

Kilkenny GAA Youth Physical Development



Introduction to Resistance Training

We live in an age when people are bombarded - and sometimes bewildered - with a constant array of messages, in relation to an increasing number of subjects from an ever-expanding variety of sources. Against this backdrop, it can often be difficult to see the wood from the trees even if it involves well-intentioned messaging around Wellbeing.

In this context, the importance of exercise can never be underestimated because "exercise is the best medicine". There is an increasing volume of Research, which testifies to the fact that "60 Minutes of Moderate To Vigorous Physical Activity Per Day" is a key requirement in this regard and the ultimate antidote to a whole array of health-related problems, which are usually the by-product of a sedentary lifestyle.

The impact of exercise is optimised when it is underpinned by a level of fitness, which derives from Resistance Training. This booklet sets out - in an easy to use manner - the 5 Key Movements and 5 Desirable Movements - along with a series of Progressions and Regressions - that can be undertaken with a minimum of equipment and fuss by people who are not actively involved in formal sport.

For those who are, they have the added advantage - and benefit - of being able to incorporate these movements into Warm-Up Routines thereby reducing the risk of injury.

While changing behaviour is never easy, I believe that this booklet will play a very important role in ensuring that best practice resistance training is the norm and that this will backbone a generation who fully commit to the benefits of 60 minutes of Moderate to Vigorous Physical Activity.

Somebody once said that the "future is not something that happens in that it is more a case of making things happen". If so, let this be the future by making it happen now.



Pat Daly
GAA Director of Games Development & Research



Resistance Training Programme

Session No.1

ALWAYS.....

- Complete the Warm-Up Movement Preparation
- Complete the Mobility and Activation Work

EXERCISE	TEMPO	SETS	WEEK 1	WEEK 2	WEEK 3	WEEK 4
DB Goblet Squat	4 down, pause, 2 up	1	8	9	10	12
		2	8	9	10	12
		3	8	9	10	12
Press-Up	4 down, pause, 2 up	1	8	8	10	12
		2	8	8	10	12
		3	8	8	10	12
Lunge Circle	Control the movement	1	3 ea	3 ea	4 ea	4 ea
		2	3 ea	3 ea	4 ea	4 ea
		3	3 ea	3 ea	4 ea	4 ea
Side Plank	Brace Core, tighten glutes	1	20 sec ea	25 sec ea	30 sec ea	35 sec ea
		2	20 sec ea	25 sec ea	30 sec ea	35 sec ea
		3	20 sec ea	25 sec ea	30 sec ea	35 sec ea
T-Plane	Control the movement	1	6 ea	6 ea	8 ea	8 ea
		2	6 ea	6 ea	8 ea	8 ea
		3	6 ea	6 ea	8 ea	8 ea

NOTES	
SQUAT	Sit back onto chair - Chest tall - Feet flat on ground
PRESS-UP	Hands under shoulders - Feet together - Body moves as one - Elbows 5 and 7
LUNGE	Step, Plant, Drop - Stay Tall - Front knee above ankle
SIDE PLANK	Hips forward - Head back - Straight lines
T-PLANE	Soft knee - Chest on the table - Open door with heel

Session No.2

ALWAYS.....

- Complete the Warm-Up Movement Preparation
- Complete the Mobility and Activation Work

EXERCISE	TEMPO	SETS	WEEK 1	WEEK 2	WEEK 3	WEEK 4
BB Hip Thrust	3 down, pause, explode up	1	6	8	10	10
		2	6	8	10	10
		3	6	8	10	10
Inverted Row	4 down, pause, 2 up	1	6	6	8	8
		2	6	6	8	8
		3	6	6	8	8
DB Split Lunge	Control the movement	1	3 ea	3 ea	4 ea	4 ea
		2	3 ea	3 ea	4 ea	4 ea
		3	3 ea	3 ea	4 ea	4 ea
Plank	Brace Core, tighten glutes	1	25 sec ea	25 sec ea	30 sec ea	30 sec ea
		2	25 sec ea	25 sec ea	30 sec ea	30 sec ea
		3	25 sec ea	25 sec ea	30 sec ea	30 sec ea
Hinge with Band	Control the movement	1	6	6	8	8
		2	6	6	8	8
		3	6	6	8	8
NOTES						
Hip Thrust	Lay on back - feet flat & shoulder width - Drive hips to sky - Push thro' feet					
Inv. Row	Overhand grip wider than shoulders - Feet together - Body moves as one					
Split Lunge	Stay Tall - Front knee above ankle - Straighten both legs at top					
Plank	Elbows under shoulders - Straight lines - Tighten core					
Hinge	Stand tall with soft knees - Push hips back - Neutral spine throughout					

Session No.3

ALWAYS.....

- Complete the Warm-Up Movement Preparation
- Complete the Mobility and Activation Work

EXERCISE	TEMPO	SETS	WEEK 1	WEEK 2	WEEK 3	WEEK 4
Standing Long Jump	Explode Forward	1	6	8	10	10
		2	6	8	10	10
		3	6	8	10	10
Med Ball Slams	Kneeling position	1	6	6	8	8
		2	6	6	8	8
		3	6	6	8	8
Nordic Hamstr.	Band assisted	1	4	5	6	7
		2	4	5	6	7
		3	4	5	6	7
Dead Bug	Brace Core, tighten glutes	1	30 sec	45 sec	60 sec	75 sec
		2	30 sec	45 sec	60 sec	75 sec
		3	30 sec	45 sec	60 sec	75 sec
Single Leg Squat	Hip, Knee, ankle in line	1	6	6	8	8
		2	6	6	8	8
		3	6	6	8	8
NOTES						
Long Jump	Feet shoulder width - Squat down - Use arms to explode forward					
Med Ball Slam	Kneeling position - Raise ball above head - Slam ball into ground					
Nordic Hamstr.	Kneeling position - Band around chest - Lower chest to floor					
Dead Bug	Lay on back - Hips & knees at 90 - Arms straight up - Lower 1 arm/leg					
SL Squat	Stand tall, one leg in front - Lower to bench - Drive up - Neutral spine					



Warm-Up Movement Preparation (No.1)

1. Mini-Band March



- **Begin in athletic position with band around knees**
- **March forward with 10 deliberate steps**
- **March backwards with 10 deliberate steps**
- **March to the left with 10 deliberate steps**
- **March to the right with 10 deliberate steps**

2. Glute Bridging (Double Leg)



- **Lay on back, feet hip width apart**
- **Push through hips and heels**
- **Hold at top for 2-3 seconds**

3. Glute Bridging (Single Leg)



- Lie on back with knees bent and 1 leg raised
- Raise hips by pushing through glute and heel
- Pause at top for 2 seconds

4. Bretzel Stretch



- Begin lying on side with knees bent in front of hips
- Hands together in front of face
- Raise top hand around in a circle as far as it can go
- Rotate head by watching top hand throughout movement

5. Hip Stretch



- Begin with right knee and left foot on the ground
- Straight line from right knee through hip up to head
- Squeeze right glute until you feel a stretch at front of right hip
- Hold for 3-5 seconds



Warm-Up Movement Preparation (No.2)

1. Mini-Band March



- **Begin in athletic position with band around knees**
- **March forward with 10 deliberate steps**
- **March backwards with 10 deliberate steps**
- **March to the left with 10 deliberate steps**
- **March to the right with 10 deliberate steps**

2. Glute Bridging (Double Leg)



- **Lay on back, feet hip width apart**
- **Push through hips and heels**
- **Hold at top for 2-3 seconds**

3. Glute Bridging (Single Leg)



- Lie on back with knees bent and 1 leg raised
- Raise hips by pushing through glute and heel
- Pause at top for 2 seconds

4. Kneeling Reach Around



- Begin with hands and knees on ground
- Place right hand behind right ear
- Maintain tightness throughout abs while raising right elbow towards the sky
- Return to beginning position

5. Hip Opener



- Step forward with left foot
- Drop left elbow towards left knee
- Push left knee away from hips
- Drop elbow towards ankle
- Hold for 3-5 seconds



Movement Preparation Mobility & Activation

1. Leg Swings



- Stand tall on right leg
- Use a partner or hurl for balance
- Swing left leg forwards and backwards while remaining tall
- Keep leg moving in straight line
- Maintain full control of swinging leg throughout

2. Bear Crawl



- Start in crawling position
- Keep knees as close to the ground as possible without touching
- Keep abs braced throughout as you move slowly forward
- Imagine there is a glass of water on your back that you can't spill

3. Single Leg T-Plane



- Stand tall on right leg with left leg raised
- Slight bend in standing leg
- Push left heel back while slowly leaning forward
- Keep going until heel and head make a straight line that is parallel to the floor
- Return to starting position

4. Jump and Land



1. Stand tall, feet hip-width apart
2. Bend hips, knees and ankles as you swing arms directly behind you
3. Explosively jump off ground as high as possible, straightening whole body
4. Land softly on balls of feet with knees bent and directly over feet (avoid knees buckling in), keep chest lifted as you jump



Resistance Training Exercises (Session No.1)

1. Goblet Squat



1. **Weight at chest level, feet hip-width apart, keep feet flat on ground**
2. **Ankle, knee & hip in alignment, neutral spine**
3. **Slowly sit back and down, bending hips, knees & ankles, keeping chest & head up**
4. **Go as low as you can keeping feet flat, try get hips below knees**
6. **Knees pushed out all the time – can use elbows to push knees out when down low**
7. **Return to standing position**

2. Press-Up



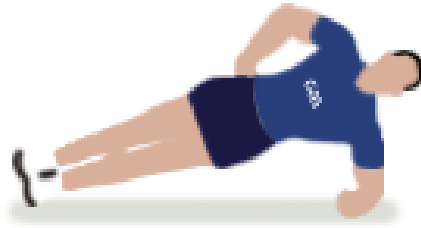
1. **Straight line ankle, knee, hip, shoulder and head throughout. Hands directly beneath shoulders, shoulder blades back and down, back flat**
2. **Lower body by bending at elbows – entire body moving as one**
3. **Elbows tucked close to body - should make a 45 degree angle when viewed from above**
4. **Go as low as you can, aiming to get chest to brush the floor**
5. **Keep core engaged, push back up into starting position, back flat throughout**

3. Lunge



1. **Begin in neutral stance with feet hip width apart, knees and hips aligned**
2. **Step forward with 1 leg**
3. **Shoulders remain above hips throughout**
4. **Front knee above ankle & not extended beyond toes**
5. **Back knee below hips. Neutral spine**
6. **Front foot stays firmly planted**

4. Side Plank



- Lay on side with elbow directly under shoulder
- Raise hips so body is in straight line
- Hold for 10-15 seconds

5. Single Leg T-Plane

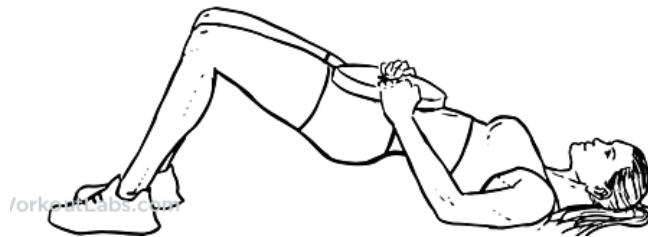
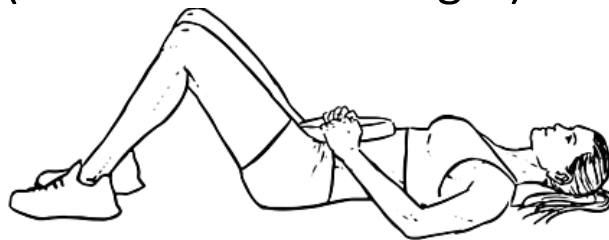
1. Stand tall on one leg, other leg slightly in the air
2. Slight bend in knee
3. Lean forward, moving through hips, pushing heel of non-standing leg backwards, keep spine straight & tighten stomach
4. Keep going until your heel and head make a straight line that is parallel to floor. Keep standing knee, foot and ankle in straight line
5. Hips remain neutral with rear toe pointing to ground
6. Slowly return to starting position





Resistance Training Exercises (Session No.2)

1. Hip Thrust (with Barbell or Weight)



1. Lay on back, knees bent, feet flat on floor shoulder width apart
2. Push hips to ceiling, drive through feet.
3. Keep straight line from knees, hips and torso
4. Squeeze glutes on the way up
5. Slowly return to starting position

2. Inverted Row



1. Slightly wider than shoulder width grip, hanging underneath, hands directly under shoulders, arms fully extended, heels on ground, legs fully extended
2. Straight line – head, shoulder, hips, knees & ankles/heels
3. Bending at elbow, pull chest to bar, legs remain straight – begin pulling with upper back, not arms
4. Hold at top when chest touches bar/broom
5. Keep core engaged, slowly return to starting position

3. Split Lunge



1. Weight at chest level
2. Feet in staggered stance at hip-width
3. Sit back down by lowering hips and bending front knee. Front knee above ankle, back knee below hip
4. Chest up throughout movement
5. Return to tall position

4. Plank



- **Rest on forearms with elbows directly under shoulders**
- **Straight line from heels to head**
- **Keep tummy and glutes braced**
- **Breathe normally throughout**

5. Hinge with Band

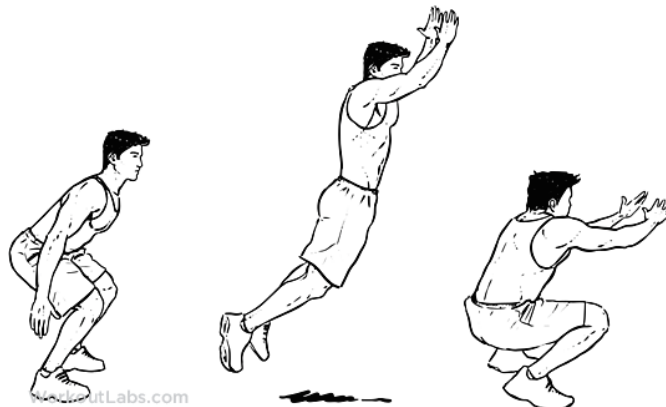


1. **Stand tall on band, feet shoulder width apart, band over shoulders & behind neck**
2. **Slight bend in knees**
3. **Slowly push hips backward by hinging at hips, keep spine straight & tighten stomach**
4. **Go as far as you can control through hamstrings and lower back**
5. **Hold for a moment, 1-2 seconds**
6. **Slowly return to starting position**



Resistance Training Exercises (Session No.3)

1. Standing Long Jump



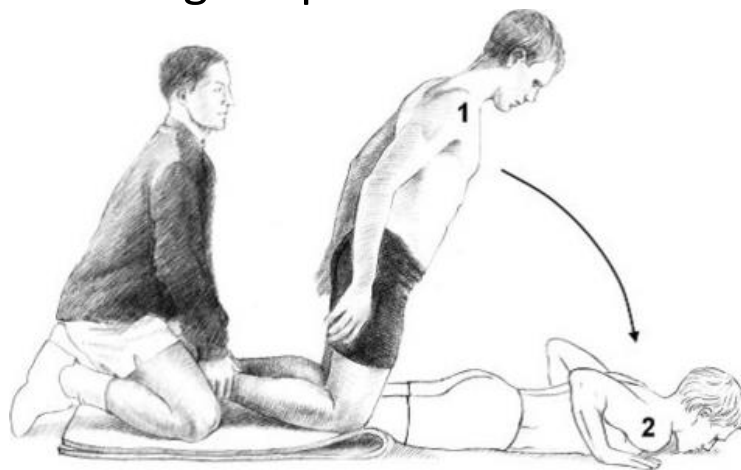
1. Stand with feet positioned shoulder width apart
2. Squat down as low as possible, keep heels on ground
3. Bring arms back behind body, to generate force
4. Explode upwards and forwards, using arms
5. Land with feet shoulder width in a squat position (soft landing)

2. Med Ball Slams



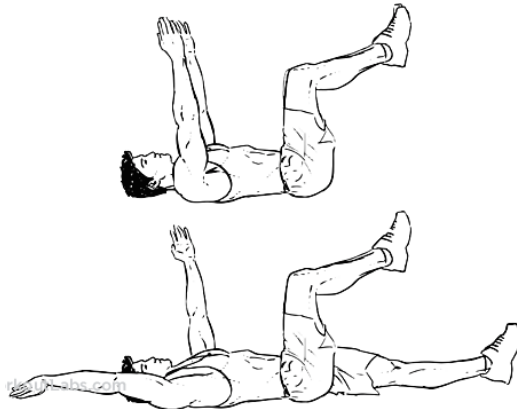
1. Stand with feet shoulder width apart
2. Pick up Med Ball with 2 hands, using correct squat technique
3. In one movement, straighten legs and back
4. Bring ball over and behind head
5. Quickly slam Med Ball onto floor in front of feet
6. Release ball at waist level

3. Nordic Hamstring Drop



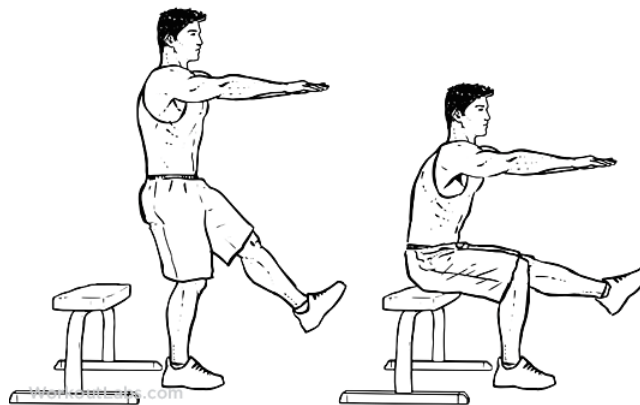
1. Kneel on floor with (fist) space between knees
2. Partner to kneel behind and hold feet in a stationary position
3. From an upright kneeling position, slowly lower body to floor
4. Try to keep straight line, knees, hips to shoulders during drop
5. Place hands in front of body before reaching floor (position 2)
6. Push yourself back to start position and repeat

4. The 'Deadbug'



1. Lie on back in the starting position
2. On the signal, straighten one leg and alternate arm
3. Keep heel and hand of outstretched leg/arm 10cm above floor
4. Contract core and hold position
5. On the next signal, repeat movement using opposite leg and arm.
6. Repeat for designated time and change at regular intervals

5. Single Leg Squat



1. Stand in front of bench, feet shoulder width apart
2. Place arms out in front for balance
3. Lift one foot from floor and straighten leg in front
4. Slowly lower body to seated position on bench
5. Keep straight alignment through ankle, knee and hip
6. Keep neutral spine and shoulders back throughout movement
7. Slowly stand up using same supporting leg, keeping alignment



GAA15 Injury Prevention Warm-Up



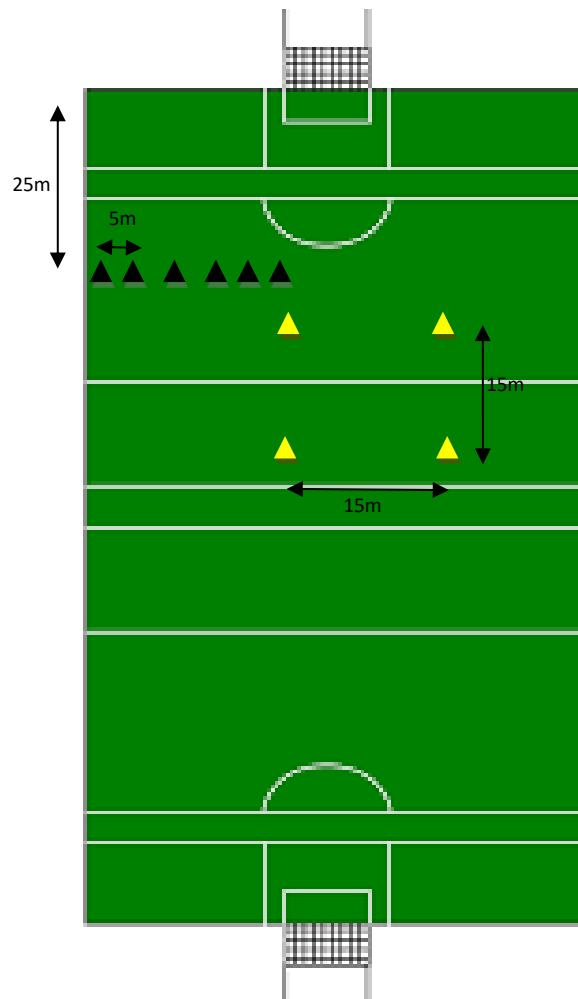
The GAA15 injury prevention programme will take the form of a 'hurling specific' warm-up prior to each team training session and on match days. The warm-up will be designed to target and improve the physical aspects of performance related to higher risk of injury.

These aspects are:

- Strength deficiency,
- Lack of flexibility,
- Imbalance,
- Proprioception,
- Avoiding vulnerable positions (movement optimisation)

By targeting and improving these aspects of performance it is proved that the number of injuries accrued throughout a season will be reduced.

Field Layout



FIELD LAYOUT

Warm-Up **Part 1** – (Raise body temperature). All players inside 65m line

Warm-Up **Part 2** – Activate muscles and mobilise joints). A row of cones, 5m apart, 25m from end line.

Warm-Up **Part 3 & 4** – (Sport specific speed). Four cones in a 15m square

Warm-Up Part 1

Raise Body Temperature (2 minutes)

- Players in groups of 3 with one ball.
- Players jog around inside the 65m line in any direction while striking the ball between the 3 players.
- Players can be any distance apart and move in any direction.
- Players must stay moving for 60 – 90 seconds.

60-90 second water break (and time for individual static stretching and movement prep.)

Warm-Up Part 2

Mobility, Activation, Dynamic Movements and Strength (7 minutes)

Players in groups of 4 with 2 players at each cone 25m from end line with 2 players opposite them on end line, one ball per group.

1. Sport specific skill work and movement.
2. Try to incorporate dynamic stretching movements consisting of high knees, heel flicks, dynamic calf stretch, skipping.
3. Include strengthening exercises, always focussing on proper technique
 - a. lunging (forward, backwards and sideways),
 - b. Squats,
 - c. Single leg T-Plane
 - d. Inchworm c/w press-up and rotation
 - e. Glute Bridging

30 second water break

Warm-Up Part 3

Agility, Plyometrics, Proprioception. (3 minutes)

All players inside 4 cones (15m square) with hurling balls on the ground scattered throughout the square.

1. All players move at pace throughout the square (different directions). Players jab lift the nearest ball, catch it in hand and 'plant' one foot on the ground (load) and 'cut' (side step, unload) to opposite direction and drop the ball. Players to change leg each time they jab lift the ball.
2. All players move at pace throughout the square (different directions). Players roll lift the nearest ball, catch it in hand and swivel 180°, plant one foot on the ground and drop the ball. Players to turn off opposite leg each time they roll lift the ball.
3. All players to complete five body weight squats, pause and into explosive vertical jumps. Players to focus on proper jumping and landing technique. Two hands on hurl placed in front of body at shoulder height.
4. All players move throughout the square (different directions) while throwing a ball high in the air for another player to jump to catch the ball by using one leg to power off (jump) and land on that same leg. Players to use different leg each time to jump for the ball. Players to focus on proper landing technique.

30 second water break

Warm-Up Part 4

Movement and Speed. (2 minutes)

1. Divide players into four equal groups and each group to the yellow cones (see field layout). Players at each corner of the square to solo (at sprinting speed) diagonally with a ball and hand pass to the opposite player who completes the same run in the opposite direction.
(20 seconds at max pace)

Warm-up complete,

Match day warm-Up should take between 15-20 minutes to complete, with less strength work.



Aerobic Running Assessment and Programme

Running Assessment

1. Complete a 1000mts time trial with all players
2. Set out 4 poles/cones in a rectangle 75m x 50m
3. Allocate players into groups of 5
4. Instruct the players to complete 4 laps of the course, as quickly as they can. Let groups finish, before starting next group
5. Record time for each player that finishes

Running Times

1. Convert all player finishing times into seconds, e.g. if Player 1 finishes the 1000m in 4 minutes and 38 seconds. His score will be 278 seconds.
2. Divide the running assessment length (1000m) by the finishing time (in seconds) to get each player's aerobic fitness level
e.g. Player 1 – $1000\text{m} / 278\text{sec} = 3.6$ meters per second
3. Divide full group into 3 sub groups based on their scores, starting with Gold group (quickest time finishers), Silver group (middle time finishers) and Bronze group (slowest time finishers).

Running Programme

1. The '15 x 15' running programme
2. Set out 3 running lanes with the 3 different running sub groups (Gold, Silver and Bronze)
3. Get the average aerobic fitness level of each group (meters per second)
4. Multiply the 3 average scores x 15
5. Measure the length of each 3 running lanes as per the group average score.
6. You now have 3 different running lengths for the 3 different sub groups.
7. Line up the group on the start line in their own sub group position.
8. On the coaches' signal, all players run to their own finish line and complete the run in 15 seconds.
9. Players recover at the finish line for 15 seconds.
10. And repeat by running back to the start in 15 seconds.
11. Repeat steps 8 to 10 for a set period of time, e.g. 3 minutes (6 quality runs)
12. To progress the running programme, increase the times, sets and reps or length