Track & Field Selection Secrets!

A guide to choosing the right event for your athletes to compete in!

Introduction – How to Use this Guide!

Track and field isn't necessarily like all of the other team sports that athletes compete in. Yes, you are a team in many respects, but individuals compete in individual events. This means you want to have the best individuals competing in those events for your Track and Field Team.

That's why we have completed this bonus material to go along with your **Track and Field Drills and Practice Plans.** Before you can even begin to coach the athletes, you need to be able to select the ones that you want in each event. It might seem easy, but there are a few intangibles that you want to include in your selection – as well as some basic tests that are going to show you telltale signs of how an athlete is going to compare against others.

This guide has been set up to include the following:

- Tests you can run during tryouts to identify the best events for an athlete
- Standardized results to show you where the athletes need to be
- A matrix to help you 'decide' the event an athlete should compete in

We will show you 10 tests that can be run to determine an athlete's best chance of success in an event. These tests are based on:

- Speed
- Strength
- Endurance
- Athleticism

We will provide a testing sheet for you to use for each athlete to help determine where they are best placed in track and field. Along with that, we will show you the ideal traits of each of the events areas: jumping, throwing, middle and long distance and then the sprints.

It's impossible to make a qualified decision on where to place a track and field athlete without knowing some of the basic indicators that we are going to go through in this guide.

By the end of the testing, you will know exactly where the athletes should be placed and then you will watch them excel in the events you have chosen.

Best of Luck!

Performance Factors by Event Type

Each event is going to require certain elements in an athlete that will help them compete at the highest level possible. The elements that are necessary for the sprinter might not be the same as what is needed for the shot put thrower. In this quick section, we'll give you an idea of what the key elements are for each event, and why these are important.

The Factors

Here are the different performance factors and what they mean:

- **Natural speed** – this is exactly how it sounds. An athlete with natural speed is going to excel at most track and field events. Put in combination with other factors and it helps you to decide where they are the best fit.

- **Power –** This is usually done by calculating or determining through test the amount of effort a person can exert in as little time as possible. A good test example would be a bound. The further a person can bound with the least amount of time required for their effort means they have more power.

- **Stride –** Is the stride consistent, clean and quick? The stride is an important component for running events.

- **Strength –** Most of the events need strength of one sort or another. But, the strength might be in different areas. This factor is the general strength of an athlete – or their ability to use their body to exert force on an object.

- **Body Morphology –** Surprisingly, the body type of a person has quite a bit to do with their overall ability to succeed in a certain event. Obviously a 200-pound brute with short, powerful legs might not be a great long jumper, but they can probably fire a shot put!

- **Aerobic capacity –** This is obviously used to help determine whether an athlete has the ability to sustain their effort consistently over a longer period of time. Important for middle and distance running events.

- **Coordination –** While most athletes benefit from coordination of one sort or another, exceptional coordination is particularly important for throwing and jumping events. When a person has to combine several different elements of motion, timing and technique, coordination is paramount.

The Important Factors by Event Type

Each of the events does require more of one factor than it does others, but most of the events can be a combination of the performance factors. Each of the event areas does have one or two performance factors that exceed the others. We'll show you what is important for each event area:

Sprints and Hurdles

1. Natural speed
2. Power
3. Stride
4. Strength
5. High lean to fat ratio (body morphology)

Middle and Long Distance Run

1. Aerobic capacity
2. Natural speed
3. Low body fat (morphology)
4. Strength
5. Stride

Jumping Events

1. Power
2. Strength
3. Lean, tall, longer, powerful legs (morphology)
4. Natural speed
5. Coordination

Throwing Events

1. Power
2. Strength
3. Body mass (morphology)
4. Coordination
5. Natural speed

This is the first step to understanding the elements that make up a good athlete in the individual track and field event areas. In the following pages, we are going to provide you a battery of tests, along with ideal testing levels in each area for the ideal athlete in that age group.

10 Performance Evaluation tests for Track and Field

Each test will have a description of how it is run along with the **standards for the 14 to 19 age group**. For younger athletes, use your judgment to adjust the standards down appropriately. We will also provide tidbits of additional information you can use in your selection.

30 Meter Sprint – Speed and Power

Have an open track where athletes can run without impediment for a full 30m. If you have the room, you can run two full areas so that you can get the athletes through the test quicker.

Each athlete starts from blocks, or from a crouch position and is timed from his or her first movement forward. Each athlete should take the test 3 times, with full rest in between each of them. Take the median time of the 3 runs in order to come up with a marked test time.

(times posted in seconds)

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	**<4.0**	**4.2 - 4.0**	**4.4 - 4.3**	**4.6 - 4.5**	**>4.6**
Female	**<4.5**	**4.6 - 4.5**	**4.8 - 4.7**	**5.0 - 4.9**	**>5.0**

Standing Long Jump – Strength and Power

In a standard long jump pit, the athletes will stand on the takeoff board and from a standing start, they will crouch down and leap forward and land on two feet in the long jump pit. Results below are for two different age categories:

14 to 16 year olds

Gender	Excellent	Above average	Average	Below average	Poor
Male	**> 2.01m**	**2.00 - 1.86m**	**1.85 - 1.76m**	**1.75 - 1.65m**	**< 1.65m**
Female	**>1.66m**	**1.65 - 1.56**	**1.55 - 1.46m**	**1.45 - 1.35m**	**< 1.35cm**

17 to 19 year olds

Gender	Excellent	Above average	Average	Below average	Poor
Male	**>3.0m**	**2.7m**	**2.5m**	**2.3m**	**<2.0m**

Female	**>2.8m**	**2.5m**	**2.2m**	**1.9m**	**<1.7m**

Chin up Test - Strength

Using a chin up bar in a school or recreation center gymnasium, the athlete must grip the bar from an underhand position and start the drill with their chin level with the bar in an upright position.

The coach will then record how many times the athlete can drop into a full arm extension and then bring themselves back up to the chin-level position. This is a great test for throwers as it shows the level of arm and shoulder strength that a person possesses – despite their overall size and body morphology.

Gender	Excellent	Above average	Average	Below average	Poor
Male	**>13**	**9 - 13**	**6 - 8**	**3 - 5**	**<3**
Female	**>6**	**5 - 6**	**3 - 4**	**1 - 2**	**0**

Wall Squat Test – Strength and muscle endurance

To be a sprinter or a long distance runner, two of the most important elements are leg strength and endurance. This drill provides information to a coach on an athlete's leg strength and overall muscle endurance. A good test for middle and long distance runners, and even for sprinters.

With a flat wall in a warm area (such as a gym), the athlete will crouch down with his or her back against the wall – and the knees will be at a 90 degree angle (some leeway can be given if an athlete has knee problems). The hips to upper body should also be at a 90 degree angle.

This drill starts when the athlete lifts his or her foot 2 inches off the ground. Coaches will time the athlete from the time the foot is lifted until it is dropped back to the ground or the athlete loses his or her balance.

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	**>102 sec**	**102 - 76 sec**	**75 - 58 sec**	**57 - 30 sec**	**<30 sec**
Female	**>60 sec**	**60 - 46 sec**	**45 - 36 sec**	**35 - 20 sec**	**<20 sec**

Harvard Step Test – Aerobic capacity

This is a popular test to help determine the cardiovascular strength of an athlete. Good aerobic response is essential for middle and long distance runners. Without a good aerobic capacity, they will not be able to summon the strength to finish their races strong.

With a standard gym bench, the athlete will start on the ground facing the bench. When the coach says begin, the athlete must step up and then down on the bench once every two seconds. The athlete does this for 5 minutes. At the end of five minutes, they take their heart rate (beats per minute= number of beats in 15 seconds x 4) after one minute, then again after two minutes, and finally after three minutes.

Add the three numbers together and then divide it into 30,000 (so 30,000 divided by bpm1+bpm2+bpm3) to get the 'point' value of the Harvard Step Test.

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	**>90**	**80-90**	**65-79**	**55-64**	**<55**
Female	**>86**	**76-86**	**61-75**	**50-60**	**<50**

Cooper VO2 Max Test – Aerobic capacity

This test is widely used to determine the aerobic level of participants. It is a very simple test to determine the cardiovascular strength of an athlete. It is also a simple test to administer. On a 400m track (or marked course if no track is available) athletes must walk or run for 12 minutes. Their overall distance indicates their level of aerobic fitness.

Age	Excellent	Above Average	Average	Below Average	Poor
Male 13-14	**>2700m**	**2400-2700m**	**2200-2399m**	**2100-2199m**	**<2100m**
Females 13-14	**>2000m**	**1900-2000m**	**1600-1899m**	**1500-1599m**	**<1500m**
Males 15-16	**>2800m**	**2500-2800m**	**2300-2499m**	**2200-2299m**	**<2200m**
Females 15-16	**>2100m**	**2000-2100m**	**1700-1999m**	**1600-1699m**	**<1600m**
Males 17-19	**>3000m**	**2700-3000m**	**2500-2699m**	**2300-2499m**	**<2300m**

Females 17-19	**>2300m**	**2100-2300m**	**1800-2099m**	**1700-1799m**	**<1700m**

Wall Toss Test – Coordination

Coordination can be a complex athletic element to record – especially in athletes that are younger. However, coordination is important when you need to be able to get the body to perform several different motions in order to complete a task. This is especially important for throwing and jumping – where the athlete needs to put several elements into action for a successful attempt.

This test can be done on a flat wall and run for 30 seconds at a time. The athlete will start with the ball in his or her right hand and be standing about 6 feet from the wall. To start the drill, the athlete will toss the ball underhand against the wall and catch with the opposite hand. This is repeated for the entire 30 seconds. The number of successful catches will be recorded.

Note: This drill also shows coaches the competitive side and how an athlete can function (with coordination) under pressure.

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	**>35**	**30 to 35**	**25 to 29**	**15 to 24**	**<15**
Female	**>30**	**25 to 29**	**18 to 25**	**12 to 18**	**<12**

Body Fat Percentage – Morphology

While this isn't necessarily a test to prevent any athlete from competing in a certain track and field event, there is evidence to suggest a correlation to success in an event based on body fat or body mass. Larger athletes with more body fat tend to do better in power events, while leaner, lengthier athletes tend to excel at jumping events.

You can test body fat with a set of calipers and should be measure in millimeters. The calipers should come with a calculation method to determine body fat percentage, based on the calipers used. The scales below measure 16 to 19 year old body fat.

	Male	**Female**
Track - Runners	**8-10%**	**12-20%**
Track - Jumpers	**7-12%**	**10-18%**
Track - Throwers	**14-20%**	**20-28%**

Test an athlete in two of three areas: Bicep, tricep and just above the hip bone. Measure more than once to make sure an accurate reading is given.

Stride Frequency Test - Stride

Stride strength and stride frequency are an indicator of the type of success an athlete might have in running events. With that said, stride frequency needs to be balanced out with speed, strength and power. That's why this test was developed: it measures the number of strides per second.

In a 60m length, the coach should mark off a 30 m section from the 20m to 50m mark. In this area, the coach will time the athlete and with an assistant, count the number of strides in that time to come up with an overall strides per second tally.

For example if a runner has 8 strides over a 30m section and completes it within 2.5 seconds, that means they have a strides per second rate of 3.2 strides per second.

Ideally, most track coaches try to train athletes at a pace of between **180 and 200 steps per minute.** This means that the athlete will touch down with each foot between 90 and 100 times if they kept the same stride pace for a full minute.

This will obviously differ between each race, but it is a good guideline for sprinters and middle distance runners. Combine stride frequency with power and you have a great runner.

Vertical Jump – Power, coordination and leaping ability

Obviously this is a good indicator of an athlete's ability to jump. However, it is not only used for high jump, but the power generated in the legs for the vertical jump is very useful in determining power and strength for sprinters as well. And the leg drive is an exceptional tool for throwers.

Athletes should stand next to a flat wall with their right arm extended, while staying flat-footed. This is the first marking point. With an assistant on a step ladder they need to be prepared to measure the height of the standing vertical jump. This is the second marking point. Use can use chalk on the jumpers finger tips to measure where the height of the jump was reached.

Measure the distance between the two markings and you have the vertical jump height.

Gender	Excellent	Above average	Average	Below average	Poor

Male	**>27”**	**20 to 27”**	**18 to 26”**	**12 to 17”**	**<12”**
Female	**>23”**	**19 to 23”**	**15 to 18”**	**10 to 14”**	**<10”**

The Selection Matrix for your Athletes

The selection matrix is what you are going to use in order to correlate the data collected from the testing of your athletes. You will be able to take into consideration all of the elements that have been tested in the above 10 tests in order to slot your athletes into individual events.

Most of the tests that were given had a scale that was provided for the standardized scores for athletes of a given age. They were rated from excellent to poor. Athletes can be given a score in a certain test based on where they fall in the rankings.

5 – Excellent
4 – Above Average
3 – Average
2 – Below Average
1 – Poor

Note: The Body Fat calculation will be used to help give a coach guidance on a particular suited event for the athlete based on the other score provided

Once all of the score are tallied for the athlete, the coach will have to sit down and determine where an athlete’s strengths lie. For example (also shown in examples on the actual matrix on the next page) if an athlete is excellent in the 30m sprint, the standing long jump, and the stride frequency, and a little weaker in the chin ups, and wall toss test then they might be better slotted to the sprint events.

However, if they don’t have great natural speed, but they do well in the standing long jump, the coordination tests and the vertical jump, they might do well in any one of the jumping events and maybe even throwing (javelin).

On the following page is an example of how the matrix would be used and then how I would slot athletes that scored a certain way in an event. Some athletes will be great multi-event competitors – while others are going to compete in just one event.

Then there is a blank matrix page for you to print off and use at your leisure. Make sure you do one for both male and female athletes.

Note: After the matrix section we will talk about some of the intangibles a coach needs to consider when placing an athlete into a certain track and field event.

Athlete Name	30m Sprint	Standing Long Jump	Chin Up Test	Wall Squat	Harvard Step Test	Cooper VO2 Max	Wall Toss Test	Stride Frequency	Vertical Jump	Body Fat %	Best Event(s)
Aly Horton	4	4	2	5	3	3	2	160	3	18	Middle distance or sprint
Julie Moon	3	2	4	4	1	2	4	140	2	24	Shot put or discus
Sarah Evens	5	5	3	3	3	4	4	170	3	17	Sprint or long jump
Bobbi-Joe Hartley	3	4	4	4	2	2	5	140	4	18	High jump or javelin
Sandi Shoal	3	5	2	3	4	4	3	160	3	15	Long distance
April Springer	4	3	4	3	3	3	5	140	4	18	Javelin or jumping events
Clare Knight	2	2	3	4	4	4	3	150	3	20	Discus or middle distance
Eva Brown	5	5	2	4	2	2	4	180	4	15	Multi-Event athlete

Athlete Name	30m Sprint	Standing Long Jump	Chin Up Test	Wall Squat	Harvard Step Test	Cooper VO2 Max	Wall Toss Test	Stride Frequency	Vertical Jump	Body Fat %	Best Event(s)

More than tests to select athletes

As a coach, you know that a person can test well in a number of different areas, but that doesn't necessarily translate to results in competition. For a variety of reasons the athlete's general athleticism doesn't translate well when they are performing in an event.

Coaches can use a variety of standardized tools to add to their assessment of an athlete – some are documented tools, others rely on intuition and your confidence as a coach.

For example: if you have an athlete that has the right body type and coordination to be an exceptional jumper, but they lack the approach speed and the technique to make a successful jump – these are things that can be taught and developed over time. **Identifying that is key to successful coaching in track and field.**

Yes, the performance tests are going to be a pretty good indicator of where your track and field athlete is going to fit – but as a coach, you may see something a little more in an athlete and you may want to encourage them in such a direction.

Other areas that a coach should look at:

- **Natural ability –** Sometimes the most unlikely athlete can hurtle a discus a mile. The performance testing may have indicated that this athlete would be best suited to sprints, but a coach should also take the time to look at where an athlete might also have natural ability.

- **Anxiety and stress –** This isn't necessarily a bad thing. If you think of the best quarter horses, they are high strung and anxious creatures. Anxiety and stress can tighten an athlete, but it can also add hormones to the body that increase awareness and summon a little extra in the tank. This can be good for runners. On the flip side, too much anxiety and stress can cause mistakes – especially in technique events such as jumping and throwing. These events require good focus balanced with natural competitive stress.

- **Competitive streak –** Most athletes will have competition ingrained in them. However, for many jumpers and throwers, the competition is more against themselves. They strive to reach further, jump higher and throw harder. They are trying to perfect their technique to make the best throw they can. When you are dealing with runners, they need to like competing head to head with other athletes. This is what brings out the best in them. You will be able to see this in athletes in the way the get up for an event. If they want to beat someone else, they might be better in head to head

competition. If they want to beat their own best mark, then they might be better in individual attempt events.

- **Coachable –** If you have an athlete that is hard to control and they think they know it all – they might not be doing anyone any good. This is something that a coach needs to consider when they are selecting athletes for certain events. It might be difficult to keep a natural 100m sprint athlete out of their desired event, but putting them in the 60m event, or the 200m event might just help you get around to them.

  Athletes that are coachable are going to excel at their chosen event. They listen to the guidance a coach is giving them – helping them to achieve their most. This is an ideal athlete.

- **Event liking –** This seems like a silly factor to include in choosing the event for your track and field athlete, but it should be in consideration. Athletes that compete in events they dislike or have little interest in, generally don't compete at their highest level.

  If an athlete gets to compete in event they like and appreciate, chances are they are going to compete at a higher level. This is something that the coach and the athlete should talk about. There may be some common ground they can agree on so the athlete is achieving as much as possible in track and field.

Combination athletes

At the middle school and high school levels especially, you are going to have athletes that compete well in many disciplines. Usually by the college level many athletes have specialized in an area – but not always. Some Olympic athletes compete in several events – especially in the sprint categories.

Coaches should not try to steer an athlete out of an event if they believe they have the skills to compete at a competitive level. Eventually, athletes that excel in one area and lag behind in another start to focus on those areas they are better at.

Athletes that can compete at a high level in many events are a track and field coach's dream. Don't discourage it, and work with those athletes so they can achieve their best at all levels of competition.

Making the selections

Most track and field teams don't have cuts. Track and field is a direct competition event where eventually many athletes will realize they just aren't able to compete at the same level as their peers. This is where many athletes get weeded out of track and field programs.

Selecting the events that your athletes are going to compete in should be a collaborative process with the athlete. Talk with them about why you feel they should participate in a certain event. Discuss scores and explain why you feel the athlete would be the best fit in a particular discipline.

Using the matrix

By doing the testing and using the matrix, you have documented back up as evidence for your selections. This is valuable for a number of reasons in amateur sports. Instead of a coach choosing athletes he or she likes or wants to make a team or compete in a certain event – the matrix is a non-discriminate way of showing an athlete (or other interested party) the basis for a decision you make as a coach.

More and more this type of system is being used in school athletics in order to combat problems with overly concerned family members, or other interested parties. It is always best to make sure you have the evidence to back you up in the event questions are raised.

Have fun and enjoy the selections!

Track and field is a great competitive sport that allows athletes to pit their individual skills against those of another. With natural ability and coaching many of these athletes go on to scholarships in colleges and universities to continue on in their track careers. Some may even go to the Olympics!

By starting athletes in the right direction now, using the tests I have included in this guide, you are going to be giving them the extra few inches or tenth of a second they need to be the best track and field competitor they can.

Best of luck!