FIRST, LET'S LOOK AT AEROBIC TRAINING

Aerobic training usually complies with the ________ principle.

· Frequency – In order to be effective with aerobic training, an individual’s need to train at least three times a week.
· Intensity – This refers to the degree or severity at which you train.

There are a number of ways you can test intensity, such as the ________ test and ________ rating scale. However, the most reliable and most used in training is by measuring the athlete’s ________ rate. When in aerobic training, the heart rate is typically between 70 percent to 85 percent of the max HR. You can measure your approximate maximum heart rate by minusing your age from 220. So for example, 220 - my age, 26, equals 194 beats per minute.
· Time – For benefits in aerobic fitness to occur, a minimum of 20 minutes is recommended.
· Type – There are an array of training types that individuals can use to create the aerobic capacity.

Let’s look at these training types in detail:

Continuous Training –
This is where the individual will work at a ________ pace, continuously (that is no stopping) for an extended period of time. At least 20 minutes of continuous training is needed for benefits to occur. This type of training would be beneficial for athletes who participate in ________ sports like marathon runs or triathlons, where the required strategy is to ensure movement constant and consistent throughout.

Fartlek Training -
Fartlek training demands constant movement with bursts of high intensity movements every-so-often within the session. So two examples could include, an athlete could run with a constant pace at 65% intensity, then every 3rd minute sprint for 30 seconds OR the athlete could do a bush run that has hills or slopes and try to maintain their pace throughout the session. This type of training is ________ for any sports where more than one energy system is used. For example, a soccer player will sprint for that through ball, jog back to get onside or defend by jockeying the opposition. Fartlek training could also be referred to as ________ training.

Aerobic Interval Training –
This training is kind of like fartlek but instead of the occasional high intensity periods - you have rest periods. So for example, an athlete may be required to run 3 sides of a football field within 4 minutes, but the 4th length of the field is the ________ period - where they have 60 seconds to walk and recover. Usually when a coach uses this type of training, they will push the athlete to work at a higher intensity - because they have that rest period to recover. This type of training therefore allows the athlete to develop both their aerobic and anaerobic fitness at the same time, depending on the time and intensity specified by the coach.
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Circuit Training –
This training involves participating in various exercises with little to no rest between each. Usually a
“_________” has a designated exercise, and once an individual has completed that station, they move off
onto the next one with a different exercise. In circuit training, a station is usually completed by one of two
ways: after a set period of time OR after a set number of __________. This form of training is good for
athletes who want to experience variety (especially if they get bored easily) whilst keeping the heart rate up.
Furthermore, circuit training can allow the athlete to develop both their aerobic and anaerobic systems in
conjunction with developing their strength.

THE NEXT DASH POINT WE WILL LOOK AT IS ANAEROBIC TRAINING
With anaerobic training, people exercise for a short time at a high intensity - at over 85% of an athlete’s
maximum heart rate. Anaerobic interval training is usually used as a form of anaerobic training. This type of
training is very similar to the aerobic interval training, however it is at a higher intensity and the given rest
periods are shorter. So for example, the athlete may work for 20 seconds at 90% intensity, then rest for 1
minute. In this example the work:rest ratio is __________, which is the rest time is 3x longer than the work
time.

What this allows the athlete to do is practise and develop their anaerobic energy system. This is beneficial
for athletes whose sport predominantly resides in the __________ system, as they can train their body to
continue working and fight fatigue, despite the build-up of lactic acid in their muscle cells.

WE WILL NOW EXPLORE FLEXIBILITY
Flexibility refers to athletes being able to move their joints through their __________ range of motion.
There are various types of __________ an individual can do to increase their flexibility.

These can include:
Static Stretching
This is the most common form of stretching, especially for children and novice athletes. This is because it is
easy to perform and minimal risk is involved as the athlete can feel their own limitations. Furthermore, you
would see this type of stretching predominantly used for warm ups and cool downs. It can also be used by
individuals who have an injury and are trying to restore their range of movement and stretch the muscle.
Individuals performed by choosing the muscle to be stretched, __________ that particular muscle to its limit
(so feeling the pull where it is slightly uncomfortable but not in any way painful) and holding the stretch for 30
seconds.
Dynamic Stretching
In health, the term dynamic can mean “changing” or “moving”. Dynamic stretching is where the athlete uses a __________ movement to lengthen and shorten the muscles - usually mimicking the movement that will be performed within the sport or activity they are about to undertake. The stretch should not force the range of motion to exceed what is natural for that movement. This stretch is relatively safe, though can cause injuries if the athlete has not warmed up properly or tries to exceed their joints range of movement. Because dynamic stretching mimics the movement that will be used in the sport or activity, it is usually used in a warm up routine.

Ballistic Stretching
This stretch can be quite risky and should only be used by high level athletes. Ballistic stretching is when an athlete stretches past their natural range of motion by using the body’s __________. So for example, when an athlete bends down to touch their toes, stretching their calves, then incorporates a bouncing type motion to further extend the stretch. The reason why this stretch is quite risky is because the athlete could cause injury by over stretching the muscle and tearing it. That said, ballistic stretching can be beneficial for athletes who know what they are doing as it can activate the myotatic reflex (or the stretch reflex). This is an __________ muscle contraction that aims to prevent any tears or injury to a muscle if it is extended past its usual range of motion.

PNF Stretching
PNF stretching stands for Proprioceptive Neuromuscular __________ stretching. This usually requires another person to help perform the stretch, though can be done using a stable object if required. PNF stretching is when an athlete lengthens the muscle using a static stretch, then they push against the resistance for at least 10 seconds whilst the resistance is held/unchanged, then they rest. This is repeated several times for each muscle. This type of stretching should not cause any pain for the athlete. However, if the athlete does not communicate effectively with their partner, it may cause injuries as the partner may push the __________ stretch past their limitations.

Flexibility is an important component in an athlete’s health related fitness factors and has such benefits as:
• Injury prevention
• Reduced soreness of the individual’s muscles after the sport or activity Increased coordination
• The relaxation of muscles during and after the sport or activity

AND FINALLY, LET’S LOOK AT STRENGTH TRAINING
Strength refers to how much a muscle can generate within __________ contraction. Strength training is an important element in an athlete’s overall training regime, especially for any sports that require creating force (such as a soccer kick), opposing force (such as tackling in rugby union), lifting a force (such as weight lifting) OR holding/performing difficult movements (such as gymnastics). Strength training can involve working against a __________ in order to force the muscle to __________ and get stronger. The process of
developing the muscle to make it bigger and making the connective tissue around it more stable is called ________.

When talking about strength training, there is additional terminology that is important to use when understanding or developing a strength training session.

These include:

• Resistance: This refers to weight or opposing another force
• Rep/s: This stands for repetitions. Reps refers to how many of the movements against resistance you do without any rest
• Set/s: This refers to the number of reps completed before rest
• Rest: refers to taking a break
• RM: This stands for _________. RM refers to the maximum weight you can lift in a specified rep. So for example, if a weight is so heavy that I can only lift it one and I would need a rest - it would be classified as 1RM. However, if I could lift it 15 times before I needed a rest - it would be 15RM.

There are four types of strength an individual can train to develop

• ________: which is the maximum force a muscle can produce with a single effort
• ________: is force time speed. So for example, an elite sprinter has a lot of power because they can create a lot of force over a short period of time.
• endurance: is measured by how many reps an individual can perform before ________ or how many reps can be performed within a specified time frame.
• ________ strength: this refers to making the strength between two people of different size relative so fair comparison can be made. For example if I could lift the same amount as Brent, despite our size difference, then I would have higher relative strength. This would also be the case if Brent could lift 120kg and I could lift only 115kg - because of our initial size difference, I would still have higher relative strength

When creating a strength training regime, there are 3 types of resistance programs you could include:

Isokinetic – Exercises where there is a constant load during the entire process of the movement
Isotonic – Exercises that cause the ________ to lengthen and shorten
_________ – Exercises that don’t change the length of muscles

There are a number of ways you can incorporate these 3 types of resistance programs in your strength training regime.

Free Weights

Free weights allow the user to complete an array of exercises, causing various kinds of ________ with the muscle groups. Kettleballs, medicine balls, barbells and dumbbells are generally considered free weights and need to be used with caution, as poor technique can lead to injury.
Advantages include:
• they are effective
• a wide range of exercises can be performed - providing variety
• they allow __________ range of movement
• exercise can closer resemble the movement required in sport/activity
• they can vary resistance to suit strength needs

Disadvantages include:
• they can be expensive
• a __________ risk of injury when using poor technique
• they can be time consuming if needing to change/load/unload different size weights

Using your own body weight
An individual's own body weight can be used to develop their __________. This can include such exercises as planking, chin ups, burpee or box jumping.

Advantages include:
• it’s effective
• it’s not expensive
• it’s portable – meaning you can do them anywhere
• it allows __________ range of movement – due to no restrictions
• exercise can closer resemble the movement required in sport/activity

Disadvantages include:
• depending on the exercise, it can be challenging for complete novice e.g. a push up can be very difficult
• cannot vary resistance past a certain level e.g. can make box jumps higher - but can only jump so high

Fixed Weights (machine weights)
Machine weights are quite popular, as people can __________ the muscle groups they want to target. Free weights can help the user to adopt the correct posture, positioning and restrict movements, __________ the risk of injury. Furthermore, the user can choose and change the resistance with ease.

Advantages include:
• they’re suitable and safe for beginners
• they allow beginners to learn correct technique and make it habit before attempting free weights
• __________ exercises can be performed on the one machine
• greater weight can be applied with __________ increase in risk
Disadvantages include:
• expensive
• take up too much space
• for advanced weightlifters, the resistance may not be enough
• does not allow individual to use a wide range of muscle groups

Hydraulic Resistance
Resistance is continuous and stable throughout the whole movement. This allows both the _______ and _______ muscle to work at the same time. For example, both the bicep and tricep would work during all stages of the movement. Although many _______ weights use hydraulic resistance, sometimes this is not the case and it is important to understand the two. Specially made hydraulic resistance machines are beneficial in that there is no “sticking point”. Sticking point refers to a certain part or _______ of the movement being difficult - like the initial lift of a bicep curl.

Advantages include:
• they are _______ resistance exists throughout the entire movement
• the agonist and antagonist muscles are worked at the same time
• AND there are no sticking points

Disadvantages include:
• They are expensive
• They do not allow individuals to use a wide range of muscle groups

Resistance Bands
These were traditionally used for _______ purposes, however due to their convenience and _______ , many athletes use them as a type of training. Resistance bands can work a wide range of muscle groups. Correct technique is important to ensure no injury occurs.

Advantages include:
• They are inexpensive
• They are portable
• they allow individuals to use a _______ range of muscle groups

Disadvantages include:
• the resistance load might not be enough for advanced weightlifters
• poor technique can cause injury

Stability Balls
Stability balls (or __________) can also be used as a form of strength training. They focus on strengthening the __________ muscles of an individual. Many free weight exercises can be used in conjunction with a stability ball.

Advantages include:
• They are inexpensive
• It allows individuals to use a __________ range of muscle groups
• They’re relatively portable
• They can be used in conjunction with free weights
• They’re good for __________, especially when using own bodyweight as resistance

Disadvantages include:
• Poor technique can cause injury, especially when used in conjunction with free weights

Link these types of training methods to isokinetic, isotonic and isometric programs:
In isokinetic programs is __________
In isotonic programs are free weights, __________, resistance bands, stability ball
In isometric programs include using __________, __________, your own body weight