

Referee Performance Conditioning Framework

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ATHLETE Activity Manual

“Ten years ago, the Referee Pursuit of Excellence program came in and we changed our mindset at the time.”

Mr Ted Kearney 2018

Speed Agility Flexibility Endurance Recovery - Training

2019/2020

Fundamentals to Football Referee Performance

Special needs of the Referees¹

The referee is frequently the forgotten participant in the match. Much is written about training for the player, but the referee must also keep up with the game and needs similar guidance to minimise fatigue. There have been several studies of the volume and intensity of running by the referee during a match. Recent data show that the referee runs about as far as the players, but in a different pattern of movement. Without an appropriate training program and good preparation, the referee may become fatigued and may not be able to exert proper control over a match. We also know the following;

The demands on the referee's assistant are less, but each assistant needs to be prepared to carry the whistle.

There is little information in the referee's training and education regarding adequate fitness preparation for performance.

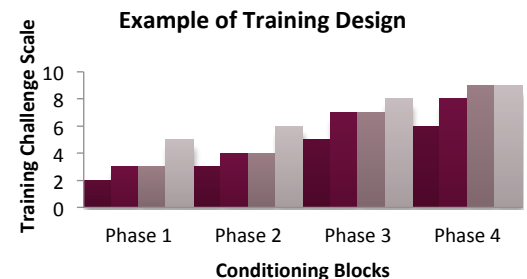
The level of play that the referee is responsible for dictates the volume and intensity of training needed.

With this knowledge the art and science of introducing a Human performance-conditioning framework must take in a number of training principles specific to meet the above demands appropriately. While confronted with a large number of demands this manual will introduce a series of relatively easy training and conditioning activities and exercises that will form the basis of a new training program. Training theories designed replicate training applications that have progressed over a number of years. Combined with science the art of implementation will effectively and efficiently increase the performance of a Referee and Assistance Referee to elite status.

Basics of a periodical approach

Progression refers to the selection of activities and exercises, loads or intensity, order of introduction and the conditioning of the athlete at the time of introduction and the demands of the activity.

The fundamental principles of periodization is knowing that an athlete's body will adapt to what the demands of the training and conditioning is designed for. The introduction of phases is critical in ensuring that injury prevention strategies and also upheld and that performance fatigue and over training is avoided.



S.A.F.E.R Training

- Speed, Agility, Flexibility, Endurance and Recovery are the known core elements and physical attributes for a match official. Using researched-based evidence this framework will specifically target these variables to allow for the adaptations required for better preparing physically and psychologically at the highest level.
- Disclaimer: This manual is only a guide for performance standards. With the knowledge every athlete is an individual, activities and/or exercise prescription must be implemented through progression based on individual ability and potential.



¹ Nutrition for Football – A practical guide to eating and drinking for health and performance – F-MARC, FIFA Production

WARM UP – Training

Components of the Warm Up

There are 3 Phases – General / Range of Movement / Specific

General Phase

2/3 min Slow Lap

Range of Movement 1

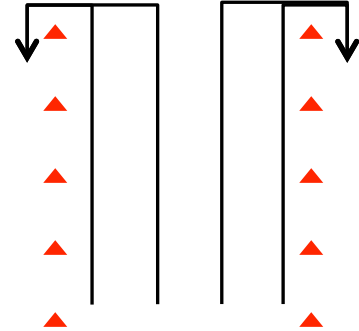
Leg Swing x 10, Hip Swing x 10, Heal raises x 10, Supine Lying back rotation x 10, Scorpion touch x 10, Shoulder rotations x 1min

Range of Movement 2

Quadriceps raise, Hamstring swoops, Groin stride, Walking Lunge with rotation, Side Squat, Heal lifts, Knee raises, Side stepping, Karaoke, Insteps, Open gate, Close gate, Low Skip

Specific Phase

Fast right leg, Fast left leg, Fast combo, High skip, Quick side-stepping left, Quick stepping right, Backwards running, Falling start, Fast feet, 5 speeds (50%, 60%, 70%, 80%, 90%)





WARM UP – Game Day

Kick off – 30min

General Phase

Gentle Jog, Walking Knee raise in chest, Walking Hamstring swoops, Walking Quadriceps raise, Walking Groin stride, Shake it loose, Walking Lunge with rotation, Walking side Squats, Gentle jog

Kick off – 25min

Range of Movement 1

Leg Swing x 10, Hip Swing x 10, Heal raises x 10, Supine Lying back rotation x 10, Scorpion touch x 10, Shoulder rotations x 1min

Range of Movement 2

Heal lifts, Knee raises, Side stepping, Karaoke, Insteps, Open gate, Close gate, Low Skip, Fast right leg, Fast left leg, Fast combo, High skip

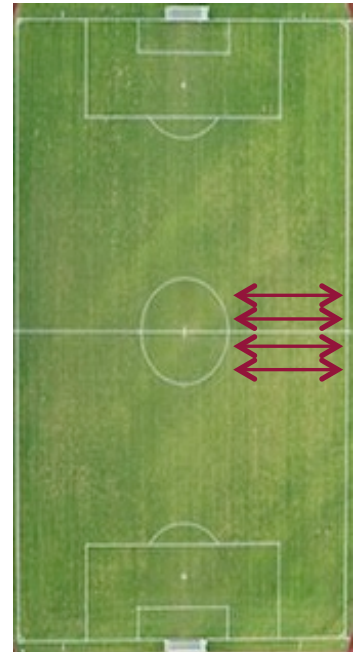
Kick off – 20min

Specific Phase

Quick side-stepping left and run, Quick side-stepping right and run, Backwards running, Backwards running turn and run forward, Falling start, 45 degree angled running, Curved running, 5 speeds (50%, 60%, 70%, 80%, 90%)

Kick off – 15min

Return to change rooms for final preparations. If you are time poor start your warm-up earlier as it should take no longer than 15 min but last for up to 45 min when done correctly



COOL DOWN – Training

Components of the Cool Down

There are 3 Phases – Active Recovery / Range of Movement Stretching

Active Recovery Phase

1/2 min Continuous Walking, Insteps, Open Gate, Close Gate, Hamstring Swoop, Quadriceps Raise, Groin Stride

Range of Movement Stretching

Target lower limbs and core as per stretching guide under flexibility. Hold stretch in cool down category for 10-15 sec before swapping sides or positions

Injury Monitoring

It is mandatory if you sustain and injury during training that you are to notify the instructor immediately in order to prevent further damage. If injury does occur than R.I.C.E protocols are mandatory and within the following 24 h seek profession medical assists. H.A.R.M protocols should also be followed during this period:

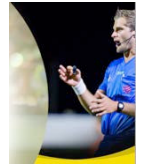


REST ICE COMPRESSION ELEVATION

HEAT ALCOHOL RUNNING MESSAGE

SPEED (MAS)

Maximum Aerobic Speed – Training. This relates to aerobic performance and forms part of the process for developing aerobic capacity and is expressed as metres per second (m/sec). To improve the training session should accumulate as much time at or as close to VO₂max as possible.

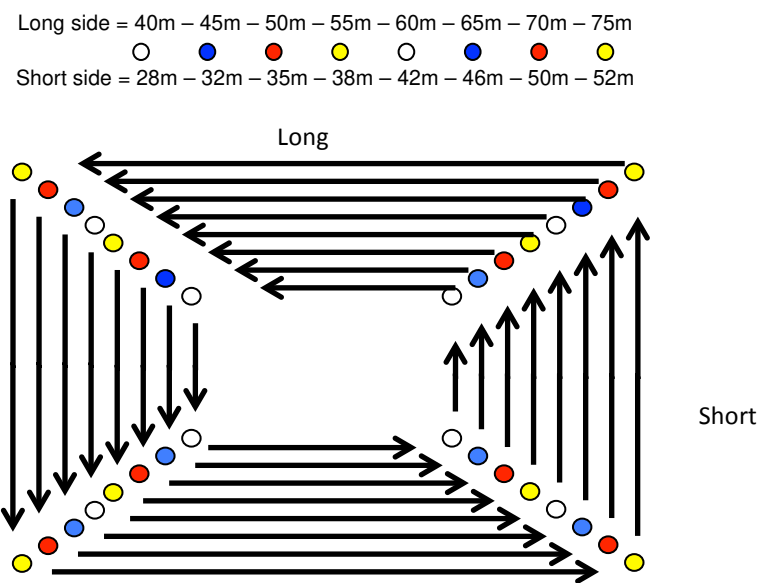


MAS Running – Individual distances are calculated after the athlete performs 1500 m time trail. The time to complete the test is then converted to performance in m/sec. The m/sec average is then used to calculate MAS% target distances over time for **individual training incentives**². Group incentives target speeds are set at the following: Km/h divided 3.6 = m/sec

G1 (16.5 km/h)	G2 (17 km/h)	G3 (18km/h)
4.58333 m/sec	4.72222 m/sec	5 m/sec

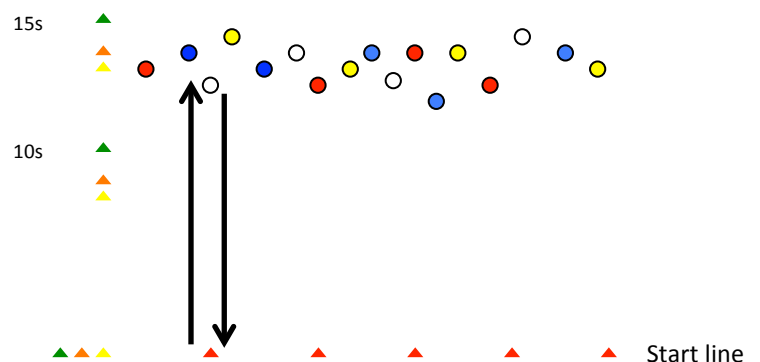
MAS Grid – Run/Recovery Run set up example = 100% / 70% MAS at 15s/15s

<p>DISTANCE DATA</p> <p>10s/10s at 110% MAS</p> <p>G1 (16.5 km/h) = 50.5m</p> <p>G2 (17 km/h) = 52m</p> <p>G3 (18 km/h) = 55m</p>	<p>DISTANCE DATA</p> <p>10s/10s at 120% MAS</p> <p>G1 (16.5 km/h) = 55m</p> <p>G2 (17 km/h) = 57m</p> <p>G3 (18 km/h) = 60m</p>
<p>DISTANCE DATA</p> <p>15s/15s at 110% MAS</p> <p>G1 (16.5 km/h) = 76m</p> <p>G2 (17 km/h) = 78m</p> <p>G3 (18 km/h) = 83m</p>	<p>DISTANCE DATA</p> <p>15s/15s at 115% MAS</p> <p>G1 (16.5 km/h) = 79m</p> <p>G2 (17 km/h) = 82m</p> <p>G3 (18 km/h) = 86m</p>
<p>DISTANCE DATA</p> <p>15s/15s at 120% MAS</p> <p>G1 (16.5 km/h) = 82.5m</p> <p>G2 (17 km/h) = 85m</p> <p>G3 (18 km/h) = 90m</p>	



MAS Run/Rest set up example = 70, 80, 90, 100, 105, 110, 115, 120, 140% MAS at 10s/10s, 15s/15s, 20s/20s, 30s/30s

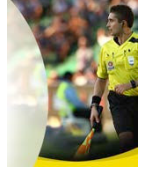
<p>DISTANCE DATA</p> <p>30s/30s at 90% MAS</p> <p>G1 (16.5 km/h) = 124m</p> <p>G2 (17 km/h) = 128m</p> <p>G3 (18 km/h) = 135m</p>	<p>DISTANCE DATA</p> <p>30s/30s at 100% MAS</p> <p>G1 (16.5 km/h) = 137m</p> <p>G2 (17 km/h) = 142m</p> <p>G3 (18 km/h) = 150m</p>
<p>DISTANCE DATA</p> <p>30s/30s at 105% MAS</p> <p>G1 (16.5 km/h) = 142m</p> <p>G2 (17 km/h) = 149m</p> <p>G3 (18 km/h) = 157m</p>	<p>DISTANCE DATA</p> <p>30s/30s at 120% MAS</p> <p>G1 (16.5 km/h) = 165 m</p> <p>G2 (17 km/h) = 171 m</p> <p>G3 (18 km/h) = 180 m</p>



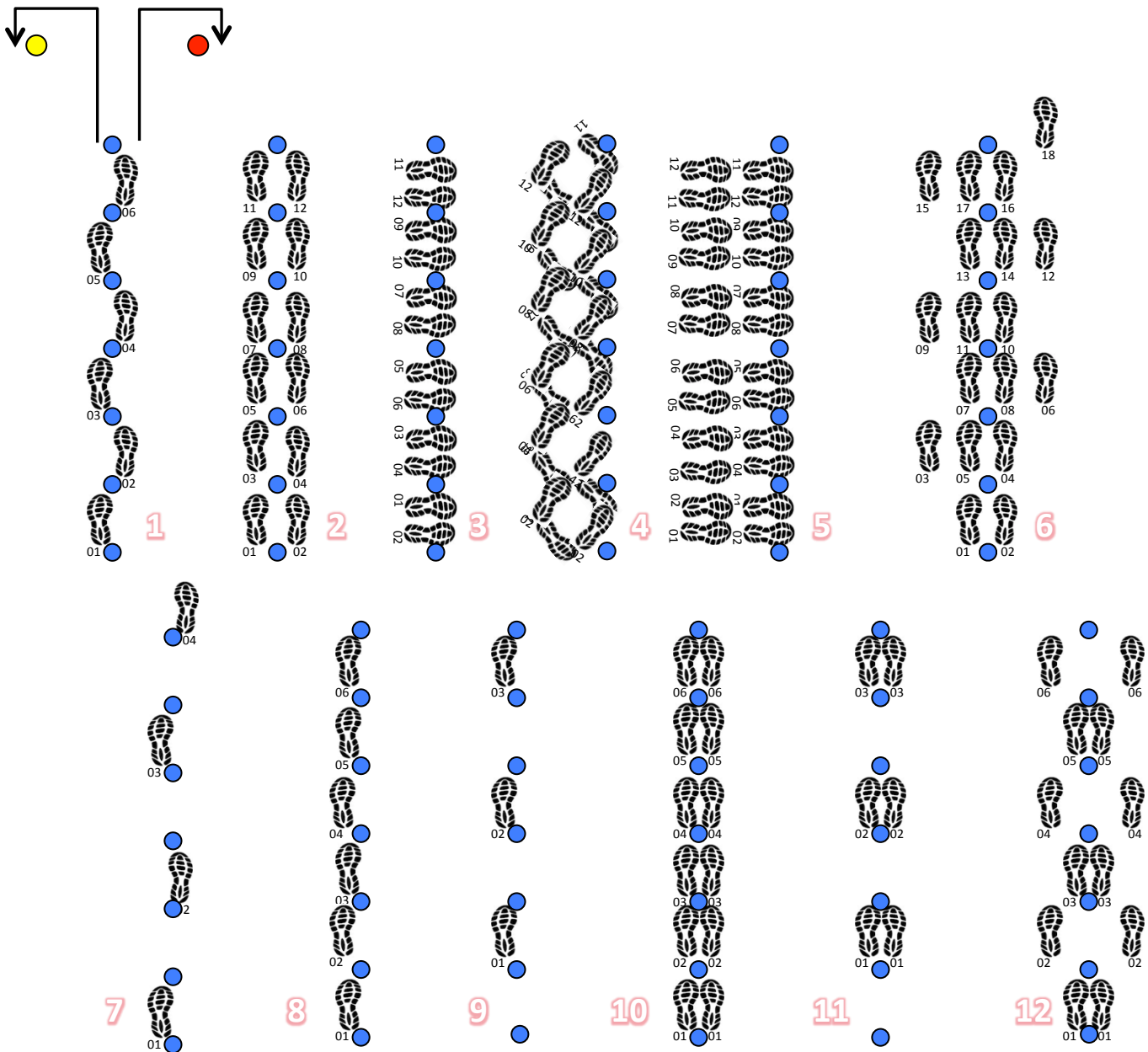
² Individual Training Incentives are calculated independently and the progressive training gap is introduced through appropriate phasing

AGILITY

The ability to provide energy via the anaerobic pathways in a short period of time is an important component for a referee. Repeated speed agility and the capacity to accelerate quickly is the expectant feature in performance and the capability to transfer movement from one direction to any given direction over short periods of distance is a factual talent of influential match officials.

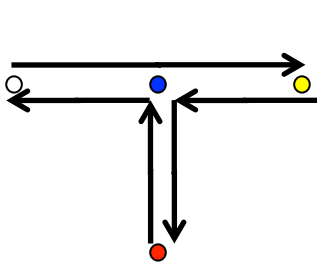


Ladder³ – Exercises 2x Sets left foot leading to the yellow followed by 2 x Sets right foot leading to the red. Test cognitive and reaction ability at final repetitions

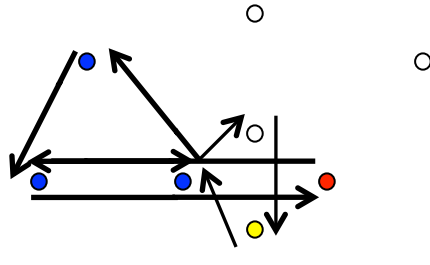


³ After the warm- up but prior to ladder drills introduce 1-2 min cognitive game for enjoyment and stimulus for preparation.

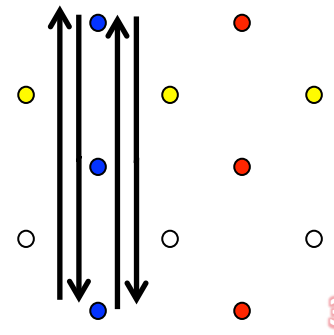
Repeatable Sprint Agility Grids⁴ – Distances can vary from 5m-10m-15m-20m. HIIT Sets by Reps or Time. Running-Sideways-Backwards-Turning-Cognitive-Peripheral-R and AR Interaction



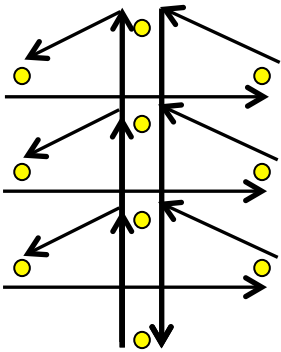
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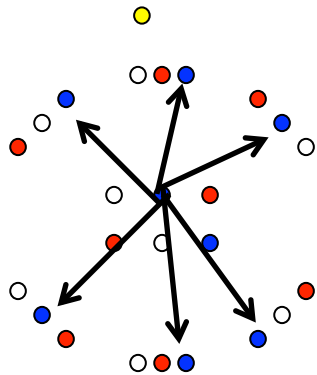
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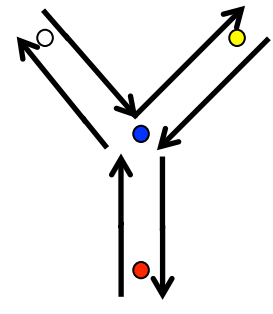
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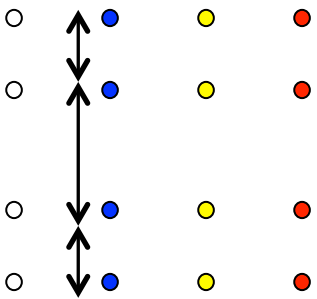
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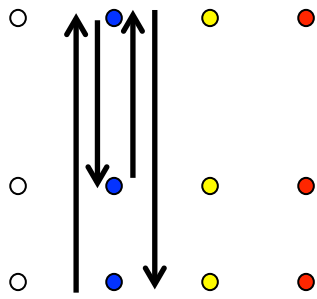
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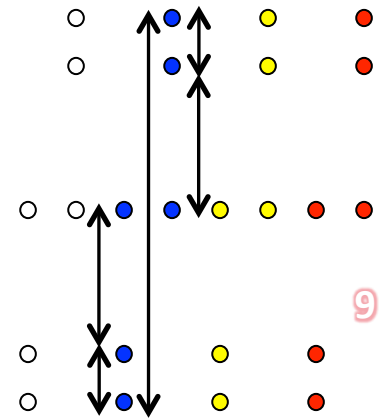
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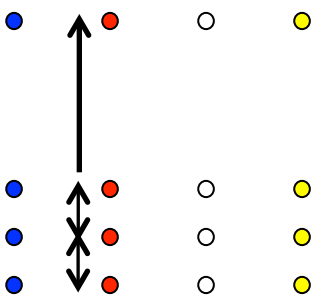
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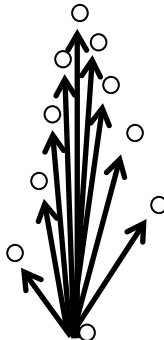
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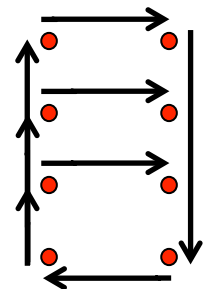
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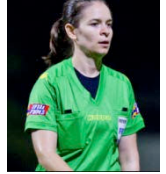


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⁴ Imperative that you replicate movement patterns that also test the cognitive ability of the athlete to make decisions whilst fatigue

FLEXIBILITY

The capacity to move a part, or series of parts, of the body without strain on the articulations or muscle attachments is critical. A referee's ability to perform skills with minimal stress on the muscle tendon will improve performance in training and activity.



Static Stretching Exercises⁵ 10-30 secs hold x 2 each side or muscle group



⁵ torson.com.au

Band Flexibility - Exercises⁶ reps and sets as per instruction guide

Set Up for Ankle Series

Purpose	Along with the hip, the ankle probably plays the greatest role in maintaining good quality movement without developing compensation in surrounding joints.
Set-up	<ul style="list-style-type: none"> The band should be positioned, wrapped and locked on around the 'ball' of the foot not the 'arch'. This will create a better lever arm, which will allow for greater force production and passive lengthening Placing the band around the body is optional
Cues	<ol style="list-style-type: none"> All ankle stretches are named based on where the band is passively moving the ankle This area includes reps and set ranges
Compensation	<ol style="list-style-type: none"> Areas of concentration to avoid doing the exercises incorrectly and reducing the benefits

Inversion

Purpose	Mobilise Subtalar Joint and lengthen out lateral compartment soft tissues while strengthening the lateral compartment muscles
Set-up	<ul style="list-style-type: none"> Follow all previous set up points from dot point 1-4 Pull back on the inside band passively pulling forefoot medially causing the bottom of the foot to face medially
Cues	<ol style="list-style-type: none"> Press firmly into the band with the lateral aspect of the forefoot (little toe side) while turning the foot out and up Keep knee calm and patella facing upward Emphasize strict ankle movement laterally and medially Go through the full range of motion 10 times and then increase tension on the inside band and repeat 10 more reps
Compensation	<ol style="list-style-type: none"> Not going through full range of motion Not having heel off the ground Not taking advantage of band tension and allowing ankle to fully invert medially Not controlling the knee

Dorsiflexion

Purpose	Mobilise Talocrural Joint (True Ankle Joint) and lengthen out Gastroc-soleus complex in the sagittal plane
Set-up	<ul style="list-style-type: none"> Sitting down place band around your waist Place band around the ball of the forefoot as discussed Wrap band around one additional time to secure on foot Place opposite foot under the calf of the stretching leg to clear calcaneus Pull back on both sides of the band until ankle is fully dorsiflexed
Cues	<ol style="list-style-type: none"> Perform rhythmical active plantar flexion through the full range of motion 10 times and then increase tension and before repeating 10 additional reps. Allow band to fully dorsiflex the ankle on each rep
Compensation	<ol style="list-style-type: none"> Not going through full range of motion Not having stretching heel off the ground Not taking advantage of band tension and allowing ankle to full dorsiflex passively Allowing the knee to compensate by rotating

Achilles

Purpose	Mobilise Talocrural Joint and lengthen out posterior soft tissues at the distal ankle including primarily the Soleus and Achilles tendon structures
Set-up	<ul style="list-style-type: none"> Follow all previous set up points from dot point 1-4 Pull back on both sides of the band equally until ankle is fully dorsiflexed
Cues	<ol style="list-style-type: none"> Perform rhythmical plantar flexion presses through the full range of motion 10 times and then increase tension before repeating 10 additional reps. Allow band to fully dorsiflex the ankle on return
Compensation	<ol style="list-style-type: none"> Not going through full range of motion Not having heel off the ground Not taking advantage of band tension and allowing ankle to fully dorsiflex Not controlling the knee

Eversion

Purpose	Mobilise Subtalar Joint and lengthen out medial ankle compartment soft tissues while strengthening medial compartment muscles
Set-up	<ul style="list-style-type: none"> Sitting down place band around your waist Place band around the ball of the forefoot as discussed Wrap band around the foot one additional time to secure on foot Place opposite foot under the calf of the stretching leg Pull back on the 'outside' band – rotating the forefoot laterally
Cues	<ol style="list-style-type: none"> Press firmly with the outside of the forefoot at the little toe trying to roll the down and in before letting the band passively pull the foot up and out Keep knee stable with patella facing upward Emphasize strict ankle movement medially and laterally Go through the full range of motion 10 times and increase tension on the outer band and repeat 10 more reps
Compensation	<ol style="list-style-type: none"> Not going through full range of motion Not having heel off the ground Not taking advantage of band tension and allowing ankle to fully evert after active inversion contraction Not controlling the knee

Set Up for Hip Series

Purpose	The hip is often a great place for the body to hide deficits or restrictions. When doing the hip stretching series it helps to visualize the face of a clock. The head is 12:00 with movements to the right side being occurring between 8:00 to 12:00 and movements to the left side being 4:00 and 12:00. There will be no stretching motion that goes between 8:00 to 4:00. The goal is to work all ranges of the upper half of the clock with all of the anterior stretching exercises.
Set-up	<p>Why Lock Out</p> <ul style="list-style-type: none"> The upper extremity 'locked out' position is designed to decrease opposite side rotation towards the stretching side. By locking out the opposite arm (example being the right side) it neuromuscularly recruits the trunk and scapular muscles alignment. Keep in mind that often the greatest compensation occurs away from the side of actual side being stretched.
Cues	<p>Ball to Arch switch</p> <ol style="list-style-type: none"> Wrap band around 'arch' of foot Wrap band around the 'arch' one additional time to lock band onto the foot Place opposite foot firmly onto the wall with knee straight Reach up onto the band approx. 6 inches down from the foot Pull elbows down to the ground at shoulder height letting knee bend to your chest Let head relax back is possible <p>Note: This will be hard and somewhat exhausting. Take your time and focus on pressing maximally and going into ranges of motion that are restricted. Go where you can't go not where you can</p>
Compensation	<p>Keeping the opposite foot against the wall</p> <ol style="list-style-type: none"> In function while one foot is flying through the air the opposite foot is firmly planted on the ground. This is why it becomes important to keep the non-stretching foot neutral and against a solid surface like the wall Along with simulating weight-bearing, this also creates greater same side stretching by eliminating compensation through the low back or opposite side hip All hip stretches are name based on the direction the band is passively moving the lower extremity



Band Flexibility - Exercises⁷ reps and sets as per instruction guide

Anterior-Lateral Hip

Purpose	Lengthening out the medial hamstring, adductors, and medial hip capsule on band leg and hip flexor, adductors, medial hip capsule on contralateral side. Lock out position also stretches ribcage and anterior chest on same side
Set-up	Left leg <ul style="list-style-type: none"> Foot attachment as previously shown Grasp band with left hand about 6 inches from foot with thumb underneath pull elbow to the floor letting knee bend Grasp end of band with right hand placing fingers through band with palm facing out and head resting on hand or band
Cues	<ol style="list-style-type: none"> Hold elbow relatively close to the floor at shoulder height Rhythmically press the heel laterally and upward trying to straightening the knee fully Make sure you maximise full range of motion on each rep Perform 10-15 rhythmical reps; trying to increase range on each rep. (you may experience burning behind the medial aspect of the knee and this is neurotension tightness which will dissipate after approx. 2 weeks of consistent stretching) Keep amplitude of knee movement short. Only release back until tension is off the muscle than repeat Once first set is complete reset grasp 2 inches off the foot – pull knee closer to axillary region and repeat 10 to 15 more reps
Compensation	<ol style="list-style-type: none"> Not pressing into full range of motion Not pressing with heel Not keeping band tight and elbows near floor Making sure you change up direction of pressing and stretching based on clock Keeping contralateral foot vertical on the wall and not bending contralateral knee Keeping shoulders and hips in line and not side bending at the waist or through the thoracic spine

Anterior Hip

Purpose	Lengthening out the mid hamstring, gluteal, gastroc-soleus, and posterior hip capsule on band leg and the hip flexor and anterior hip capsule on contralateral side
Set-up	<ul style="list-style-type: none"> Initial set up as outlined for hip series
Cues	<ol style="list-style-type: none"> Hold elbows relatively close to the floor at all times Rhythmically press the heel towards the ceiling straightening knee as much as possible Make sure you maximise full range of motion on each rep Perform 10-15 rhythmical reps; trying to increase range on each rep. (You should only experience pain of stretch during contraction and no muscle tension when you release contraction) Keep amplitude of knee movement small. Only release leg back until tension is off the soft tissues than repeat Once first set is complete reset grasp 2 inches off the foot and repeat 10 to 15 more reps
Compensation	<ol style="list-style-type: none"> Not pressing into full range of motion Not pressing with heel Not keeping band tight and elbows near floor Knee bowing in due to tight lateral structures Not keeping opposite foot on wall and knee relatively flat on the floor

Anterior-Medial Hip

Purpose	Lengthening out the lateral hamstring, abductors, lateral and posterior hip capsule on band leg while good stabilization on contralateral side. Lock out position also stretches ribcage and anterior chest on same side
Set-up	Left leg <ul style="list-style-type: none"> Using standard foot attachment as outlined Grasp band with right hand using a thumb under grip about 6 inches off your foot Grasp end of the band with right hand, pulling fingers through band with palm facing out Rest head onto hand or band
Cues	<ol style="list-style-type: none"> Hold elbow relatively close to the floor at shoulder height Rhythmically press the heel across your body and upward, trying to completely straightening the knee Make sure you maximise full range of motion on each rep Perform 10-15 rhythmical reps; trying to increase range on each rep. (you may experience burning behind the lateral aspect of the knee and calf. This is neurotension tightness which will dissipate after approx. 2 weeks of consistent stretching) Keep amplitude of knee movement short. Only release back until tension is off the muscle than repeat Once first set is complete reset grasp 4 inches off the foot – pull knee closer to your chest region and repeat 10 to 15 more reps
Compensation	<ol style="list-style-type: none"> Not pressing into full range of motion Not pressing with heel Not keeping band tight and elbows near floor Making sure you change up direction of pressing and stretching Keeping contralateral foot vertical on the wall and not bending contralateral knee Keeping shoulders and hips in line and not bending at the waist or through the thoracic spine

Anterior-Medial Hip Rotation

Purpose	Lengthening out the lateral hip rotators, posterior hip capsule on band leg while maintaining good stabilization on contralateral side. Lock out position also stretches ribcage and anterior chest on same side
Set-up	<ul style="list-style-type: none"> Initial set up as outlined for hip series
Cues	<ol style="list-style-type: none"> Pull the foot down towards the right shoulder trying to touch the elbow on the floor Hold for a 2-3 count and release before repeating <p>Note: this is the only time the band is used as an elastic 'pulling' strap</p>
Compensation	<ol style="list-style-type: none"> Not pulling into full range of motion with knee bending Keeping contralateral foot vertical on the wall and contralateral knee extended Keeping shoulders and hips in line and not side bending at the waist Making sure you keep foot high at the start and pulling foot toward shoulder not hip


Posterior Hip

Purpose	Lengthening out the anterior hip capsule, hip flexor, quadriceps, and latissimus dorsi without low back compensation
Set-up	<ul style="list-style-type: none"> Grasp the band and while allowing the leg to remain in neutral, press the band overhead and behind the head slightly locking out the elbows Opposite leg should be at least 18-24 inches out in front, touching the wall firmly with the knee and hip flex approx. 75 to 90 degree <p>Note: You must be able to easily see the stabilizing knee and foot in front of you</p>
Cues	<ol style="list-style-type: none"> Keeping the elbows locked out, press the left leg back while maintaining pressure on the right foot against the wall When fully lengthened, allow band leg to return to neutral before repeating When pressing leg backwards, allow knee to straighten to engage hip flexor <p>Note: To increase Quad stretch, reach down on the band and reset grip before locking the arms out again. This will increase knee flexion which will increase quadriceps stretch</p>
Compensation	<ol style="list-style-type: none"> Not keeping stabilizing leg well out in front Not locking arms out overhead and keeping them there during the stretch Not letting knee extend and straighten as the leg is actively pushed back Using to strong of band Allowing knee and thigh to rise up because of tight lateral thigh structures Not keeping contact on wall with stabilizing foot and subsequently hyperextending through lower back




Proprioception Neuromuscular Facilitation (PNF) Stretching Exercises⁸ 10 sec push phase followed by a 10 sec relaxation phase x 3


Lying Glute

	Target Muscle	Gluteus Maximus
	Preparation	Instruct participant to lie on floor or mat. Kneel beside participant. Bend participant's knee and hip and rotate leg crosswise. Position outside of participant's knee on nearest shoulder with participant's lower leg extended under arm. Position near ankle on participant's opposite lower leg
	Application	Extend or place hands on mat to each side of participant. Push participant's leg by leaning toward participant. Repeat with opposite leg.


Seated Glute

	Target Muscle	Gluteus Maximus
	Preparation	Instruct participant to sit on floor or mat, reclining back with support of both arms behind body, and feet on floor and knees bent. Have them cross their lower leg (just above ankle) over thigh of opposite leg. Position chest on participants back and grasp participant's lower knee and upper ankle.
	Application	Push participant's torso toward legs. Hold stretch. Repeat with legs in opposite position


Lying Piriformis

	Target Muscles	Piriformis, Quadratus Femoris Erector Spinae
	Preparation	Instruct participant to lie on floor or mat with legs bent. Stand near their feet facing them. Assist them crossing their thighs, placing outside of one knee close to top of their other knee. Bend over participant's hips, position their foot of closest bent leg on your chest or shoulder while grasping their lower leg, in addition to knee of opposite leg with other hand.
	Application	Push your bodyweight down on foot while pushing down on side of participant's knee. Hold stretch. Repeat with legs in opposite position.
	Remarks	Low back may be stretched if hips rise off of floor significantly. If spinal flexion is not desired, care should be given to keep back of hips on floor by monitoring hips position and pushing downward instead of toward participant's chest.


Seated Piriformis

	Target Muscles	Piriformis, Quadratus Femoris Erector Spinae
	Preparation	Instruct participant to sit on floor or mat, reclining back with support of both arms behind body, and feet on floor and knees bent. Have them cross their thighs by placing back of knee on thigh of other leg. Ask them position foot on floor closer to hip. Place your hands on back of participant's shoulders or position your chest on participant's upper back and your hands under participant's lower thighs.
	Application	Push participant's torso toward legs. Hold stretch. Repeat with legs in opposite position.


Lying Crossover

	Target Muscles	Gluteus Medius, Gluteus Minimus Obliques, Erector Spinae
	Preparation	Instruct participant to lie on floor or mat. Kneel beside participant. Bend participant's near knee and hip. Place hand on outside of participants near knee and opposite hand on participant's shoulder.
	Application	Push participant's knee to opposite side while backing participant's shoulder down. Hold stretch. Repeat with opposite side.
	Remarks	Maintain 90° flexion in participant's hip while maintaining participant's shoulders flat on floor.


Lying (Prone) Quadriceps

	Target Muscles	Rectus Femoris Quadriceps
	Preparation	Instruct participant to lie prone on mat or floor. Straddle participant facing toward feet. Knee beside participant with leg extended over or just above participant's hips. Bend participant's near knee and place hand under participant's upper leg and opposite hand on ankle.
	Application	Lift knee and push ankle down toward hip. Hold stretch. Repeat with opposite side.
	Remarks	The opposite leg or thick towel can be placed under participant's near knee (and above participant's far knee) to further stretch Rectus Femoris. Tibialis Anterior can be stretched if ankle is completely plantar flexed.


Lying Hamstring

	Target Muscles	Hamstrings
	Preparation	Instruct participant to lie on floor or mat. Kneel beside participant and extend participant's leg upward. Position back of participant's lower leg on nearest shoulder. Position near ankle on participants opposite lower leg.
	Application	Push participant's leg close to participant's chest. Place hands on floor with arms extended to control resistance. Repeat with opposite leg.


Lying Straight Leg Groin

	Target Muscles	Adductors, Hip
	Preparation	Instruct participant to lie on floor or mat with legs positioned straight up, slightly apart. Grasp participant's ankle from inside.
	Application	Spread legs down to side and hold stretch
	Remarks	Administrator may need to kneel down closer to participants who are more flexible.

Lying Bent Leg Groin

	Target Muscles	Adductors, Hip
	Preparation	Instruct participant to lie on floor or mat. Ask them to place soles of feet together on floor close to body with knees apart. Kneel close to participant and place hands on insides of participant's knees.
	Application	Spread participants legs down to side and hold stretch

Seated Hamstring

	Target Muscles	Hamstrings Erector Spinae
	Preparation	Instruct participant to sit with knees straight on floor or mat. Kneel behind participant and position chest on participant's back. Place hands just above knees from each side.
	Application	Push participant's torso toward legs with chest while holding down knees. Hold stretch.

ENDURANCE

Aerobic energy production depends on the presence of oxygen. To maximise oxygen intake is an excellent indicator to determine performance potential and also indicates the ability to perform strenuous, prolonged physical work. Interval training for the aerobic system can potentially overcome this problem as it allows sufficient stress at the VO₂max level while allowing adequate recovery for repeated efforts therefore resulting in more time at VO₂max.



Interval Training⁹



30 min at 80% MAS

G1 (16.5km/h)

Distance 400 m

Time per lap = 1min 49 sec

Number of laps = 16

G2 (17km/h)

Distance 400 m

Time per lap = 1min 45 sec

Number of laps = 17

G3 (18km/h)

Distance 400 m

Time per lap = 1min 40 sec

Number of laps = 18

20 min at 85% MAS

G1 (16.5km/h)

Distance 400 m

Time per lap = 1min 42 sec

Number of laps = 11

G2 (17km/h)

Distance 400 m

Time per lap = 1min 39 sec

Number of laps = 12

G3 (18km/h)

Distance 400 m

Time per lap = 1min 34 sec

Number of laps = 13

2 x 10 min at 90% MAS

3 min REST BETWEEN EACH

G1 (16.5km/h)

Distance 400 m

Time per lap = 1min 36 sec

Number of laps = 6.25

G2 (17km/h)

Distance 400 m

Time per lap = 1min 34 sec

Number of laps = 6.5

G3 (18km/h)

Distance 400 m

Time per lap = 1min 28 sec

Number of laps = 6.75

5 x 2 min at 100% MAS

1-2 min RECOVERY RUN BETWEEN EACH

G1 (16.5km/h)

Distance = 550 m

Recovery Run = 267 m

G2 (17km/h)

Distance = 567 m

Recovery Run = 267 m

G3 (18km/h)

Distance = 600 m

Recovery Run = 267 m

H.I.I.T – Work Rest Ratio 1:2

G1 (16.5km/h)

Distance 400 m

Time per lap

100% MAS = 1 min 27 sec

TARGET TIME 1.5 = 5.27min

OTHER Distances

100 m = 21.75 sec

200 m = 43.50 sec

600 m = 2 min 10.5 sec

800 m = 2 min 54 sec

G2 (17km/h)

Distance 400 m

Time per lap

100% MAS = 1 min 24 sec

TARGET TIME 1.5km = 5.16min

OTHER Distances

100 m = 21 sec

200 m = 42 sec

600 m = 2 min 06 sec

800 m = 2 min 48 sec

G3 (18km/h)

Distance 400 m

Time per lap

100% MAS = 1 min 20 sec

TARGET TIME 1.5km = 5min

OTHER Distances

100 m = 20 sec

200 m = 40 sec

600 m = 2 min

800 m = 2 min 40 sec

⁹ Image QSAC – Queensland Sports and Athletics Center (QSAC) qsac.com.au

RECOVERY

Appropriate sleep, nutrition and immediate post training or activity procedures improve performance potential. Sleep and nutrition are well documented and have the most support in the sport science based research. Other strategies include active recovery, massage, wearing compression garments and cold immersion therapy. Implementing strategies after periods of high training and match loads is critical for elite success.

Cryotherapy – Cold Treatment Application Principles (Decreases Pain, Swelling / Bleeding and Cellular metabolism)

Reusable cold packs	20 – 30 mins	Ice Water Immersion	5 – 10 mins
Endothermal cold packs	15 – 20 mins	Ice Massage	5 – 10 mins
Crushed Ice bags	5 – 15 min	Contrast baths / showers	4 min warm, 1 min cold
Vapulocoolant Sprays	Multiple brief sprays	Cryo / Cuff	15 – 20 mins

Water Running – Water is the most under utilized resource in training stimulus that promotes the balance of recovery strategies. Non Weight Bearing activities and/or water-based exercises are essential. Deep water running in the water is patterned as closely as possible to pattern used on land. Basically anything you do on land for training can be replicated in the water. Running and stretching your lower limbs in the water to supplement your training recovery could be the difference needed to sustain performance over an extended period of time.

Long Slow Distance	RPE Scale 2-4 / 30 – 40 min
HIIT - Work Rest Ratio 1:1	RPE Scale 6-8 / 10 – 20 min



Hydration¹⁰

Fluid replacement protocol after activity = (weight before exercise – weight after exercise)
1KG = 1Litre

Difference in weight kg/l plus 500ml rehydration

If you lose 2.5 kgs after a match then you need to consume 3 litres of fluid to replace any residual fluid deficit after activity. Water is the best form however when fluid losses are high and/or rapid rehydration is required, sodium replacement may also be required.

Drinks	CHO(%)	Sodium (mmol/L)
Gatorade	6	18
Powerade	7.6	12
Endura	6	14
Staminade Sport	7.5	14
PB Fluid & Electrolyte Replacement	6.8	25



¹⁰ Guideline set by Australian Institute of Sport

Myofascial Release¹¹¹² 3-5 rolls each side or 20-30 secs each side

Outer Thigh - ITB



Quadriceps Release



Adductor Release



Hamstring Release



Gluteal Release



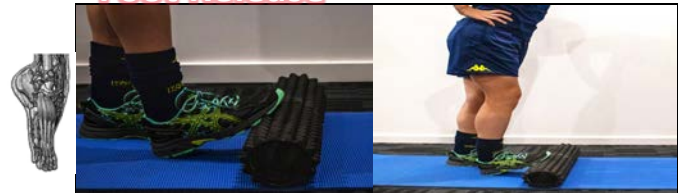
Peroneal Release



Calf Release



Foot Release



Thoracic Release



Back & Hip Release


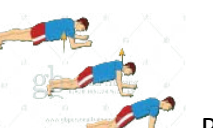






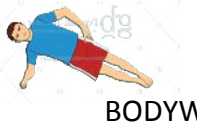






¹¹ PTPfit.com

¹² tpttherapy.com.au

ADDITIONAL INFORMATION – High Performance Resistance Training

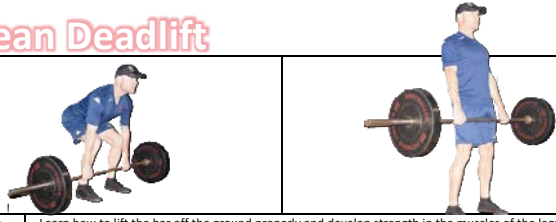
Body Weight¹³ – Activities (Strength: 10-12Reps x 2-3 Sets or alternately 30-60sec per exercise)(Endurance: 15-20Reps x 3-4 Sets or alternately 90-120sec per exercise)(Power: 6-8Reps HIT x 5-6 Sets)

<p>1. T PUSH UP</p>  <p>BODYWEIGHT PUSH UP</p> <p>Muscles used: Shoulders, Chest, Triceps, Back, Core, Buttocks</p> <p>Summary: The classic bodyweight exercise that is often performed so poorly. This exercise should be thought of as a moving core exercise.</p> <p>PLANK to PUSH UP</p> 	<p>2. PLYOMETRIC LUNGES</p>  <p>BODYWEIGHT LUNGE</p> <p>Muscles used: Glutes, Quads, Hamstrings, Core</p> <p>Summary: A fundamental lower body strengthening exercise. Also helps improve hip mobility.</p> <p>STATIC REAR LUNGE</p> 	<p>3. WITH LEG EXTENSIONS</p>  <p>LEFT SIDE PLANK WITH ARM EXTENSION</p> <p>Muscles used: Shoulders, Core, Hips</p> <p>Summary: Challenge your core muscles and shoulder stability with the exercise.</p> <p>BODYWEIGHT SIDE PLANK</p> 
<p>4. WITH ARM & LEG EXTENTION</p>  <p>BODYWEIGHT STABILITY</p> <p>Muscles used: Shoulders, Back, Core, Glutes</p> <p>Summary: A tricky exercise but excellent for improving the postural muscles in the back of the body. Tough on the shoulders stabilisers too</p> <p>TA BREATHING</p> 	<p>5. SQUAT JUMPS</p>  <p>Y SQUATS</p> <p>Muscles used: Glutes, Hamstrings, Buttocks, Upper Back, Core</p> <p>Summary: The perfect starting point and an excellent full body exercise. Great for improving mobility too.</p> <p>SINGLE LEG BALANCE</p> 	<p>6. WITH LEG EXTENSIONS</p>  <p>RIGHT SIDE PLANK WITH ARM EXTENSION</p> <p>Muscles used: Shoulders, Core, Hips</p> <p>Summary: Challenge your core muscles and shoulder stability with the exercise.</p> <p>BODYWEIGHT SIDE PLANK</p> 
<p>7. FIGURE 4s</p>  <p>CROSS BODY MOUNTAIN CLIMBERS</p> <p>Muscles used: Shoulders, Core, Glutes, Quads, Hamstrings</p> <p>Summary: An exercise that works into the core and shoulder stabilizing muscles too.</p> <p>HIP THRUST</p> 	<p>8. SKATERS</p>  <p>SIDE SHUFFLES</p> <p>Muscles used: Glutes, Quads, Hamstrings</p> <p>Summary: Get that heart rate up and improve your foot speed with this exercise</p> <p>DUCK & DODGE</p> 	<p>9. CROSS OVERS</p>  <p>DEAD BUG MOBILITY</p> <p>Muscles used: Core</p> <p>Summary: A fun and effective core exercise that connects the body together via it's cross body sling systems.</p> <p>SCISSORS</p> 

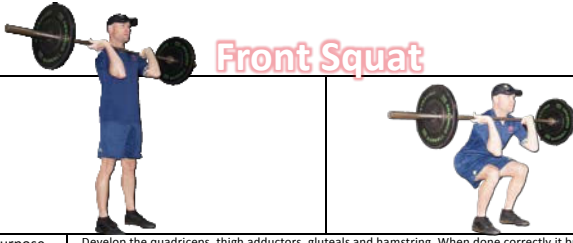
¹³ Images - gbpersonaltraining.com

Lifting Techniques¹⁴ - Barbell Exercises¹⁵ (establish 1RM Max / Strength 8-10 Reps 65%-80% 1RM x 2-3 Sets – Endurance 10-15 Reps 75% 1RM x 2-4 Sets – Power 4-6 Reps 85%-90% x 1-6 Sets)


Clean Deadlift

	
Purpose	Learn how to lift the bar off the ground properly and develop strength in the muscles of the legs, hips, back and torso stabilizers
Set Up	<ul style="list-style-type: none"> Approach the bar resting on the platform so the shins make contact Place feet hip-width apart with toes pointed straight ahead Keep back straight and shoulder blades pulled together, squat down to grasp the bar Grasp the bar with a pronated grip slightly wider than shoulder-width with arms straight and elbows pointed out Head remains in a neutral position looking forward throughout the entire lift Weight should be shifted to the heels and the hips should be slightly higher than the knees Take a deep breath to fill the chest with air and engage the core
Method	<ol style="list-style-type: none"> Lift the bar smoothly off the floor to just about knees by slowly extending the hips and knees (keep the bar in contact with the shins) Raise the bar, knee, hips and shoulders in unison with a constant back angle throughout (avoid excessive arching) As the bar passes over the knees, the shoulders remain in front of the bar, arm straight with elbows pointed out, hips flexed and knees slightly bent Extend hips forward and engage the core to establish erect position As a fully erect body position is established, shoulders, hips, knees and ankles should be in alignment Return the bar to the platform in a slow, controlled manner, maintaining a straight back The bar should slide down the thighs as you flex primarily at the hips until it passes over the knees Then squat down simultaneously pushing hips back and flexing knees with weight on the heels
Coaching Points	<p>Maintain a constant back angle during the initial lift-off (shoulders, hips, knees and bar should all move together as one unit)</p> <p>Do not jerk the bar off the floor; pull it smoothly and under control</p> <p>The bar should remain in contact with the legs throughout the entire lift</p>

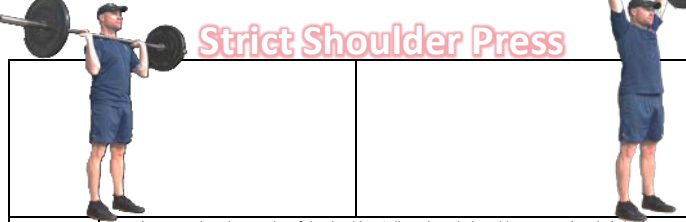
Front Squat

	
Purpose	Develop the quadriceps, thigh adductors, gluteals and hamstring. When done correctly it builds the muscles, ligaments and tendons surrounding the knee.
Set Up	<ul style="list-style-type: none"> Set the bar at a height that is comfortable for taking off rack and replacing when done Step under the bar with the knees slightly bent and place bar on front of shoulders Align hips with shoulders then inhale to expand lungs and hold until you are set up Lift the bar off the rack and step backwards away from frame and position the feet shoulder-width apart with the toes pointed straight ahead in a comfortable position
Method	<ol style="list-style-type: none"> Focus head and eyes straight ahead, take a deep breath to fill the chest with air and engage the core In a slow, controlled motion, simultaneously push hips back, flex knees, and allow the torso to come forward slightly Distribute bodyweight from the balls of the feet to the heels and lower At the bottom, do not bounce, jerk or stop the squat Drive through the floor (keeping the weight back on the heels) and extend hips and knees Raise hips and shoulders simultaneously to keep back straight and head neutral Exhale near the top of the squat and fully extend knees and hips to return to start position
Coaching Points	<p>Do not bounce out of the bottom position</p> <p>Keep knees pointed out, aligned with feet and behind toes throughout entire lift</p> <p>Pick a spot in front and focus on it throughout the entire lift</p>

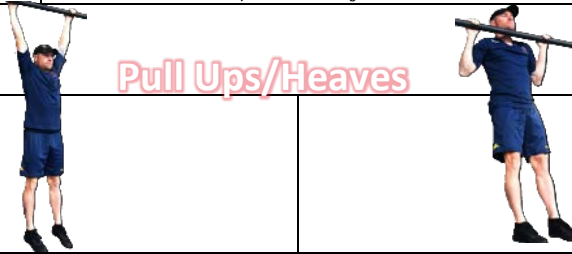
Bench Press

	
Purpose	Develop strength in the muscles of the pectorals, shoulders and triceps
Set Up	<ul style="list-style-type: none"> Lie flat on the bench in a five-point body contact position with eyes directly under the bar Grasp the bar evenly with a closed, pronated grip with hands slightly wider than shoulder width Lift the bar from the rack and position it directly above shoulders with the elbows fully extended
Method	<ol style="list-style-type: none"> Take a deep breath to fill the chest with air and engage the core to prevent the back from arching Lower the bar slowly and under control allowing it to touch the chest Keep wrists rigid and directly above elbows drive the weight explosively off the chest by extending elbows Exhale as you near the top of the lift
Coaching Points	<p>The movement of the bar should be down and slightly forward, and up and slightly back</p> <p>The most common error is to let the bar come off the chest moving towards the legs (the bar must come straight up and back off the chest for maximum force)</p> <p>Wrists should be in line with elbows with thumbs wrapped around the bar throughout the entire lift</p> <p>The lower back should remain in contact with the bench throughout the entire lift (do not arch the back or raise the chest to meet the bar) and avoid bouncing the bar off the chest</p>

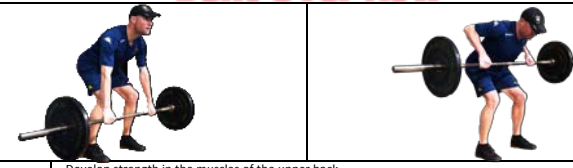
Strict Shoulder Press

	
Purpose	Develop strength in the muscles of the shoulder girdle and teach the athlete to use the whole body to stabilize overhead loads
Set Up	<ul style="list-style-type: none"> Set the bar at a height that is comfortable for taking off rack and replacing when done Place hands evenly on the bar, slightly wider than shoulder-width, with a pronated grip Position bar across the shoulders with shoulder blades pulled together, elbows pointed down with hands directly above them Stand erect and step back to position body in the centre of the rack Place feet hip-width apart, toes pointed straight ahead and slightly flex hips and knees with the weight centred on the feet
Method	<ol style="list-style-type: none"> From the start position, press the bar straight overhead by extending the arms and keeping the body stable At the top of the lift the bar should be slightly behind the ears with elbows completely extended and in line with the shoulders, hips and heels Lower the bar to its starting position across the shoulders in a controlled manner
Coaching Points	<p>When lowering the bar, simultaneously flex hips and knees as bar hits the shoulders to help absorb the weight (do not allow knees to come forward over toes)</p> <p>Avoid using the lower body to complete the lift</p> <p>Keep shoulders over hips during the entire ROM and keep elbows directly under hands through out lift</p>

Pull Ups/Heaves

	
Purpose	Develop strength in the muscles of the upper back, arms and abdominals
Set Up	<ul style="list-style-type: none"> Place hands evenly on a bar slightly wider than shoulder width with a pronated grip (over grasp) Let body hang completely from the bar with elbows and hips fully extended, knees slightly flexed and ankles crossed Engage the core to stabilize the body and prevent arching of the back
Method	<ol style="list-style-type: none"> Front the start position pull entire body up by squeezing the shoulder blades back and down, and flexing elbows Continue to pull body upward until chin is over the bar then lower entire body to start in a controlled manner
Coaching Points	<p>Concentrate on squeezing the shoulder blades together to achieve a full ROM</p> <p>Avoid swinging the body and legs when pulling up and engage the core throughout the entire ROM</p>

Bent Over Row

	
Purpose	Develop strength in the muscles of the upper back
Set Up	<ul style="list-style-type: none"> Approach the bar resting on the platform and place feet hip-width apart with toes pointed straight ahead Keep back straight and shoulder blades pulled together Squat down to grasp the bar with a pronated grip slightly wider than shoulder width Slowly extend legs to elevate the bar to just above the knees then extend hips to stand erect Keeping the back straight and knees slightly flexed push hips backward and lower torso until it is parallel with the floor
Method	<ol style="list-style-type: none"> Maintain a torso position parallel to the floor, squeeze shoulder blades together and flex elbows to pull them up and slightly outwards Pull the bar upwards until it touches the upper abdomen Return the bar to the start position in a slow, controlled manner
Coaching Points	<p>Weight should remain on the heels of the feet with knees slightly flexed</p> <p>Maintain a straight back position throughout the entire lift and avoid using momentum to complete lift</p> <p>Concentrate on squeezing the shoulder blades back and down to achieve a full ROM</p>

¹⁴ IMPORTANT: An appropriate warm up must be completed prior to lifting activities and additional a cool down thereafter

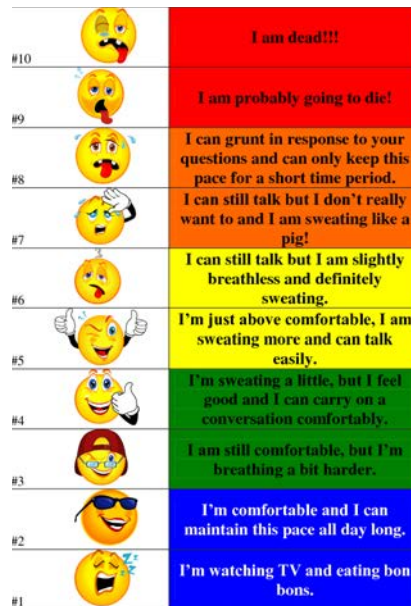
¹⁵ National Strength and Conditioning Association (NSCA)

Cardio Equipment – Treadmills, Rowers, Bikes, Grinders and Cross Trainers

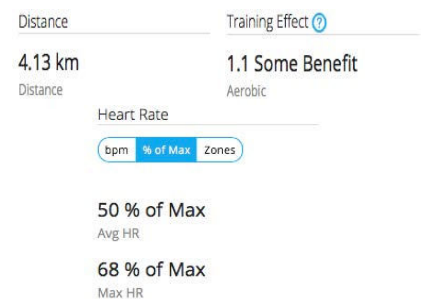
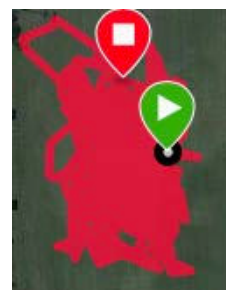
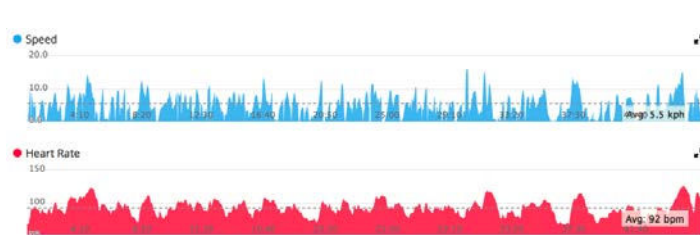
Long Slow Distance	RPE Scale 2-4 / 30 – 40 min
HIIT (choose 4 x machines)	RPE Scale 7-9 Bike / 10 min
	RPE Scale 7-9 Grinder / 10 min
	RPE Scale 7-9 X-Trainer / 10 min
	RPE Scale 7-9 Rower / 10 min



Rating of Perceived Exertion – The RPE scale is used to measure the intensity of your exercise. The RPE scale runs from 0 -10. The numbers relate to phrases used to rate how easy or difficult you find an activity. For example, 0 (nothing at all) would be how you feel when sitting in a chair; 10 (very, very heavy) is how you feel at the end of an exercise stress test or after a very difficult activity



DATA Management - Garmin¹⁶ Polar¹⁷ - Athlete Management Systems are essential to monitor what matters and clearly shows how an athlete is tracking. Individual load performance and adjustments to training programs based on data will help keep athletes game ready so therefore it is mandatory to have devices set and active for each training session and match. Athlete monitoring will occur for maximizing performance, reducing injury risk and optimizing competition readiness



¹⁶ Athletes log on: gamin connect – Select Group (A League and W League Match Officials INVITATION ONLY) FQ Panel - Select Group 2

¹⁷ Athletes log on: polar flow – Select Group (FIFA Match Officials INVITATION ONLY)

TESTING PROTOCOLS

FIFA has an established set of tests used as methods to assess the aerobic fitness of referees and assistant referees. FIFA Fitness Test protocols and standards will be implemented throughout the program.



Fitness test for referees (men & women)¹⁸ - The official fitness test for football referees consists of two tests. Test 1, Repeated Sprint Ability (RSA), measures the referee’s ability to perform repeated sprints over 40m. Test 2, Interval Test, evaluates the referee’s capacity to perform a series of high-speed runs over 75m interspersed with 25m walking intervals. The time between the end of Test 1 and the start of Test 2 should be 6 to 8 minutes maximum. Tests must be performed on an athletics track (or a natural/artificial football field if no track is available). Athletic spikes may NOT be worn during the tests. Referees must pass the FIFA Fitness Test at least once a year. In addition to the official test, the “Dynamic YO-YO Test” and the “YO-YO Intermittent Test Level 1” may be used as methods of assessing the aerobic fitness of referees with the recommended standards.

Test 1: Repeated Sprint Ability

1. Electronic timing gates (photocells) should be used to time the sprints. Timing gates should be positioned no higher than 100 cm from the ground. If electronic timing gates are not available, an experienced physical instructor should time each sprint using a manual stopwatch.
2. The ‘start’ gate should be placed at 0m and the ‘finish’ gate at 40m. The ‘start line’ should be marked out 1.5m before the ‘start’ gate.
3. Referees should line up at the start with their front foot touching the ‘start line’. Once the test leader signals that the electronic timing gates are set, the referee is free to start.
4. Referees should receive a maximum of 60 seconds recovery between each of the 6 X 40m sprints. During their recovery, referees must walk back to the start.
5. If a referee falls or trips, they should be given an additional trial (one trial = 1 x 40 m).
6. If a referee fails one trial out of the six, they should be given a seventh trial immediately after the sixth trial. If they fail two trials out of seven, the match official has failed the test.



Reference times for men referees

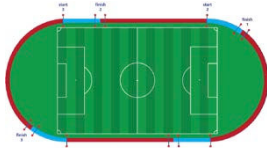
1. International and category 1: maximum 6.00 seconds per trial
2. Category 2: maximum 6.10 seconds per trial
3. Lower categories: maximum 6.20 seconds per trial

Reference times for women referees

1. International and category 1: maximum 6.40 seconds per trial
2. Category 2: maximum 6.50 seconds per trial
3. Lower categories: maximum 6.60 seconds per trial

Test 2: Interval Test

1. Referees must complete 40 x 75m run / 25m walk intervals. This equates to 4,000m or 10 laps of a 400m athletics track. The pace is dictated by the audio file and reference times are set in accordance with the referee’s category. If an audio file is not available, an experienced physical instructor should use a stopwatch and whistle.
2. Referees must start from a standing position. They must not start before the whistle. To ensure that referees do not start early, assistant test leaders should be positioned at each start line to control the start. A flag may be used to block the lane until the whistle has sounded. On the whistle, the flag should be dropped, allowing the referees to start running.
3. At the end of each run, each referee must enter the ‘walking area’ before the whistle. The walking area is marked out with a line 1.5m before and 1.5m behind the 75m line.
4. If a referee fails to place a foot inside the walking area on time, they should receive a clear warning from the test leader. If a referee fails to place a foot inside the walking area on time for a second occasion, they should be stopped by the test leader and informed that they have failed the test.
5. It is recommended that the test be run in groups comprising no more than six referees. It is possible to have four groups running the test simultaneously (see below), meaning a total of 24 referees can be tested at once. Each group should be allocated with a test leader who should monitor their group closely throughout the test.



Reference times for men referees

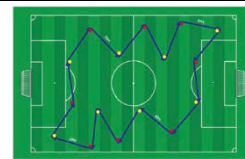
1. International and category 1: maximum 15 seconds per 75m run and 18 seconds per 25m walk
2. Category 2: maximum of 15 seconds per 75m run 20 seconds per 25m walk
3. Lower categories: maximum 15 seconds per 75m run and 22 seconds per 25m walk

Reference times for women referees

1. International and category 1: maximum 17 seconds per 75m run and 20 seconds per 25m walk
2. Category 2: maximum 17 seconds per 75m run and 22 seconds per 25m walk
3. Lower categories: maximum 17 seconds per 75m run and 24 seconds per 25m walk

Optional test 1, Dynamic Yo-Yo

1. The cones must be set out as illustrated in the diagram below. It is important that the colours (i.e. red and yellow) are placed accurately and that the distance between the red and yellow cones is exactly 20 meters. Referees may start from the yellow or red cones. It is recommended that the test be run in groups comprising no more than two referees starting from each cone.
2. Referees starting from a yellow cone should run to a red cone, turn and continue to the next yellow cone. Each run is interspersed by a recovery period.
3. Referees starting from a red cone should run to a yellow cone, turn and continue to the next red cone. Each run is interspersed by a recovery period.
4. The audio file will dictate the pace of the runs and the length of the each recovery period. Referees must keep pace with the audio file until they have reached the required recommended level.
5. If a referee fails to place a foot on the ‘finish cone’ on time, they should receive a clear warning from the test leader. If a referee fails to arrive on time on a second occasion, they should be pulled from the test by the test leader.



Reference times for men referees

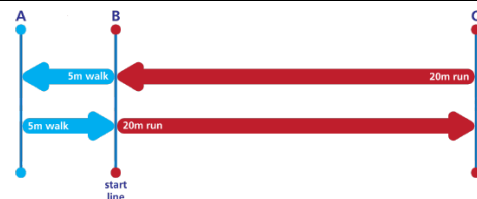
1. International and category 1: level 18-8 / 2,040 m
2. Category 2: level 18-5 / 1,920 m
3. Lower category: level 18-1 / 1,760 m

Reference times for women referees

1. International and category 1: level 17-8 / 1,720 m
2. Category 2: level 17-5 / 1,600 m
3. Lower categories: level 16-8 / 1,400 m

Optional test 2, Yo-Yo Intermittent

1. Cones must be set out as illustrated in the diagram below. The distance between A and B is 5 m. The distance between B and C is 20 m.
2. Referees must complete the following sequence in accordance with the pace dictated by the audio file.
 - a. run 20m (B-C), turn and run 20m (C-B)
 - b. walk 5m (B-A), turn and walk 5m (A-B)
3. The audio file of the Yo-Yo Intermittent Recovery run (level 1) will dictate the pace of the runs and the length of each recovery period. Referees must keep pace with the audio file until they have reached the recommended level.
4. The starting position requires the referees to be standing still with their front foot on the line (B). Referees must place a foot on the turning line C. If a referee fails to place a foot on the line C or fail to return to line B on time, they should receive a clear warning from the test leader. If a referee fails to place a foot on the line C or fail to return to line B on time for a second occasion, they should be pulled from the test by the test leader.



Reference times for men referees

1. International and category 1: level 18-2 / 1,800 m
2. Category 2: level 17-7 / 1,680 m
3. Lower categories: level 17-4 / 1,560 m

Reference times for women referees

1. International and category 1: level 16-4 / 1,240 m
2. Category 2: level 15-7 / 1,040 m
3. Lower categories: level 15-3 / 880 m

Fitness test for assistant referees (men & women)¹⁹ - The official fitness test for football assistant referees consists of three tests:

Test 1, Change of Direction Ability 'CODA', assesses the assistant referee's ability to change direction. Test 2, Repeated Sprint Ability (RSA), measures the assistant referee's ability to perform repeated sprints over 30m. Test 3, Interval Test, evaluates the assistant referee's capacity to perform a series of high-speed runs over 75m interspersed with 25m walking intervals. The time between the end of Test 1 and the start of Test 2 should be 2 to 4 minutes maximum. The time between the end of Test 2 and the start of Test 3 should be 6 to 8 minutes maximum. Tests must be performed on a stable surface such as an athletics track or football field. Athletic spikes may NOT be worn during the tests. Assistant referees must pass the FIFA Fitness Test at least once a year. In addition to the official test, the Assistant Referee Intermittent Endurance Test 'ARIET' may be used as a method of assessing the aerobic fitness of assistant referees with the recommended standards.

Test 1: CODA

- Electronic timing gates (photocells) should be used to time the CODA. Timing gates should be positioned no higher than 100 cm from the ground. If electronic timing gates are not available, an experienced physical instructor should time each trial using a manual stopwatch.
- Cones should be set out as illustrated in the diagram below. The distance between A and B is 2 m. The distance between B and C is 8 m.
- Only one timing gate is required for the CODA (A). The 'start line' should be marked out 0.5m before the timing gate (A).
- Assistant referees should line up at the start with their front foot touching the 'start line'. Once the test leader signals that the electronic timing gates are set, the assistant referee is free to start.
- Assistant referees sprint 10 m forward (A to C), 8 m sideways left (C to B), 8 m sideways right (B to C) and 10 m forward (C to A).
- If an assistant referee falls or trips, they should be given an additional trial.
- If an assistant referee fails the trial, they should be given an additional trial. If they fail two trials, the match official has failed the test.

Reference times for men assistant referees

- International and category 1: maximum 10.00 seconds per trial
- Category 2: maximum 10.10 seconds per trial
- Lower categories: maximum 10.20 seconds per trial

Reference times for women assistant referees

- International and category 1: maximum 11.00 seconds per trial
- Category 2: maximum 11.10 seconds per trial
- Lower categories: maximum 11.20 seconds per trial

Test 3: Interval Test

- Assistant referees must complete 40 x 75m run / 25m walk intervals. This equates to 4,000m or 10 laps of a 400m athletics track. The pace is dictated by the audio file and reference times are set in accordance with the referee's category. If an audio file is not available, an experienced physical instructor should use a stopwatch and whistle.
- Assistant referees must start from a standing position. They must not start before the whistle. To ensure that referees do not start early, assistant test leaders should be positioned at each start line to control the start. A flag may be used to block the lane until the whistle has sounded. On the whistle, the flag should be dropped, allowing the assistant referee to start running.
- At the end of each run, each assistant referee must enter the 'walking area' before the whistle. The walking area is marked out with a line 1.5m before and 1.5m behind the 75m line.
- If an assistant referee fails to place a foot inside the walking area on time, they should receive a clear warning from the test leader. If an assistant referee fails to place a foot inside the walking area on time for a second occasion, they should be stopped by the test leader and informed that they have failed the test.
- It is recommended that the test be run in groups comprising no more than six assistant referees. It is possible to have four groups running the test simultaneously (see below), meaning a total of 24 referees can be tested at once. Each group should be allocated with a test leader who should monitor their group closely throughout the test.

Reference times for men assistant referees

- International and category 1: maximum 15 seconds per 75m run and 20 seconds per 25m walk
- Category 2: maximum 15 seconds per 75m run and 22 seconds per 25m walk
- Lower categories: maximum 15 seconds per 75m run and 24 seconds per 25m walk

Reference times for women assistant referees

- International and category 1: maximum 17 seconds per 75m run and 22 seconds per 25m walk
- Category 2: maximum 17 seconds per 75m run and 24 seconds per 25m walk
- Lower categories: maximum 17 seconds per 75m run and 26 seconds per 25m walk

Test 2: Repeated Sprint Ability

- Timing gates should be positioned no higher than 100 cm from the ground. If electronic timing gates are not available, an experienced physical instructor should time each trial using a manual stopwatch.
- The 'start' gate should be placed at 0m and the 'finish' gate at 30m. The 'start line' should be marked out 1.5m before the 'start' gate.
- Assistant referees should line up at the start with their front foot touching the 'start line'. Once the test leader signals that the electronic timing gates are set, the assistant referee is free to start.
- Assistant referees should receive a maximum of 30 seconds recovery between each of the 5 X 30m sprints. During their recovery, assistant referees must walk back to the start.
- If an assistant referee falls or trips, they should be given an extra trial (one trial = 1 x 30 m).
- If an assistant referee fails one trial out of the five, they should be given a sixth trial immediately after the fifth trial. If they fail two trials out of six, the match official has failed the test.

Reference times for men assistant referees

- International and category 1: must complete each trial in a maximum 4.70 seconds per trial
- Category 2: must complete each trial in a maximum 4.80 seconds per trial
- Lower categories: must complete each trial in a maximum of 4.90 seconds per trial

Reference times for women referees

- International and category 1: must complete each trial in a maximum 5.10 seconds per trial
- Category 2: must complete each trial in a maximum 5.20 seconds per trial
- Lower categories: must complete each trial in a maximum 5.30 seconds per trial

Optional test, ARIET

- Cones should be set out as illustrated in the diagram below. The distance between A and B is 2.5 m. The distance between B and D is 12.5 m. The distance between B and D is 20 m.
- Assistant referees must start from a standing position. They must complete the following sequence in accordance with the pace dictated by the audio file.
 - run 20m forwards (B-D), turn and run 20m forwards (D-B)
 - walk 2.5m (B-A), turn and walk 2.5m (A-B)
 - run sideways 12.5m (B-C), and run sideways facing the same side 12.5m (C-B)
 - walk 2.5m (B-A), turn and walk 2.5m (A-B)
- The audio file will dictate the pace of the runs and the length of each recovery period. Assistant referees should keep pace with the audio file until they have reached the recommended level.
- The starting position requires the assistant referees to be standing still with their front foot on the line (B). Assistant referees must place a foot on the turning lines (C & D). If an assistant referee fails to place a foot on the lines B, C or D on time, they should receive a clear warning from the test leader. If an assistant referee fails to arrive on time on a second occasion, they should be pulled from the test by the test leader.

Reference times for men assistant referees

- International and category 1: level 16.0-3 / 1,470 m
- Category 2: level 15.5-3 / 1,275 m
- Lower categories: level 14.5-3 / 1,080 m

Reference times for women assistant referees

- International and category 1: level 14.5-3 / 1,080 m
- Category 2: level 14-3 / 820 m
- Lower categories: level 13.5-8 / 715 m

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