

Fitness for Touch



Produced by Touch Football Australia in conjunction
with Justin Lannan

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Touch is one of Australia's highest family participation sports due to its minimal contact high activity nature. The sport provides a fun, fit and friendly atmosphere for all individuals at all levels from novice to elite, with nearly 40% of registered participants are females. The majority of participants are aged less than 30 years (58%), however 16% of the players are aged 40 years or more.

The purpose of this manual is to pass on up to date training methods to coaches and players alike. By presenting what modern research in the field of sports science has uncovered, and presenting the basic philosophies in plain English of not only what to do and how to do it, but more importantly why it is done. This manual is to be used as a guide to assist you and your players with their training. You don't have to have access to a sport scientist or a team of elite athletes to apply this information.

Planning.

In order to properly prepare ourselves to play touch we need to follow a few simple principles that are not rocket science. All of our training needs to be specific to what we are trying to achieve; therefore firstly we must understand what our goals are. To help us achieve our goals we need to follow the **SMARTER** approach:

- S** Goals must be *Specific*
- M** Goals must be *Measurable*
- A** Goals must be *Adjustable*
- R** Goals must be *Realistic*
- T** Goals must be *Time Based*
- E** Goals should be both challenging and *Exciting*
- R** Goals needs to be *Recorded*

Training Session

The purpose of the training session is to permit the coach to put their players through their paces in game specific activities that performed in a controlled environment. Where the coach has their hands on an imaginary remote control enabling them full control of what goes on. With a blow of a whistle they can stop, fast forward, rewind and eject what's going on. But most importantly the training session should be designed to use the record function in the players minds.

The training session should consist of the following three components.

- Warm Up
- Game Specific Activities
- Warm Down

There must to be a complete seamless progression from one component to another, where the warm up routine flows directly into the game specific activities component of the training session, followed by the warm down which is designed to assist the player to recover.

The most important component of the training session is the game specific activities, as this is the specific tactics and skills that the coach wants the players perform. So the warm up should be designed to enable the players to be both physically and mentally prepared.

Warm Up

The purpose the warm up is an integral part in assisting in the preparation of both our mind and body for the upcoming physical activity.

Before we can start an activity we need to efficiently take our body from a resting to an active state. The most efficient way to do this is through a graded series of dynamic movements that eventually replicate both the speed and range of motion of the upcoming activity and it is very essential to include the ball in as many activities as possible.

It is important to note that as our body moves;

- There is an increase in blood flow to the working muscles.
- As muscles continually contract and relax heat is generated.

When our muscles are warm:

- More oxygen is made available to them.
- They contract and relax faster.
- Blood viscosity lowers (allowing for increased blood flow)
- There is an increase in nerve transmission
- Metabolism increases



- Range of motion increases
- Muscle stiffness decreases

An appropriate warm up should follow these four steps:

1. Mental preparation.

To help switch the players mind onto training, an efficient way to do this is to create a series of simple grid activities that concentrate more on game sense and coordination skills than cardiovascular activity, (this is also a good activity to do before training starts while you are waiting for everybody to turn up).

2. Basic aerobic exercise.

Easy jogging with football for a couple of minutes so that the body temperature is raised enough to have a light sweat.

3. Dynamic Stretching.

A more specific warm up of the body, moving the limbs through their required range of motion.

4. Game specific activities

A series of higher intensity drills that replicate the requirements of the players, eg sprints, attack and defensive skills.

A pre training game of touch is not recommended as a warm up activity as often the players will perform numerous ballistic activities such as lunges and explosive sprints before they are properly warmed up.

Stretching

There are two basic types of stretching known as *Static and Dynamic*.

- Static stretching is when the muscle is slowly stretched into the required position, and then held there.
- Dynamic Stretching is when the body's limbs are moved through their ROM.

There is also a form of Dynamic Stretching known as *Ballistic Stretching*. This type of stretching occurs when the muscle is rapidly moved through its range of motion with force (bouncing or jerky movements), and can be extremely dangerous if the muscle is not warmed up enough as it can cause muscle/joint injury.

Traditionally warm ups consisted of mostly static/ballistic stretching activities that were separated by true dynamic activities such as running. Research has shown that static stretching offers no benefit in effectively warming up muscles, and ballistic stretching can cause injuries, and therefore they do not efficiently preparing muscles for the required activity.

- Static stretching should be only done as part of a warm down activity.
- Ballistic stretching should be only performed under competent supervision.
- Larger muscle groups should be stretched before smaller muscle groups.

“Whenever our body is moving it is stretching”.

Dynamic Stretching is basically an active stretch, where the players warm up the required muscles and put their limbs through the required range of motion. By using a correct sequence of activities that gradually allow the athlete to gain a greater mobility through increasing the range of movement in the joints. Dynamic stretching has been shown to be more beneficial for a warm up activity than static stretching.

For an example of a dynamic warm up routine see appendix.

Game Specific Activities.

This is the major component of the training session, as it is where the coach gets the players to perform specific activities such as to improve their game, to target an upcoming opposition etc. This is the traditional part of training where the coach has full control of the session and the warm up and cool down must be specifically designed and coordinated around this component. Individual components of this section are discussed later in this manual.

Warm Down

The purpose of the warm down is exactly the opposite to warm up by assisting the body to return to a resting state. After a strenuous training session a periods of time needs to be dedicated to allowing the player recover. It should last approximately 10-15 minutes.

An appropriate warm down will:

1. Assist with the dispersion of accumulated waste products (e.g. lactic acid)
2. Speed up the recovery process
3. Helps to prevent muscle soreness

4. Assists the player to be better prepared for the next training session
5. Assists in helping the player to relax and mentally switch off

An appropriate warm down should follow these three steps:

1. Aerobic exercise

A slow jog around the playing area ending, with a brisk walk to a central location. During the jog the players should repeat the dynamic stretching activities before stopping.

2. Static stretching

A simple series of stretches that targets all the muscle groups that have been exercised. Stretches need to be held for between 40-60 seconds.

3. Recovery procedures

The 5 R's Rehydrate, Refuel, Rest, RICED and Recover.
Avoid HARM for 72 hours after an injury.

RICED: Rest, Ice, Compression, Elevation, and Diagnosis.
HARM: Heat, Alcohol, Running and Massage

Energy Systems

In order to move we require energy, and there are two general classifications for our energy sources: Aerobic (with oxygen), and Anaerobic (without oxygen). The difference between these two energy sources is basically the time and/or intensity of the activity. The body will automatically choose which energy system it requires at any particular time. These two systems also have a number of sub-systems, but for the purpose of this exercise we will only concentrate on Aerobic and Anaerobic energy systems. It is important to note that all of the energy systems are in use at any one time, but in varying amounts. So as the exercise changes in either intensity and/or time, so too does the balance of the energy systems that are being used.

Aerobic Energy

This is best described as doing exercise while being able to talk. As we can only talk as we are exhaling, it means that in order to talk we must be breathing, and our body uses the oxygen we have inhaled to help convert our body's stored carbohydrates, proteins and fats to be used as a source of fuel. The carbohydrate stores can fuel us for only approximately 90 minutes of continuous exercise, and can take up to 20 hours to fully replenish. Aerobic exercise is generally one of low intensity and/or of a longer duration (i.e. generally anything greater than four minutes of continuous exercise).

Anaerobic Energy

In anaerobic exercise, the body has only an extremely small amount of energy available to fuel an all out activity lasting up to four seconds, before the fuel



stores are empty. However unlike aerobic energy our body can rapidly replenish these stores, but there too is a limit as approximately 50% is replenished within 20 seconds, 75% within 40 seconds and 100% within 3 minutes. Anaerobic exercise is generally one of high intensity and/or of a shorter duration, that is less than four seconds of continuous exercise.

A game of touch can be considered both aerobic and anaerobic, as a whole it can be considered aerobic, but as the game consists of two 20 minute halves that consist of numerous high intensity efforts (anaerobic) that last for only very short periods of time. So to look at a game of touch in reference of energy systems, it could be seen as an aerobic activity that consists of many aerobic activities (50% Anaerobic, 30% Aerobic and 20% combination), remember all energy systems are in use at the same time, but just in different amounts.

Whenever our muscles contract we produce a by-product known as "Lactic Acid", this by-product was once thought of as a waste product, and was blamed for sore muscles, cramps etc. where in fact Lactic acid is used by our body to assist in the supply of fuel for energy. However when our muscles contract vigorously, such as an extensive amount of anaerobic activity, is where lactic acid now becomes a problem. More lactic acid is now produced than the body actually requires. This excess actually prevents the muscles from contracting and we begin to feel a sharp burning pain in the muscle (normally legs). This excess Lactic acid is what is the limiting factor in allowing us to continue the activity rather than having enough energy. So in order to continue we have to get rid of the excess lactic acid.

The longer the excess lactic acid remains in the muscle the more time it will take before the muscle will want to vigorously contract again. In order to effectively remove the Lactic acid from our muscles we need slow down the activity, to at least 60% of the intensity, for a couple of minutes which allows the blood to flush out of the excess Lactic acid of the muscle. As we are not able to physically sustain extensive amounts of anaerobic activity, it is important that after an anaerobic effort that the players keep moving at a light pace in order to maximise their recovery.

Planning the training session.

In order to get the most out of the training session, as coaches we must not only know what we are trying to achieve, but more importantly how we are going to do it. As a game of touch requires both skill acquisition and fitness conditioning, to be more efficient with the training session we need to be able to effectively combine both. This will instantly not only be more time efficient, but more effective. However this does require much more planning, and this is often where the coach fails due to lack of preparation.

A game of touch requires the use of all energy systems in different ratios at different times during the game; therefore we must train them accordingly. So the training session should be focused on training these energy systems appropriately. If we looked at a continuum of how our body produces and uses energy we would have both aerobic and anaerobic at opposite ends.

It has been tradition to train aerobic and anaerobic energy systems independently, where long runs were used during pre season to build an aerobic base before any anaerobic training began. But as they are both in operation at the same time, in essence when you are training one you are also training the other.

In order to make the most of the limited time we have with our players we need to properly plan our training sessions in order to maximise any benefits, and as anaerobic training will by nature also train the aerobic energy system, it is wise then to minimise the amount of time spent solely training the aerobic energy system, such that the long runs have minimal purpose. By planning a training session that has periods of high intensity exercise dispersed with low intensity exercise effectively is integrating both the anaerobic and aerobic energy systems, and this is called interval training. As the game of touch is basically just one long aerobic activity that consists of hundreds of anaerobic activities, interval training would have to be a training method of choice that replicates the game itself.

Interval training familiarises the player with short bursts of high intensity activity that are immediately followed by a period of an active recovery, (eg a 20m sprint followed by a 60m jog). Following an anaerobic activity it is extremely important that the players perform an active recovery; as remember this is the best way to assist the body in promoting the loss of excess lactic acid.

The principle of interval training works the same as most training programs through utilising a combination of both sets and reps for each activity that are all performed on a specified work to rest ratio (W:R). By varying components of the work to rest ratio you can target specific energy systems from increasing rest and decreasing work for predominately aerobic training through to decreasing rest and increasing work for predominately anaerobic training.

However it is important to note that the coach must constantly monitor the players mental performance, as well the physical, because mental fatigue can occur earlier than physical fatigue, and once mental fatigue has set in physical performance will suffer. A general rule of thumb is *...the more mentally demanding the activity requires a greater recovery period.*

In order to get the most out of the training the players need enough recovery to enable them to efficiently perform the required activity at the appropriate level. Such that the W:R ratio has to be flexible from player to player as well as from activity to activity.

The implementation of an efficient interval training session does need some planning, however it is an extremely simple concept, and with experience an astute coach will know exactly how to manipulate it to his advantage. Although interval training does not have to be two separate training drills, (e.g. an anaerobic drill followed by an aerobic activity), but it can be part of a single activity where the players seamlessly alternate from high intensity to low intensity activities.

Here are three examples of interval training.

Fig 1.



Fig 2.

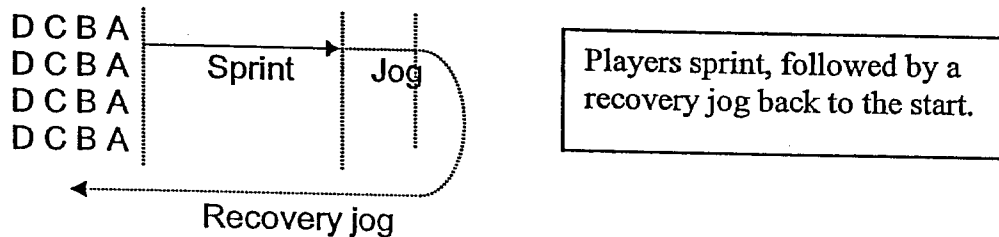
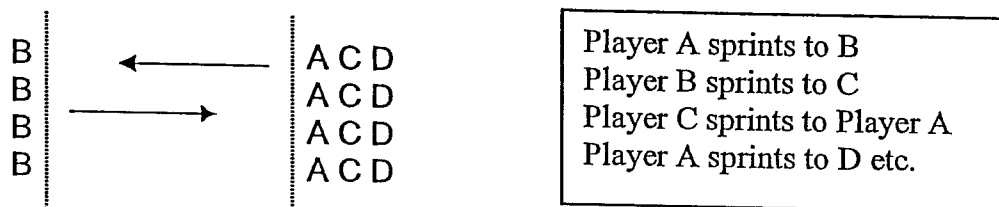


Fig 3.



Players on the left side have a W:R ratio of 1:2 and the players on the right side have a W:R ratio of 1:4.

These types of activities have endless amounts of variations that can be included that range from changing the distance, including game specific activities, adding a ball and even adding opposition.

By ensuring that the players put 100% effort into the work component of every activity, this training will also double as a fitness component of the training session, therefore saving more time. Nothing can be more specific than replicating game related activities that test game specific skills that are done at game pace.

Speed Agility and Quickness (SAQ)

The importance of SAQ training should never be overlooked and is one of the most important components of a touch training session. As the speed of a player from point A to point B is extremely important, it also must be understood that the players agility and quickness between A and B will also affect their speed.

Straight-line speed is one thing, but for a player to be able to both accelerate and decelerate while changing direction in the shortest possible time is more relevant to touch. When you see TV footage of the cheetah trying to catch the gazelle we see the perfect battle between speed and agility.

The cheetah has a body that has adapted for speed and is able to cover 7-8 meters with every stride, it can accelerate to up to 72 kph in just two seconds and has a top speed of 110 kph. While the gazelle is designed for agility where it is able to consistently make many sharp short steps in a very short distance, but only has a top speed of 60 kph.

The cheetah gets its speed due to its massive stride length but unfortunately when at top speed it has very poor agility, where the gazelles is able to run fast while taking many short steps allowing it to constantly change direction often get away from the cheetah. Touch players must have the ability to run fast like a cheetah, and at a split seconds notice have to be like a gazelle by shortening their stride length to allow efficient changes in direction.

There is much overlap between speed, agility and quickness, but to avoid repetition each component has been simplified as follows.

Speed.

The aim of speed training is to teach the body to move its limbs as fast as possible, while maintaining coordination. In order to do this the brain and nervous system must be trained to efficiently contract the required muscles. To do this efficiently the player must be completely rested and fresh before doing any type of speed training and is ideally periodised during pre season and at the start of an individual training session.

To get the most benefit out of speed training the player must put in 100% effort, and there must be a maximal recovery period between efforts of between 1-3 minutes (depending on the initial fitness of the player). It is important to note that speed training is not a cardiovascular session but a neuromuscular session.

As touch players rarely sprint more than 20m, and of that only 5-10m would be running in a straight line, and as a world class 100m track athletic takes up to 70m before they gain perfect running technique, so spending lots of time correcting touch players running technique may not be worthwhile. Touch

players should be doing speed training of distances of between 5-60m; and the longer the distance means more rest between sets.

Some examples of speed training are as follows.

- 4 sets of 8 x 10m 2 min walk back recovery
- 4 sets of 6 x 20m 2 min walk back recovery
- 2 sets of 5 x 30m 2 min walk back recovery
- 2 sets of 5 x 40m 2 min walk back recovery
- 2 sets of 4 x 50m 3 min walk back recovery
- 2 sets of 4 x 60m 3 min walk back recovery

Agility.

Agility is being able to change direction without loss of coordination, balance or speed. Players must be able to subconsciously adjust both their stride rate and stride length, as the shorter the steps the more agile the player is. Agility is different to speed and strength where it does not need as much maintenance to retain it.

Agility can be included in the training session by performing drills that incorporate fast feet running over a short distance, as well as activities that make the player have to constantly run from A to B as fast as possible while having to perform a number of changes in direction while at full pace. To further test the player, the coach can change the distance between the cones, add ball skills, add opposition and introduce random activities/directional changes during an activity.

Here are three examples of agility training.

Fig 4.

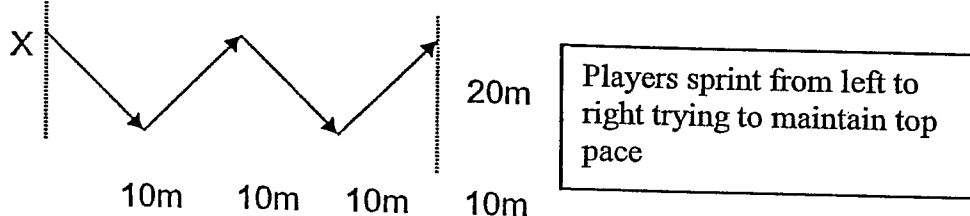


Fig 5.

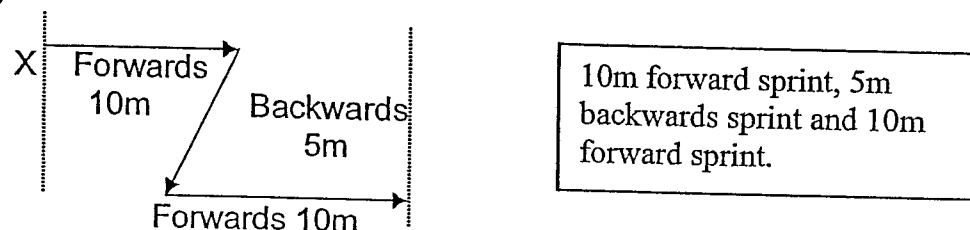
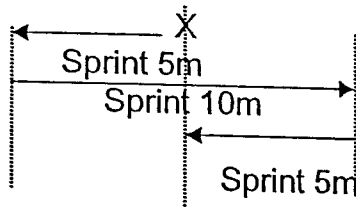


Fig 6.



Players sprint left 5m, right 10m, then left 5m.

The first sprint (left or right) is randomly chosen by the coach.

Quickness.

In the context of SAQ, quickness is all about the speed of the reaction to a stimulus and then how quick force can be generated to allow a player to change direction. Where speed and acceleration are affected by quickness. The brain must not only be taught the movement pattern but more importantly the speed of the movement pattern.

By both increasing the speed and actually performing the required movement over and over again will eventually train the brain to coordinate the movements in a controlled and explosive manner. The aim of this training is to develop First Step Quickness, where the player is able to rapidly accelerate over the first 3 to 5 meters. Where the first three to four steps that the athlete takes must be powerful, fast and effective in order to get them moving as quick as possible.

Here are three examples of quickness training.

Fig 7. Fast Feet / Sprint

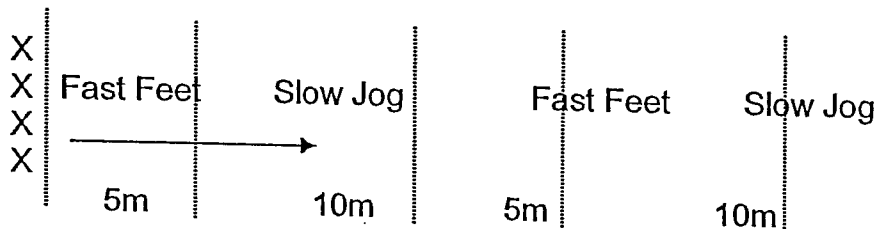
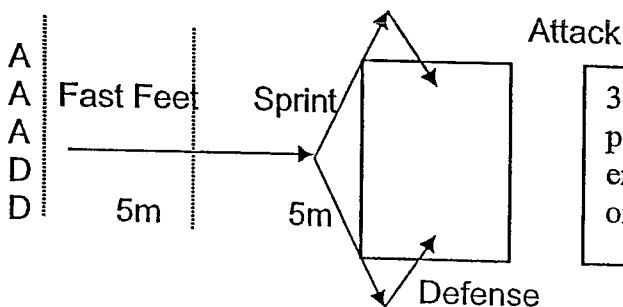
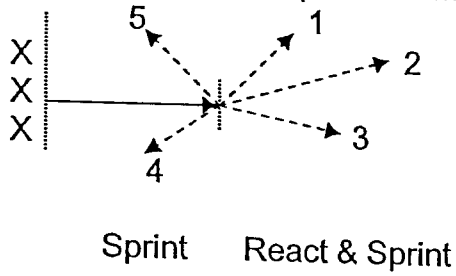


Fig 8. Fast Feet / Sprint / Attack



3 attackers and 2 defenders perform a fast feet drill, then enter a grid and execute a 3 on 2 overlap drill.

Fig 9. Fast Feet / Sprint / React & Sprint



Players sprint forward and on the coaches signal players must immediately react and sprint to the nominated marker.

Nutrition.

We need energy for our activities, and this energy comes from the food we eat and drink. The main source of fuel for our body is glycogen, and the body is able to source glycogen from carbohydrates, proteins as well as fats, however carbohydrates are the preferred energy source as they supply a greater amount of energy per gram.

Our diet should consist of approximately 57% carbohydrates, 30% proteins and 13% fats, and when we eat excessive amounts of any of these, the surplus will be converted to fat. However if we are low in our glycogen, it will make us tired, our initial performance will suffer and if it continues it could lead to illness and even injury. If we eat in excess of our energy needs, the body will store a limited amount of glycogen and a larger amount of fat. When we eat less than our energy needs, our body draws on its own glycogen and fat stores for energy. If we continue to exercise in this state we will go beyond glycogen depletion, and the body will then begin to break down protein in the form of muscle and lean tissue for fuel.

Carbohydrates can vary in the speed that the body can convert them into energy (blood glucose); and have been graded from 1 to 100 (with glucose rated 100), this is called Glycaemic Index (GI). Where the lower the number the slower the conversion to energy, eg apples, lentils, baked beans and milk are low GI, Oranges, white rice and pasta are medium GI and corn flakes, honey, bread, table sugar, watermelon and baked potatoes are high GI.

Pre Event.

The pre event meal needs to be of a low GI index, as the glucose we don't want to be released into the blood stream immediately. Due to it taking about two hours to completely digest our food, it is advised that any pre event meal be at least two hours before exercise, although a light carbohydrate snack may be consumed at least 15 minutes before exercise.

Post Event.

The post event meal is part of the recovery strategy, where high GI foods are preferred due to the body's high ability to absorb the glucose, and therefore assist in the recovery process.

Recovery.

The importance of recovery should never be overlooked, because as a coach we all want our athletes to perform at their best, and we all know what it like to work after only a few hours sleep. If the players are not properly rested they too will not perform at their best. Recovery allows for body to repair itself from the rigors of training and competition where the muscles and connective tissues can repair themselves, and the mind is allowed to switch off.

The term recovery should not only be thought of as between training sessions but during training/game itself, as the better the players are able to recover between high intensity efforts the more they can train, and hopefully the better their performance will be.

During training/games, recovery is associated with internal factors such as the lack of anaerobic energy after an all out effort and the amount of lactic acid accumulation in the muscles after a series of anaerobic efforts. While external factors such as weather such as heat, cold, and wet are not to be overlooked.

As already mentioned when performing a high intensity anaerobic effort, we only have enough energy available to last around four seconds, and it takes approximately 3 minutes to be fully recovered. 50% of our fuel is replenished within 20 seconds and 75% within 40 seconds. This means that if too many high intensity efforts are done with too little recovery, the player will eventually need at least 3 minutes to fully recover. So that when designing a work to rest ratio for an activity there must be a longer rest between each set to allow the players to fully recover.

The lactic acid accumulation in the muscles is the major contributing factor for loss in our ability to contract our muscles during repeated high intensity activity (as opposed to lack of energy). To reduce the amount of lactic acid in our muscles and speed up our recovery we need circulate more blood through the muscle, and the blood flowing through the muscle will assist in taking away the excess lactic acid. In order to effectively do this we need to exercise the muscle to at least 60% of the intensity. For example the best way to get rid of lactic acid in the legs is to go for a light jog rather than stand still or sit down.

Carbohydrates are an important energy source, however our body can only store approximately 90 minutes worth of energy, and it can take up to 20 hours to fully replenish our stores. When our body is exercising more blood is pumped to the working muscles and less to our digestive system, so it will take even longer to convert the food ingested into energy while exercising. However our body will take on carbohydrates faster in a liquid form as compared to a solid form, but it is hard to exercise with excess food/fluid in our stomach. Our body is more receptive to absorbing carbohydrates during the first two hours after exercise, so it is more important to replenish our carbohydrates after exercise than during.

All players need to adopt a post training/game recovery ritual, regardless of winning or loosing, that consists of a light jog to help get rid of any excess lactic, ingestion of high glycaemic carbohydrates and a series of static stretches and an injury management plan.

Recovery should follow the 5 R's Rehydrate, Refuel, Rest, RICED and Recover, then avoid HARM for 72 hours after an injury.

RICED: Rest, Ice, Compression, Elevation, and Diagnosis.



HARM: Heat, Alcohol, Running and Massage

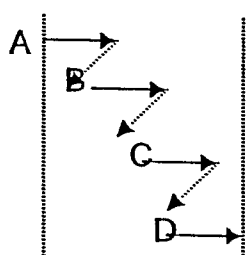
The Training Session Samples.

Mental preparation.

It is important to allow players to mentally switch on, and by having the players spend 10-15 minutes before training starts playing simple grid activity games helps the players have a bit of fun before training begins, and it helps to get them mentally switched on. It also doubles as activities that help keep players active while you are waiting for everyone to turn up.

These activities have minimal running involved and are focused on ball skills and fun.

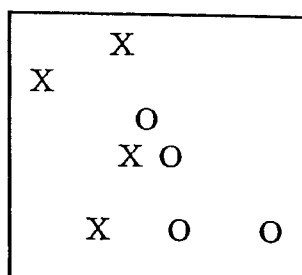
Fig 10.



Fast hands in a small grid

Players start standing still progress to a walk and up to a light jog.

Fig 11.

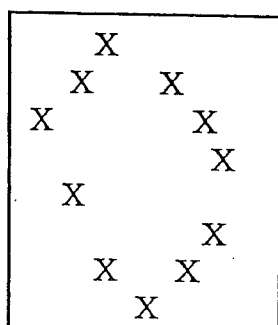


Ball tag

Team with ball must tag opposition to eliminate them from the grid.

- Player with ball can only move one step
- All players must remain inside grid
- If ball is dropped, a tagged player can return to the game

Fig 12.



Hot potato passing

Players stand in a circle and randomly pass the ball as fast as possible. Players must have maintained control of the ball before passing

Variation

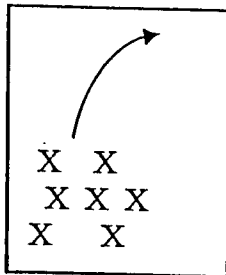
- Players have hands behind backs and must clap before they catch the ball.

Basic aerobic exercise.

Once everybody has arrived and they are mentally ready to train, the players perform a low intensity jog for approximately 3-5 minutes (depending on the temperature) around the area with the ball. The intensity should be low enough that they can still hold a conversation but obtain a light sweat.

Fig 13.

Catch Control Pass.



Players run in a bunch around the playing area with the ball and randomly throwing the ball anywhere within the bunch. The players firstly catch the ball, then once they have the ball under control they immediately throw it.

The ball is not allowed to hit the ground.

Coaching Points:

- Ensure the ball spends minimal time in the players hands (hot potatoes).
- Get players used to catching and controlling the ball from awkward positions.
- Assist in players mentally switching on.
- For larger groups add an extra ball.

Dynamic Stretching.

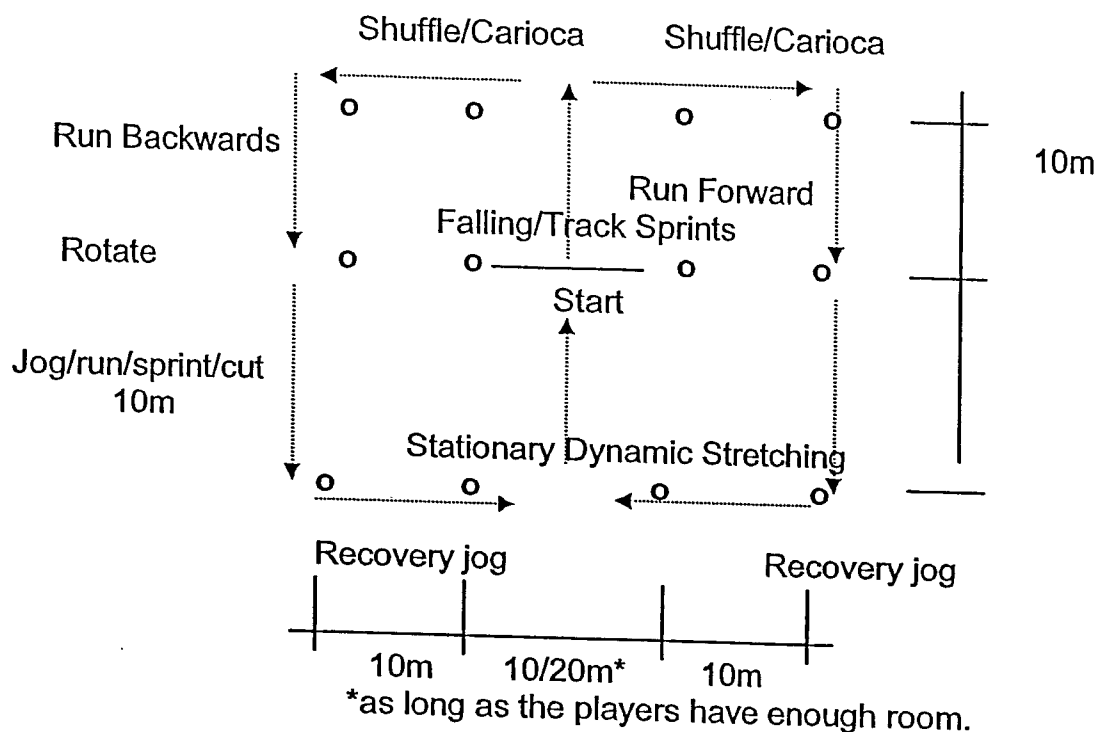
When using a dynamic warm up, it is important to follow these steps to ensure maximal efficiency in both warming up players as well as minimising any risk in soft tissue injuries.

- Progress from slow to fast activities.
- Stretch large muscle groups before small muscle groups.
- Do single plane exercises before multi plane exercises.
- Use a football where possible during the exercises.
- Do a stationary dynamic stretch between exercises to allow players to recover.

Remember the dynamic stretching routine should be designed to prepare the players for the game specific activities that are planned by the coach.

A sample dynamic stretching routine for touch is in the appendix.

Dynamic Stretching Set Up



Sample Dynamic Warm Up Routine Progression

Forward	Lateral	Backward s		
Lunge	Lunge	Rotate		25%
Knee to Chest	Shuffle	Rotate	Ball	
Toes Up	Shuffle	Rotate	Ball	
Toes Down	Shuffle	Rotate	Ball	
Calf Stretch				
Short Step Butt Kicks	Carioca	Rotate	Ball	50%
Long Step Butt Kicks	Carioca	Rotate	Ball	
Back Roll				
High Knees	Carioca	Rotate/Cut	Ball	50%
Fast Skip	Carioca	Rotate/Cut	Ball	
Lower Back				
Skip for Height	High Knee Carioca	Rotate/Cut		75%
Skip for Length	High Knee Carioca	Rotate/Cut		
Bound for Height	High Knee Carioca	Rotate/Cut		
Bound for Length	High Knee Carioca	Rotate/Cut		

Leg Swings				
Fast Butt Kick	Shuffle	Rotate/Cut		90%
Fast High Knees	Shuffle	Rotate/Cut		
Own Stretch				
5 m Falling Sprints				100%
10m Track Starts				100%

Drill Explanations

Exercise	Description	Rationale
Forward Lunge	Keep knees at 90° Keep shoulders, hips and thigh in straight line (vertical)	Quadriceps, groin, hamstring, gluteus
Lateral Lunge	Face forward, step sideways, keep shoulders and hips in straight line vertical, squat down, repeat	Quadriceps, groin, hamstring, gluteus
Knee to Chest	Stand on toes (stretch calf) Knee to chest (stretch groin, hamstring, gluteus)	Calf, hamstrings, groin, gluteal
Shuffle	Face forward, spring off heels. No clicking of feet!	Initiate lateral movement (hip, quadriceps, calf)
Toes Up	Forward running with legs straight, toes pointed up and landing on midfoot	Calf
Toes Down	Forward running with legs straight, toes pointed down and landing on forefoot.	Calf
Short Step Butt Kicks	Forward running, bring heel to butt while no forward movement of the knee.	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Long Step Butt Kicks	Forward running, bring heel to butt and bring knee forward.	Fast twitch fibres (hip flexors/ hamstrings/gluteus)
Carioca	Face forward with lateral movement. Leading leg in front, then leading leg behind.	Lateral leg and hip rotation.(hip flexors)
High Knee Carioca	Advanced carioca, leading leg lift knee towards chest	Advanced lateral leg and hip rotation. (hip flexors)
High Knees	Forward running, bring knees to chest	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Fast (Power) Skip	Fast skipping while taking very small steps. Drive arms and spring off toes	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Skip for Height	Short skips concentrating on springing as high as possible.	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Skip For Length	Longer skips concentrating on driving of rear foot for distance.	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Bound for Height	Keep ankles together, squat down and concentrating on springing as high as possible.	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Bound for Length	Keep ankles together, squat down, lean forward and concentrating on springing as far as possible.	Fast twitch fibres.(hip flexors/ hamstrings/gluteus)
Falling Sprints	Keep ankles together, fall forward and sprint using body height to drive forward	Explosive running