

Rehabilitation 1 Assignment*

*The athlete's age, sex, ability, fitness, previous training and previous injuries, as well as their body's physical reaction to training and the sports season, must all be considered in effective training programmes.

For the selected 3 sports I will assume the athlete is a 34 year old male of average fitness, strength and ability.

Sports Stretching:

All pre-sports stretches should be short (10 seconds) to take the muscle to its current end of range, but not to lengthen the muscle/s or change their structure. Pre-sport dynamic stretching is also indicated in most sports to warm muscles, increase blood & nutrient supply and reduce injury occurrence. All post-sport static stretches should be prolonged (30+ seconds) and repeated 3x (post warm-down). PNF, active isolated, and assisted stretching techniques can be employed to increase the effectiveness of the stretching programme.

Takwondo/Hapkido

Indicated muscles/joints:

- Calf, hamstrings, quads, psoas, glutes, back, pectorals, forearm muscles, triceps.
- All joints, especially the knee, hip, wrist & shoulder.

Desired training outcomes:

Improved agility, rotational & reaction speed, lean muscle development (11a fast-twitch fibres), strength-endurance, flexibility, performance economy, co-ordination, aerobic endurance, proprioception, muscle capillarization and short-term anaerobic energy pathways.

Common injuries/referral/considerations:

- Groin, hamstring, back, glute, Achilles and rotator cuff strains.
- Impact tissue injury.
- MCL, ACL, wrist and ankle sprains.
- Tendonitis (Achilles & tennis elbow)
- DOMS.

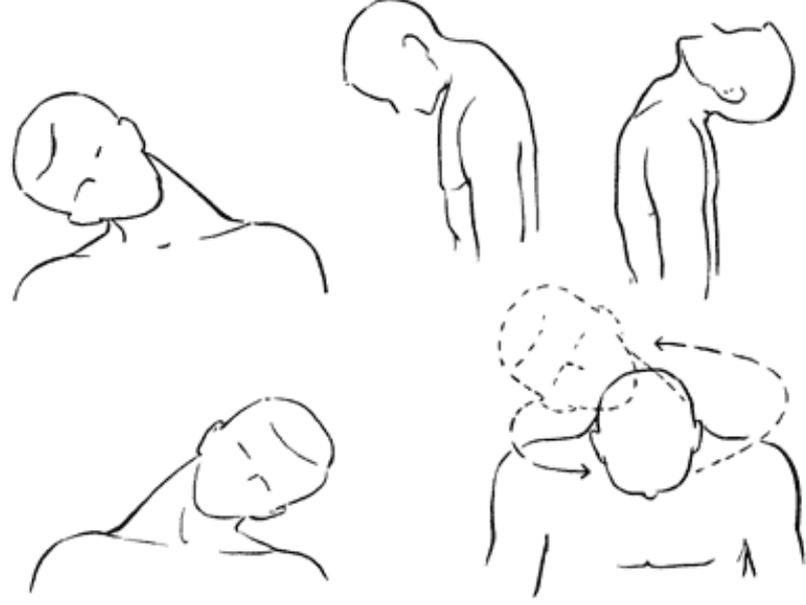
Warm up:

1. **Stretches:** Short, 10 second stretches of the forearm, hamstrings, calves, quads, triceps, rotator cuffs, lower back and:

<p>Chest/rhomboids</p>	 <p>1 Stretch the arms out wide and push your chest out</p> <p>2 Stretch the shoulder blades apart and "go hunchbacked"</p> <p>Chest Opening & Closing Mobilization</p>
<p>Adductors</p>	

2. **Mobilisations:** Hip circles, wrist stretches and:

<p>Hip openers-light</p>	
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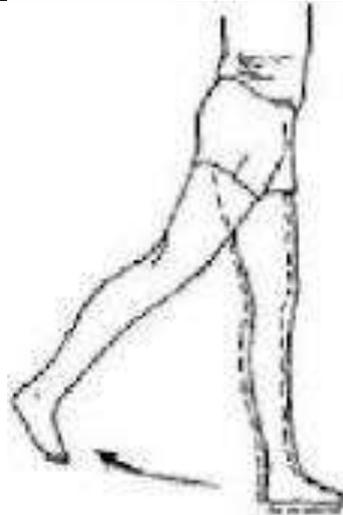
	
<p>Back lunge & twist-relaxed</p>	
<p>Neck mobilisations</p>	

3. **Dynamic stretching:**

Hamstrings/glutes

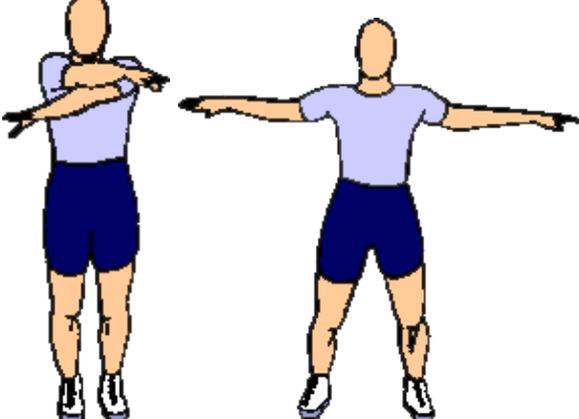


Quadriceps



Psoas

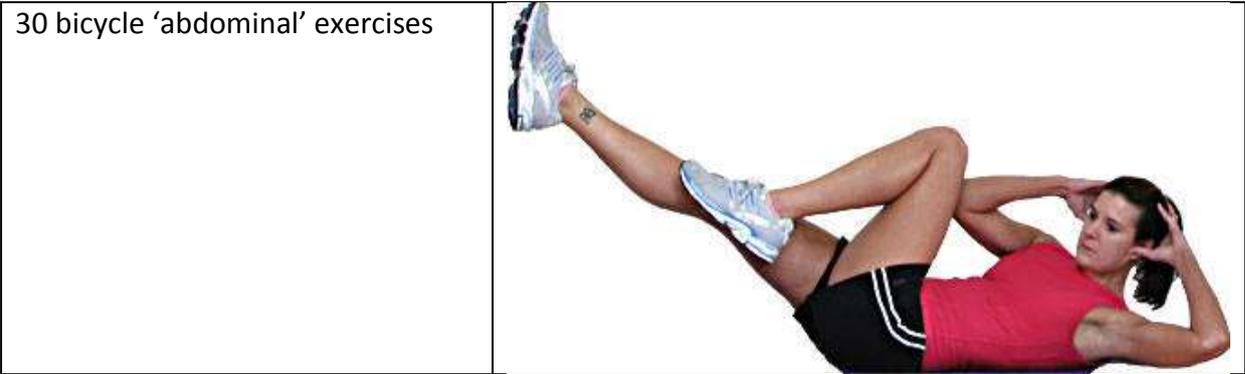


Adductors	 A line drawing of a person from behind, sitting on a bench. Their right leg is raised and bent at the knee, with the foot resting on the ground. A curved arrow indicates the movement of the leg towards the midline of the body.
Over the fence exercise	 A line drawing showing two people from the waist up. They are standing side-by-side. The person on the left has their right leg raised and bent, with the foot resting on the person on the right's right leg. A dashed horizontal line is drawn across the middle of the legs.
Chest/rotator cuffs	 Two line drawings of a person from the waist up. The left drawing shows the person with their arms crossed in front of their chest. The right drawing shows the person with their arms extended horizontally to the sides.

...20 of each.

4. 5 minutes of **shuttle runs** interspersed with instructions to 'touch the ground', squat-jumps, 'butt kicks', 'high knees', sidestep, carioca, squat-thrusts & 'change direction'.

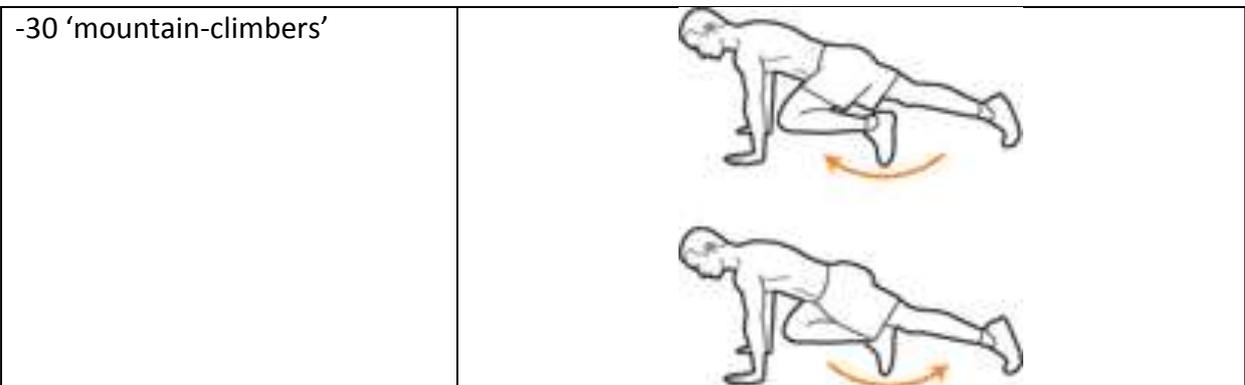
5. **Calisthenics:**



- Run on spot at maximum intensity for 8 seconds.
- 20 press up's (on knuckles).
- 30 star jumps
- 8 second burst of 'maximum-speed' star jumps.

6. **Plyometrics:**

- 10 press-up/claps.



- 10 press-up/claps.



- 30 'bouncing front-kicks'-L&R.
- 30 'bouncing turning-kicks'-L&R.

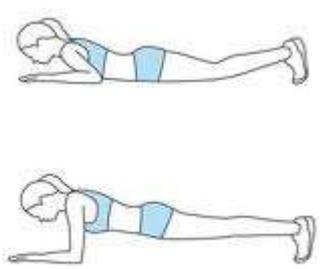
Indicated training:

Interval training (Sunday & Wednesday)

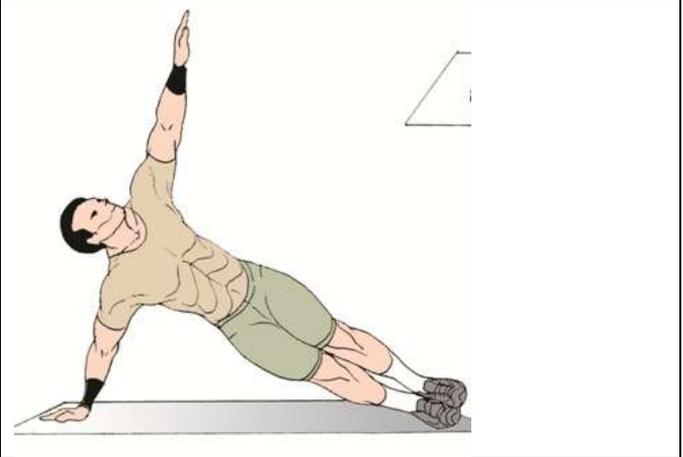
8, building to 12 minutes	Running @ 75% heart rate maximum (HRMax)
2 minutes	Fast-running @ 85% HRMax
2 minutes	Slow recovery jog
8>12 minutes	Running @ 75% HRMax
2 minutes	Fast-running @ 85% HRMax
2 minutes	Slow recovery jog

Proprioception, core-stability & balance (Sunday & Wednesday)

- SLOW KICKS: The athlete should, very slowly (10 seconds/kick), execute 10 front kicks, 10 sidekicks, 10 back piercing kicks with minimal 'wobble'.
- THE PLANK ROUTINE:

<p>Engage your deep abdominals/glutes raising your stomach/pelvis off the ground (on elbows) so your body forms a straight 'plank'. Hold for 30 seconds.</p>	
<p>Raise the left & right leg, holding each for 20 seconds.</p>	

Roll onto your left hand, extend the arm, and open out into side-plank. Hold for 30 seconds; right and left side.

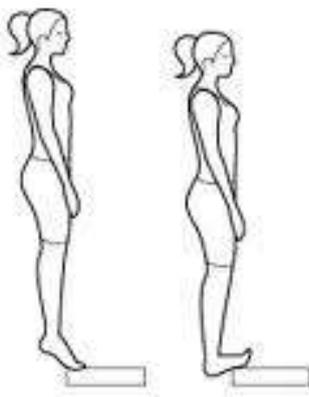


Speed & reaction training (Tuesday & Saturday)

- X-box Kinect games UFC Trainer 'hit the mitts' and Kinect Adventures 'Rallyball' are great for speed, reaction time and hand-eye co-ordination. If you do not have a Kinect you can ask a friend to provide quick, random strike-pad positions for you to kick/punch.
- FLOOR LADDER DRILLS: Specific hop, jump, turns and skips in and out of a floor ladder (or cones).

Power-combination, short term anaerobic & pre-conditioning (Tuesday & Saturday)

- 2 sets of 30 bicycle exercises.
- 2 sets of 15 eccentric calf raises on stairs (4-second lowering time).



- 2 sets of 25 press up's.
- 3 sets of 12 leg-presses.
- 3 sets of 12 knee-extensions.
- 3 sets of 12 reverse dumbbell fly's*.
- 3 sets of 12 dumbbell bicep curls*.
- 3 sets of 12 dumbbell shoulder presses*.
- 2 sets of 20 burpees.

- 40 'bouncing front kicks'. Right and left leg.
- 1 set of 10 press up-claps.
- The athlete should then perform 10 minutes of assorted kicks, punches and strikes to a heavy punch bag to include 'bursts' of attack combinations.

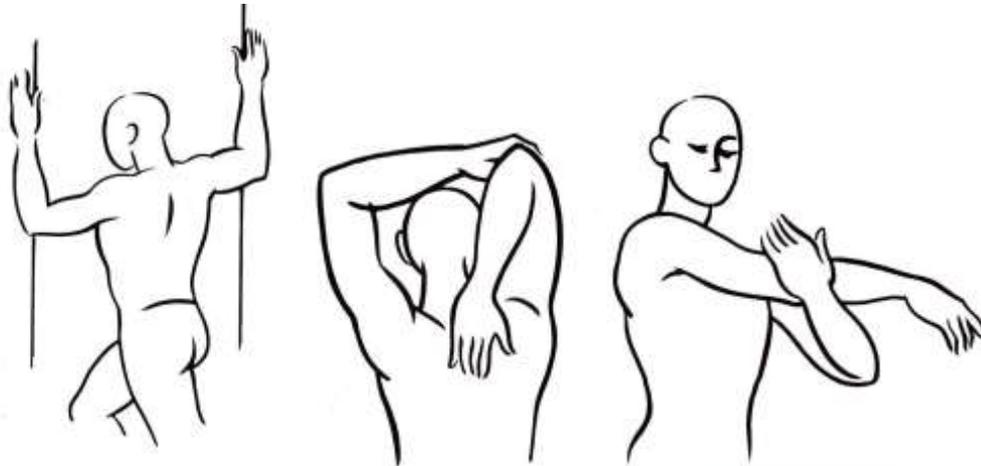
*60% 1 repetitive maximum (1RM) weight used.

Leg & Hip Stretching (daily)

- The athlete should do all the post-sport stretches for the legs, hips and pelvis on a daily basis (for increased flexibility). All other stretches should be done 2 x weeks.

Warm-down: Slowly repeat the mobilisations and dynamic stretching from the 'warm up'.

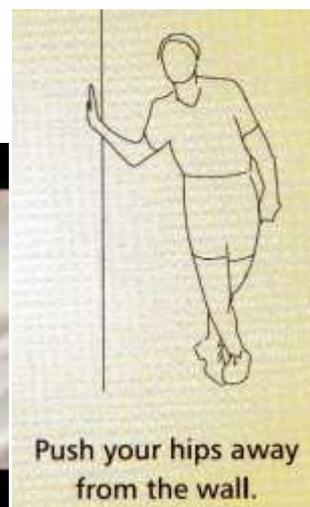
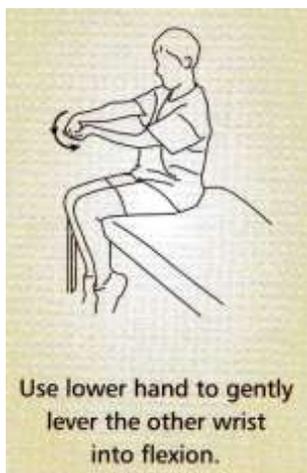
Post-taekwondo stretching:

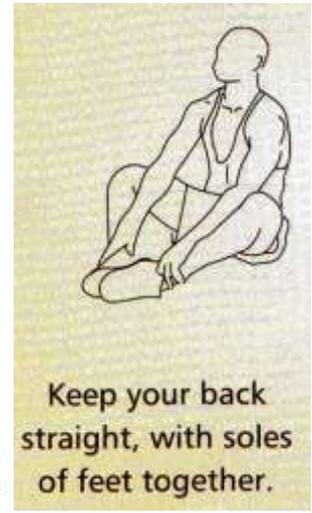
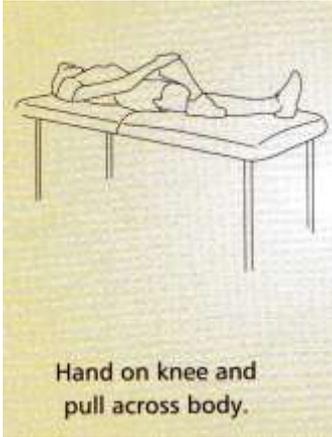


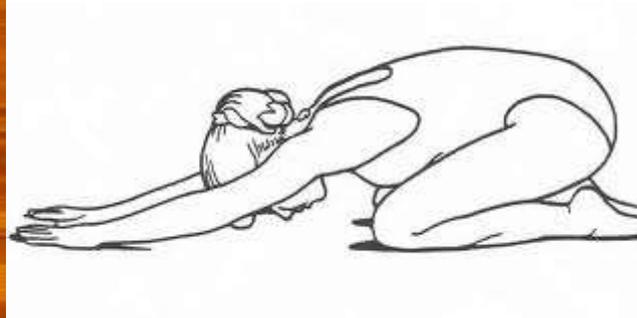
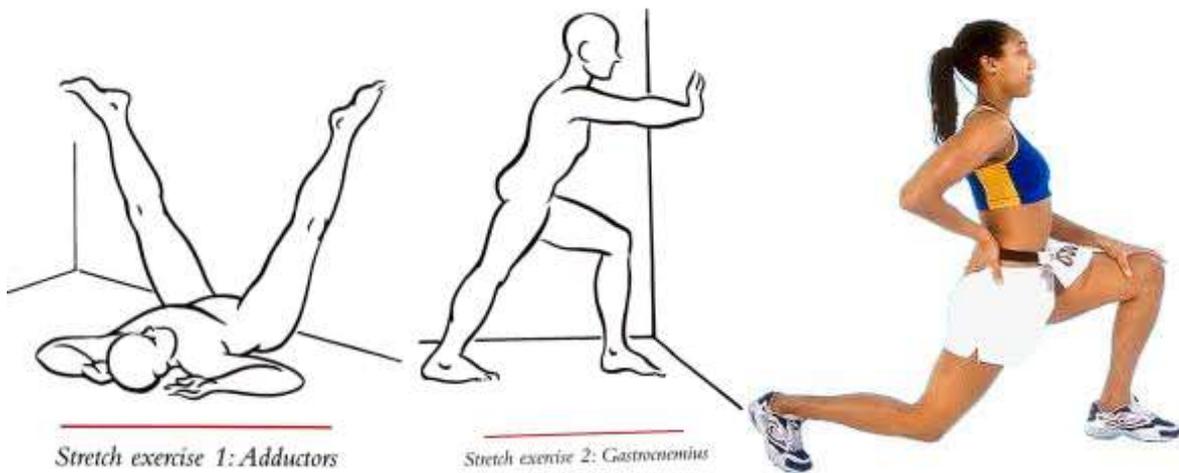
Stretch exercise 2: Pectoralis major

Stretch exercise 2: Teres major

Stretch exercise 2: Posterior deltoid







Golf

Indicated muscles/joints:

- Finger/wrist flexors, triceps, posterior deltoid, infraspinatus, teres minor, rhomboids, latissimus dorsi, obliques, paraspinals, glutes.
- Wrist, shoulder, back, elbow.

Desired training outcomes:

Improved balance, co-ordination, suppleness, proprioception, and core, back & upper body strength.

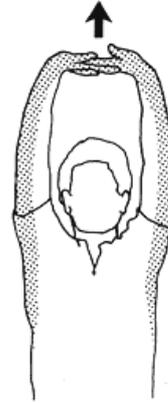
Common injuries/referral/considerations:

- Golfers elbow
- Rotator cuff injury
- Back/oblique strain
- Stiff legs (DOMS)

Warm up:

1. **Stretches:** Short, 10 second stretches of the forearms, triceps, lower back, rotator cuffs, rhomboids and:

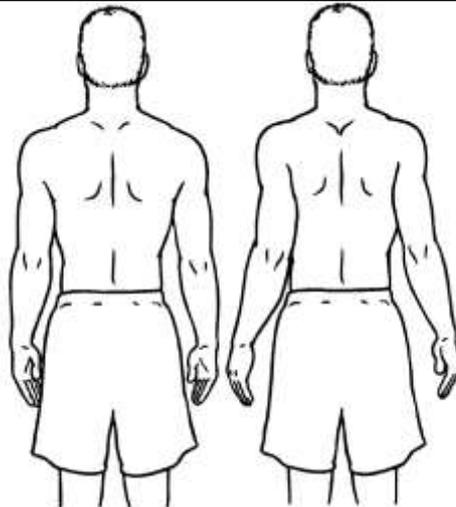
Standing chest/abdominal

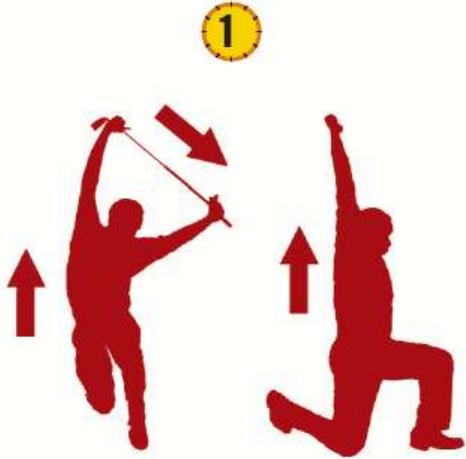


2. **Movement exercises:**

Do the following movement exercises, starting slowly (10 seconds/exercise), gradually increasing the speed until they are performed at a moderate pace:

Scapular retraction/chest opener



Lunge & stretch exercise	
Elbow to opposite knee exercise	
Wide-hand golf swing	

Indicated training (Tuesday & Thursday):

Proprioception, co-ordination & balance

- TWISTING 1-LEG STANDS: The athlete should stand on one leg with a golf club held out in front of them, between 2 hands. Slowly rotate the torso from side to side for 1 minute attempting to minimise 'wobble' and keep upright. Change legs and repeat.

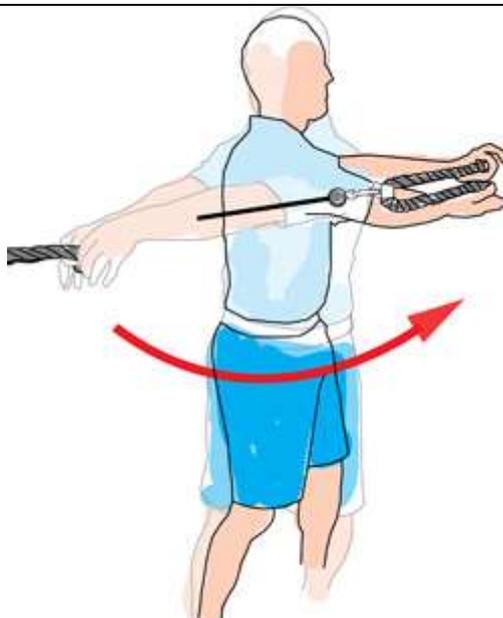
- **BOUNCING BALL OFF WALL:** Bounce a tennis ball off a wall from the left to right hand for 2 minutes. To increase the difficulty, do this exercise standing on 1 leg.

Core stability, strengthening and pre-conditioning

BALL ROTATION: Lie on a Swiss ball with hands clasped in front of your chest, knees bent and pelvis raised. Engage your deep abdominals then, slowly, move your shoulders left while turning right. Move back into the centre, and then repeat moving right. Try to use your abdominals/glutes to limit unnecessary movement. Hold a 1-3 kg weight to increase exercise difficulty. Do 2 sets of 20-30 rotations.



CABLE TWISTS: Using a gym cable-machine or theraband tied to a bannister. Grasp the cable/band between in both hands, hold arms horizontal to the floor and twist against resistance. Find the suitable weight/resistance to do 3 sets of 10 @ 65% 1RM.



Warm down: Slowly repeat the movement exercises from the 'warm-up'.

Post-golf stretching:



Stretch exercise 2: Posterior deltoid



Stretch exercise 2: Teres major

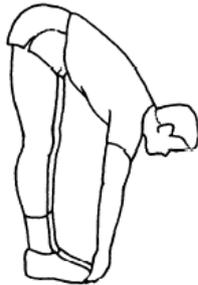


Use lower hand to gently lever the other wrist into flexion.



Stretch exercise: Quadriceps

HAMSTRING STRETCH (STANDING)
This stretches the hamstrings, erector spinae, and gluteal muscles.



Position: Stand with the knees slightly bent.

Action: Bend forward keeping the head up, and reach toward the toes. Straighten the legs, and hold this position for 10 to 15 seconds.



Stretch exercise: Latissimus dorsi



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6

Skiing

Indicated muscles/joints:

- Quads, adductors, abductors, quadratus lumborum, obliques, rotator cuffs, triceps latissimus dorsi.
- Knees, hips, lumbar spine, shoulder.

Desired training outcomes:

Improved leg suppleness, balance, strength-endurance, core stability, aerobic fitness and strength of legs, glutes & lower back.

Common injuries/referral/considerations:

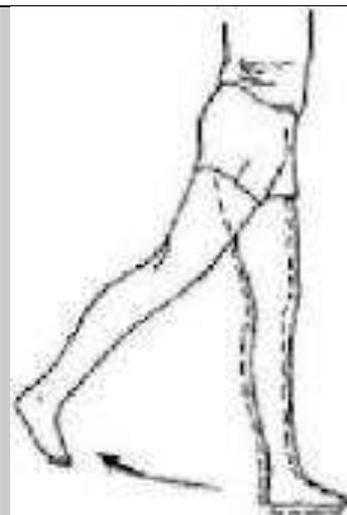
- Knee injuries (ACL, MCL, torn cartilage)
- Quad, glute & rotator cuff strain
- Sub patella tendonitis
- Whiplash

Warm up 1 (pre-ski's/boots on):

1. Short, 10 second stretches of the short/long adductors, abductors, gastrocnemius, quadriceps, psoas & glutes.
2. *Movement exercises:*
 - a) 25 x walking press-up's.
 - b) 30 seconds of hip-circles.

c) 1 minute of leg swings, hip extensions, sideways- lunges & hip flexion's.

Leg Swings



	
d) 1 minute of pretend mogul dips.	

Warm up 2 (boots & ski's on):

1. Short, 10 seconds stretches of the hamstrings (knees straight), lumbar spine (knees bent), rotator cuffs and:

Lats/obliques

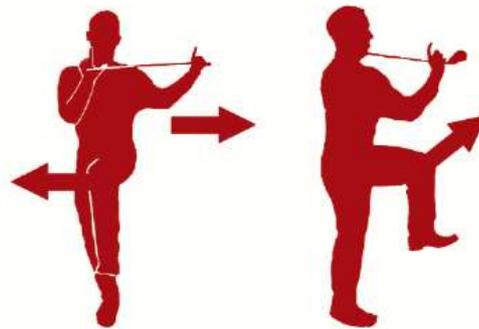


2. 30 seconds of marching.



3. 30 seconds of elbow-opposite knee exercise.

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4. 30 seconds of torso-twists holding ski poles (see diagram).



Indicated training*:

*Do exercises 3x/week for 3 months before a skiing trip.

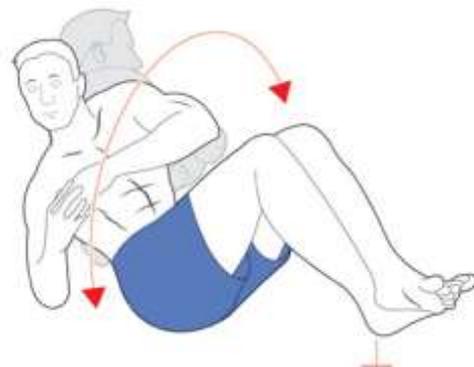
Isometric muscle conditioning, core stability and knee/quadriceps pre-conditioning:

WOBBLE BOARD WALL-BOUNCE: Stand on a wobble board and bounce a football off a wall while balancing/stabilising.

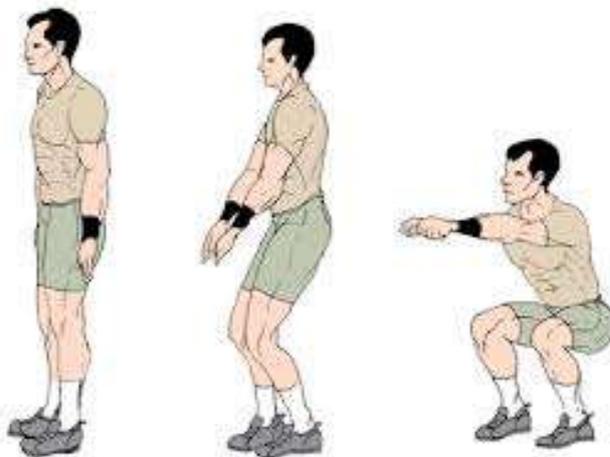
SIDE PLANK: Lie on your left side on your elbow, tense your deep abdominals/glutes and raise your pelvis off the ground until your body is in a straight 'plank'. Hold this position for 30-60 seconds. Repeat on the right side.



RUSSIAN TWISTS: Lay on your back with your knees up, lift your torso. Twist to move your left elbow to your right knee, repeat on the other side. Do 2 sets of 30-50.



ECCENTRIC SQUATS: Slowly, over 4 seconds, lower yourself into the squat position (keeping your weight back). Return and repeat. 2 x 15 squats.



WALL SLIDE: Start with your back against the wall and your feet 40-50cm from the wall. Slowly slide down the wall until your knees/hips are at right angles. Hold this until fatigued (30 seconds building to 1 minute). Repeat 6-10 times.

Wall Slide

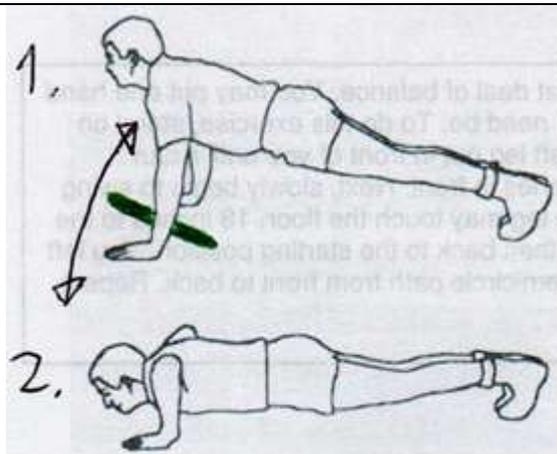


Aerobic training

- Go for cycle 3x a week. The majority of cycling should be at 75% HRMax (fat-max zone). Try and gradually build from 20-40 minutes over 3 months.

Short-term anaerobic & strength training:

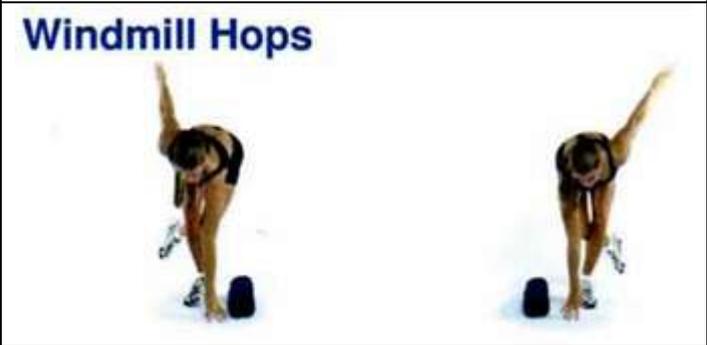
WALKING PRESS UPS: Roll up a towel and place it as shown. Get into the press up position as shown in picture 1. Walk your left hand over the towel, followed by your right. Then walk both hands back to the right of the towel. Start doing 15 and build to 25. Do 3 sets.



PRETEND MOGAL DIPS: Place a rolled towel on the ground to your left. Jump sideways over the towel to the right hand side. Jump back again. Start doing 30 and build to 60. Do 4-6 sets.



WINDMILL HOPS: Place a rolled towel on the ground. Start standing on your right foot. Jump over the towel onto your left foot and reach your right hand towards the left knee. Repeat the other side. Start doing 30 and build to 60. Do 4-6 sets. Build to touching the ground as your knees/back strengthen.



Warm down: Gently and slowly repeat the dynamic stretches, hip circles and elbow-opposite knee exercise (20).

Post-skiing stretching:

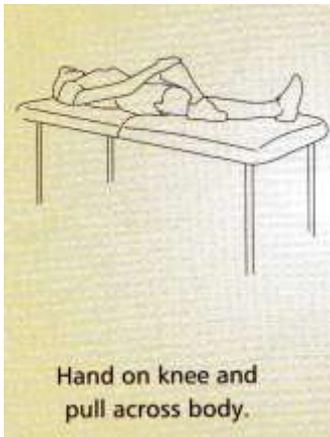


Stretch exercise 2: Posterior deltoid

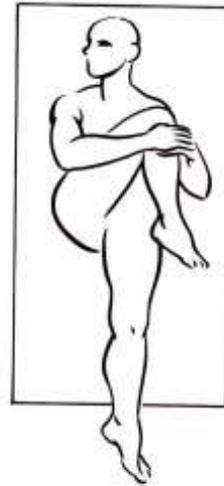


Stretch exercise 2: Teres major





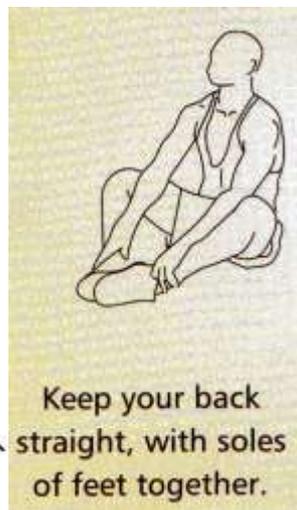
Stretch exercise: Quadriceps



Stretch exercise: Gluteus maximus (knee to opposite shoulder)



Stretch exercise 2: Gastrocnemius



Extra training information:

- Prolonged stretching, plyometrics and strength training should be avoided for 3 days prior to high-intensity training, taekwondo competitions and skiing holidays. Sharpening drills should be substituted.
- Remember to warm-up prior to training, as well as for your chosen sport.

- *Sports Psychology Strategies:* These can greatly benefit sports performance. Visualisation and centring will benefit golf performance, energising and post-event attribution for taekwondo.
- High GI carbohydrates before taekwondo and low GI before skiing/golf will improve energy supply. Post sport carbohydrate & protein rich meals are beneficial.