



North Branch JO Volleyball Program

Xplode Sports Training, LLC is focused on improving and enhancing all areas of athletic performance. Including athletic speed, power, strength, flexibility, self-confidence and less injury prone athletes. Most Volleyball injuries occur, because the athlete did not put themselves in the proper position to get, hit, pass the ball. Xplode will focus on proper speed mechanics and drills to build athletic power, acceleration, speed, lateral movement and building both the aerobic and anaerobic systems, to allow the athlete to put themselves in the proper position. We prepare the athletes physically and mentally to help improve their overall athletic ability. Proper decelerating and accelerating techniques will assist with improving the athletes overall performance and will be utilized by the athlete throughout their entire career. Our staff is fully certified and have all played at the collegiate level. We have been there and done that. We provide skill levels that include-- Division I Strength and Conditioning, National Championships, BS/BA and Master degree levels in the Exercise Science and Coaching Certificates. We have produced winning teams and athletes. If a team is serious about success and getting to the next level of performance, Xplode can and will provide the state of the art equipment and trained staff to help with the individual athletes and team's success and goals. We are here for the coaches and the athletes and look forward to working with you.

Xplode Athlete Tips:

1. Nutrition

KEY POINTS TO REMEMBER

1. More fraud exists in the area of nutrition than in any other segment of the fitness industry.
2. In most cases athletes are not a reliable sources for nutrition information.
3. Testimony is an opinion not based upon facts or scientific research.
3. Supplements are not more effective than the food you buy at the grocery store.
4. Carbohydrates are the best source of energy.
5. Only 25% of your daily calories should come from fat.
6. Vitamins do not provide energy.
7. A 1% - 2% drop in body weight due to water loss can cause a 15% decrease performance.
8. There are 3500 calories in one pound of fat.
9. A sauna and a rubber sweat suit cause you to sweat and lose water, not fat.
10. Spot reducing is impossible.
11. There are nine calories in one gram of fat and only four calories in one gram of carbohydrate.

12. The body can eat most foods in moderation...BALANCE is the key.

2. Water

The body is predominantly composed of water. All systems in the body are dependent upon water. Premature fatigue during a game and poor recovery can be the result of not drinking enough water each day. Most athletes live in an under-hydrated state, which significantly decreases the efficiency of all systems in the body. Dr. Pat Mann, former nutrition consultant for the Washington Capitals Hockey Team, states, "There is no fountain of youth, no magic pill or potion to enhance performance. But there is water." She adds, "...few things cripple athletes faster than dehydration." You don't need to be in an exhausted state to negatively impact your performance. Dr. Mann states, "A one to two percent drop in body weight due to water loss can cause a 15% decrease in performance." Athletes simply don't drink enough water. They contribute to the problem by consuming diuretics such as alcohol, coffee, tea, and caffeinated sodas. Athletes perspire profusely every day. You lose additional water simply by breathing. Under normal circumstances, we lose 2 to 3 liters of water a day. This water must be replaced. You should consume at least two extra quarts (eight 8 ounce glasses) of water every day above and beyond what you sweat to remain properly hydrated.

3. Mental Preparation

KEY POINTS TO REMEMBER

1. The key to maximum gains is the proper amount of quality exercise and adequate rest.
2. Too much rest results in lower fitness levels.
3. Not enough rest prevents full recovery.
4. Find out how little exercise you can perform to stimulate the best gains.

4. Proper Training

Speed & Quickness development . You've heard the term "speed kills." A more appropriate term for an athlete should be, "specific sport speed kills." For a Volleyball player the term should read, "position specific Volleyball speed kills."

Too much emphasis is placed upon running in a straight line (40-yard sprint). The speed to play the game of Vball is specific to the demands of each position on the floor. Vball speed is the key to your success not straight-line track speed. Some athletes run fast in a straight line but do not possess the abilities to quickly change direction.

Your goal is to develop the specific speed and quickness you use to play your position, and a level of conditioning to sustain that speed and quickness during a game. Welcome to Xplode Sports Training.

Speed and quickness are abilities you inherit from your genetic pool. There are specific physical and neurological assets you must possess to run fast. These are factors you have no control over.

You can't develop more speed than your genetic potential will allow. Why is it that an elementary school student can sprint faster than anyone in his school? He's had no special training or coaching. He's in no better shape than the other kids. But...proper training can and will get you to your full genetic potential.

XPLODE PROGRAM ORGANIZATION

Balance is the key to Xplode Programming. Total body development is essential for a volleyball player. You must develop every major and minor muscle group to its fullest potential. If too much time is spent performing one exercise, or developing a specific area of the body, it's usually at the expense of other areas. Many young players come into our program having spent endless hours performing incorrect movements with a slow pace.

They've become good at doing the slow movement, but is not helping them in a game that must have speed. However, many are deficient in other areas of the body. Deficient areas often include the side oblique's, the rotator cuff, the upper back, the posterior deltoid, the hamstrings and midsection.

Xplode is designed to develop every major muscle group in the body. We place an equal value on every exercise performed.

You can enhance the body's ability to fully recover from exercise. Good eating habits are essential. Try to eat meals and snacks at approximately the same time every day. Develop normal and regular sleep patterns. A lack of a normal daily routine can disrupt the systems in the body used to help the recovery process. As you grow older you may need more rest than your younger teammates.

The ability to increase strength, speed and conditioning levels, is dependent upon quality work, sound nutrition, your genetic makeup, and the **proper amount of rest**.

Xplode Conclusion:

Xplode exists for the athletes and the coaches. Every Elite Level team and or organization has a Strength and Conditioning Coach/Professional. Xplode is just that. We are your strength and conditioning coaches. This is our life. We are in the business of training athletes to be better, both physically and mentally. Training athletes to get to the next level in athletic performance. Creating an atmosphere that instills hard work and dedication. Our trainers have played at the next level, not only played there but also trained athletes of all levels, grade school through professional. Xplode has proven results across the board with our athletes. We are looking forward to working with the North Branch Volleyball teams. Please call me direct at 651-210-6390 to discuss pricing, dates and times.

Get Prepared with Xplode,

Brett Harper and Staff

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“You only have one Attitude---Pick a Good One”



In the plains of Africa, there is a constant struggle for survival. Every morning the gazelle awakes knowing he has to run faster than the fastest lion to survive. And every morning the lion awakes knowing he has to run faster than the slowest gazelle to survive. Either way, when the sun comes up, you better be running.



The Xplode Program from an Exercise Science Perspective

I.

Xplode Sports Training--Volleyball Off-Season Training: Using your time wisely

To understand Volleyball strength and conditioning you have to be aware of the unique demands placed on a Volleyball player. In order to be successful in Volleyball, besides having exceptional skills, players should participate in a program that will enhance their strength, power, speed and agility. Volleyball has a number of unique features. During the game, players must accelerate and decelerate rapidly in shifts that last 30-45 seconds on average. The game is played in shifts and the player rests sitting down. In addition, Volleyball players must endure extremely high force collisions due to the high speeds attained in the game.

Although many so-called authorities will tell you the energy supply for Volleyball may be primarily aerobic, the trained observer may draw a different conclusion. Forwards generally play in a rest-to-work ratio in the area of 3:1, while a position like linemen use a rest-to-work ration of 2:1. Most sports can be classified somewhere between low intensity and high intensity activity. Low intensity activities can continue for long periods of time. However, high intensity activities can proceed only in short spurts interspersed with regular rest intervals to facilitate recovery. Using these definitions, Volleyball places towards the high intensity end of the scale.

The off-season strength program should focus on preparing both the muscular system and the neuromuscular system. Exercise selection should include explosive weightlifting movements, multi-joint lower body exercises, upper body pulling and pressing movements, and a full range of trunk movements.

The off-season conditioning program should focus on speed development and interval training. We tell our athletes: "train slow, get slow." Conditioning, speed development, and strength training should be specific to the sport of Volleyball. Speed training on Woodway Treadmills, Hill Running, bleachers, using similar intervals to the game, but some conventional aerobic training should also be done.

There are two phases to building fitness for Volleyball:

1. Improving general fitness or getting "into shape"
2. Volleyball-specific conditioning

Getting in shape means improving aerobic power, flexibility, strength and diet while decreasing body fat and increasing muscle mass. The second phase requires conditioning specifically for the demands faced on the Court. Exercises and drills are selected and completed with specific exercise prescriptions so that your physical and physiological development best suits the game of Volleyball. We are going to work on developing a good base of strength and conditioning before moving onto the development of sport-specific attributes.

II.

Volleyball Off-Season Training: Aerobic v. Anaerobic Training

Aerobic v. Anaerobic training, which should I focus on?

Your body has different energy systems that work together to fuel your Volleyball performance. Although Volleyball is primarily an anaerobic sport, a strong aerobic base allows you to work longer and at a higher intensity by postponing fatigue and allowing a speedy recovery. The aerobic system provides energy for low- and moderate- intensity exercise and helps the body recover from fatigue. For example, a 1-hr bike ride at a comfortable pace is fueled mainly by the aerobic system.

Volleyball is characterized by repeated bouts of high- intensity action interspersed with periods of moderate activity and rest. The aerobic energy system supplies only a small portion of the energy needed during moderate activity, but it is critical for efficient recovery between play stoppages and during time on the sideline. Aerobic conditioning can be improved through sub maximal continuous exercise and through high- intensity, intermittent exercise. Sub maximal continuous exercise at 75-80 % of your maximum heart rate for 30 to 60 minutes will improve your heart's ability to deliver oxygen to the muscles for energy and will allow the body to recover more quickly from intense efforts. Intermittent aerobic conditioning, using a series of 2-3 minutes of higher intensity exercise interspersed with 2 to 3 minutes of rest builds up the aerobic supply system and increases the muscles ability to extract oxygen from the blood.

There are two different types of programs to build aerobic fitness:

1. Continuous, moderate intensity, long duration programs
2. Intervals of high intensity work followed by easy recovery intervals of 1, 2, or 3 minutes grouped into various packages of time.

For interval programs, the training load can be increased in a number of ways:

- Increasing the duration of work intervals from 1 to 2 to 3 minutes
- Increasing the intensity of each work interval
- Decreasing the time of the recovery interval
- Increasing the intensity of the work interval
- Increasing the number of work/recovery intervals

On the other side of things, the anaerobic systems produce energy very quickly to meet the demands of intense action, such as making a tackle, defending a pass, shedding of a pulling offensive lineman, making a diving catch and sprinting for a 40 yard TD. These systems utilize the ATP-PC (phosphagen) system and the glycolytic system for energy. In Volleyball, although the game itself lasts for about 2 hours, the players are usually only on the Court for high- intensity drives of approximately 3-7 minutes (ideally). Due to the nature of Volleyball, it is important to train anaerobically.

The ATP-PC system provides immediate energy, in the form of ATP, for short-term, high- intensity activities for up to 10 seconds. The glycolytic system provides energy for longer high- intensity activities ranging from 10 seconds to 2 minutes. This level of training corresponds directly to the physiological requirements of the game. To develop anaerobic energy systems, we will utilize sprint interval training. These involve full-out, high- intensity, high-speed intervals followed by rest or active recovery. We will use sprints ranging from less than 10 seconds to around 30 seconds, with a 1:2 or 1:3 work-to-rest ratio. [For example, a 1:2 work-to-rest ration involves sprinting all-out for 30 seconds, active recovery for 1 minute, then sprinting full out again.] Towards the end of the training program, you should make an attempt to progress to 1:1 work-to-rest ratios, especially if you are a defenseman or part of the special team units.

III.

Volleyball Off-Season Training: Principle of Specificity (Are you training right?)

The Principle of Specificity of Training

The principle of specificity is deceptively simple and it drives all the gains that one makes from a strength training program. Specificity states that the body makes gains from exercise according to how the body exercises. This principle is important because applying it correctly will allow one to have a focused, efficient, effective program that will lead to the desired gains. Failing to apply it will result in wasted energy and time, and it will result in frustration as gains do not materialize.

When developing a conditioning program, you should consider the following:

- the movements to be trained
- the muscles and joints to be trained
- the energy system(s) to be trained
- the speed of movement

Strength and conditioning programs can be designed to enhance movements that are performed in athletics. This is important because this may improve an athlete's performance. It may do this by strengthening the movement; it may also accomplish this by allowing the athlete to practice the movement with resistance. It is also important because it can maximize an athlete's training time and be used to help prevent injuries in the athletic event. A number of questions should be considered to help with this:

- Is the activity performed standing?
- What joints perform the activity?
- Do the joints work together or sequentially? If sequentially, what is the sequence of movement?
- What motions are performed by each joint?

Things like workload, rest, and intensity are driven by the energy system(s) that you want to train. Energy system training is critical to improving athletic performance. Often performance is limited by your energy stores and your ability to replenish them, both of which are trainable. You can design conditioning programs to enhance the energy system(s) that are used in an athletic event. To do this, consider the following:

- How long does the event last?
- Is the event performed continuously? Or does the athlete get to rest?
- If the event is not continuous, how much time does the athlete actually spend moving before he or she gets to rest?

Energy system training is an important consideration because it helps to dictate how much weight to use, how many repetitions to perform, and the amount of recovery time. If you are interested in increasing the stores of ATP, then training will involve heavy weight, low repetitions, and lots of rest. Glycolytic training will involve moderate reps, moderate weight, and little rest. Aerobic training means lighter weights, many repetitions, and no rest.

A final consideration with specificity concerns the velocity of movement. The gains from exercise are specific to the velocities that the exercises are performed at. If exercises are performed at slow speeds, then we become stronger at slow speeds; however, there is little transfer to faster speeds. If exercises are performed at faster speeds, then we become stronger at faster speeds. This is important for athletics because few sports are performed at slow speeds. If one is designing a conditioning program for a sport that is performed at high speeds, then one will need to include exercises that make athletes stronger at high speeds. These include things like the variations of the Olympic-style lifts (the clean, the snatch, and the jerk), plyometric exercises, Woodway ELG and Force Treadmills and sprints.

The principle of specificity is important because it dictates what gains are made.

IV.

Volleyball Off-Season Training: Principle of Overload (Are you training progressively?)

The Principle of Overload

The overload principle states that in order to keep making gains from an exercise program, you must find some way to make it more difficult. This is because bodies adapt to exercise. The problem is that once your body adapts to a given workload, it will not continue to adapt unless the workload is increased somehow. If you do not continue to adapt, then eventually you will plateau and regress. Having stated that it is necessary to make conditioning programs more difficult, one caution should be kept in mind: you must observe specificity when applying the overload principle. Performing a set of twenty might be a way of making the workout more difficult, but if you need to enhance the phosphagen energy system then you are violating specificity. There are a number of ways to apply the overload principle to a strength and conditioning program:

- Increase the weight lifted, band resistance
- Increase the volume of work
- Change the exercises employed
- Modify the order of the exercises
- Alter the rest periods
- Increased Resistance on the Woodway Force

- Over-Speed work on the Woodway ELG

Increasing the weight that is lifted will make the workout more difficult. Heavier weights will force your muscles, connective tissue, bone and nervous system to adapt. Lifting heavier weights will also cause you to initially perform fewer repetitions with the weight.

Increasing the volume of work—either number of sets, number of repetitions, or some combination thereof—will result in your body having to adapt to it. This is one of the main ways to elicit larger muscles and connective tissue adaptation from strength training. One should be careful with this method of applying overload; a volume that is too great will train the wrong energy system.

Changing the exercises employed is a way to increase overload that many individuals are reluctant to use. Many people feel that the exercises they are performing are the only ones that can elicit certain gains. This is not so. Changing the exercises has a number of benefits, including keeping the workouts interesting and requiring your body and nervous system to adapt to resistance imposed in a totally different way. There are many exercises that train the same movement and the same muscle groups; this means that you do not have to rely on one exercise to train a given area.

The order that exercises are performed is another way to provide overload. By changing when exercises are performed, you make some exercises more difficult to perform and others easier. For example, in your current workout your exercise order may look like this: bench press, incline press, dumbbell flies. Now, let's change the order of exercises so that the new workout looks like this: dumbbell flies, incline press, bench press. The result of this change is that you will be able to lift more weight on the dumbbell flies and incline press, because they are performed while you are fresher. You will lift less weight on the bench press, because it will be performed while you are fatigued. Not only will you become stronger on the first two exercises, but you will also keep your workouts interesting and this will also help your body to adapt in a different manner because you are focusing on the first two exercises instead of the bench press.

A final way to provide overload is to modify the amount of rest. This must be used carefully to ensure that you are observing specificity. By increasing the amount of rest in between sets, you allow your body to recover more completely. This means you will be able to lift heavier weights with a greater number of repetitions. The benefit of this approach to training is that it allows you to increase your strength on exercises. Conversely, if you shorten the amount of rest in between sets, you do not allow yourself as much recovery. It becomes more difficult to lift a given amount of weight. While this does not do as good a job of increasing strength, it does force the muscles to grow to adapt to the rest period.

Overload is not something that only needs to be applied on a daily basis; it must be applied over a lifetime of training. The final principle deals with the importance of applying overload logically over time.

V.Volleyball Off-Season Training: Power and Speed Training (How-to incorporate plyometrics into your summer training.)

Incorporating plyometrics training to develop power and speed.

Plyometric training for the sport of Volleyball can have a great impact on the athlete's on-Court performance. Why train for explosive power and speed?

- Explosive power allows you to start, stop and react quickly to elude a defender or to make the catch or tackle
- Fast accelerations allow you to capture or move to space on offense or the make the interception
- Fast accelerations and speed allow you to establish position and reduce space for better defense
- Fast accelerations and high speed give you a better transition game
- Higher speed gives you more momentum and an advantage in collisions
- Higher speeds can be transferred into more yards more points more tackles more interceptions

Plyometrics bridge the gap between strength and speed. If you want to improve your athletic performance, the transition from strength training to power training will play an integral part in your success. Here's why...Maximum strength takes 0.5 to 0.7 seconds to produce. Yet most explosive, athletic movements occur much more rapidly. Whether your objective

is to accelerate faster, hit harder, move around the Court more quickly, jump higher or throw further... The key to improving your power and performance lies in generating the highest possible force in the shortest possible time...

Plyometrics play a primary role in this training objective. Ideally you would first develop a high level of maximal strength before starting a plyometrics program. This gives you the greatest potential for peak power. The underlying principle of plyometric training is the stretch-shortening cycle. Very simply, as a muscle stretches and contracts eccentrically (lengthens) it produces storable elastic energy. If the muscle then contracts concentrically (shortens) this elastic energy can be used to increase the force of the contraction.

A good example is jumping...If an athlete jumps vertically they will invariably dip down just before takeoff. Quickly lowering their centre of gravity stretches the working muscle groups allowing them to contract more forcefully for the jump. In essence a muscle stretched before it contracts will contract much more forcefully. What role does plyometrics play in all of this? Plyometric training places increased stretch loads on the working muscles. As the muscles become more tolerant to the increase loads the stretch-shortening cycle becomes more efficient. The muscle stores more elastic energy. It can transfer from the eccentric or stretching phase to the concentric or lengthening phase more rapidly. This is the key to generating peak power. Lower body based plyometrics should be the dominant part of your training program as more of the power needed in the sport of Volleyball comes from the lower body. The hips, gluteals, quadriceps and hamstring areas must be strong and flexible to maximize performance and implement a Volleyball plyometric program. It is these muscle groups that are key to developing a strong powerful speed stride. In summary, plyometrics are exercises that enable muscles to reach maximum strength in as short a time as possible. In other words, these exercises develop power. You will be faster, less injury prone, quicker, more agile, more powerful, stronger and have improved athletic performance by training with Xplode. We have proven results.

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"Any trainer can make an Athlete tired---But not every trainer knows how to make an Athlete better."