

GAA PLAYERS CONFERENCE

CONDITIONING FOR GAELIC GAMES

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Outcomes

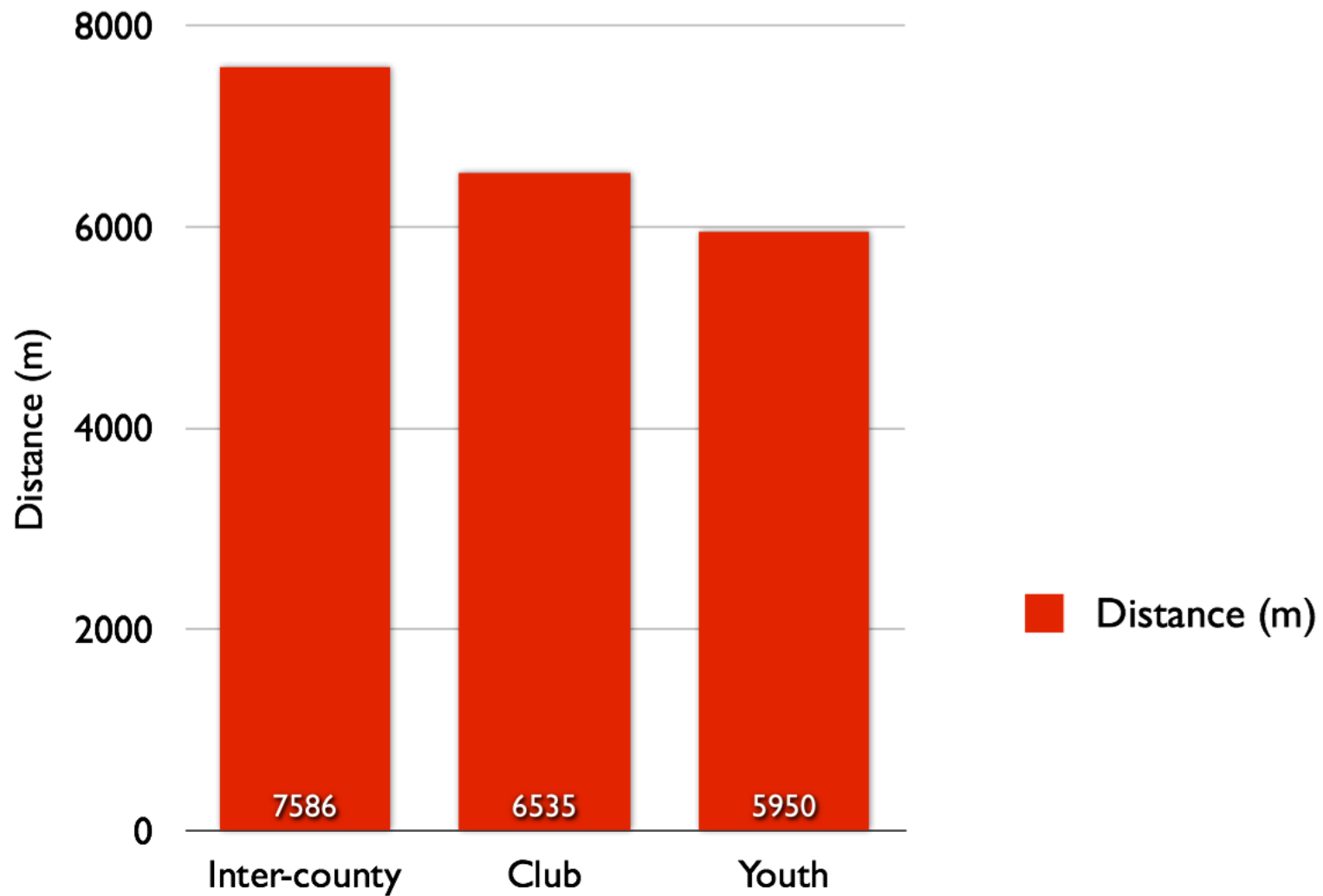
- Physical demands of your game
- Components of Fitness
- Developing Endurance
- Developing Speed

PHYSICAL DEMANDS OF GAELIC GAMES

“What are you training for?”



Figure 2. A comparison of the physical demands of inter-county, club and youth hurling



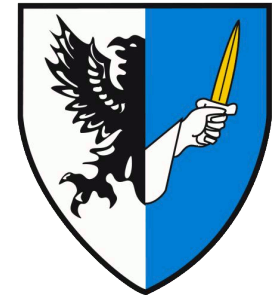
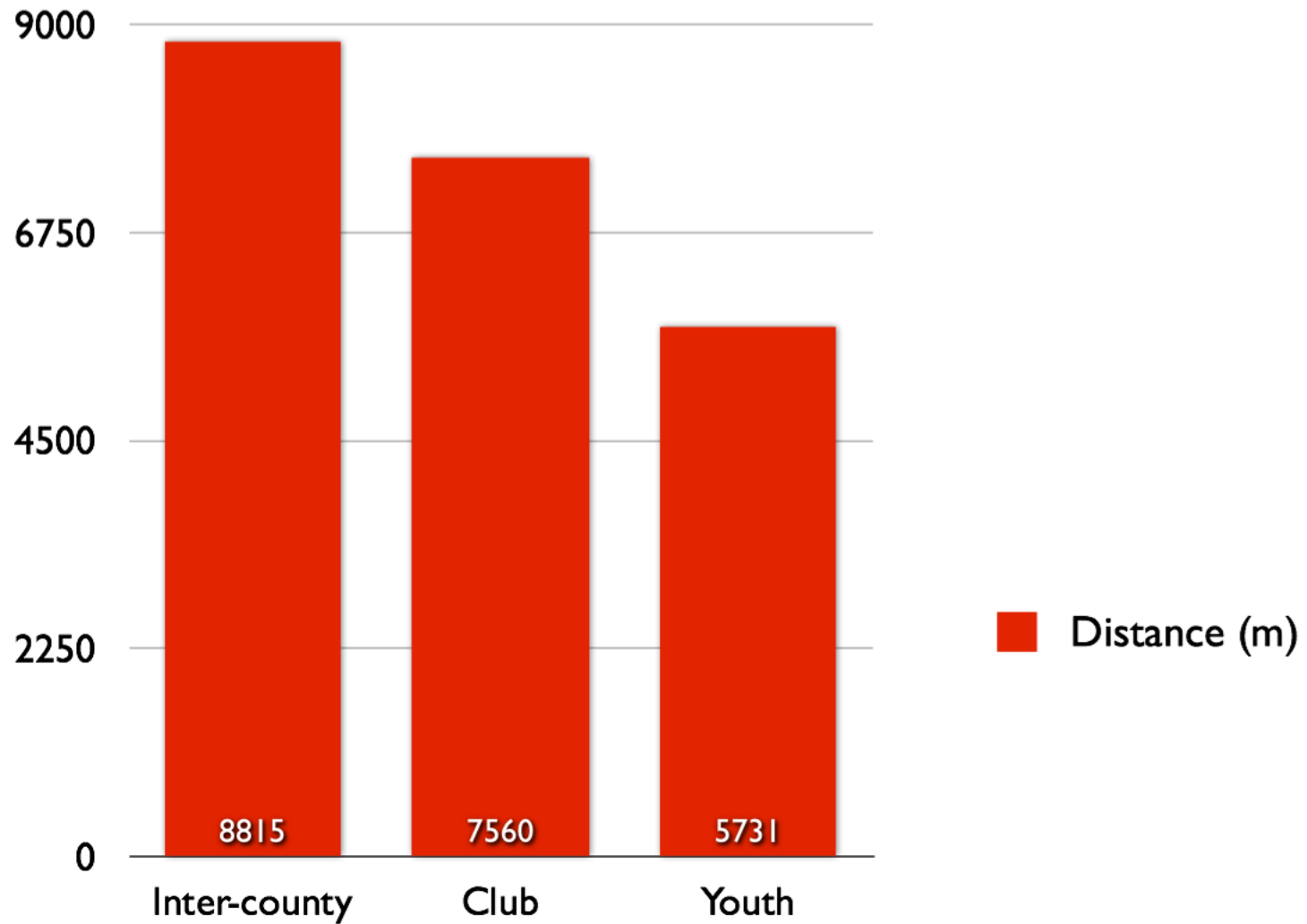
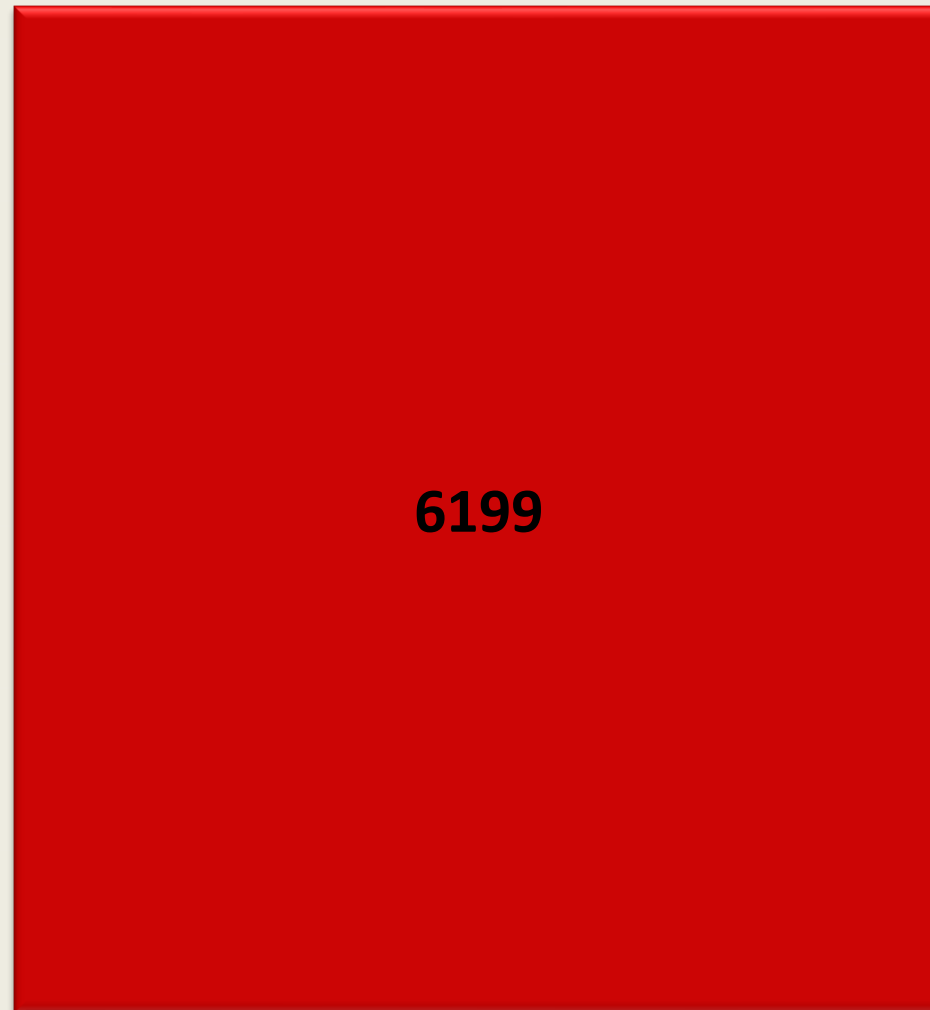


Figure 2. A comparison of the physical demands of inter-county, club and youth Gaelic football



Physical demands of ladies inter-county football

7000
6000
5000
4000
3000
2000
1000
0



Senior Intercounty

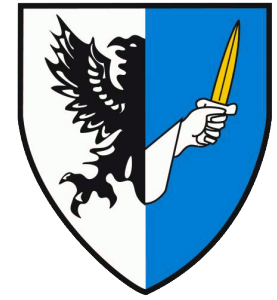


Figure 3. The movement activities of hurling. The values are expressed as a percentage of time.

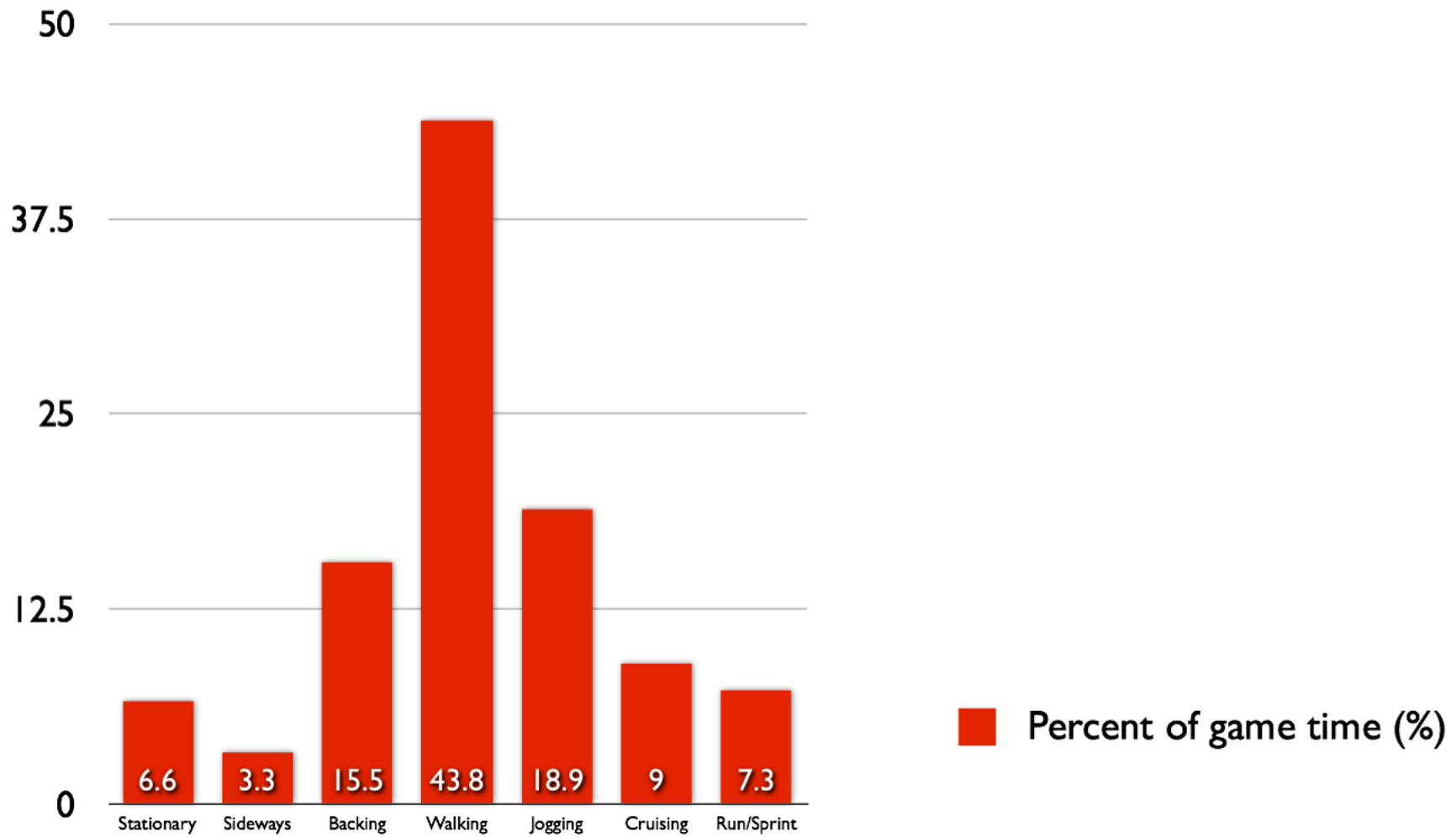
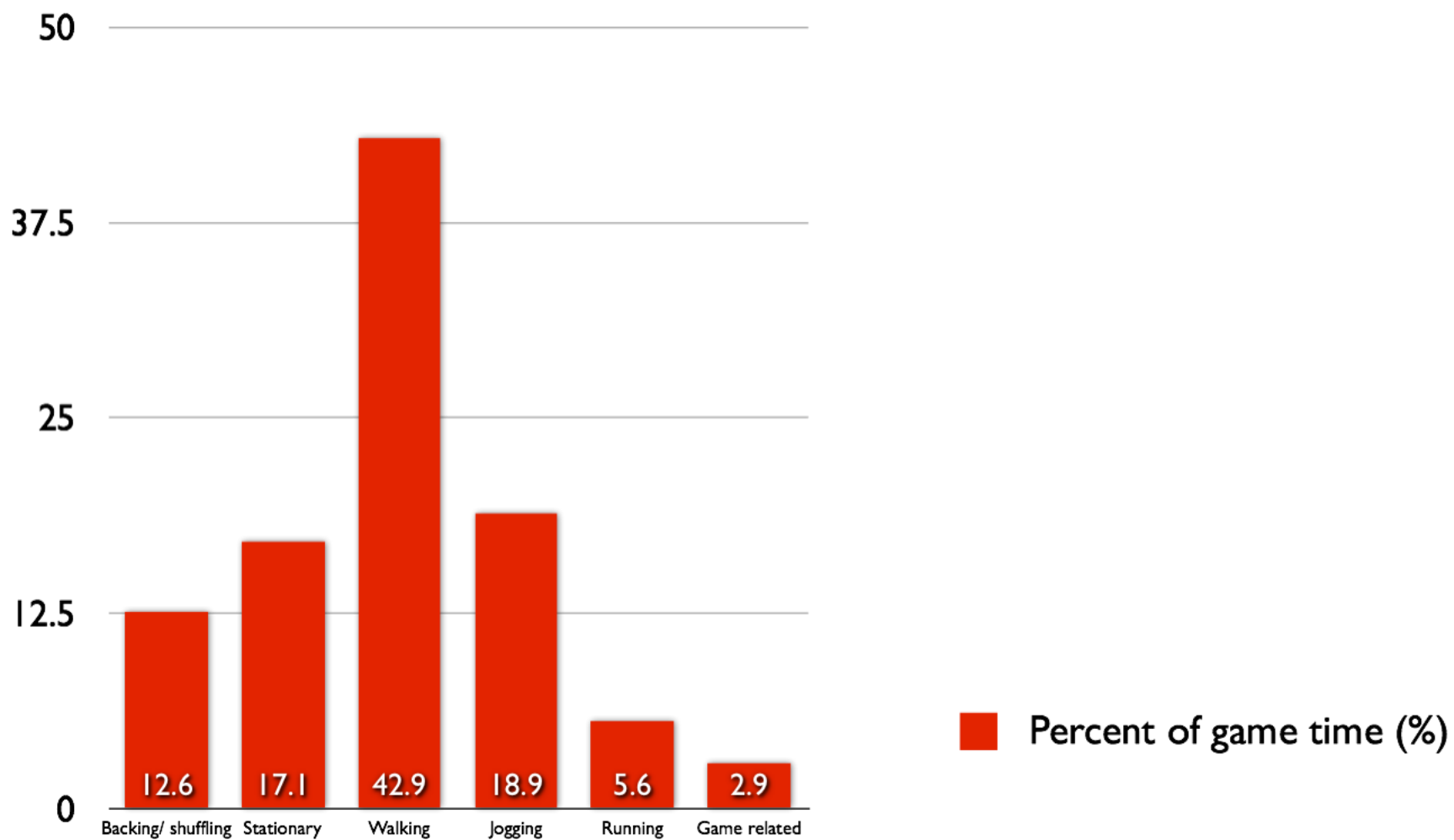


Figure 3. The movement activities of Gaelic football. The values are expressed as a percentage of time.





Sprints in Hurling



- The total number of sprints varies across positions with on average 184 sprints in a game with an average duration of 6s
- Sprint distances average 18m and occur every 20-30s.
- Sprints rarely start from a standing position.
- The maximum speeds attained in a sprint is 30km.hr

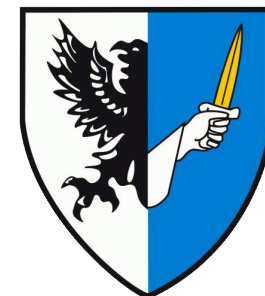
Fatigue in Hurling

High-Intensity (HI) Distance

>17 km.hr = 1116 \pm 352 m

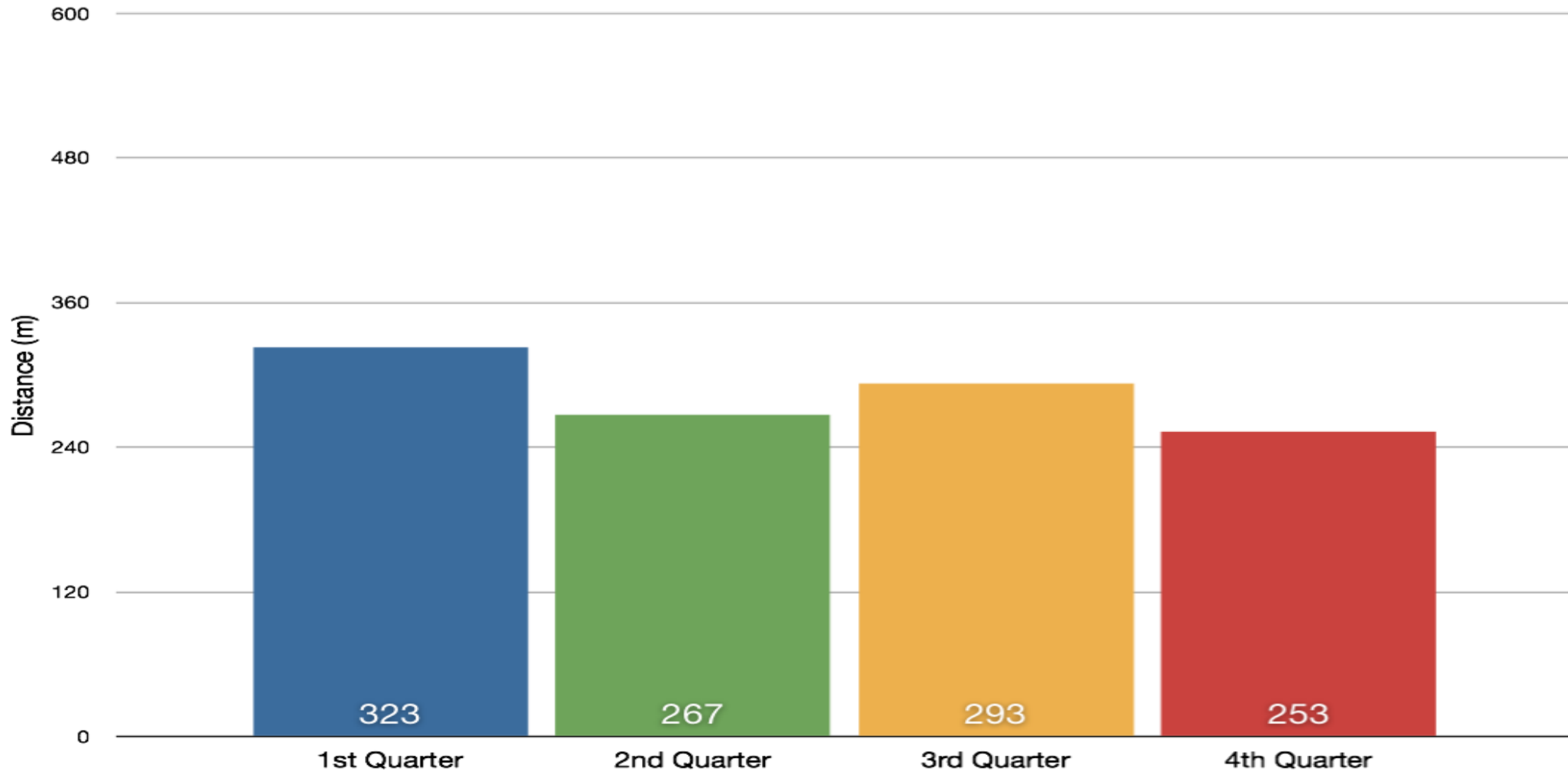
1st Half: 590 \pm 210 m

2nd Half: 526 \pm 186 m

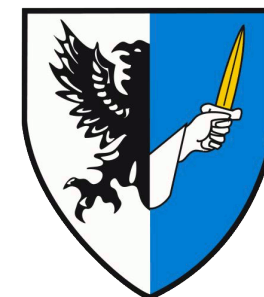
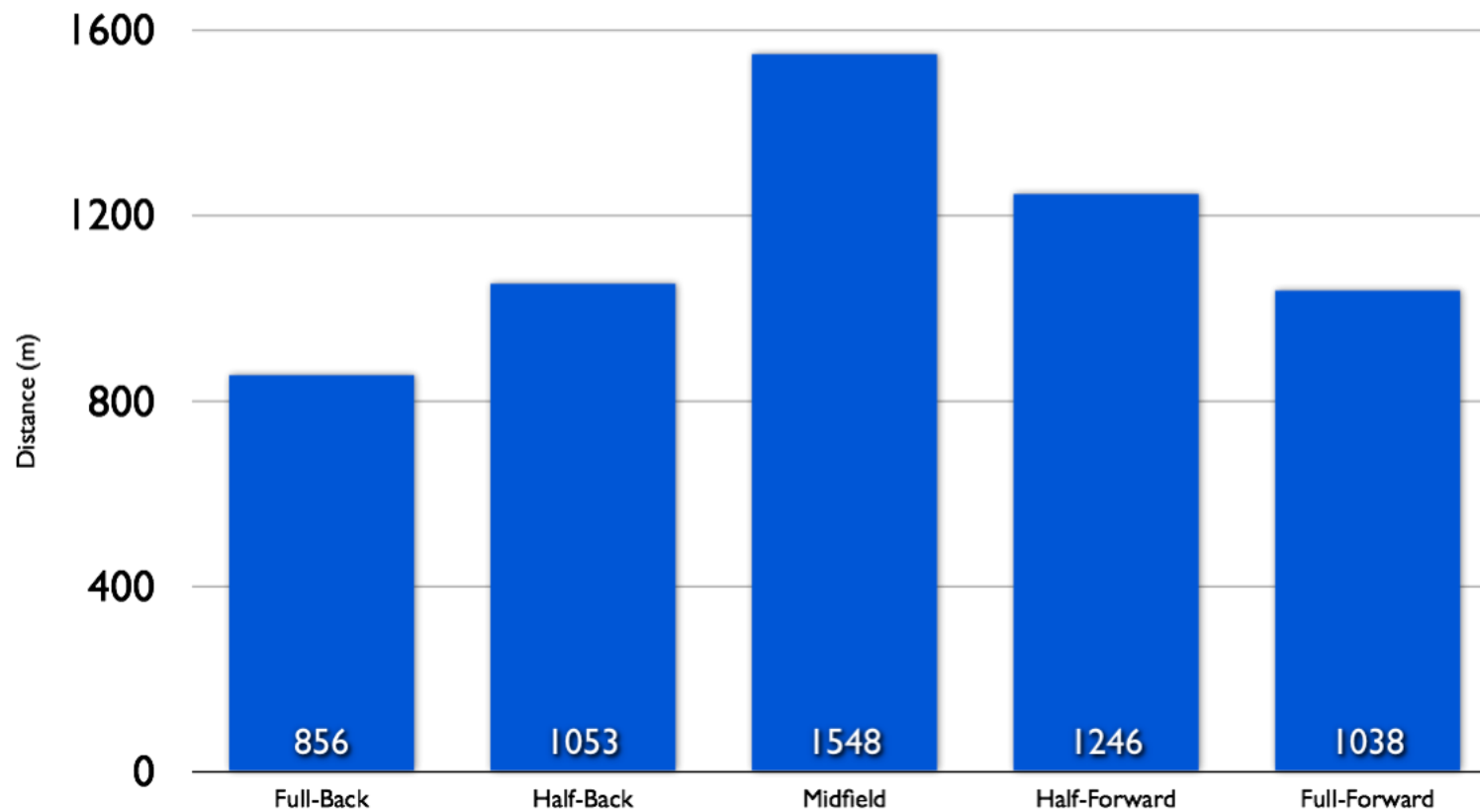


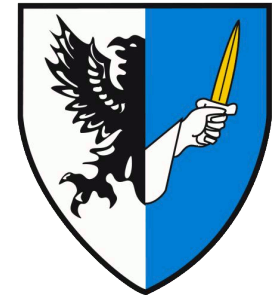


The drop in performance over the course of elite inter-county hurling game.



The positional variation in high-intensity distance in elite inter-county hurling players.





Sprints Gaelic Football



- The total number of sprints varies across positions with on average 182 sprints in a game with an average duration of 7s
- Sprint distances average 20m and occur every 30s.
- Sprints rarely start from a standing position.
- The maximum speeds attained in a sprint is 30km.hr

Fatigue in Gaelic Football

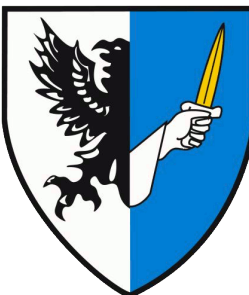


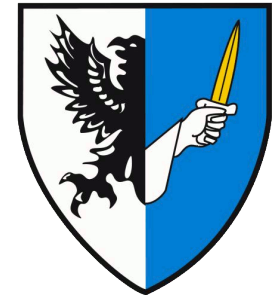
High-Intensity (HI) Distance

>17 km.hr = 1695 ± 503 m

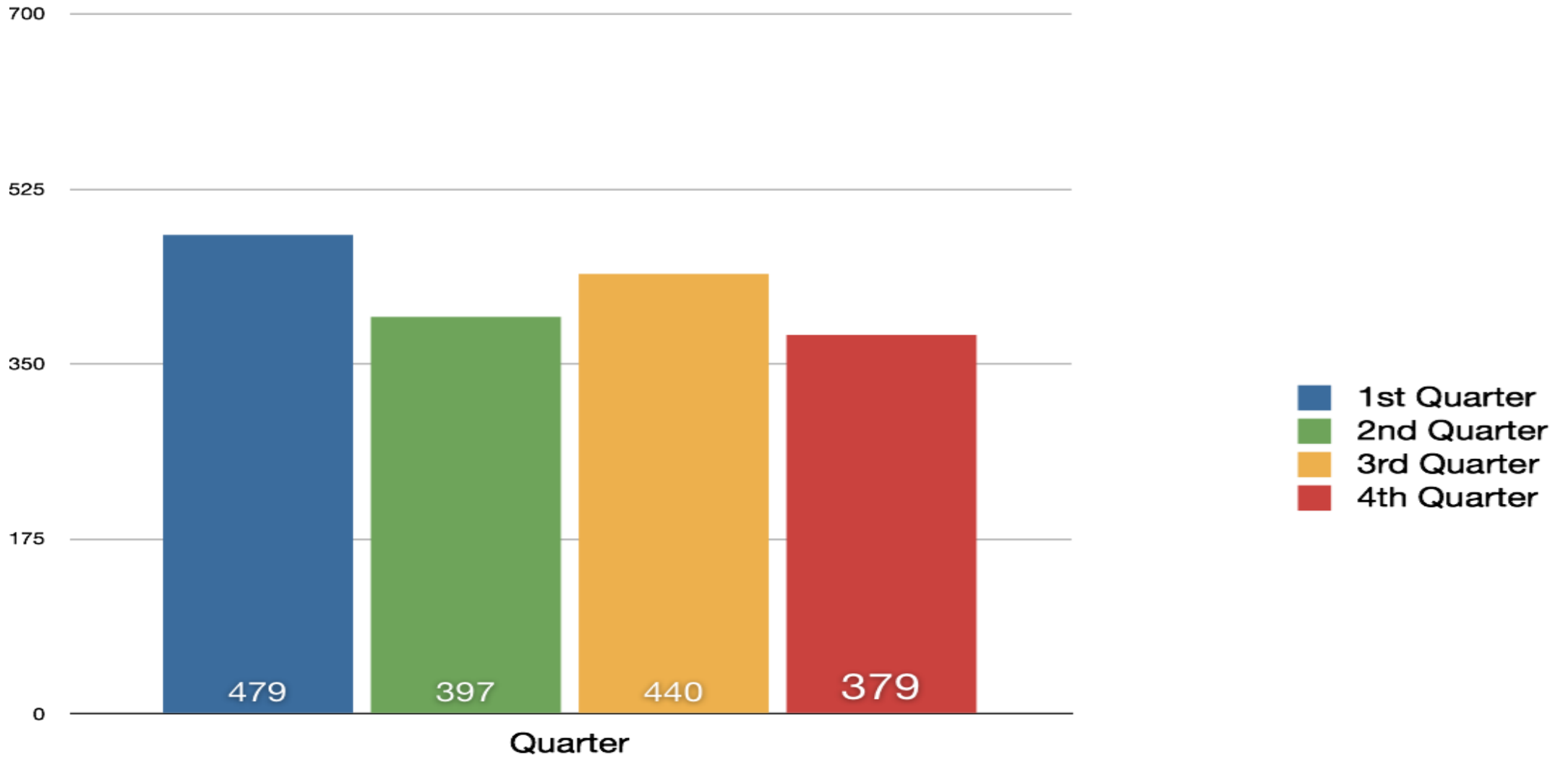
1st Half: 876 ± 299 m

2nd Half: 819 ± 245 m

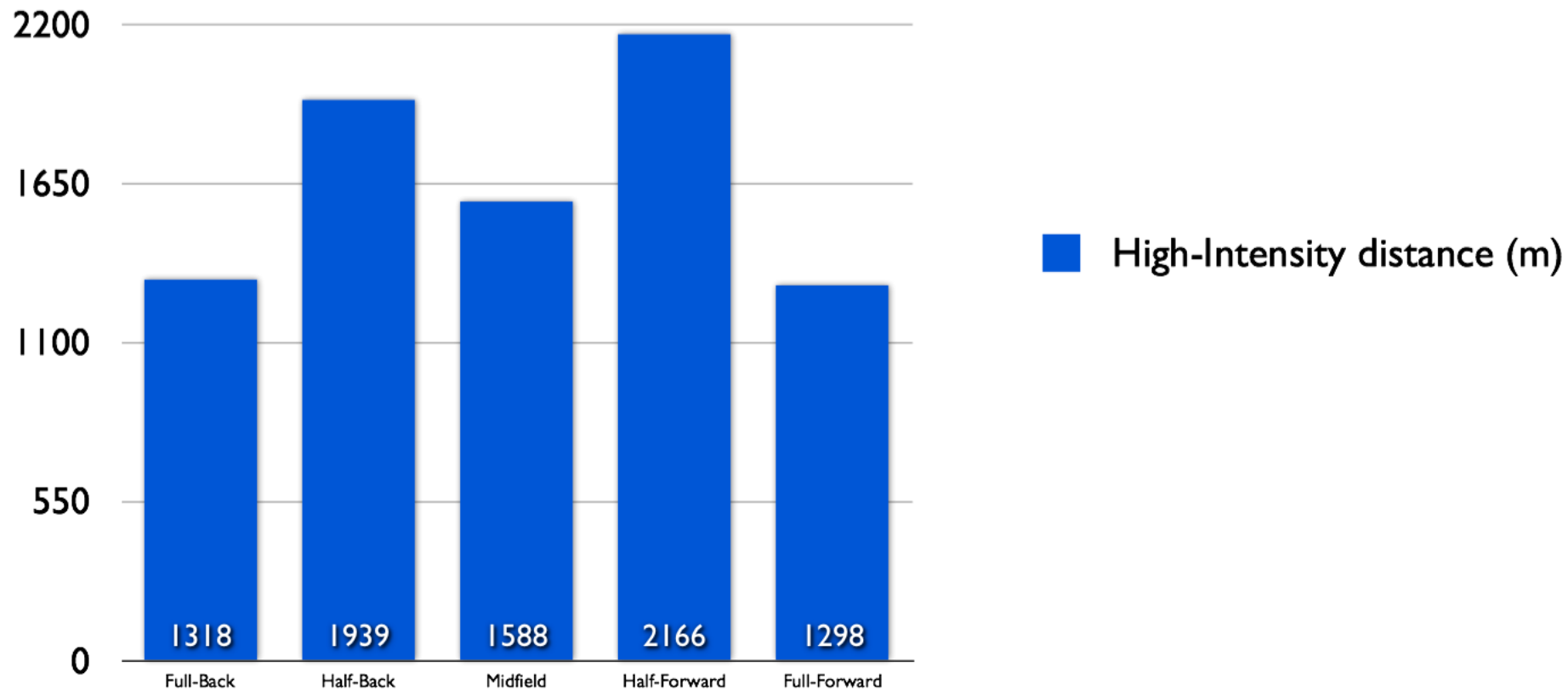


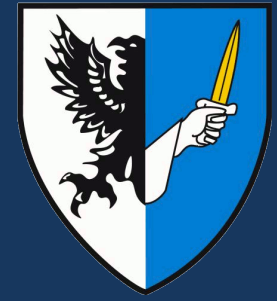


The drop in performance over the course of elite inter-county Gaelic football game.



The positional variation in high-intensity distance in elite inter-county players

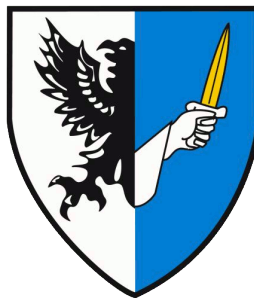




What we know about the demands of our games?

- The player is constantly being challenged to accelerate and decelerate from various positions
- Players gained possession while standing, walking, jogging and striding.
- Players are not required to run at the same pace for any large length of time.
- Does our training prepare us for this?

Figure 1.B. Total Playing Performance Model





PHYSICAL FITNESS



The ability to perform the basic techniques, engage in physical contests and respond to signs, sounds and signals experienced during the game with the least possible expenditure of energy.

Recovery

Recovery

Speed

Speed
Endurance

Power

Flexibility
&
Mobility

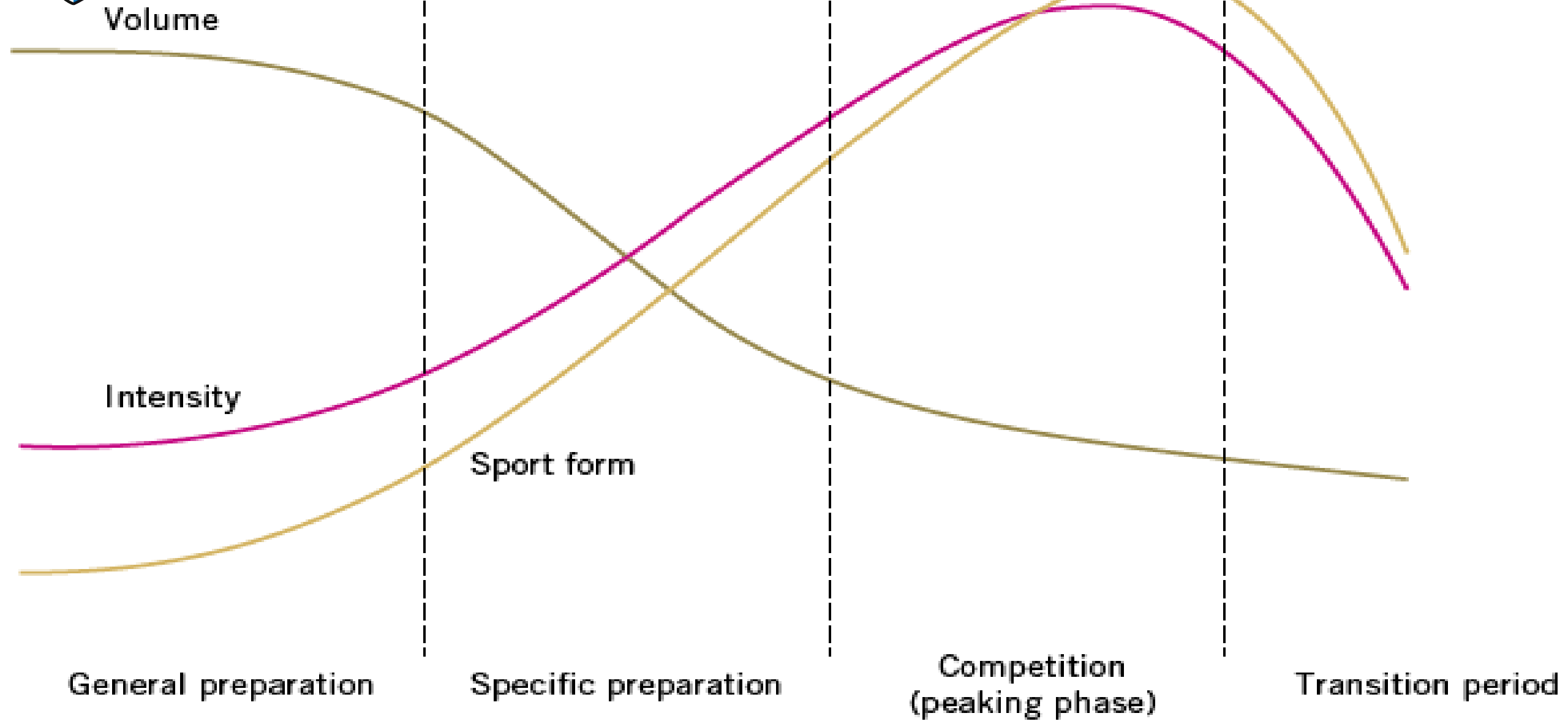
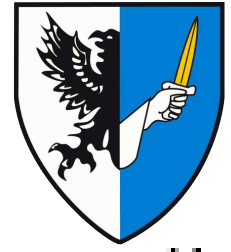
Endurance

Strength

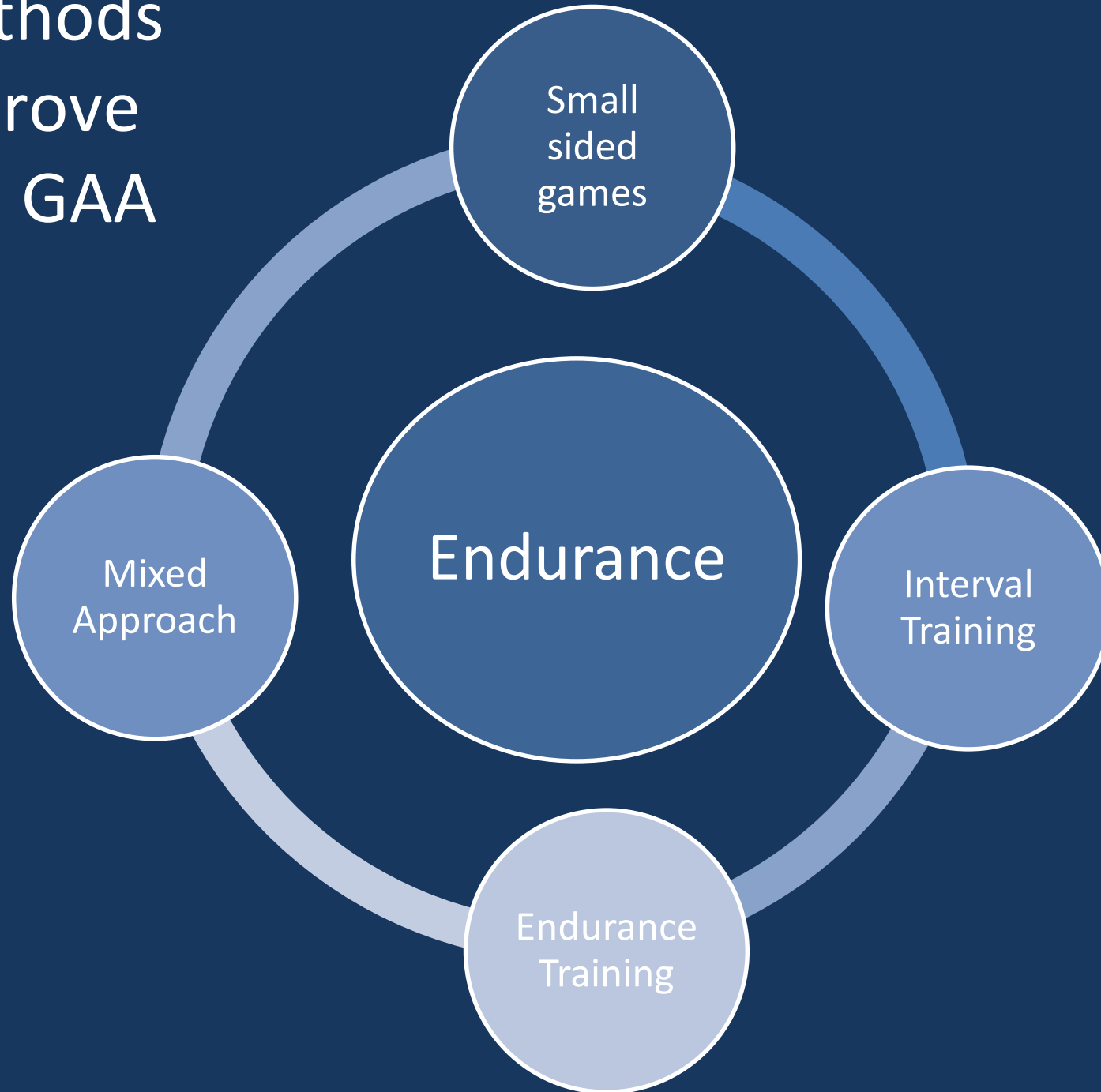
Strength Endurance

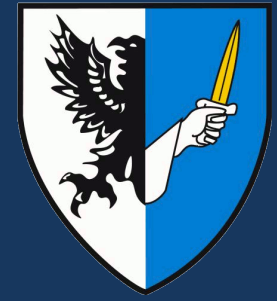
Recovery

Recovery



Different Methods Used To Improve Endurance In GAA Players





INTERVAL TRAINING
VS
ENDURANCE TRAINING

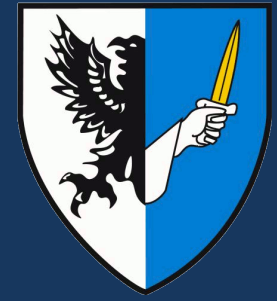
Endurance Training

- Traditionally endurance training involving steady state running (i.e. continuous laps of field) and has been used as a method of improving aerobic capacity and is still a method of training use by some in the GAA
- Although useful for developing aerobic capacity it may lack the specify to develop speed and power in GAA players and may even be detrimental. (Cregg, 2013, Masters from DCU)
- Regularly performed endurance training induces a variety of metabolic adaptations in skeletal muscle that improves endurance performance (Hawley, 2002).

Interval Training

- Interval training consists of repeated bouts of moderate to high-intensity exercise interspersed with periods of rest or reduced intensity exercise(Wilmore, Costill, & Kenney, 2008).
- Interval training is based on the concept that a greater amount of work can be performed at higher exercise intensities with the same or less fatigue compared to continuous training (Baechle & Earle, 2008).
- Interval training can be manipulated by altering any of the following:
 - distance of the run
 - recovery duration
 - number of repetitions
 - time of the run
 - actions undertaken during recovery





Endurance Training

Benefits

- Improves aerobic capacity
- Easy to administer
- Can be used easily with large groups
- For players with poor fitness levels it can be easier than some other training methods

Limitations

- Lacks specificity to GAA games which are hugely dependant on speed and power
- May blunt speed and power performance depending on volume undertaken
- Can become boring for athlete

Interval Training

Benefits

- Improves aerobic capacity
- Time efficient
- Can train at match intensity
- Maintains speed and power

Limitations

- If a ball is introduced it can affect the intensity of the runs
- Can be uncomfortable for the player depending on intensity employed and fitness levels of the player
- Harder for the player to recover from compared to other form or training





Longer Interval Training

One method of interval training is through 4 X 4 minute training which follows the following structure

▶ Warm up

Chamari et al 2005

▶ 4 minute high intensity → 3 minute active recovery

McMillian et al 2005

▶ 4 minute high intensity → 3 minute active recovery

▶ 4 minute high intensity → 3 minute active recovery

▶ 4 minute high intensity → 3 minute active recovery

Continuous Running

Ball Dribbling Track

SSG

Combination

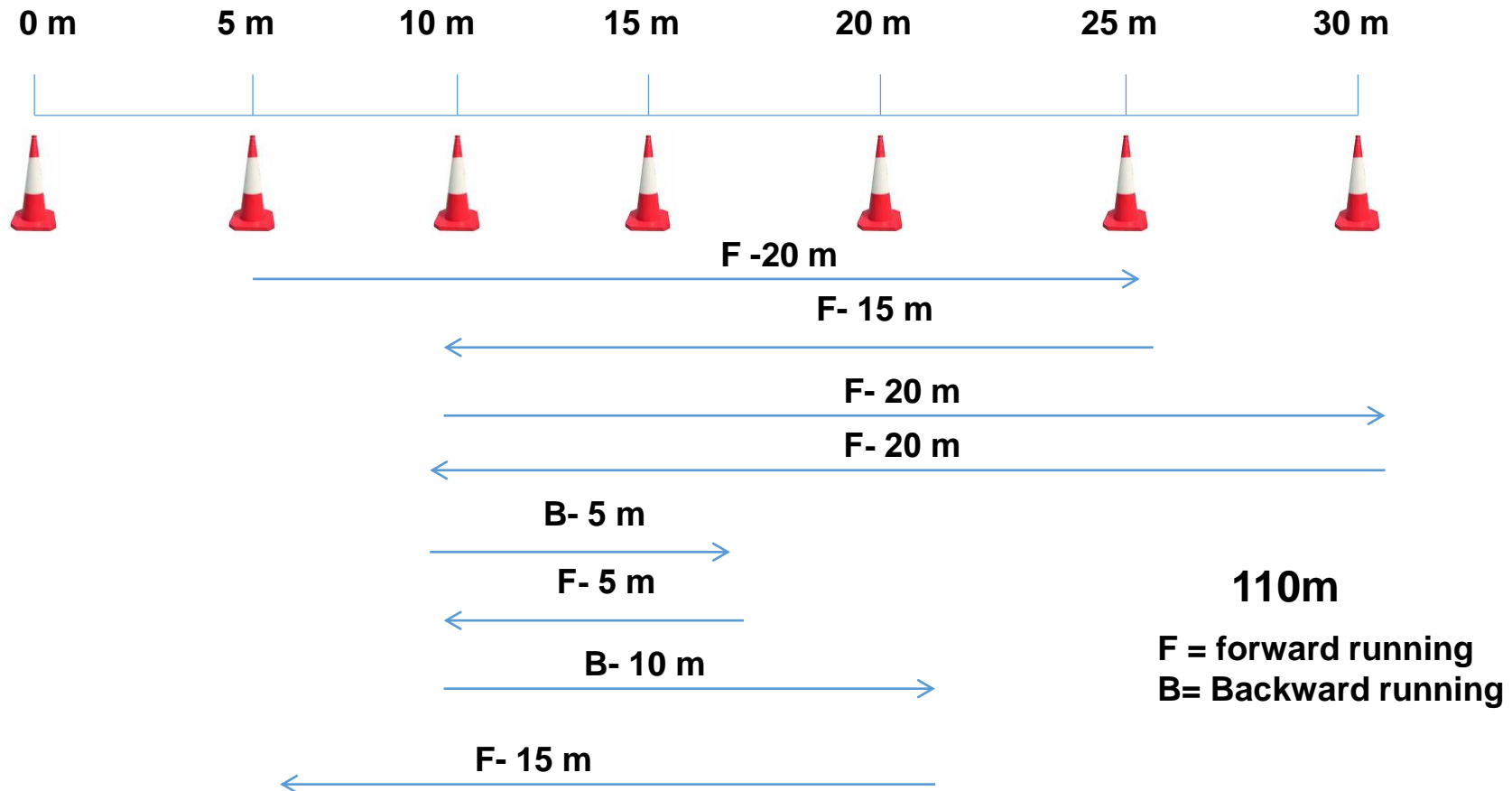
Shorter Interval Training

(Kelly et al, 2018, JSCR)

“compared the effects of 2 weeks of high volume training(HVET) and interval training(HIT) on $\dot{V}O_2$ max, running economy, blood lactate levels and time trial performance on 15 club level Gaelic football players”

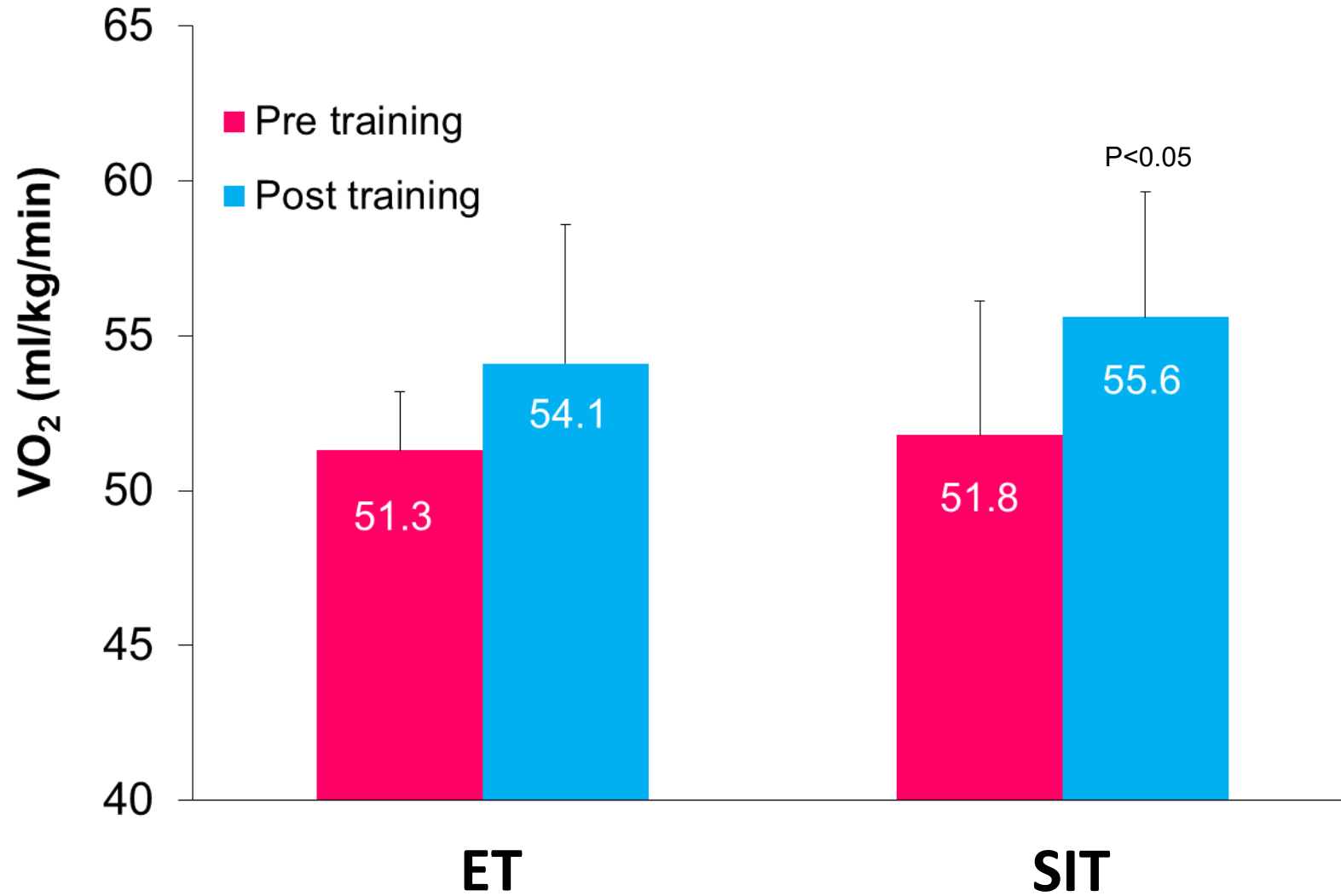


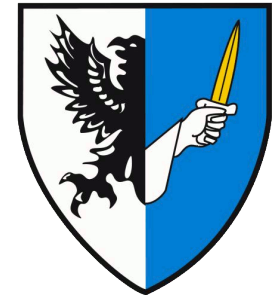
SIT Protocol



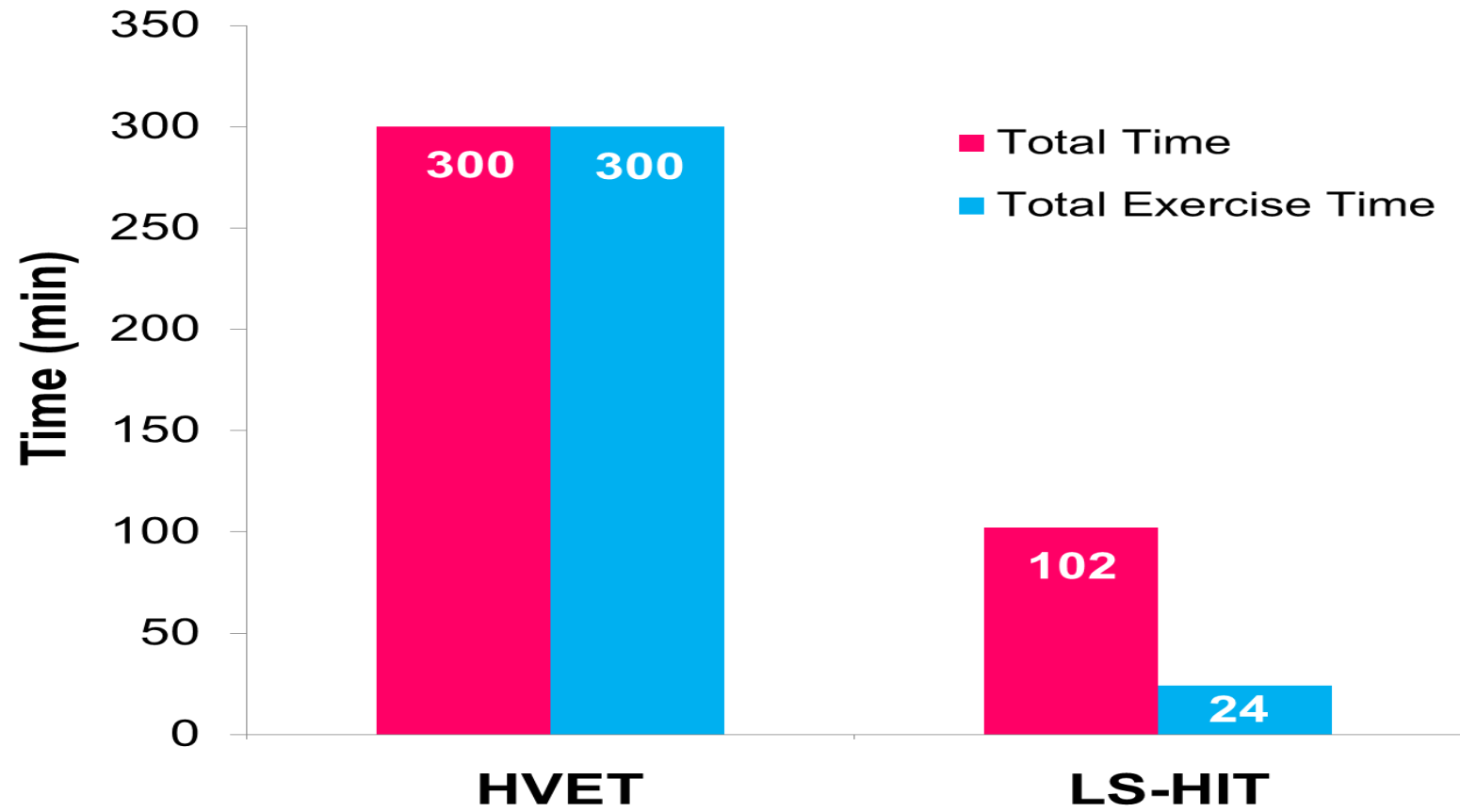
Results

VO₂max





Total Time Commitment



Shorter Interval Training

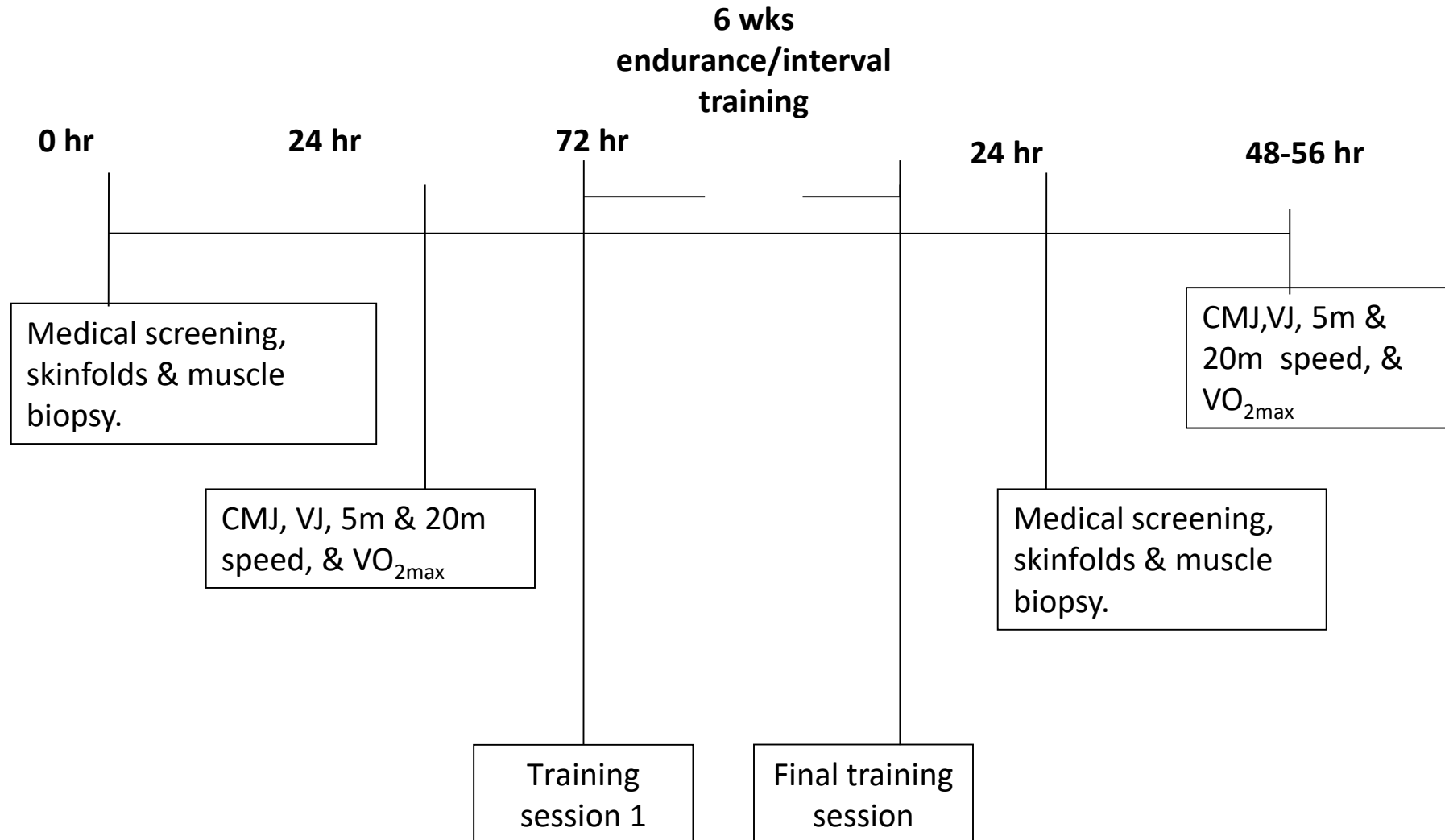
(Cregg & Kelly, 2013, DCU)

“compared the effects of six weeks high intensity interval training and high volume endurance training on maximal aerobic capacity , speed and power in 25 club level Gaelic football players”







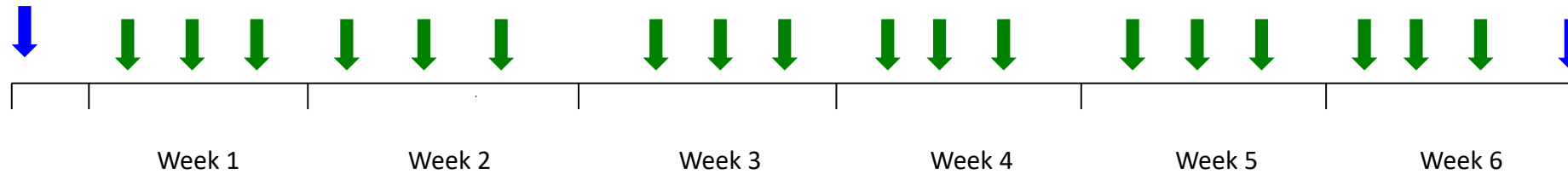
What did we do?



What did I do?

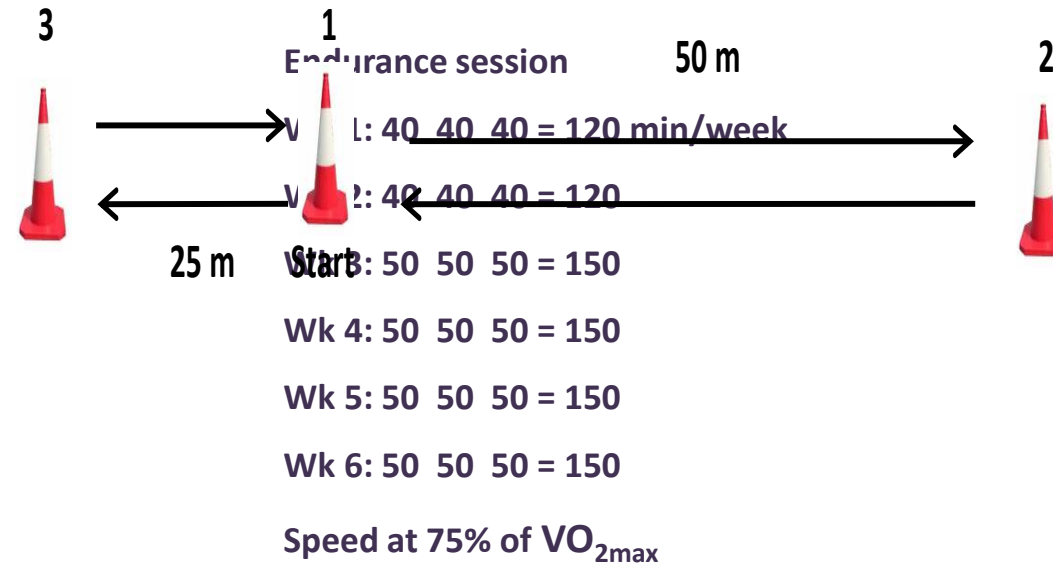
Training Sessions

 Testing
 Training session



High Intensity Training

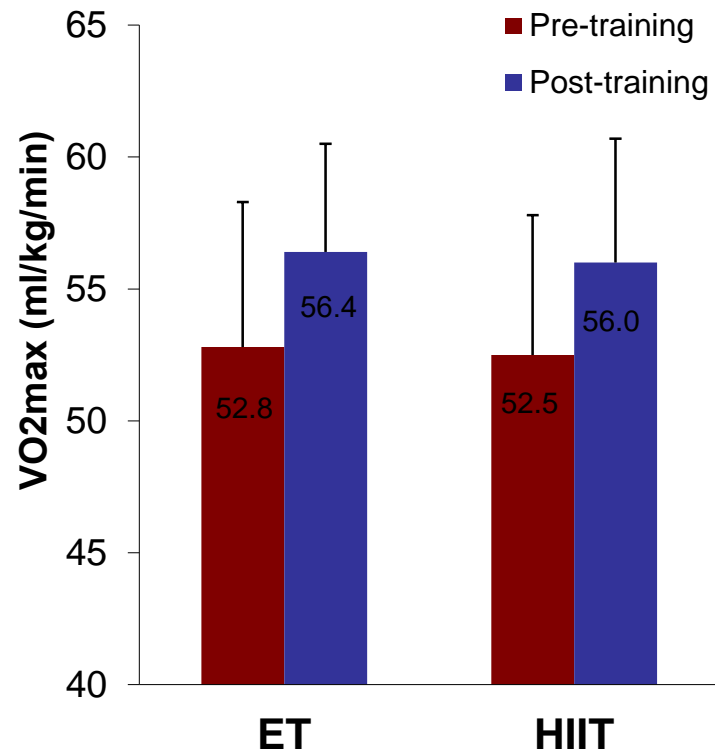
- 100m HIT + 50m active recovery
- 40s to cover 150m
- 4 runs per set
- 3min recovery
- One cycle = 40s x 4 = 160s
- Wk 1-2 = 3 sets
- Wk 3-6 = 4 sets





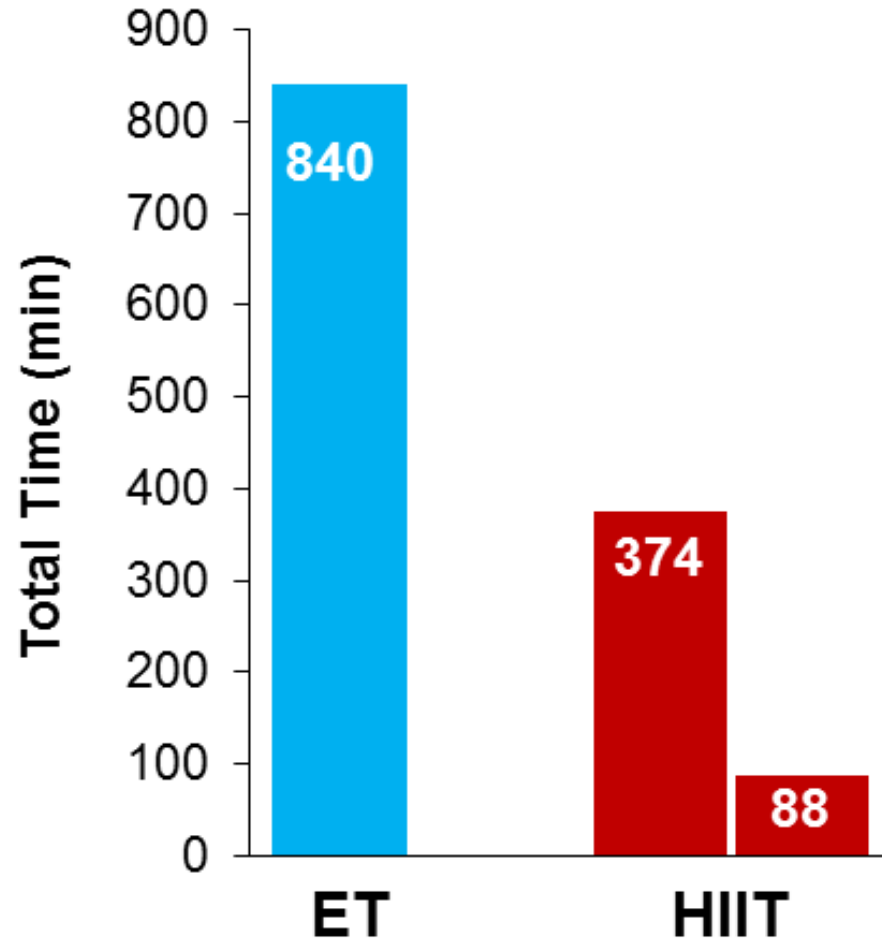
What did I find?

- Aerobic Capacity increase by 7 % in both groups
- Speed and power was maintained in the high intensity group
- Speed and power decreased significantly in the endurance training group



What does this mean for you?

- HIIT is a time efficient way to improve aerobic capacity in club level Gaelic footballers
- HIIT maintains speed and agility with a minimal negative effect on body composition



3 aerobic capacity

may have a



Sample Program

Week 1

4 x 4 minute repeats with 3 minutes recovery

Week2

4 x 4 minute repeats with 3 minutes recovery

Week2

4 x 4 minute repeats with 3 minutes recovery

Week 4

Interval session - 4 runs x 3 sets (1200m) 3mins rest between sets

Week 5

- 5 runs x 2 + 4 runs x 1 sets twice per week (1400m)
3mins rest between sets

Week 6

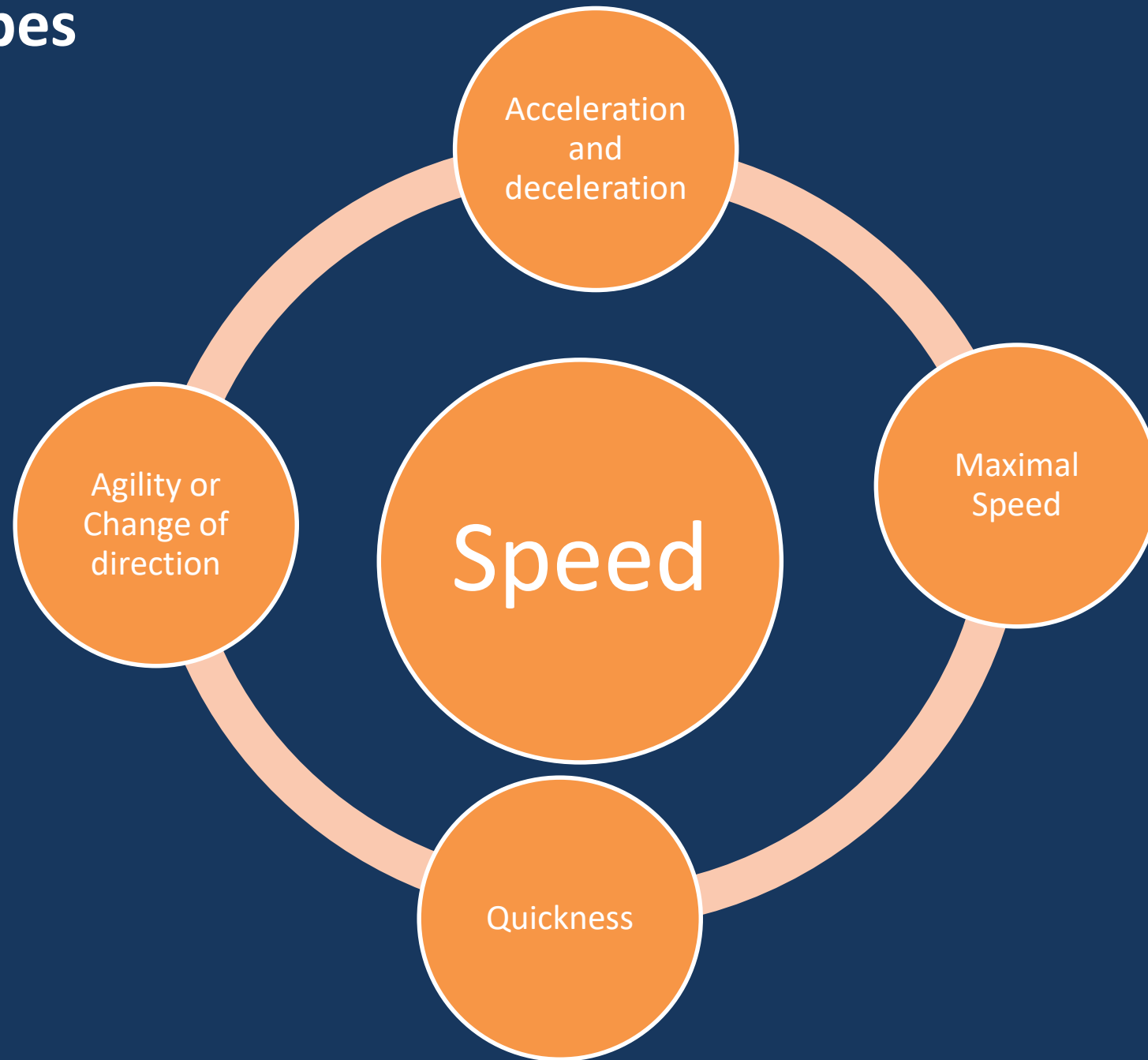
Interval session - 4 runs x 4 sets (1600m) 3mins rest between sets





SPEED FOR GAELIC GAMES

Different Types of Speed



Methods Used To Improving Speed In GAA Players



Resistance Training

“A systematic program of exercises involving the exertion of force against a load, used to develop the strength, endurance and/or hypertrophy of the muscular system”

When the player increases their strength and power it allows them to generate more power and thus force in speed or agility movements.

There are many different forms of resistance training that can be used including

- maximal strength
- power exercises
- plyometrics
- resisted runs



Improving Running Technique

- Good running technique should be taught and refined to players at all levels
- Speed will not come after one set of drills, it is something that has to be works on for many months and years.
- There is a difference between sprinting technique for 100m sprinter and running technique for team sport players and obviously the involvement of the ball or hurl will alter technique



Improving Running Technique

Arm Action

- Each arm should move as a whole and elbows bent at roughly 90 degrees
- Arm actions should be as much as possible in a forward and backwards never side to side
- When accelerating aggressive forward and backwards arm action is a must. (Brown, 2005)



Improving Running Technique

Leg action

- When in motion the players foot when running should land directly underneath their hips on the ball of the foot(note: not on the toes)
- As the foot leave the ground it follows a straight path up towards the buttock and at the same time the knee will come forward to where the thigh will be nearly parallel with the ground depending on speed.
- The greater the running speed the greater the height the heel will raise at the back.
(Brown, 2005)





Sprint Training

The following are guidelines to take into consideration when implementing speed drill/training.

- 1. Timing:** Speed drills should be performed early in a session preferably occurring straight after the warm up as this is when the player and neuromuscular system is freshest and not fatigued. (Beach & Earle 2008) (Warpeha 2007 NSCA)
- 2. Volume:** Volume should be low but intensity should be high (Warpeha 2007 NSCA) while Beach & Earle 2008 also stated that volume should be low 3-6 reps per set.
- 3. Recovery :** Beach & Earle stated that rest should be high saying it should be 3-5 minutes to allow full recovery of the neuromuscular system. Note that low level exercise such as skills work should be used in this time period so time is not wasted.
- 4. Effort:** When performing sprints 100% effort should be emphasised

Sample Speed Program

Week 1 (Repeat twice)

5m x 2 - 10sec rest after each rep
10m x 2 - 20sec rest after each rep
20m x 2 - 40sec rest after each rep

3 minute recovery(Running Mechanics)

5m x 2 - 10sec rest after each rep
10m x 2 - 20sec rest after each rep
20m x 2 - 40sec rest after each rep

Volume = 140m

Week 2 (Repeat twice)

5m x 2 - 10sec rest after each rep
15m x 2 - 30sec rest after each rep
30m x 1 - 60sec rest after each rep

3 minute recovery(Running Mechanics)

5m x 2 - 10sec rest after each rep
15m x 2 - 30sec rest after each rep
30m x 1 - 60sec rest after each rep

Volume = 140m





Take Home Messages

- Understand the demands of the level your playing
- Develop endurance through long and short intervals
- Develop speed through improving running mechanics and sprint training

THANKS



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