



FairPlay Friendship Forever

**International Umpire
Fitness Training
Manual**

Produced by:

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INTRODUCTION

Fitness is not a one dimensional concept, is it made up of different components contributing to the notion of general fitness. As a hockey umpire it is essential to have high levels of fitness in order to keep up with play and make correct umpiring decisions. This becomes particularly important during a tournament scenario where umpires may be involved in multiple matches over a short period of time with only minimal recovery between matches.

The areas of fitness that are covered in this programme are **core stability, endurance, strength, speed and specific intervals**.

Over the course of a tournament, umpires can cover over 7000 m during a single match. Although more than 90% of this time is spent in low or moderate intensity activity, sprints are frequently interspersed within the running.

The **intermittent nature of hockey** and the constant changes in playing speed highlights the importance of a balance between sprinting and high-speed activity training in addition to lower intensity training.

While conducting the training programme it is therefore essential that you match training intensities with those that would be used during match play.

How to use the programme:

The programme has been designed to incorporate **different areas of fitness** in order to gain maximum overall benefit. These areas are:

- Core stability
- Endurance
- Strength
- Speed
- Specific Intervals

Training for each component has been structured separately so the volume of training for each area will vary throughout the year with the training focus shifting also.

It has been structured to last **one year** of periodisation. It is important that you plan ahead and follow the programme, particularly in terms of which types of sessions you are doing at which time of the year.

- **Stages:**

The session plans for endurance, speed and strength have been divided into three **stages**. These stages represent different starting levels of fitness. Throughout the programme sessions have been created to suit each particular stage. The programme allows for **progression** within each stage and the intensity should increase at a pace that is **appropriate to your stage**.

It is your decision which stage you start out at but the following information can be used as a guide for selecting which stage is appropriate for you. Do not feel as though the stages are set in stone, if once starting the programme you find the sessions are too challenging or easy – switch accordingly. However the sessions have been created to challenge you and help to improve your fitness so don't simply opt for the easy option! You are the best judge of your current levels of fitness so use the box below as a guide.

Selecting your stage:

- **Stage 1** – bleep test score of level 4-7, limited experience of regular, structured training.
- **Stage 2** – bleep test score of level 7-10, less than 5 years experience of regular, structured training.
- **Stage 3** – bleep test score of level 10+, over 5 years experience of regular, structured training.

- **Phases:**

There are three phases within the year-plan. Each stage is a progression from the last and the training emphasis will switch between the fitness areas although all components will continually be worked on.

The phases are designed to give you a solid base from which you can develop and become more sport specific. It is important you don't get ahead of yourself – the plan has been devised this way for a reason and the beginning phases are fundamental to the development of the programme.

- **The programme:**

For each fitness component the training programme states the **number of sessions that should be completed each week** and the types of session that should be included (where appropriate).

The core and strength sessions are designed so they require little or no equipment and that you can complete them anywhere.

Core stability is essential to hockey umpires and this has been highlighted in the programme. There is a high volume of core work throughout the year but sessions can be split within a day so you complete different exercises at different points in the day. For example, split the three exercises comprising a core stability session so that you can do one exercise in the morning, one when you get home from work, and one later in the evening. This will reduce the time spent on sessions so that you can hopefully still fit them in during days when you may feel like you have no time. Try to include as much core work as possible.

To increase the intensity of sessions:

- Endurance example – during the steady state runs try to improve by running further at a faster pace in the allocated time.
- Strength example – add an extra repetition into the sets.
- Speed example – increase your pace so you are able to sprint the distances in a shorter time.

As you go further into the programme you may find that sessions are continually becoming too comfortable. In this case you may wish to move up a stage.

TOURNAMENT FITNESS TRAINING PROGRAMME

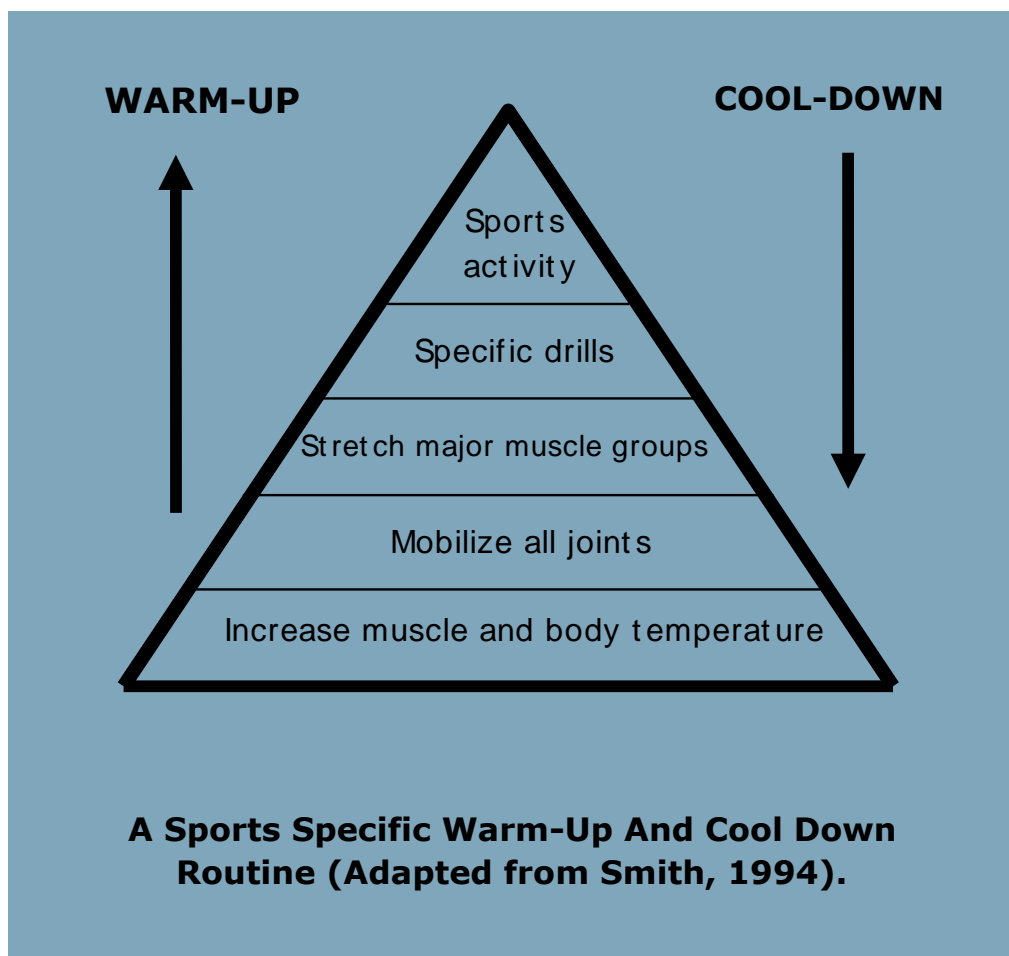
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Tournament Month
	Phase 1				Phase 2				Phase 3			
Endurance	2	3	3	2	2	2	2	2	1	1	1	1
Specific Intervals	-	-	-	-	-	-	-	1	2	2	2	1
Speed	-	-	-	1	1	1	1	2	2	2	2	2
Strength	1	1	2	3	3	2	2	1	1	1	1	1
Core	3	3	3	3	4	4	4	4	3	3	3	3

GENERAL ADVICE

Warm-up:

A warm-up should be completed before every training session and before every match. It is equally important to conduct a cool-down following exercise.

A suggested model (Smith, 1994) containing the stages that should be used when warming-up are shown below.



The warm-up should be a progression from basic, non-specific exercise to dynamic drills and the specific training or match activity. The length of the warm-up will depend on the session you are undertaking. For example a continuous endurance session will require a short warm-up and little or no drills but a technical speed session should have a larger focus on building up the intensity to maximal sprinting capacity and is likely to take longer.

Why warm-up?

Warming-up can induce the following changes:

- **Elevates body temperature** – many bodily processes work more efficiently at warmer body temperatures.
- **Elevates muscle temperature**
- **Improves circulation** - at rest muscles require less oxygen and hence less blood than during exercise. It probably takes about 3-5 minutes for the blood to redistribute itself upon exercising. It's not a good idea therefore to go straight into a match without any prior exercise.
- **Prepares the neuromuscular paths** – messages between brain and muscles are sent more efficiently which will better prepare your skills for training.
- **Possibly reduces the risk of injury**

Using the stages in the model above, a warm-up should include:

1. **Increase muscle temperature** - start with low intensity running or walking and gradually build up the intensity.
2. **Mobilise all joints** – complete exercises to increase the movement at the joints.
3. **Stretches** – stretching should be structured and follow a logical sequence, for example lower body muscles through to upper body. Hold stretches for 10 seconds each.
4. **Drills** – these can include some of the speed technique drills outlined in the 'Speed Training' section, running strides and should also include walking drills (forward and backward lunges, walking high knees). The drills you include should be appropriate to the type of session you are undertaking.
5. **Specific activity** – this refers to the training session.

Cool-down:

After each session ensure you complete a cool-down. The stages of the cool-down should follow the above model for the warm-up but in reverse.

The benefits of a cool-down are:

- **Lowered heart rate** - by continuing some movement post exercise will ensure your heart rate gradually returns to resting level.
- **Promotes removal of waste products** – this will delay the onset of muscle soreness (DOMS).
- **Prevents muscle shortening** – muscles should not feel as tight in the days after a match.

Flexibility:

After each training session it is important that you complete some flexibility exercises in addition to those in the warm-up and cool-down.

Flexibility refers to the range of motion around a joint. Regularly undergoing flexibility sessions will enable you to reduce the risk of muscle pulls by ensuring adequate range of movement and enhance your running efficiency.

Make sure you structure your stretching protocol. Do the stretches in order to avoid missing muscle groups out.

Hold each stretch for at least 30 seconds and control for the duration making sure you do not overstretch or bounce. This can cause injury. Also focus on maintaining good technique.

It will also be of benefit to you if you can complete other flexibility sessions during the week in addition to your training. Ideally some stretching should be done everyday. You will achieve the best results if your muscles are warmed up so make sure you warm-up before a flexibility session.

Recovery:

Recovery is an important part of training. Adequate rest between sessions and effective recovery enable the body to replenish lost stores from exercise.

Recovery allows:

- Replenishment of phosphocreatine and glycogen stores.
- Reduction in muscles soreness in the days following exercise.
- Re-hydration.
- Increased blood flow to muscles thus aiding recovery.

It is important to include at least one rest day per week to allow the recovery processes to take effect.

Towards the end of the programme multiple sessions can be completed in a day where time is available but ensure these are different types of session, for example endurance session in the morning and strength session in the evening.

One week in each month should consist of a recovery week. This indicates a reduction in training intensity for the duration of the week. Try to

complete the same number of sessions but reduce the number of sets or time spent for each session.

Important points to remember to allow effective recovery:

- Include rest days – these can include passive recovery or active recovery (light exercise).
- Keep hydrated – keep taking on fluids after the sessions.
- Remember to cool-down thoroughly after a session and stretch.
- Flexibility – try to stretch as frequently as possible.

CORE STABILITY TRAINING

What is core stability?

Core stability describes the capacity to control the position and movement of the mid portion of the body. The deep muscles within the abdomen assist in the maintenance of good posture and provide the foundation for all arm and leg movements. It is the conditioning of these abdominal muscles which core stability training targets.

Improving your core stability should provide you with:

- Greater ability to generate speed.
- More efficient use of muscular power and strength.
- Increased ability to change direction.
- Improved balance and muscle coordination.
- Reduced injury risk resulting from poor posture and ability to maintain good posture while running.

How to choose your sessions:

Outlined below are a number of core stability exercises. They are separated into **beginner** and **advanced** exercises allowing you to select the appropriate difficulty of exercises dependent on your experience of performing core stability exercises.

For each core stability session you should **choose 3 of the exercises** and adapt them according to the phase 1 and phase 2 difficulty options outlined below each exercise.

Beginners should stick to those exercises categorised as 'beginner'. More **experienced individuals should choose from any of the exercises listed** and adapt the difficulty of the exercises accordingly.

You should **alternate between your chosen exercises** so that you do three different exercises to those you completed for your previous core session.

Things to remember when performing core stability exercises:

- Remember to use **controlled and slow movements**. Performing the exercises too fast is likely to promote a poor technique.
- Continue to **breathe normally** throughout the exercises! To hold your breath is a signal that you are not relaxed.
- Do not do any exercises that put pressure on your back if you have any back problems.
- Stop if you feel any excessive discomfort or pain during the exercises.
- **Have 30 seconds recovery between sets of each specific exercise.**

Core Stability Exercises		
Beginner		
Session Description	Stage 1	Stage 2
1. The Plank		
<ul style="list-style-type: none"> - Lie on your front with hands clasped together under your forehead. - With forearms flat on the floor, lift yourself up while maintaining a straight bodyline. - Your toes and forearms should be the only parts of your body touching the floor. - Think of it as holding a semi press-up position. 	Hold for 15 s Repeat 3 times	Hold for 30 s Repeat 3 times
2. Side Plank		
<ul style="list-style-type: none"> - Lie on your side. With your top hand resting on your top hip, the other hand and forearm should be placed on the floor directly below your lower shoulder pointing away from your body. - Lift up your body so it is straight with only the forearm and the outside of one foot (the other foot resting on top) in contact with the floor. 	Hold for 20 s Repeat 2 times for each side	Hold for 30 s Repeat 3 times for each side
3. Static Straight Legs		
<ul style="list-style-type: none"> - Lie on your back with your legs together and your arms by your sides. - Whilst keeping your legs straight throughout, lift your heels approximately 10 cm off the floor. 	Hold for 20 s Repeat 2 times	Hold for 20 s Repeat 2 times
4. Bridge Lift		
<ul style="list-style-type: none"> - Adopt a basic sit-up position with your knees bent and arms by your sides. - Tensing your abdomen you should try to raise your hips as high as you can comfortably go. 	Hold for 20 s Repeat 3 times	Hold for 1 min Repeat 2 times
5. Heel-Taps		
<ul style="list-style-type: none"> - Adopt a basic sit-up position with your knees bent and arms by your sides. Bring your head and shoulders slightly up off the floor and hold this position throughout. - With arms by your sides, attempt to touch your right heel with your right hand by bending sideways at the waist. - In one movement, return to the starting position and do the same for the opposite heel. 	Touch each heel 6 times. Repeat 2 times	Touch each heel 10 times Repeat 3 times
6. Hundreds		
<ul style="list-style-type: none"> - Lie on your back with your arms by your sides. Raise your legs and bend them to form a right angle at your hips and knees. - Keeping your arms straight and lifting your hands/arms roughly 10 cm off the floor, gently tap the floor 100 times by performing a small pumping action with the arms. - Adopt a pace of approx. 2 taps per second. 	Repeat 2 times	Repeat 3 times

Core Stability Exercises		
Advanced		
Session Description	Stage 1	Stage 2
1. Reverse Crunches		
<ul style="list-style-type: none"> - Lie on your back with your knees bent and hands placed flat on the floor by your side. With feet together or crossed, bring your knees in towards the chest until bent to roughly 90 degrees. - Contract your abdominal muscles in order to curl the hips off the floor, allowing you to reach the legs up towards the ceiling. - Slowly bring your legs back down. 	Repeat 20 times 2 sets	Repeat 20 times 3 sets
2. Supermans		
<ul style="list-style-type: none"> - Start in an all fours position. - While tensing your stomach you should lift one arm and the opposite leg at the same time. - Hold the Superman position for 3 seconds and slowly return to the starting position. 	Repeat 10 times each side 2 sets	Repeat 15 times each side 3 sets
3. Single Leg Extension		
<ul style="list-style-type: none"> - Lie flat on your back with one leg extended and one leg bent with this foot flat on the floor. - Slowly raise the extended leg to roughly 15 cm off the floor then lower the leg back to the starting position. 	Repeat 10 times each leg 2 sets	Repeat 15 times each leg 3 sets
4. Double Leg Extension		
<ul style="list-style-type: none"> - Lie flat on your back with both legs extended. - Slowly lift the legs to roughly 15 cm off the floor then lower the legs back to the starting position. 	Repeat 10 times 2 sets	Repeat 20 times 3 sets
5. Elbow-to-Knee Crunches		
<ul style="list-style-type: none"> - Begin in the basic sit-up position, with knees bent and hands at the side of your head. - You should attempt to sit-up whilst twisting so that your elbow goes towards the opposite knee. - The other elbow will remain on the floor and focussing on keeping this elbow on the floor will help you adopt the correct position. 	Repeat 10 times each side 2 sets	Repeat 15 times each side 3 sets
6. Leg Raises		
<ul style="list-style-type: none"> - Start from a kneeling on all fours position (keeping your back straight and parallel with the floor). - Tense your stomach throughout. - Using your bum you should lift up one leg – keeping it bent – so that the sole of your foot is facing the ceiling. - Hold the position for 3 seconds and lower. 	Repeat 8 times each leg 2 sets	Repeat 12 times each leg 3 sets

ENDURANCE TRAINING

Why endurance training?

Hockey umpires cover on average between 7000 (males) and 7300 m (females) during a 70 minute tournament match of which over 85% of time is spent at a low to moderate intensity. During a match umpires are required to change speed and direction frequently and spend very little time stationary. This implies most recovery from high and moderate intensity activity occurs during low intensity work.

Endurance training will provide you with:

- Improved cardiovascular function
- Improved oxygen transport to the muscles
- Help preserving the carbohydrate fuel stores used for high intensity running
- Greater ability to recover between intervals of play
- Maintenance of a higher work rate before the onset of fatigue

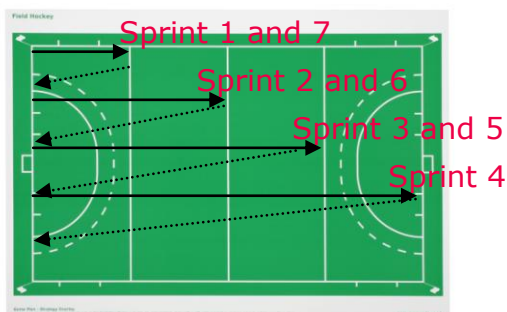
Umpiring requires different types of endurance needed to last the 70+ minutes of a match and to be able to keep up with intermittent nature of hockey play. It therefore essential that you have the necessary endurance capacity to cope with these required demands.

General points:

- Complete sessions on grass where possible. This will reduce the impact on your legs.
- Try to vary the type of sessions you include each week.
- For all running sessions concentrate on keeping your technique efficient and retaining good form, especially when you are tired.
- Start at the stage which is most suited to you as described before and progress through the stages as you are able to.

PHASE 1			
Session Description	Stage 1	Stage 2	Stage 3
Session A – Continuous			
<ul style="list-style-type: none"> - Continuous exercise at moderate intensity keeping a steady pace. - Vary the mode of exercise (running, cycling, swimming). - Increase duration as you get more comfortable 	20 minutes	40 minutes	60 minutes
Session B - Continuous			
<ul style="list-style-type: none"> - Complete 2 x ___ min run with 5 minutes recovery between runs. - Run at a challenging pace so you could not go much further in the time. - Try to run the same distance in each repetition. 	2 x 10 minutes	2 x 15 minutes	2 x 20 minutes
Session C – Interval			
<ul style="list-style-type: none"> - Complete laps of a grass pitch using the following directions: <ul style="list-style-type: none"> • 1 x long side stride (60% pace) • 1 x short side lateral shuffle (half right leg lead, half left leg lead) • 1 x long side at 80% pace • 1 x short side jog - Try to maintain the same pace throughout each lap. 	6 laps	8 laps	10 laps
Session D – Fartlek			
<ul style="list-style-type: none"> - Jog at a moderate pace for 6 minutes then run at a faster pace for 4 minutes. This constitutes one set. - Try to maintain the faster pace in all of the 4 minute sections. - There are no gaps between sets. - At the end of the 4 minutes you should be breathing hard so the change to jogging is evident. 	2 sets	3 sets	4 sets
Session E – Fartlek			
<ul style="list-style-type: none"> - Run at moderate intensity (50% pace) for 2 minutes then run at a fast pace for 1 minute (80% pace) followed by 1 minute of slow jogging. 	6 reps	8 reps	10 reps

PHASE 2			
Session Description	Stage 1	Stage 2	Stage 3
<p>Session A – Continuous</p> <ul style="list-style-type: none"> - Continuous exercise at moderate intensity keeping a steady pace. - Vary the mode of exercise (running, cycling, swimming). - Increase duration as you get more comfortable. 	30 minutes	50 minutes	70 minutes
<p>Session B - Continuous</p> <ul style="list-style-type: none"> - Complete 2 x ___ min run with 5 minutes recovery between runs. - Run at a challenging pace so you could not go much further in the time. - Try to run the same distance in each repetition. 	2 x 15 minutes	2 x 20 minutes	2 x 25 minutes
<p>Session C – Interval</p> <ul style="list-style-type: none"> - Complete on a hockey pitch (if possible – if not estimate distances and use an alternative grass pitch). <ul style="list-style-type: none"> • From the backline sprint to the nearest 22m line and jog back. • Repeat to the halfway line, far 22 m line, far backline, far 22 m line, halfway line and near 22 m line (as below). - Maintain a fast pace throughout all sprints. 	2 repetitions	3 repetitions	4 repetitions



Session D – Interval			
<ul style="list-style-type: none"> - Run 250 m at 80% pace with a slow jog recovery between runs. - Take 3 minutes recovery between sets. - Try to run in a straight line where possible. 	2 sets of 2 runs	3 sets of 3 runs	3 sets of 4 runs
Session E – Fartlek			
<ul style="list-style-type: none"> - Run for 5 minutes at a moderate pace. - Sprint for 30 seconds at 90% pace then jog for 1 minute (50% pace). - This constitutes one set. - Follow with five 50 m strides (walking recovery). 	4 sets	5 sets	6 sets

PHASE 3			
Session Description	Stage 1	Stage 2	Stage 3
Session A – Continuous			
<ul style="list-style-type: none"> - Continuous run at moderate-high intensity. - Try to increase the distance you run each time. - Try to keep the fast pace throughout the exercise. 	30 minutes	40 minutes	40 minutes
Session B – Interval			
<ul style="list-style-type: none"> - Set out markers at 0, 5, 10, 15 and 20 m. - From the 0 m sprint to 5 m and back pedal to the start. Repeat to the 10, 15 and 20 m. This is one set. - Alternate the back pedal recovery with lateral shuffles (one set right leg lead, one set left leg lead) - Allow 2 minutes rest between sets. 	6 sets	8 sets	10 sets
Session C – Interval			
<ul style="list-style-type: none"> - Run 150 m at 90% pace with a walk back recovery between runs. - 2 minutes recovery between sets. - Run in a straight line where able. 	3 sets of 2 runs	3 sets of 3 runs	3 sets of 4 runs
Session D – Interval			
<ul style="list-style-type: none"> - Sprint for 10 m in a forward direction and then lateral shuffle for 10 m as the recovery. - Repeat for four more sprints alternating the leading leg of the lateral shuffle. These five sprints constitute one set. - Rest for 2 minutes between sets. 	2 sets	3 sets	4 sets
Session E – Fartlek			
<ul style="list-style-type: none"> - Run at a fast pace for 1 minute (80% pace) followed by 1 minute of slow jogging. - This constitutes 1 set. - Follow the session with 3 minutes jogging then complete five 50 m sprints at maximum effort with 50 m jogging recovery. 	6 sets	8 sets	10 sets

STRENGTH TRAINING

Strength Introduction

Strength is the ability of the body to apply force against a resistance and is important for hockey umpires as strong, supple muscles are required in any joint movements: particularly during bursts of high intensity running. You should note that strength exercises are also conducive to improving flexibility when performed with the correct technique and performing the exercise through its full range of motion. For example, going close to full extension and flexion of the arms during a press up.

All of the strength exercises detailed below make use of your own body as a resistance so they can be performed anywhere. Where appropriate, advice has been provided to indicate how the exercises can be adapted if you have access to gym equipment such as dumbbells.

Improving your strength should provide you with:

- Increased functional strength of muscles required during tasks such as running.
- Strong, supple muscles that can enhance flexibility if performed correctly.

How to choose your sessions:

Outlined below are a number of strength exercises. When completing a strength session you should **select 3 of the exercises** and adapt the exercises according to the phase 1, phase 2 and phase 3 difficulty options outlined below each exercise.

You should **alternate between your chosen exercises** so that you do 3 different exercises to those you completed for your previous session.

Similarly, you should **select exercises that work different muscles** of the body. For instance, squats, single leg squats, and ski sits all work similar muscles, thus there would be a lack of variety if you completed these three exercises in one session.

Things to remember when performing strength exercises:

- Remember to use **controlled and slow movements** and perform the exercise through its **full range of motion**. Performing the exercises too fast is likely to promote a poor technique.
- Breathe in as the weight is lowered and out as the weight is lifted under exertion. **Do not hold your breath!**
- Ensure that you **stretch off after every session** to prevent any loss of flexibility
- **Have at least 30 seconds recovery between sets.**

Strength Exercises			
Session Description	Stage 1	Stage 2	Stage 3
1. Press Ups			
<ul style="list-style-type: none"> - With your palms placed a shoulder width apart you should complete a full-range of motion, lowering your chest fully to the floor. - Looking forward will help promote a better spinal posture when performing the exercise. - You can perform them from your knees if necessary. 	Repeat 15 times 2 sets	Repeat 20 times 3 sets	Repeat 30 times 3 sets
2. Sit Ups			
<ul style="list-style-type: none"> - Adopt a standard sit up position of knees bent and arms either at the side of your head or hands placed on opposite shoulders. - Contract you abdominal muscles to lift your torso towards your knees then slowly lower back down. 	Repeat 15 times 2 sets	Repeat 20 times 3 sets	Repeat 30 times 3 sets
3. Lunges			
<ul style="list-style-type: none"> - Standing up-right with your feet together, you should lunge forward with one leg so that your knee is over your ankle. - Quickly return to repeat the action. - N.B: You can perform this exercise whilst carrying a dumbbell in each hand. 	Repeat 10 times each leg 2 sets	Repeat 10 times each leg 3 sets	Repeat 15 times each leg 3 sets
4. Calf Raises			
<ul style="list-style-type: none"> - Using a wall in front of you as support, stand on one leg and rise on to your toes. - Hold for 2 seconds. 	Repeat 10 times each leg 2 sets	Repeat 10 times each leg 3 sets	Repeat 15 times each leg 3 sets
5. Triceps Dips			
<ul style="list-style-type: none"> - Place your hands facing forward on an object behind you, such as a chair or stair. - Extend and rest your legs out in front of you. - Dip down so that your elbow is at a right angle and then extend back to the starting position. 	Repeat 10 times 2 sets	Repeat 15 times 3 sets	Repeat 20 times 3 sets

6. Squats	Repeat 15 times 2 sets	Repeat 20 times 3 sets	Repeat 30 times 3 sets	
<ul style="list-style-type: none"> - Stand upright with feet just wider than shoulder width apart. - You should look forward throughout this exercise and slightly push your chest out. - Place your hands on your hips (or clasped out in front of you to counterbalance). - Keeping the posture straight, slowly push your buttocks back and bend your body at the hips in an exaggerated sitting motion. - Continue until your knees are bent and the thighs are parallel to the floor (your weight should be largely placed on your heels). - Then straighten back up again. - N.B: you can perform this exercise carrying dumbbells just above your shoulders. Or carry a single dumbbell with both hands between you legs. Do not compromise your technique though! 	Repeat 5 times each leg 2 sets	Repeat 10 times each leg 3 sets	Repeat 20 times each leg 3 sets	
7. Single Leg Squats	Repeat 5 times each leg 2 sets	Repeat 10 times each leg 3 sets	Repeat 20 times each leg 3 sets	
<ul style="list-style-type: none"> - Leaning with your back against a wall, raise one leg off the floor. - With hands on hips (or out in front to counterbalance) you should slowly lower yourself down as far as you can go (your weight should be largely placed on your heels) then straighten back up again. - As you improve you should be able to squat lower. 	8. Ski Sits	Repeat 15 times 2 sets	Repeat 20 times 3 sets	Repeat 30 times 3 sets
<ul style="list-style-type: none"> - Similar to the squat technique except feet should be placed closer together (approx. 15 cm apart). - Place your hand on your thighs and stick your buttocks out. - Bend your body at the hips in an exaggerated sitting motion whilst raising your arms. - Continue until your knees are bent and the thighs are parallel to the floor (your weight should be largely placed on your heels). - Straighten back up whilst bringing you hands back to your thighs. 				

SPEED TRAINING

Why speed training?

For international hockey umpires GPS tracking has shown that on average 3-4% of total movement is spent in high intensity running. It is important that umpires have the attributes required to perform high intensity running in order to be close to the in-game action in order to increase their chances of making the correct decisions.

It is often thought that speed is a quality which people are born with. While there is an element of truth in this, it has been shown that training can improve the composition of muscles so that they are more suitable for performing high speed actions.

The training drills detailed on the following pages are designed to improve your overall capabilities in performing explosive sprints. Furthermore, some of the drills will also compliment your agility and speed-endurance. Speed-endurance is broadly the extent to which you can maintain high intensity movements and perform such movements on numerous occasions in a given period (e.g. a hockey match).

Firstly, listed below are a number of drills which are designed to improve your general running technique.

Key points relating to good running technique:

- The head should remain stationary – try not to let it move from side to side.
- The body should lean forward during acceleration. This should not just be from the hips – the acceleration action has been previously likened to a 'controlled fall'.
- Body weight should be solely focussed on the balls of the feet and as the feet leave the ground they should follow a path straight up to the buttocks. Simultaneously, the knee should rise so that the thigh is parallel to the ground.
- An aggressive arm action is vital. Each arm should move as a whole and fingers should go from 'lips to hips' in a straight action, not from side to side.

Technique Drills:

Technique drills should play an important part in any speed-training programme. Improving sprinting technique and efficiency alone can lead to improvements in running speed. The following are examples of speed drills that should be incorporated into your warm-up for sprint sessions.

- **High Knees:** the main aim of this particular drill is to increase stride length. This drill involves rapidly raising your knees to above parallel, maintaining a forward body lean from the ankle. This step should be a fluid/springy motion. The drill should either be performed on the spot or by slowly moving forwards.

- **Heel Flicks:** the aim of the heel flick drill is to increase stride frequency. This drill involves alternately flicking the heels to the buttocks and back to the floor as fast as possible whilst maintaining an up-right body position. Again, the drill can either be performed on the spot or by slowly moving forward.
- **Fast Feet:** fast feet drills are designed to increase leg speed. The aim of this drill is to make as many foot contacts with the ground as possible within a given distance. You should maintain a forward body lean from the ankle and keep your chin in. Also, you shouldn't lift your feet too high – focus on making contact with the ground as many times as possible.
- **Exaggerated Elbow Drive:** on this drill the emphasis is on exaggerating the arm action by actively driving the arms backward such that the elbows go beyond the body, and then driving them forward so that the hands are in line with your lips. Either standing still or moving forward at a comfortable pace, focus on practicing the elbow drive movement.
- **Form Running:** this drill involves running at half to three-quarter pace concentrating on technique, such as: head still, trunk still, arms moving from 'lips to hips', everything moving forward, high knees.

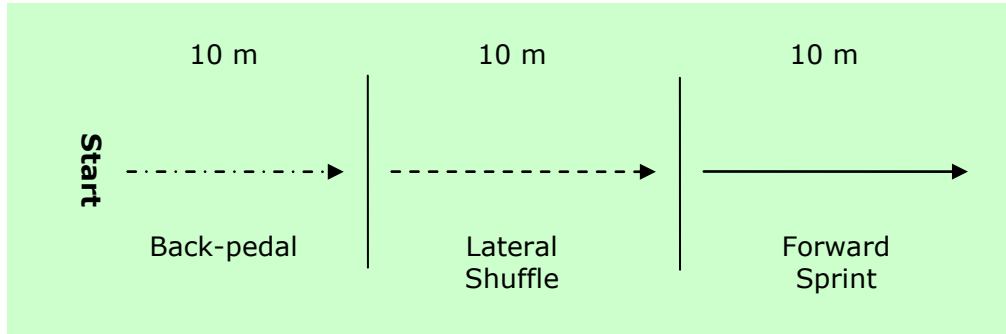
Things to remember when performing speed exercises:

- Make sure you work flat-out on all the drills you do where a set intensity is not specified. To do this you will need to fully recover between runs.
- Having a training partner whom you can compete against may help you push yourself.
- As always you should warm-up thoroughly before the session and cool-down afterwards.
- A good technique is vital: see above for further advice.
- Look at the diagrams to help you understand how the drills should be completed for each session.

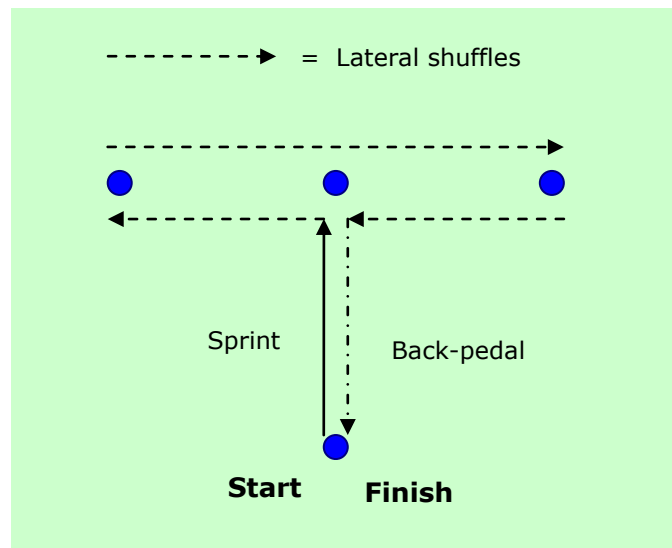
PHASE 1			
Session Description	Stage 1	Stage 2	Stage 3
<p>Session A – Speed Gears</p> <ul style="list-style-type: none"> - After some fast feet drills, estimate a straight 80m distance. - Accelerate steadily for 20m sections so that from 60-80m you are almost at maximal speed. - There should be a distinct change of pace for each 20 m section as though shifting from 1st to 4th gear. 	4 repetitions	5 repetitions	6 repetitions
<p>Session B – Retreating Sprints</p> <ul style="list-style-type: none"> - From a standing start back-pedal for 10m, followed by 10m lateral shuffle (side-steps), followed by a 10m forward sprint. - All 3 movements should be performed at maximal speed. - Transition smoothly between the 3 movements. - Alternate the leading leg for the lateral shuffle between repetitions. - Walk back recovery between repetitions and 30 seconds rest between sets. 	3 sets of 3 repetitions	4 sets of 4 repetitions	5 sets of 5 repetitions
<p>Session C – T-drill</p> <ul style="list-style-type: none"> - Set out markers to make a large T-shape (see diagram). - Start at the base of the T and sprint forwards. - Then lateral shuttle (side-steps) along the top of the T to one side, then shuffle to the opposite side. - Lateral shuffle back to the middle of the T, then back-pedal back to the start position. - 15 seconds rest between repetitions and 1 minute rest between sets. 	1 set of 5 repetitions	2 sets of 5 repetitions	3 sets of 5 repetitions
<p>Session D – Shuttle Sprints</p> <ul style="list-style-type: none"> - Set out 3 markers approximately 7m apart in a straight line. - Start 7m away from the nearest cone and sprint to the cone and back to the start again. Repeat for each cone until you have run to the furthest cone and back again. - Rest for 1 minute between sets. 	3 repetitions	4 repetitions	6 repetitions

PHASE 1 DRILL DIAGRAMS

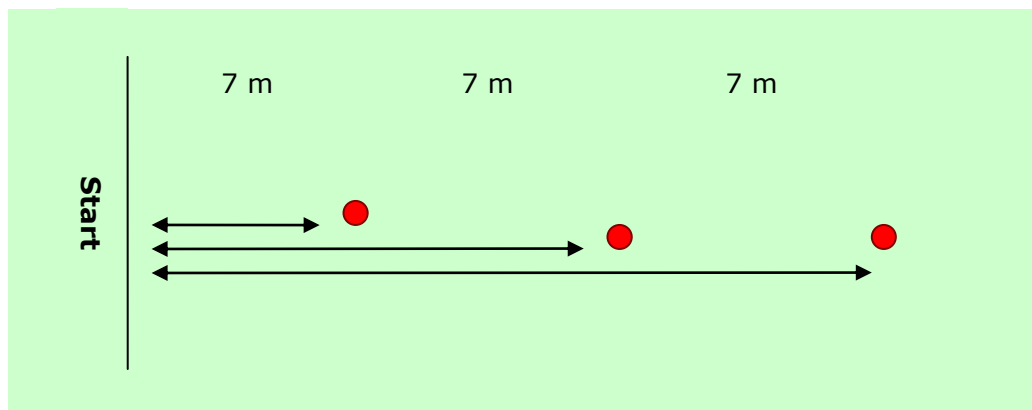
Session B – Retreating Sprints



Session C – T-drill



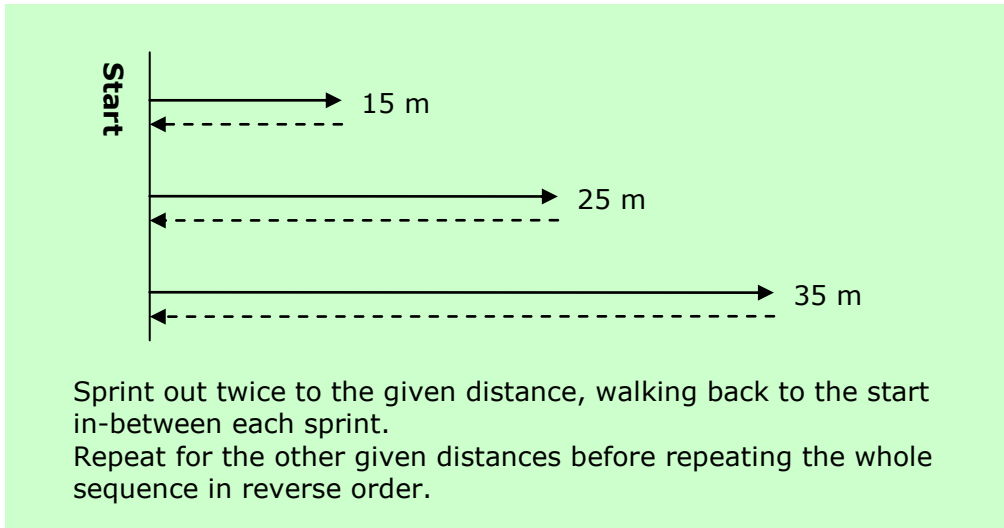
Session D – Shuttle Sprints



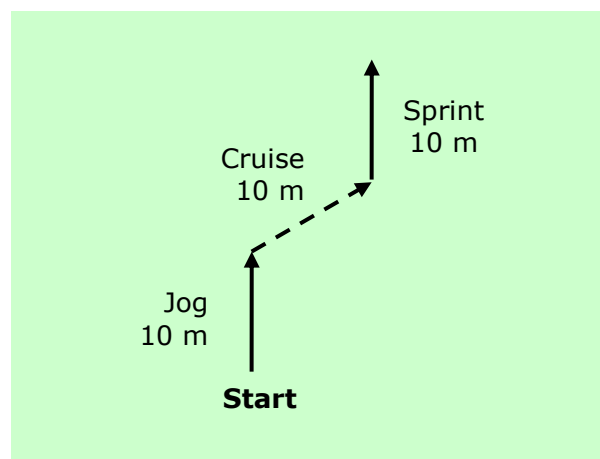
PHASE 2			
Session Description	Stage 1	Stage 2	Stage 3
<p>Session A – Pyramid Sprints</p> <ul style="list-style-type: none"> - Sprint 2 x 15m, walking back to the start between each sprint. - Repeat for 2 x 25m, 2 x 35m. - After 1 minute rest, repeat the sequence in reverse order. - Try to run at your maximum speed for each of the sprints. 	1 set	2 sets	2 sets with an extra stage of 2 x 40m sprints.
<p>Session B – Repeat Sprints</p> <ul style="list-style-type: none"> - Perform 5 x 80m sprints at maximum speed. <ul style="list-style-type: none"> • Walk back recovery between sprints. - Then perform 5 x 20m sprints at maximum speed. <ul style="list-style-type: none"> • Wait until you feel fully recovered between each sprint. 	1 set	2 sets	3 sets
<p>Session C – Directional Sprints</p> <ul style="list-style-type: none"> - Jog for 10m then move toward a 45° angle at a slightly slower pace. Continue for approximately another 10m. - Then, still moving forward, change direction back the opposite 45° and sprint at full pace for 10m. - Alternate the directional change between sets. - 30-60 seconds rest between sets. 	3 sets of 8 repetitions	3 sets of 10 repetitions	4 sets of 10 repetitions
<p>Session D – Accelerations</p> <ul style="list-style-type: none"> - Start stationary and accelerate up to 10m then stop. - Focus on performing explosive accelerations for each sprint. - Walk back recovery. - Vary your starting position. E.g., facing backwards, in a squat position etc. 	8 repetitions	12 repetitions	16 repetitions

PHASE 2 DRILL DIAGRAMS

Session A – Pyramid Sprints



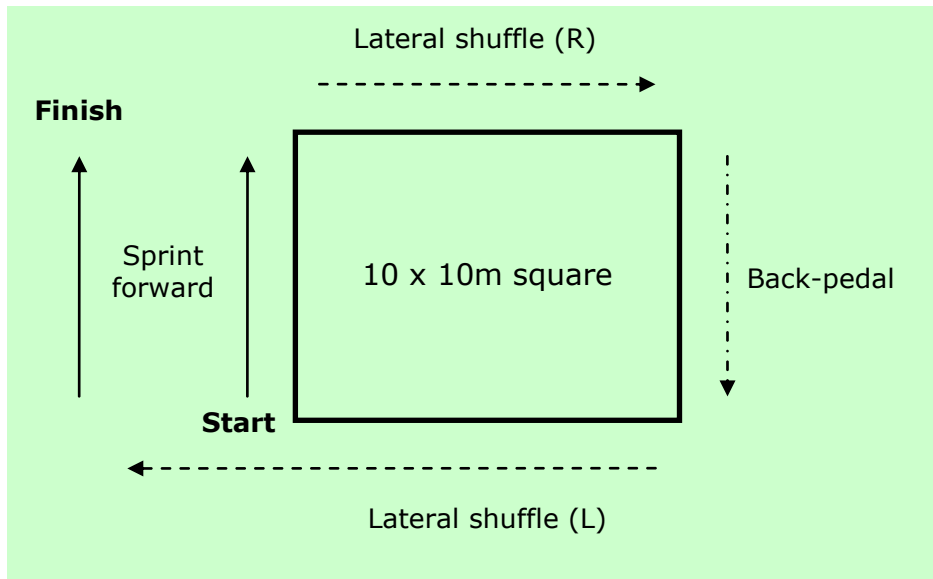
Session C – Directional Sprints



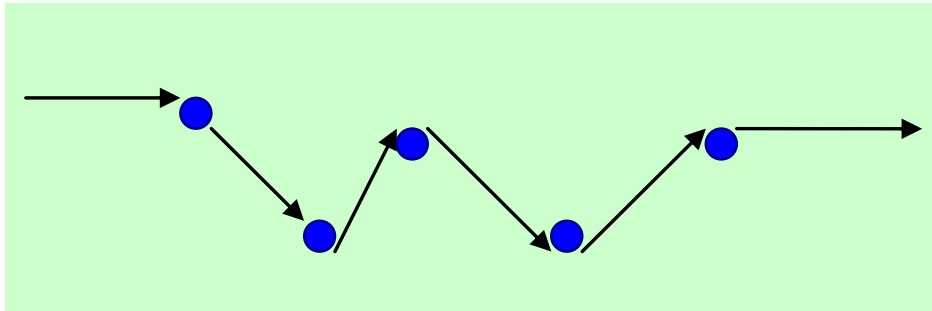
PHASE 3			
Session Description	Stage 1	Stage 2	Stage 3
<p>Session A – Sprinting Square</p> <ul style="list-style-type: none"> - Mark out a 10m by 10m square. <ul style="list-style-type: none"> • Sprint to the first corner. • Perform a lateral shuffle (side-steps) leading with the right leg to the next corner. • Back pedal to the next corner. • Lateral shuffle leading with the left leg back to the starting position. • Sprint forwards again. - 30 seconds rest between repetitions. 	8 repetitions	12 repetitions	16 repetitions
<p>Session B – Speed Slalom</p> <ul style="list-style-type: none"> - Sprint round a slalom course set out with 5 markers at maximal speed. - Walk back for recovery between repetitions. - Have 2 minutes rest between sets. - You can vary the course of the markers to your own preference. 	3 sets of 8 repetitions	3 sets of 10 repetitions	4 sets of 10 repetitions
<p>Session C – Speed Endurance</p> <ul style="list-style-type: none"> - Mark out a straight distance of 20-30m. The distance should be one that you can run to and back in roughly 15 seconds. - At close to maximum pace sprint the distance and back again. - Have 15 seconds rest between each sprint so you run for 15s and rest for 15s. - Complete this cycle for the designated time period and rest for 2 minutes between sets. 	3 sets of 3 minutes	3 sets of 5 minutes	Complete as many 5 minute sets until you can no longer keep pace
<p>Session D – Agility Acceleration</p> <ul style="list-style-type: none"> - Set out 4 markers to make a 'D' shape (you can use the D of a hockey field if available). - Start in the centre of the straight line and sprint to each marker and back in turn. - 2 minutes rest between each set. 	3 sets of 3 repetitions	4 sets of 4 repetitions	5 sets of 5 repetitions

PHASE 3 DRILL DIAGRAMS

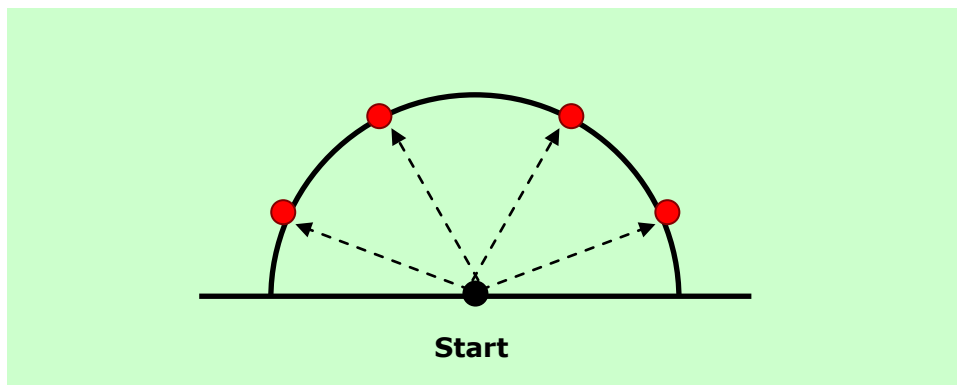
Session A – Sprinting Square



Session B – Speed Slalom



Session D – Agility Acceleration



SPECIFIC INTERVAL TRAINING

What is specific interval training?

The majority of drills listed in this training guide whether endurance based, strength based or otherwise, are catered to improve your general fitness. However, there are a number of movements associated with hockey umpiring which may be deemed unnatural. For example, running in a straight line whilst looking to one side to view the play. Another could be stooping or bending sideways whilst on the move to see around players that are blocking your view.

Similarly the patterns of movements for hockey umpires are unique. Analysis of GPS data shows that umpires are often stationary or moving at very low intensities for relatively long periods of time (e.g., during penalty corners at the opposite end of the pitch). These periods of inactivity are then often followed by sudden bursts of acceleration – often whilst changing direction. For example, the change of speed required when a team produces a swift counter-attack.

The specific interval training drills outlined on the following page are specifically designed to get your body used to performing these 'unnatural' movements in the lead up to a tournament/game.

How will specific interval training help you:

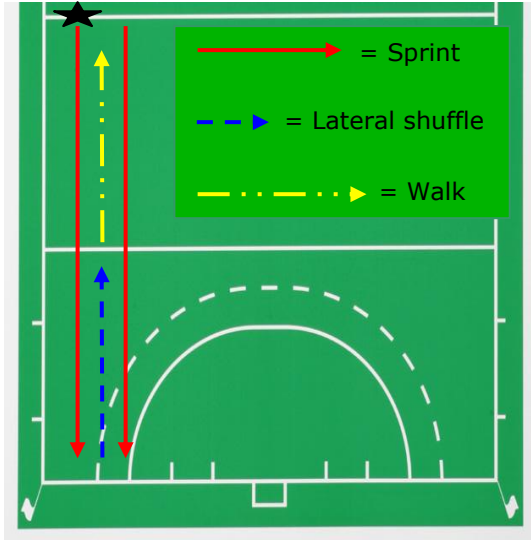
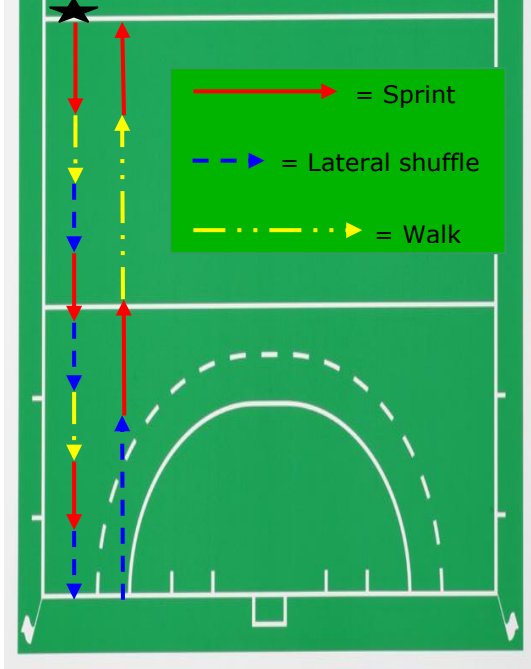
- Prepare your muscles and physiological systems for the specific movements associated with hockey umpiring.
- Allow your body to get used to accelerating whilst changing direction and holding 'unnatural' positions whilst on the move.

The specific interval training drills are presented without the usual differentiations in phases. This is because the drills outlined should be suitable for all umpires. Similarly, the drills are designed to be used in the immediate run-up to a match/tournament so you will hopefully have built up a good fitness base in order to complete the drills.

Things to remember during specific interval training:

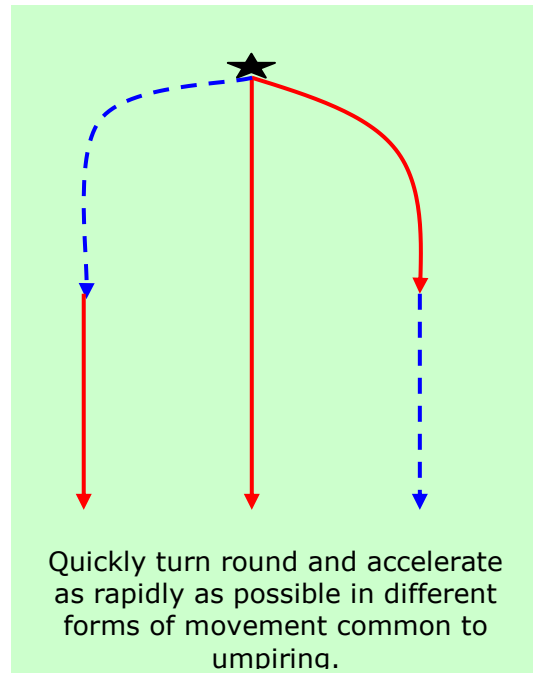
- Remember to fully warm-up. The drills involve a lot of changes in direction so you should make sure your muscles and joints are suitably prepared.
- Try to perform the exercises with maximal effort – try to replicate the efforts you produce during matches.
- Feel free to adapt the exercises as you please. For instance, if you know that you normally perform a specific movement, or change direction in a particular way due to the demands of umpiring then implement it into the drills.

Specific Interval Training Drills

Session Description	Diagram
<p>Session A – Half-way Sprints</p> <ul style="list-style-type: none"> - Start in a stationary position as though standing on the halfway line. - Quickly turn and sprint in the opposite direction for approx 50m. You should do this whilst looking to the side as though watching the play. - Slow down then begin a lateral shuffle (side-steps) for 20m back in the direction you came from. - Then walk to your original starting position. - Turn quickly again and sprint as before. 	 <p style="text-align: center;">Adapt and repeat at your discretion.</p>
<p>Session B – Stuttered Sprints</p> <ul style="list-style-type: none"> - Along an approximate 50m distance, begin to sprint from a stationary position. - At your discretion, at regular intervals you should slow the pace and begin light jogging, lateral shuffles, or walking, before returning to the sprint. - Make the transitions in movements as abrupt as possible as though an event in play has caused you to change your movement. - Look to one side throughout as though watching the play. - Work your way back up the 50m in a vaguely similar fashion before remaining stationary for 30s. - Then repeat the drill. 	 <p style="text-align: center;">Adapt and repeat at your discretion.</p>

Session C – Turn and Accelerate

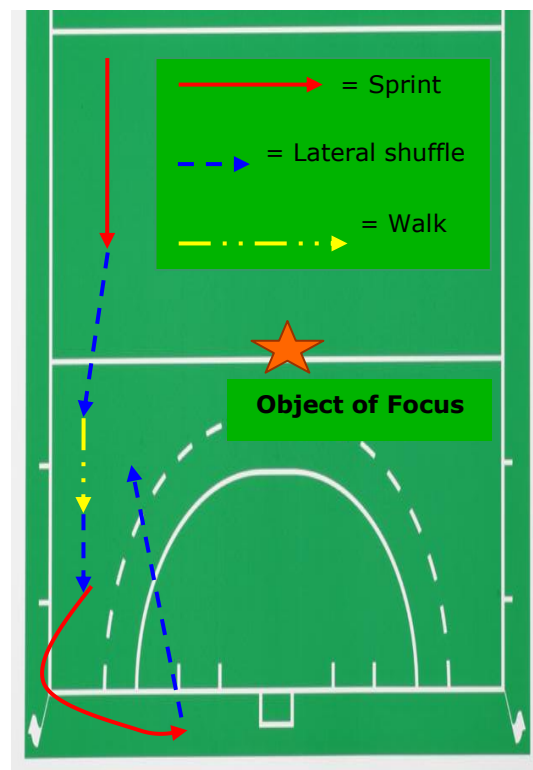
- Start in a stationary position facing away from the direction you intend to turn and accelerate to.
- At your command abruptly turn and accelerate as quickly as possible for approx 10-15m.
- Try to mix up the combinations of your movements, e.g:
 - Straight turn and sprint.
 - Turn, sprint, then side-step.
 - Turn then rapidly side-step.
- Try to turn and accelerate whilst looking to your side. For instance, a quick lobbed pass may have been made and you are turning to get up to the play.
- Have at least 20 seconds rest between repetitions.



Adapt and repeat at your discretion.

Session D – Eyes on the Prize

- Place an object in the middle of one half of a pitch or a field approximately the size of a hockey pitch.
- As though running one half of the field as in a match, you should maintain focus on the object.
- Run up and down the side of the field alternating between jogging, sprinting, side-stepping and walking as necessary to maintain full sight with the object.
- At various times you can imagine that there are players blocking your view, so you can stoop and bend in order to try and keep full sight of the object.
- Use your own initiative to try and make the drill as realistic to your movements and focus during a real match.



Adapt and repeat at your discretion.

FITNESS TESTING

Every 4-6 weeks during the training programme you should complete a battery of fitness tests. Fitness tests allow you to monitor your training progress and also to assess more precisely which aspects of your fitness need improving. Don't complete the bleep test and Yo-yo test on the same day; however do try to complete them both within the same week.

Always keep a record of your fitness test results as this allows you to monitor your progress over a longer period as well as providing information to change your training to maximise gains for you.

Bleep test:

The bleep test, or multi-stage fitness test measures your aerobic capacity or endurance. This should improve during the first 6-9 months of your training. It may not improve during the last 3 months prior to the tournament.

Yo-yo intermittent recovery test level 1:

The YoYo test measures your intermittent endurance and is therefore more specific to the demands of hockey umpiring which is intermittent in nature. During the initial 3-6 months this may improve a little but should improve a lot during the 6 months leading up to a tournament.

Straight line sprint:

Complete a straight line sprint over 30m. If you do have access to sprint beams, you can also measure your acceleration at 5m and 10m. This should improve during the last 6 months of the training.

1km run:

An easy way to monitor your fitness is to complete a 1km run in the fastest time you can. Make sure you always complete this on the same surface, eg pitch, track, treadmill. We would expect this to improve throughout your training year.

Lab test

If it is possible try to arrange a lab test at a gym or university. The benefits of a lab test are that it allows very specific training speeds to be prescribed for the sessions presented in this manual. Also, it is very sensitive to training adaptation and will allow you to monitor your training and maximise the benefits that you make.

FURTHER INFORMATION

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Useful web-links:

<http://www.bangsbosport.com/>

<http://www.topendsports.com/>

<http://www.gssiweb.com/>

<http://www.hardcorehockey.co.uk/>

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