

Track & Field Glossary

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A

Acceleration - A positive rate of change of velocity. In other words, the act of speeding up.

Aerobic - Characterizing metabolic processes that use oxygen to break down fuel and produce energy. Endurance events and longer duration exercise primarily rely on aerobic energy production.

Aerobic threshold - A threshold occurring at a lower intensity of exercise than the lactate threshold. The aerobic threshold is commonly said to be the point at which anaerobic energy pathways begin to operate significantly, or where blood lactate concentrations reach approximately 2mmol/liter (see “blood lactate concentration”).

Anabolic - Categorizing metabolic reactions in the body that use energy to build up larger molecules, or rebuild damage body structures, such as muscles. Periods of recovery are categorized as anabolic, and set the stage for catabolic reactions to occur.

Anaerobic - Characterizing metabolic processes that are used primarily in shorter, high-intensity exercise that break down fuel to produce energy in the absence of oxygen.

Anaerobic threshold - See “lactate threshold.”

Anchor - The athlete who runs the last leg of a relay race.

Ancillary training - A type of training in which the athlete focuses on a type of work not directly related to the event for which the athlete is training. For instance, a distance runner utilizing resistance training is doing ancillary training.

Anterior pelvic tilt - A postural imbalance common for runners in which the pelvis rotates forward (hips forward, butt sticking out) during either running or standing. Lack of stability

in the lower core and hip muscles, along with tight hip flexors are common contributors to unwanted anterior pelvic tilt.

Approach - In a jumping event, the run up phase during which the athlete builds speed or otherwise prepares for the jump.

Athletics - The collection of sports including track and field, cross country running, and road racing. The name is derived from the Greek work “athlos,” meaning “contest.”

ATP - Adenosine triphosphate is the energy currency of the body. It is needed to perform most of the body's work.

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B

Backside mechanics - The movements of the running form that take place behind the athlete's center of mass.

Baton - The hollow tube which must be passed between runners to complete a relay race.

Bell Lap - The final lap of a multiple lap race, at the beginning of which a bell is rung. This signifies that the leader of the race has begun the final lap.

Biomechanics - The study of the physical principles of human movement.

Blind Pass - A non-visual type of baton exchange employed in a sprint relay

Blocking - A technique used in the throws which entails bracing one part of the body to efficiently transfer momentum to another part of the body.

Blocks - An aid used at the start of events up to the 400 meter distance, including the hurdles.

Blood lactate concentration - The measurement of lactate in the blood, often used to gauge the contribution of anaerobic energy systems in any anaerobic work performed. Blood lactate concentration is measured in millimoles per liter (mmol/liter).

Bounding - A type of exercise in which the athlete runs with an exaggerated push off so that each step becomes a leap.

Break-Line - A specific mark on the track used only in certain races that are longer than one lap (such as the 800 meter or 4x400 meter relay). The break-line indicates the point

at which runners may leave their assigned lane and move toward the inside lane of the track.

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C

Catabolic - Categorizing metabolic reactions in the body that break down molecules to produce energy. Time spent exercising is categorized as catabolic. Recovery and anabolic processes are needed to allow catabolic processes to occur.

Center of mass - The mean location of all mass in a system. Or, as commonly used in relation to the human body, the cross-section of a body above and below which mass is equally distributed.

Championship racing - Racing in which the primary determinant of success is place. Usually a title is on the line, such as a conference title or national championship.

Changeover - The exchange of the baton from one runner to the next during a relay race.

Check mark - A mark on the runway used to aid the athlete in staying consistent during the approach of a jumping event or the javelin throw. It might indicate where to start, where to change the phase of the approach, where to take off, or where to throw.

Concentric contraction - The type of contraction during which muscle length shortens, such as in the push-off phase of a jump or running stride.

Crossbar - The bar that a high jumper or pole vaulter must clear.

Crouch start - A common starting position used by sprinters in the absence of blocks. The crouch start utilizes four points of body-ground contact and positions for both the “On your marks” and “Set” commands.

Curb - See “rail.”

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D

Dashes - The term commonly used to describe races up to the 800 meter distance. For example, the 100 meter dash.

Decathlon - A common men's multi-event, consisting of 10 individual track and field competitions, including running, throwing, jumping, and hurdle events. Each event is scored on a point scale and the winner is the athlete with the highest point total from all 10 events combined.

Deceleration - A negative rate of change of velocity. In other words: The act of slowing down.

Delayed Onset Muscle Soreness (DOMS) - Soreness in the muscles that sometimes occurs 24-48 hours after a bout of exercise in which intensity is increased. DOMS is also associated with exercise that includes significant eccentric contraction.

Die - In a distance or middle-distance race, to have a painful experience in which your body shuts down and your pace slows.

Discus - A throwing event in which the athlete throws a cylindrical object as far as possible.

Doping - The use of performance enhancing substances.

Dorsiflexion - A movement of the foot in which the toes move closer to the shin.

Draft - In a distance race, to tuck in behind another runner, letting that runner control the pace and block the wind.

Dual-alley start - A type of start commonly used in large distance races where there are two waterfall starts: One standard, and a second farther down the track that is spread over the outside half of the lanes. Runners in the outside alley may break only to the middle of the track, designated by cones, until completing the first turn, at which time the runners on the outside may break toward the inside lanes where the runners who started from the full waterfall have already moved.

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E

Eccentric contraction - A type of muscle contraction during which the muscle lengthens, despite contracting, such as during the landing phase of the running motion (especially in

downhill running). Eccentric contraction is thought to be responsible for a large percentage of microscopic muscle damage that leads to soreness.

Electrolytes - Salts and minerals in the body that allow vital electric currents to pass through the body. Examples of electrolytes include: Sodium, potassium, and zinc.

Endurance - The physical quality of being able to extend the duration of a given activity.

Exchange zone - The 20 meter section of a track inside which the baton must be passed from one runner to another during a relay race.

Extension - The movement of a joint during which the angle of the joint becomes more obtuse. For instance, extension of the elbow straightens the arm.

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F

Flexion - The movement of a joint during which the angle of the joint becomes more acute. For instance, flexion of the elbow brings the wrist toward the shoulder.

False Start - Moving or leaving the starting blocks or line before the gun goes off.

Fartlek - A term derived from Swedish, literally meaning “speed play.” A fartlek is any of the several types of training during which the runner varies the pace frequently over the course of a continuous run.

Fast twitch muscle fiber - Due to their fast contraction rate and low resistance to fatigue, these fibers are useful use in anaerobic activities such as sprinting (or any exercise that is high in intensity and short in duration). Fast twitch muscle fibers are also known as Type II fibers. These are further divided into Type IIa, which have a slighter higher resistance to fatigue and fast contraction, and Type IIb, which are used for maximal contractions.

Field events - All of the throwing and jumping events; events that do not take place on the track itself.

Flight phase - For a jumper, the period following takeoff during which the athlete enters a period of non-support.

Flop style - Also known as the Fosbury Flop, this is a style of high jumping in which the jumper's back passes over the bar. The style was popularized by American Dick Fosbury, a gold medalist in 1968.

Force - The physical manifestation of energy in the form of acceleration. In athletics, force is produced by the muscles. $\text{Force} = \text{mass} \times \text{acceleration}$. Force is positively correlated with power.

Frontside mechanics - The movements of the running form that take place in front of the center of mass.

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G

Glide technique - In the shot put, this is the technique employed by many throwers in which the athlete glides from the back of the ring to the front in a straight line without rotating. The glide technique is older than the spin technique, but both are still commonly used.

Glycogen - The compound that is the form of stored carbohydrates in the body. Glycogen storage most commonly occurs in the muscles and liver.

Glycogen depletion - The process of diminishing glycogen storage in the body, specifically in the liver and muscles. This typically refers, in endurance events, to the point of diminishing glycogen storage beyond which the body begins to respond, opposed to a literal depletion of glycogen in the body (which never occurs).

Grip height - In the pole vault, the measurement from the top of the pole to the athlete's top hand.

Ground contact time - The amount of time each foot remains in contact with the ground during each foot strike while running.

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H

Homeostasis - In the human body, this is the state that the body's processes are constantly directed toward, characterized by stability and equilibrium. A goal of training is to increase the capacity for work possible while maintaining homeostasis.

Headwind - A wind moving the opposite direction of a sprinter or jumper during the sprint or approach. Marks set into headwinds are counted for record purposes, but setting any kind of record into a headwind is a rare occurrence.

Heat - A preliminary or qualifying race within a competition that involves multiple (two or more) rounds of races run for the purpose of qualifying for the final of the race.

Heel Recovery - The phase of the running stride during which the heel is moving toward the center of mass as a result of a bending knee and flexing hip.

Hurdles - The horizontal barriers, called hurdles, which must be cleared during the various so-called hurdle races. These races are most commonly 100 meter, 110 meter, and 400 meter distances. Hurdles are differentiated from the barriers in the steeplechase because they can be adjusted for height and will rock/fall when struck. Each hurdle event uses ten barriers regardless of the race distance. The height, however, changes for each distance.

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Impact Area - The designated place for implements to land during throwing events.

Implement - The object in a throwing event, including the javelin, shot, hammer, and discus.

Intensity - A measure of how hard an athlete is working during exercise.

Interval Training - A type of training during which an athlete runs a given pace for a given distance and time, and then takes a specified amount of rest before another bout of intense running. The “interval” commonly refers to both the running bout and the rest period. The rest period can either be constituted by complete rest, or simply a lowering of intensity.

Isometric contraction - The type of muscle contraction during which muscles neither lengthen nor shorten. In most dynamic movements in track and field, isometric contractions are limited to the secondary actions of stabilization, but are often elicited specifically in stability or resistance training

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J

Junior - An athlete who is under 20 years of age on December 31st of a given year.

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K

Kick - A final increase in speed that comes toward the end of a running event. Kicks are primarily used to refer to in the 800 meter distance and up.

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L

Lactate threshold - The exercise intensity at which more lactic acid is produced than the body is able to process. At this point, lactate accumulates in the blood stream. Lactate threshold is an important measure for endurance sports and can be greatly increased with training.

Lactic Acid - A by-product of anaerobic energy production believed to contribute to the fatigue of working muscles. In actuality, lactic acid quickly breaks down into lactate, which can to some degree be reused as a fuel, and a positively charged hydrogen ion. It is the hydrogen ion that increases the acidity of the blood and contributes to fatigue.

Lap - One complete circuit of a track.

Leg - A designation segment of a relay race completed by one runner.

Lifting - In the race walk, a violation in which the athlete raises both feet off the ground simultaneously.

Long distance races - Commonly referring to races above and sometimes including the 3,000 meter distance.

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M

Macrocycle - In training, the term used to describe a long block of training constituting a buildup toward one period of competition. Macrocycles are commonly equivalent to a single season.

Maximum Controllable Speed - A term used in reference to the jumping events to describe the fastest speed a jumper is able to attain in approach without losing control of the jump.

Maximum Velocity Mechanics - A term used to describe the biomechanics used by runners during full speed sprinting. The term can be applied to sub-maximal velocities, as it describes components of form, rather than pace.

Mesocycle - In training, the term used to describe any medium-term training cycles that are part of the macrocycle. Mesocycles are also commonly called phases, and are often grouped by theme.

Metabolism - The sum of all chemical processes in the body.

Microcycle - A microcycle is the smallest block of training, composed typically of 7 to 14 days of training. A group of microcycles makes up a mesocycle.

Middle distance races - Commonly considered races above 400 meters in distance, but below (or sometimes including) the 3,000 meter distance.

Mondo - A hard, fast type of surface commonly used on tracks where a high level of competition takes place. The material of a mondo track is laid in strips rather than poured — as with most all-weather track surfaces — which contributes to a greater degree of cross-angle friction, and subsequently, traction. Mondo has been the track surface in every Olympic Games since 1976.

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O

Overstriding - A biomechanical running inefficiency in which a runner lengthens the stride by extending the foot farther forward rather than increasing the power of the push off. Overstriding can result in extended ground contact times, an unnecessary braking action, and additional impact forces on the body.

Overload training - Training based on the principle of overload, which states that to elicit an adaptation, an athlete must in some way apply a workload greater than that to which the athlete is accustomed. Common methods of overload are increasing resistance, duration, intensity, or speed. This can also be achieved by decreasing rest periods or the time it takes to perform a given amount of work.

Overtraining - An umbrella term used to describe many stages and degrees of training when the volume and intensity of work being performed by the athlete exceeds the athlete's capacity to recover from the workload.

Overuse injuries - A type of injury incurred by training at levels of intensity and/or volume which do not allow recovery to match the breakdown incumbent in training.

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P

Passing Zone - See "Exchange zone."

PB - Personal Best.

Periodization - In training, the concept of dividing training into blocks, also called mesocycles, typically characterized by different emphases.

Plantarflexion - The movement of the ankle in which the toes are pointed toward the ground.

PR - Personal Record.

Pronation - The inward roll of the foot that occurs from initial footstrike (especially in runners who heel-strike) until preparation for toe-off. Pronation is a necessary type of joint movement for running, as it is a primary means of absorbing the impact forces of running. However, excessive pronation is a common precursor for overuse injuries. This can be addressed with strengthening, orthotics/insoles, or corrective footwear.

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R

Recovery - A window of time during which the body repairs, rebuilds, and restores. Commonly refers to the sum total of regenerative processes throughout a training cycle, time between workouts, or blocks of lower intensity or rest during a workout session.

Rabbit - In a non-championship race, a rabbit is a runner (often paid) who is designated to lead the race through a certain distance at a set pace. Typically, a rabbit leads for half to two-thirds of the total race distance. Rabbits are used to ensure a fast pace and to alleviate the pressure to lead from the actual competitors.

Race Modeling - A training technique that consists of rehearsing specific parts or elements of the race.

Race walk - A type of race in which the athlete must have one foot in contact with the ground at all times, and the advancing leg must be straight.

Rail - Typically an aluminum bar running along the inside of the first lane. The rail makes it easier to spot distance runners stepping off the track. Rails are commonly used on outdoor tracks.

Relay - An event in which four team members each run one of four legs of a race. The runners pass a baton in designated exchange zones. The distance of each leg of the relay may be the same, as in the 4x100 meter and 4x400 meter relays. It may, however, vary from leg-to-leg, as in the distance medley relay and sprint medley relay.

Relay Leg - The segment of a relay race completed by a single runner.

Runway - A designated area or lane where jumpers perform their approach before a jump.

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S

Scratch Line - The line at the center point of a relay race's exchange zone.

Set Position - The still position runners must assume immediately before the starting device goes off.

Shot - The implement used in the shot put, a round steel ball.

Sit-and-kick - In a distance race, a type of racing strategy in which a runner relies on his superior finishing speed and makes no attempt to gain the lead of the race until the very

end.

Slow twitch muscle fiber - These highly oxidative fibers are useful for endurance activities or exercise that is low-to-moderate in intensity and longer duration. Also known as Type I muscle fibers, their high resistance to fatigue and slow contraction rate help to sustain aerobic activity.

Spikes - Shoes fitted with semi-sharp “spikes” implanted or screwed into the sole of a shoe. Spikes are used to increase traction.

Spin technique - A technique used in the shot put in which the thrower spins rather than gliding from the back of the ring to the front. The spin technique allows the thrower to apply force to the shot for longer than the glide technique, though both can be, and are used, successfully.

Split - The time of a particular segment of a race or running workout.

Stability training - A type of balance or resistance training aimed at increasing the stability of joints, especially during dynamic movement.

Staggered Start - Used in races from 200 meters to 800 meters that start on a curve. The starting lines are staggered lane by lane to make up for the different distance of the curve in each lane, so that each athlete starts the same distance from the finish line.

Standards - In the pole vault, the bars used to hold and measure the height of the pole. Standards are adjustable both up and down and back and forth.

Stroke volume - The volume of a blood the heart pumps or is capable of pumping in a single beat.

Supercompensation - In training, the theoretical period that follows a training stimulus during which a fitness gain is present. The supercompensation model states that before any given workout, a baseline fitness level exists. Then, during the workout, the fitness level decreases as the athlete fatigues, and after the training stops, recovery begins. Ample recovery leads to the period of supercompensation, during which the level of fitness is heightened compared to the baseline. If no further training stimulus is provided, then the fitness level will return to baseline over time.

Supination - The outward rolling of the foot. In the running stride, supination occurs immediately before foot strike, as well as during toe-off. Supination is a natural part of the running stride, in which much of the potential energy stored in stretched tendons is converted back into kinetic energy. However, when runners supinate heavily, pronation is limited and shock absorption can be an issue.

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T

Tail Wind - A wind travelling in the same direction as a runner or a jumper. Tailwinds greater than 2.00 meters per second (m/s) lead to wind-aided marks. These marks count for the competition, but not for record-setting purposes.

Takeoff - The moment at which an athlete's support foot breaks contact with the surface of the throwing circle, runway, or track and the athlete enters a period of flight.

Takeoff board - Also called the takeoff strip, the spot from which the long jumper or triple jumper takes off. After this, there is a foul line. Jumps are measured from the front of the board.

Throwing circle - The circle or ring in which a thrower throws the discus, shot put, or hammer.

Throwing Sector - The specified arc in which a thrown implement must land.

Toe-off - The phase of the running or walking stride when the toes (primarily the big toe) push off the ground.

Training age - The number of years a given athlete has been training seriously for his event. Training age also takes into account the quality and volume of past preparation.

Training stimulus - Any session of training — including running, jumping, throwing, plyometrics, resistance training, etc — that provides an impetus for the body to improve an element of fitness, such as strength, bone density, or stroke volume.

Trial - An attempt in a field event.

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V

Ventilatory threshold - This is similar to the lactate threshold in practice. However, it is defined by an accelerated increase in breathing rate (rather than by lactate production). Breathing rate increases to expel excess carbon dioxide produced as a byproduct of a blood-buffering system that regulates the pH of the blood.

Visual Pass - A type of pass commonly used in distance relays in which the outgoing runner will accept the baton while looking back toward the incoming runner.

VO2 Max - An athlete's maximum aerobic capacity, defined by the maximum amount of oxygen that can be utilized by the body. VO2 max can be defined absolutely as liters per minute (l/min), or relative to body mass as milliliters per kilogram of body weight per minute (ml/kg/min).

Volume - In training, the term used to describe the total workload of an athlete.

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W

Waterfall start - A common start for the distance races in which athletes line up along a curved line and may break in toward lane one immediately.

Wind-Aided - A term applied to marks gained with the help of a tailwind stronger than 2.00 meters per second (m/s). Wind-aided marks count for the purpose of the competition in which they are made, but are not officially counted for record purposes.

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