

What does a specific speed session look like for a team sport athlete?

Originally published 11 April 2019 · fatchfitness.com



I was discussing training with a colleague the other day and the topic of speed training came up. Out of interest I asked what a typical session looked like at this time of year (early season) and the response had me think that I should do an article on what a speed session should look like for a team sport athlete?

I thought I would start by answering a basic question:

What is the goal of speed training?

One answer could be:

Speed training should improve your ability to run/move faster in a way that is beneficial to your sport/activity that you are training for.

If we take this answer as being correct, then we need to work backwards from the speed session itself and work out what sort of speed is required, over what typical distances will you need to sprint; is it straight line running or are there changes in direction involved; is it mainly from a stationary or moving start; approximately how many times might you need to perform this sprint effort during a game (what sort of recovery can you expect b/w sprints?) and when in the training year is this program being written for (preparation, precompetition, competition)?

Whilst we don't necessarily need to answer all of the above questions, if we can unpack the key questions, then we will have a clearer idea of what sort of speed training we need to implement to achieve our speed goals.

Back to my colleague, she is involved in a sport that has had a comprehensive GPS analysis completed with the following metrics recorded:

Performance Attributes	Metrics
Top Speed	~6/1m/s (22km/hr)
Sprint Number/game	~12-17
Distance/Time spent:	
Walking	~300m 23.5%
Jogging	~400m 33%
Running	~350m 30%
Sprinting	~110m 5.6%
Heart Rate Band	>90% time above 80% Max HR.

Armed with this information, we can now start to answer the key questions BEFORE we begin putting pen to paper and constructing an appropriate speed program.

Q. What sort of speed is required?

From the above analysis, you can see that very little of the total time of the game is spent in a high velocity band (5.6%. Speed>18km/hr) whilst almost 30% is taken up with running (Speeds b/w 12-18km/hr). Also we know that there are only a small number of high velocity sprints performed throughout a match (b/w 12-17).

We can also conclude from this analysis that the efforts are at a high intensity with maximal velocities of >6m/s being achieved regularly during these sprints (you have to sprint/accelerate hard to reach these sorts of velocities over short distances).

Q. Typical Sprint directions?

The time motion data didn't specifically look into this question – but from experience most of the high velocity running would be largely in a straight line, with the need to run in an arc as well as rapidly change directions on the fly.

What I believe is important at this point is to also distinguish b/w speed training and agility training – I believe that you should train raw speed in isolation at times and then add agility (change of direction) activities into the routines at other times.

"When we are trying to improve an athlete's raw speed, nothing beats straight line sprinting to achieve this goal."

Q. Are your typical sprint efforts from a stationary or moving start?

There are both stationary and walking/jogging starts so we ensure that we add both these factors into our programming.

Q. How many times might you need to repeat this sprint effort during a game?

This is more of a speed endurance (general aerobic endurance) question. We know from the above analysis that the sport is highly aerobic (try lots of repeated sprints with short recoveries and see how your heart rate reacts!!) and as such when we are ready to work on a player's speed or general endurance we now have all the information we need to develop a sport specific program to address these performance metrics.

Here is an example of the program my colleague had been given (Early Season) to develop her speed.

- 10 × 100m
- 6 × 200m
- 3 × 300m
- 1 × 400m

This is not a speed session for a team sport athlete, this could be a speed session for a 5,000m or 10,000m distance athlete.

Even if you were to argue that this would develop good speed endurance/general endurance for the athlete – when in this game (or any team sport) does a player run for longer than 100m without stopping or changing direction?

This is just lazy programming – it is easy to make an athlete run long repetitions, they will be physically punished doing this type of workout BUT where is there an ounce of specificity to this type of routine?

After reviewing the above Time Motion GPS analysis of the sport and knowing that she was only weeks away from having to compete in State and National level tournaments, this is the program I prescribed for her:

- 10 × 10m
- 10 × 20m
- 10 × 30m.

I believed I had solved the incorrect sprint distance issue but after speaking with her once she had completed the first session – she said that it just about killed her because she thought she should “jog back b/w each sprint effort”!!!

This is quite a typical “Team Sport Speed attitude” - often without the understanding that speed development isn’t fitness (not the typical team sport fitness that team sport athletes crave) – this sort of training is about developing the tools your body needs to accelerate & run fast!

I then made the following modifications:

- 10 × 10m – slow walk back recovery b/w sprints.

5-minutes break.

- 8 × 20m – slow walk back recovery b/w sprints.

5-minutes break.

- 6 × 30m – slow walk back recovery b/w sprints.

The total speed session taking about 25-minutes.

Two things happened once we made this programming change:

1. Given the time to recover b/w efforts, this athlete was more willing to give 100% efforts when performing each sprint (very important for CNS adaptation).
2. As the athlete was now accelerating/sprinting at 100% 1-2 times per week, her speed improved in the lead up to her main event culminating in being selected in a National train on squad.

So what is the moral to this story:

1. Speed training isn’t speed endurance training.
2. Sprinting should be distance specific to your sport.
3. There is little benefit in programming 100m+ distances for your team sport athletes to perform at speed.
4. 100% efforts require good recoveries. There is **no speed developed** when fatigued and if the cardiovascular system is being overloaded due to excessive repetition distances or inadequate recovery b/w high intensity efforts.
5. Development of raw speed should be done over short distances and largely in a straight line – there will be plenty of time to work on the athlete’s agility at speed later on.

My next article will look at [Acceleration v’s Speed training](#) and provide examples of programming that will develop both these attributes.

For additional resources, this is a pretty good account of [speed training principles for team sports athletes](#).

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