

Higher & Intermediate 2 Physical Education

Preparation of the Body – Hockey

Q. Discuss the importance of the following **aspects of fitness** in an activity of your choice.

- Physical
- Skill-related
- Mental

In hockey, physical fitness is very important. Cardio-respiratory endurance (CRE) is particularly important as your working muscles require an oxygen supply from the heart and lungs for a long period of time (70 minutes or longer). Also, a high level of CRE allows you to maintain a high skill level throughout the game. CRE is important as is particularly vital for midfield players as during a game they will be expected to provide support in defence and attack. They will cover a large area of the field and must have high levels of CRE to keep up with play. For the majority of the game they will move at a variety of lower intensity speeds. However, they also have to produce short bursts of extremely high intensity effort to support their strikers in attack and chase their opposition players into defence. Another important aspect of physical fitness is speed. Speed is the maximal velocity that can be reached by part or all of the body. Midfield players need to have high levels of speed. It is vital when tracking back in their defensive role to catch up with the opposition. This may be to defend a player with the ball or mark a player who may receive the ball. Speed is also vital for midfielders when supporting forward players. Midfielders are often expected to make supporting runs into the D to overload the attack and this must be done at pace. Wide midfielders need speed to drive down the line either with the ball or with the anticipation of getting the ball to provide quality passes into the D.

Skill-related fitness is also important in hockey. Agility is the ability to change position and direction quickly and precisely. The game has 2 clearly defined phases – attack and defence. Attacking play is about retaining possession and creating goal-scoring opportunities. Defensive play is about limiting the opposition's attacking options. As possession is either won or lost, the game emphasis changes and players have to react accordingly. Players must demonstrate agility when beating opponents with the ball. The ability to move and change direction quickly is vital. Balance is the ability to control balance when body movement is altered. Players have to skilfully control and pass the ball in a variety of ways. It is essential to have good balance when passing the ball and the ability to improvise with the lean of the body, spin of the ball, pace, strength of touch and placement over any distance.

Mental fitness is important in hockey to ensure that you perform to the best of your ability. You have to be able to perform at your optimum level of arousal: if you are anxious or worried then this will affect your performance. Similarly, if you are under aroused then you cannot expect to play to your potential. It is important to go through mental rehearsal before practising a complex skill in hockey or before an important game. This is when you visualise what you are going to do in order to help you perform effectively. Finally, managing emotions is also important in hockey. You have to be able to cope with pressure and deal with various situations without them affecting your performance. You have to stay focused and motivated at all times.

NB: You should have examples of the effects of various strengths and weaknesses on your overall performance (use information from timed match analysis and standardised tests)

Q. Describe how you gathered information about your fitness **within** the activity (**general** information regarding your fitness.)

A. To gather information on my general fitness, I used a timed match analysis. To carry out this test, I played an 11v11 game of hockey for 70 minutes. Under 10 minute intervals, an objective observer placed ticks in the appropriate boxes depending on the type of movement a performer is making during a match (standing still, walking, jogging, mid pace and sprinting). Valuable information about the performer's levels of fitness can be gathered from a timed match analysis schedule. If there is a decrease in the number of sprints a player is making towards the end of the game then sprint endurance is affecting performance. If there is a greater amount of time spent in lower intensity activity such as standing still and walking and less time in higher intensity activity such as mid paced running and sprinting towards the end of the game then CRE is affecting performance.

Q. Describe how you gather information about your fitness **out with** the activity (**focused** information regarding your fitness.)

A.

Physical:

- 20 metre leger test – CRE
- It involves running continuously between 2 markers, 20 metres apart in time to recorded 'bleeps'. The 'bleeps' get progressively closer together (faster) as you proceed through the test. The 'bleeps' are numbered. You keep going until you are unable to reach the markers twice in a row. The last number given is your score for the test. You can then compare this score with national ratings to see how good your CRE is. You can also use it to measure improvements in your CRE over time.
- 60 metre shuttle – speed

Skill-related:

- Illinois test – agility
- You begin the test lying on your front (head to the start line) and hands by your shoulders. On the 'Go' command the stopwatch is started, you push yourself up as quickly as possible and run around the course in the direction indicated. When you get to the finish line the timer is stopped. You may repeat this 3 times, with a long break in between, and take your fastest time. You can then compare your time with national ratings to see how good your agility is. You can also use it to measure improvements in your agility over time. This test is appropriate for hockey because it involves running with a variety of directional changes. It is an appropriate indicator of agility as it involves quick movement and directional change.
- Ruler drop test - reaction time

Q. Why were the methods used to gather information **appropriate**?

- The general observation (timed match analysis) was appropriate as it was played in a competitive 11v11 hockey match against similar ability opponents. This provided a true and accurate reflection of my fitness in a games context.

- All specific fitness tests (e.g. 20m leger test, illinois test) are standardised tests so allow comparisons to be made to norm tables.

- ✓ Allows to compare results
- ✓ Observation schedule data gathered in game situation therefore realistic results
- ✓ Easy to use
- ✓ Permanent record
- ✓ Aids motivation
- ✓ Standard tests allows comparisons with national norms

Q. Explain why it is important to **assess** your fitness/development needs.

A. Provides:

- ✓ Starting point/ information to base training programme around
- ✓ Clear, valid identification of development needs
- ✓ Establish pre training levels to ensure appropriate work load
- ✓ Set targets and bench marks for improvement
- ✓ Allow comparisons before, during and after training programme
- ✓ Aids motivation
- ✓ Information to monitor/ evaluate

Q. Select **one** method of training you have used to develop a **physical** aspect of fitness. Describe what you did when using this method. Discuss the **advantages** of using the method.

A. **Fartlek training** – training that involves running at varying speeds. Different terrains/ inclines can also be used.

- ✓ Develops aerobic and anaerobic endurance
- ✓ Can be made activity specific i.e. actions & movement patterns of hockey
- ✓ Game like as it includes bursts of speed and continuous running
- ✓ Exercises can be adapted to suit level of fitness
- ✓ Easy to add progressive overload

We are completing our fartlek training **WITHIN** the activity

NB: If you are asked to describe a session that you used to improve a skill-related aspect of fitness then you could use fartlek training for agility (and continuous running for physical/CRE)

Continuous training – any exercise (running, cycling etc.) that ensures that the heart rate is operating in your training zone.

- ✓ Develops aerobic capacity
- ✓ Straight forward to plan
- ✓ Easy to add progressive overload

We are completing our continuous training **OUT WITH** the activity

Q. Discuss the **advantages** of different **approaches to training** (advantages from table on pg 47)

A. Training within activity (fartlek training/all drills and practices related to hockey)

- ✓ developed skills of game and specific fitness requirements of hockey
- ✓ practice specific movements i.e. dribbling
- ✓ can be similar to the pressure demands of a game
- ✓ easy to set up
- ✓ varied and motivational
- ✓ able to be set up on a hockey pitch

Training out with activity (continuous training)

- ✓ developed specific fitness (CRE)/muscle groups
- ✓ easy to set up and carry out
- ✓ required minimum equipment
- ✓ easy to add progressive overload
- ✓ quickly see improvements (in CRE)

Combination of both – 1/2 fitness/running and 1/2 practice drills

- ✓ developed skills of game and specific fitness requirements of hockey
- ✓ provided variety in training
- ✓ kept me motivated and prevented boredom
- ✓ practice specific movements i.e. dribbling

Q. What do you understand about the **principles of training**? Give **examples** of how these were used within your training programme.

Reminders - Progressive overload (frequency, intensity, duration) – we progressed our training by:
Week 3 of continuous running and fartlek – increased duration (from 20 to 25 minutes)
Week 5 of continuous running and fartlek - increased intensity (from 70 - 80% to 75 - 85% of maximum heart rate: increased speed)

Specificity – our training has been specific to our current level of fitness (tested initial fitness level) and our activity (fartlek involves hockey specific movement/skills/fitness and is game-like)

We ensured **reversibility** did not occur by continually progressively overloading our training programme.

A. The first principle that I applied when planning my training programme was specificity. I made sure that, having collected information on my level of fitness, my programme was based on my strengths and weaknesses. I also made sure that it was specific to the demands of the activity. To achieve this, I used fartlek training as it would improve both my aerobic and anaerobic endurance. Fartlek ensured that my training was game-like as I worked at a variety of different speeds and could incorporate skills too.

I then looked at how often I would train (frequency) and decided that I would carry out my training over a six week period to give myself enough to make improvements. I also decided to train 4 times a week during my P.E. periods. When I was ready, I could add another session in my own time.

I trained within the activity, doing a mixture of running and game-related drills to not only improve my fitness, but also my skills in the game. I trained for at least 20 minutes (duration) to ensure that I was working in my training zone.

In my training, I did continuous running for 20 minutes in the first 2 weeks but, as my level of CRE improved, I increased this to 25 minutes. After week 4, I also increased the intensity by increasing my speed. I ensured that my heart rate was between 75 - 85% of maximum heart rate (instead of 70-80%). This ensured that I was applying the principle of progressive overload to my training programme.

I also made sure that, when I was training, I was keeping within my training zone. This ensured that my training was effective. I had calculated my training zone before I started my training programme. This ensured progression in my programme and put my body under more stress, therefore improving all aspects of my game.

The final principle I considered was reversibility. I didn't want to lose the fitness I gained so I ensured that I completed all training sessions. I also planned a long term programme so that I could maintain my fitness after the 6 week programme. By using these principles, my programme was progressive and effective.

Q. Discuss the importance of **setting goals** to improve your level of fitness. Give examples of the goals you set.

A. It is important that I set myself goals so that I have a target to work towards when I am carrying out my training programme. These goals must be realistic and achievable, otherwise they will be impossible to reach.

Setting goals is a good way to motivate yourself to work hard when you are training. This will help you get through times when you find training difficult. You feel a sense of achievement when you manage to see an improvement in your fitness and in your game performance.

It is important to set short and long term goals, so that you have something that you can measure in both the short and long term. Short term goals enable to monitor my training and determine whether my programme is working and whether I can then go on to achieve my long term goal.

My short term goal was to be able to complete a 20 minute continuous running session without stopping. I wanted to be able to increase my session to 25 minutes after 2 weeks of training.

My long term goal was to get a least a level higher in the 20m leger test. I achieved 8.1 initially and wanted to get above level 9. After my 6 week programme, I also wanted to be able to maintain a high skill level in my 70 minute hockey match without being subbed off.

Finally, setting goals allowed me to record progress on my fitness and gave me the incentive to work hard, not only to improve my level of fitness but also my overall performance. Goals should be specific, measurable, achievable, recorded and time-phased,

Q. Discuss why your training might differ between each of the three **phases of training**. Give examples to support your answer.

A. In the preparation (pre season) phase of training I am trying to build up general fitness work and, in particular, my aerobic endurance. I could do this by running long, slow distance runs twice per week to start with. Each run lasted 20 - 30 minutes. As I got nearer to the competition phase, I gradually increased the intensity of the programme by increasing the duration I was running to 40 – 50 minutes. I could also do work like circuit training or particular drills. Again, I increased the intensity by increasing the work period. I used a heart rate to monitor to ensure that I was working in my training zone.

In the competition phase, the fitness work which I am doing will remain specific to the demands of my activity. I would also work on the skills which I require for my activity. I will have reached a particular level of fitness and will look to rely on the benefits I have gained from pre-season. I would also work on specific aspects of fitness that I require for competition. For example, I would use fartlek to maintain my aerobic and anaerobic endurance. I would like to peak for competitive hockey matches so I would taper down my training before competition. This tapering down would allow my body to recover. Here, I would decrease the frequency, intensity and duration of each session.

The difference in the final phase is that my body is now recovering after competitions and needs to rest. I would cut down the training in order to achieve this. However, I would try to maintain a general level of fitness. I could take part in other activities such as cycling or swimming. I would also cut down the amount of time that I spend on training.

Q. Explain the **importance of monitoring/evaluating** your performance.

A. It is important to continually monitor your training programme and improvements in performance. By monitoring our training and performance we are able to establish if training is effective and if we are meeting targets. It allows you to alter targets or set new ones if necessary. It allows you to make necessary changes to the training programme, for example making it more demanding by increasing the intensity of sessions. Monitoring performance can also provide motivation and confidence. Evaluating performance can help in identifying future development needs.

Q. Describe the methods you **used to evaluate** the effectiveness of your training programme.

We can monitor our training through:

- ✓ Heart rate monitors (continually)
- ✓ Training diaries/logs (continually)
- ✓ Knowledge of results (continually)
- ✓ Video (continually)
- ✓ Feedback (continually)
- ✓ Re-testing performance ie 20m leger test & timed match analysis (middle & end)
- ✓ You have to describe these in more detail!

Q. Discuss the effectiveness of your training programme on your **overall/ whole** performance. Give examples of your **future development needs**.

A. My training programme had several effects on my overall performance. These included:

- ✓ Sustaining a higher and more consistent skill level for longer
- ✓ Maintaining performance/ onset of fatigue did not occur until much later in the game
- ✓ Managing to support attacking play throughout the game
- ✓ Beating opponents/ dribbling past them etc
- ✓ Managing to keep up with opponent/ track back into defence
- ✓ Pressurising opponents/ regaining possession
- ✓ Motivated/ increased confidence

I consider my future development needs to include improving my reaction time within a competitive match of hockey. Currently, I find that I lose concentration as the game goes on and I am not as quick to react as I should be. Sometimes, I am standing watching what is happening instead of reacting to it. For example, if my team mate is shooting then I watch to see if it goes in instead of reacting to win the

rebound. If I improved my reaction time then I would beat my opponents to the ball and win more possession. I would also score more "rebound" goals.

Another future development need is improving my flexibility. If I improved my flexibility then I would be able to reach further to win the ball through a lunge tackle. It would also make my tackle stronger. If I increased my flexibility then it would also improve the power in my passes and shots.

	1	2	3	4	5	6	7
Aspects of Fitness	Physical: CRE, speed & speed endurance	Skill-related: agility, balance and reaction time	Mental: Level of arousal, mental rehearsal & managing emotions				
Analysis Methods – Within Activity (General Data)	Within = timed match analysis						
Analysis Methods – Out with Activity (Focused Data)	CRE = 20 metre leger test	Speed = 60 metre sprint	Agility = Illinois test	Reaction time = ruler drop test			
Why Appropriate?	Easy to use/ understand	Permanent record	Starting point/ comparison	Aids motivation	Standard tests = national norms	Timed match analysis = realistic	Objective observer
Assessing Fitness	Identifies weaknesses	Starting point/ comparison	Info to base programme on	Set appropriate workload	Targets can be set	Aids motivation	Info to monitor/ evaluate
Approaches to Training	Within activity	Outwith activity	Combination of both				
Training Methods - Continuous training (CRE)	Outwith activity	Develops aerobic capacity	Straight forward to plan	Easy to add progressive overload	Ensures heart rate is in training zone		
Training Methods - Fartlek training (CRE and Speed)	Within activity	Develops aerobic and anaerobic capacity	Actions & movement patterns of activity	Adapted to suit fitness level	Easy to add progressive overload		
Principles of Training	Progressive Overload (F/I/D)	Specificity	Reversibility				
Phases of Training	Pre-season	Competition	Transition/ Off season				
Monitoring Performance - How?	Re-testing/ observation sheets (mid point & end)	Heart rate monitors (continually)	Training diaries (continually)	Feedback	Knowledge of results (games)	Video	
Monitoring Performance - Why?	Ensures goals are being met	Re-testing – provides comparison				Increases motivation/ confidence	Allows you to make adaptations