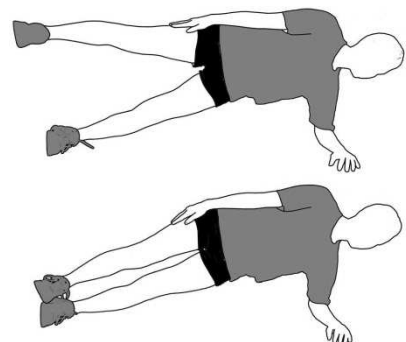
Target: lateral spinal stabilisers, hip stabilisers and abductors

Lie on your side with your elbow directly beneath the shoulder and your feet stacked.

Slowly lift your hips to perform a side bridge. Ensure your body is in a straight line: ankles, knees, hips, torso, and both shoulders. Provided the bridge is stable, attempt to slowly lift the top leg.

Maintain a straight line along your body throughout.

5-10 repetitions each side



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Aeroplane:

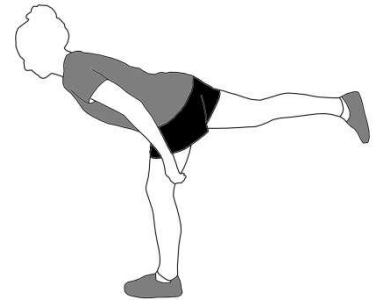
Target: ankle, hip and torso stabilisers

Stand on one leg and slightly bend the knee and hip joint.

Slowly begin lifting your foot upwards so that your body rotates about the hip joint. Keep your body in a straight line.

Pause at the barrier point and check that your toes are pointing directly down toward the ground.

3-10 repetitions each side



1leg short knee bend:

Target: ankle, hip and torso stabilisers

Stand on one leg and place the unloaded leg in front of the body.

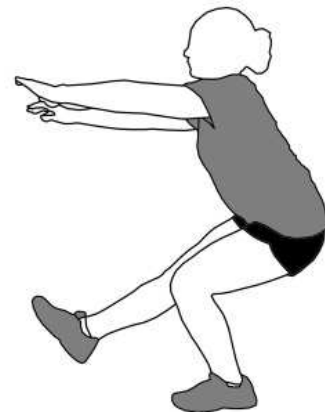
Slowly perform a one leg squat by moving the butt back & down toward a chair (real or imagined); **LOAD THE HIP NOT THE KNEE** (keep the weight on the heel throughout)

The knee must remain in line with the foot – do not allow it to collapse inward during the down or up phases of the movement.

The barrier point is reached when the hip can no longer properly control the position of the knee.

Use a 40-50cm bench or chair to guide the movement.

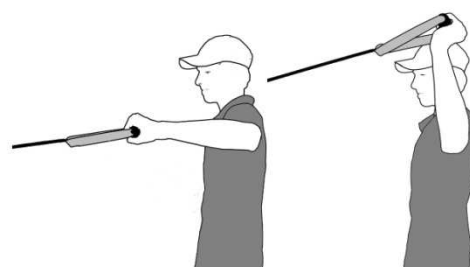
3-7 repetitions each side



External shoulder rotation:

Target: external shoulder rotators

HIGH EXTERNAL – set the shoulder & elbow in the high position, set and stabilise the shoulder blade, and then perform slow external shoulder rotations without moving the upper arm or elbow. Body faces the line of the tubing.



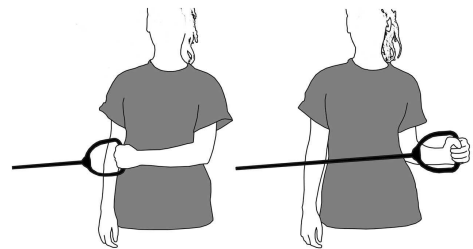
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NOTE:

High external shoulder rotation and 1arm shoulder retractions are suitable for individuals who exert good control of the shoulder blades. All others should use a low position external shoulder rotation and 2arm retractions (no moneys)

LOW EXTERNAL – your elbow needs to remain tight to your side in a low position throughout.

15-20 REPS/POSITION



2arm shoulder retractions (no moneys):

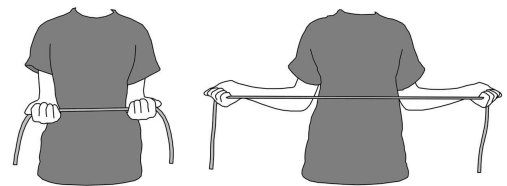
Target: scapula retractors

Grasp a short length of tubing with palms fully supinated (thumbs pointing away from the body).

Set the shoulder blades in the in and downwards '6 o'clock' position, and then perform slow external shoulder rotation.

Return and relax the shoulder blades. Repeat.

10-20 REPS



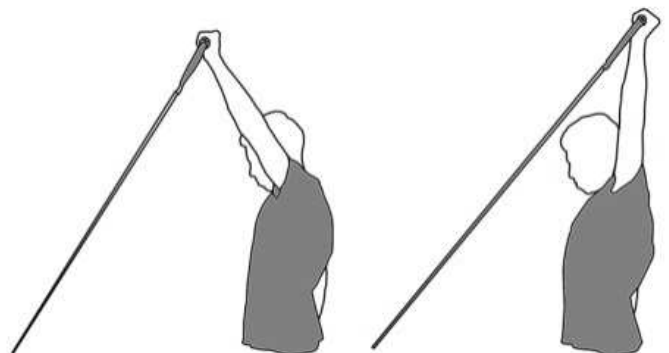
1arm overhead (o/h) flexion:

Target: lower fibres of trapezius muscle

Stand with a straight arm overhead, 30-40deg forward from the vertical line of your body.

Brace your core (pull your belly button in) and extend your arm as far back as possible. Keep the arm straight throughout and do not rotate your shoulders to add more force to the pull.

10-20 REPS/SIDE



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Press-up plus (p/u+):

Target: serratus anterior muscle

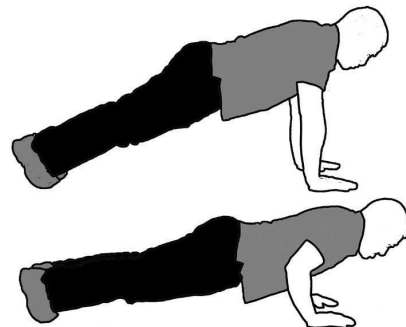
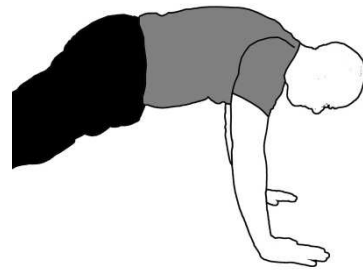
Set in a stable press-up bridge with your hands under your shoulders.

Perform a small controlled press-up. It is important that the shoulders remain over your hands throughout. Maintain the shape and position of your lumbar spine: avoid collapsing your pelvis anteriorly (arch in the lower back).

A plus is performed by slowly pushing your shoulder blades further apart and returning them in a controlled fashion to the neutral position – don't let them go all at once.

Note that a plus movement should not involve elevating or shrugging the shoulder blades but is a small protraction motion. Return to the neutral starting position.

6-10 REPS



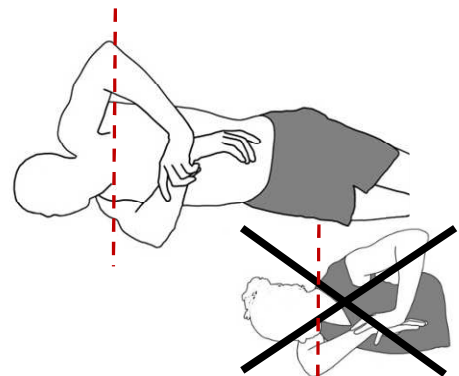
Sleeper stretch:

Target: tissues affected by internal shoulder rotation

The shoulder under stretch (at bottom) must be blocked throughout by the weight of your body on top of it. Gently rotate the lower arm downward to the barrier point.

This stretch is essential for tennis players, swimmers, and throwing sports.

HOLD FOR 45s EACH SIDE



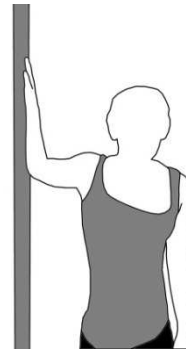
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Pec major stretch:

Target: *pec major muscle*

Place your lower arm on the wall, as shown, and then gently rotate your body away from the wall until a stretch is felt in the upper chest.

HOLD FOR 45s EACH SIDE



Hip flexor stretch:

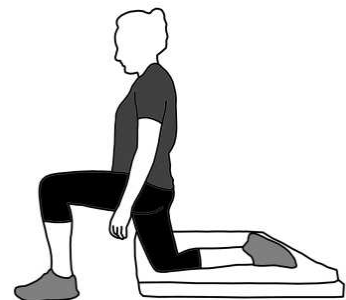
Target: *hip flexor muscles*

Kneel with your foot out in front as shown. Engage your core and 'tuck' your pelvis backward to put the muscle at the top of the back leg under stretch.

Gently push your butt forward to achieve a greater stretch, as needed.

This stretch is important for individuals in running sports.

HOLD FOR 45s EACH LEG



Lumbar spine/piriformis stretch:

Target: *lumbar and deep gluteal muscles*

Sit up tall and place your hand as far behind you (around the corner) as possible. Push hard against your knee to achieve maximal rotation.

This stretch is ideal for individuals with tight lower backs and hip stabilisers.

HOLD FOR 45s EACH SIDE



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Seated torso rotation:


Target: thoracic spine

Sit up tall with your legs and hips facing forward. Slowly rotate your torso and reach around with your arms to the barrier point of the stretch.

HOLD FOR 45s EACH SIDE



RELATED READING:

 *Posture and sport*

These and other resources are available free to all at: <http://sportperformance.co.nz/resources.html>