



PERFORMANCE VOLLEYBALL CONDITIONING

A NEWSLETTER DEDICATED TO IMPROVING VOLLEYBALL PLAYERS

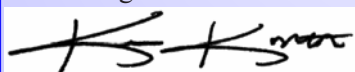
Volume 17, Number 5

Meeting the 12 Domains of Volleyball Conditioning

When we say conditioning for volleyball it means a lot of different things to different people. At Performance Conditioning Volleyball we have placed conditioning into 12 domains to help define the conditioning process and to make it easier for you, the reader, to get help/information in the areas you need. Go to www.performancecondition.com/volleyball and check out all the past articles we have done in each domain.

- 1- Testing Section
- 2- Jumping, Plyometrics, Explosive Power Section
- 3- Spiking Velocity Section
- 4- Agility, Mobility, Flexibility, Footwork, Warm-up, Court Movement Section
- 5- Recovery, Aerobic and Anaerobic Conditioning, Circuit Training Section
- 6- Blocking Strength, Stability and Balance Section
- 7- Program Design Planning, Periodization & Exercise Techniques and Modalities Section
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 - Off-season Category
 - Pre-season Category
 - Program Design Methods Category
 - Exercises: How-to-do Category
 - Conditioning Equipment/Products and Modalities Category
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 - Postural Restoration Category
- 9- Nutrition Section
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- 10- Volleyball Sport Science Section
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Something to look at.



Ken Kontor, publisher Performance Conditioning Volleyball

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Ken Kontor



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Rich Zwolinski

ALL NEW!!

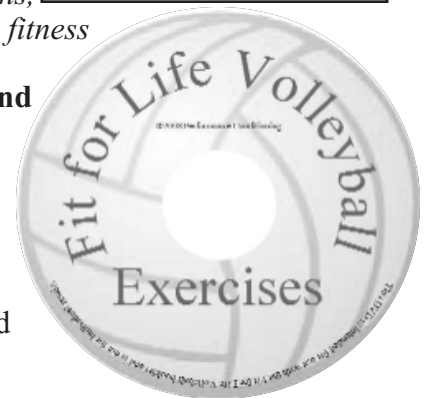
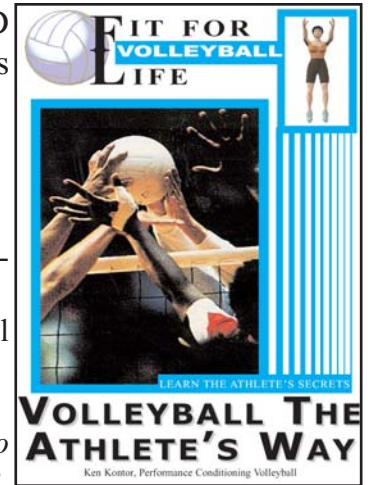
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"I would highly recommend this program to volleyball players on all levels who wish to improve their own personal fitness or who need guidance in breaking down their seasons, and to coaches who could benefit from this information regardless of what skill and/or fitness levels their team members are at."

-Bill Neville, Volleyball Coaching and Coaching Education Legend



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Meet the Author

Ken Kontor is publisher of **Performance Conditioning Volleyball** newsletters, now in its 13th year of publishing and 11 volleyball-specific conditioning books. He is a founding member of the USA Volleyball Sports Medicine and Performance Commission and is the Curriculum Developer for the USA Volleyball, Volleyball Conditioning Accreditation Program (VCAP).

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Volume 17, Number 5

SAND VOLLEYBALL ROUNDTABLE: NEW CONDITIONING CHALLENGES

Participants: Ali Wood-Lamberson, Director of Beach Programs, USA Volleyball, Danalee Corso, Sand Volleyball Head Coach, Florida State University, Anna Collier, Sand Volleyball Head Coach, University of Southern California



With the advent of the first NCAA National Sand Volleyball Championship April 27-29 in Gulf Shores, Alabama, the co-existence of court and sand would seem to be a natural fit. However, it is the surface—sand versus court—that creates conditioning challenges for volleyball coaches. Surface issues include:

- Sand provides a forgiving environment to raise the jumping volume.
- Raising jumping volume improves jumping endurance.
- Too much training in the sand may result in reduced explosive power and potential overtraining.
- Sand dampens the plyometric response—not ideal for higher intensity jump training.



Ali Wood-Lamberson, Danalee Corso, & Anna Collier

To learn more about the new challenges facing the proper development of the volleyball athlete beyond the surface, we talked with three of the country's top sand coaching experts (one club, two collegiate). We hope this conversation adds to this new collegiate sport's understanding and development at all levels of play.—Ken Kontor, publisher, Performance Conditioning Volleyball

PC: I want to ask this expert panel about the concept of transitioning from court to sand or vice versa. What are important physical considerations in this process?

AWL: I would like to address my comments to the athlete transitioning from court to sand or indoor to the beach. We see a lot of this on the club level where they play eight months out of the year indoors. Time, or lack of it, is going to be a big issue as opposed to dealing with a two-sport athlete. I will leave the collegiate transition to Anna and Danalee who have indoor players transitioning from court to sand.

AC: Our sport can start March 5. However, the on-court team has off-season conditioning up to March 1 and they play competitively until then. At that point, they come to me, transition and we compete by March 17. All sand volleyball coaches must be aware of and concerned by this. The question revolves around the short amount of conditioning they can do when they come from December. They go

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ODV indicates author believes content is for outdoor volleyball.
NOTE: Training age year is continuous, year-round conditioning beyond just playing volleyball.

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indoors for a quite a while and come out with only five days to transition! I have no solutions but point this out in order to discuss answers from a conditioning/preparation standpoint.

DC: Here at Florida State we have a different situation because we have two completely independent programs which have more exclusive sand players than anywhere else in the country. My indoor coach was supportive yet skeptical when we began but is now supportive—on a conservative basis. Our strength and conditioning coach for both sports, Jon Jost, is concerned about potential overtraining. This is something I am also concerned with and I extend this “overtraining” to the mental aspect. We address recovery as an important part of our overall developmental program from day one. The girls who play both indoor and sand have a completely different agenda which emphasizes just getting used to the sand. Their skill acquisition on the sand remains a priority. We try not to overwhelm the athlete and approach it as if it was two separate sports.

PC: Let’s talk about off-season—the time when an athlete develops the basis to build upon and become a better volleyball athlete. Based on your comment, this off-season concept is jeopardized because of scheduling. Are there compromises if you create a time when an athlete can develop and progress through the off-season?

DC: There is a helpful new NCAA rule that allows fall sport athletes to train with their strength and conditioning coach during the summer if they are enrolled in summer school. This is when the strength and conditioning coach can focus on the off-season. Our court coach feels that the second semester is a time of skill acquisition. Our strength coaches realize that they do not have the time in the winter/spring for base strength development. This rule change is quite different than my collegiate playing days. It offers year-round training and skill development but the downside is that it is more mentally taxing. I think our court coach considers the sand as cross training and a conditioning opportunity for the second semester. The athletes get the repetitions they want on a more forgiving surface even though the skills are somewhat different. Our court coach sees it as a benefit to be off the hard surface and in a more enjoyable environment. Skills (“volleyball IQ”) improve by touching the ball in a more challenging situation than if they were indoors.

AWL: If an athlete plays for their high school from August to December, have club play until June and then train USA Beach outdoors during the summer (May thru July), that is total volleyball year-round. Athletes in this situation tend to burn out mentally and emotionally. Look at Europe—our kids actually play fewer hours here in the United States. The difference is that our kids will have a high school coach, a potential indoor national coach, club coach and beach coach (three or four coaches!) all demanding and pulling the athlete in different directions. In Europe it is a one-coach system where the coach can carefully monitor physical and emotional burnout.

AC: Another point on the collegiate scene is that girls transitioning from court to outdoors have been doing a lot. I train those who come to me from this system, then the six that I have exclusively on sand all fall. There is no way I can place the same amount of physical and emotional stress on the court group, so my lesson plans are different for the two groups. I must also meet with my strength and conditioning coach because once those players come back to me, they are in a 20-hour-a-week work environment five days a week which includes strength and conditioning. The court group cannot do the cleans and other big lifts that my sand players do. I want the court transition people to feel fresh and light on their feet in the beginning, so for them we do more band and med ball work but still incorporate explosive moves. I say that beach volleyball players need “guns and buns,” and you can only get this through explosive, heavy work. I concentrate on three principles with indoor players—keep them healthy, have them enjoy this sport and be competitive. Doing first two well results in the third.

PC: We define the seamless process as the volleyball coach’s interaction with the conditioning coach to develop a program that allows the strength and conditioning coach to do their job while the volleyball coach oversees all activity. Now we are bringing in a third party (the court coach) to the seamless process. How can the three work together?

DC: It is important for other colleges to know how USC and FSU are structured. We both have directors of volleyball, who in my case is Chris Pool. Indoor is different from other sports in the fact that we could be recruiting the same athlete. Having a director of volleyball means that someone is always there who is accountable but also allows me autonomy in recruiting. I look to Chris for guidance and incorporate his athletes into the program. My first job was to educate him on the sand game because it was new to him. He let me work with some of his players and we are now in the experimental stage. The relationship has been amazing for me; I have learned so much. It all comes down to the right personnel to make a marriage like this work.

AC: The third part of this triangle is Bret, my strength and conditioning coach. He comes to my practices and observes what I need my athletes to do. He adjusts some of the workouts because he does not have a sand volleyball background. Now he understands what it takes to make players better by identifying the things that are different than the indoor game. We work closely with Mick (head indoor coach) to identify which players he has who want to come out for sand. This process makes me, Mick and Brent determine what we must do to coordinate our strength and conditioning program. Since athletes come to USC on an indoor scholarship, Mick has the final say as to the individual needs of each player. The off-season is his business, but my true sand players also make it my business. We work independently because we have a separate relationship with Bret but we do work in tandem toward the same goal.

AWL: Out of the 16 schools that are adding sand volleyball as an NCAA sport, 15 have this hierarchy in place. The head coach is the same coach for both indoor and outdoor or they are over the sand coach. Florida International hired Rita Buck-Crockett as head sand coach and director of volleyball. That will be unique because she supervises the indoor coach.

PC: How can physical and mental overtraining be avoided? When do you know when to back off?

AC: I'm old school; I'm not backing off. However, I think that overtraining in volleyball comes more from an emotional rather than a physical state. I train hard, teach lessons but make it fun. Indoor has become so much "pass the target, pass the target, eye, hands close the block." It is work. I can say three dolphins just swam by when I am on the beach. I have coached both indoor and beach and they understand that their experience with me will be the most fun they will have in sports. I take care of the emotional and spiritual and I think the physical comes out from that.

AWL: When Anna talks about the fun factor, one indicator that your players are already over trained is if they do not want to be at practice or don't show up. We are starting to incorporate recovery methods to avoid over training early on with our clubs and junior national kids. Methods include cold and hot plunges, massage and physical therapy in a pre-hab setting.

DC: I was physically over trained several times during my professional career. I learned that the fitness component of sand volleyball is huge. I worked closely with strength and conditioning to look for fatigue cues. The better the athlete's condition, the less fatigue will affect them. Going five days a week new to some of our beach players. John Jost and I devised a strategy to check the posterior chain and we came up with a few tests to ensure they can physically handle what happens. We must make sure these things are addressed, especially with our indoor players coming into the program—we only have one shot with them. We also require ice plunging three times a week and massage for athletes playing both indoor and sand since their needs ought to be separately addressed. Finally, we incorporate a FlexMob, a flexibility and mobility hour getting the body back to balance. I feel that sand is more taxing on the body than indoor; the athlete has to touch the ball so much more because of the number of players on each side. It's more work. 0

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Elite VOLLEYBALL Performance Digest

Is Your Volleyball Strength and Conditioning Program Acceptable?

Applying Accepted Practices in
Developing a Safe Strength and
Conditioning Program for Volleyball

Presented by USA Volleyball Sports Medicine and Performance Commission

Edited by MJ Engstrom, Head Volleyball Coach, University at Albany, Member USAVSMPC

Written by Ken Kontor, Publisher Performance Conditioning Volleyball, Member USA Volleyball SMPC

USA Volleyball Sports Medicine and Performance Commission mission is to serve volleyball coaches and athletes through the assimilation, generation and dissemination of information in the areas of sports medicine and performance and to coordinate future research in these areas.

At the annual USA Volleyball Sports Medicine and Performance Commission (SMPC) meeting held at the AVCA national convention, the commission unanimously adapted new guidelines for the establishment and operations of a volleyball-specific strength and conditioning program entitled Accepted Practices in Developing a Safe Strength and Conditioning Program for Volleyball



USA Volleyball
Sports Medicine and Performance Commission

I know it is more regulations—just what we need! Unfortunately, the misguided strength and conditioning programs practiced at all levels of play are reaching alarming levels and things are getting worse. Part 1 of this article is the letter from a parent. In Part 2 the safe, accepted practices are presented. Explained in Part 3 are my comments about what the coach is doing that would be in violation of the safe, accepted practices.

Part 1 - Parent Letter

We have a situation with a coach who, the day after a tournament, asks 13- and 14-year-old athletes to do crab crawls for 100 yards down the length of a gym and back. They do it over and over. Then they must use their hands and upper body to drag their bodies that same distance back and forth multiple times.

My daughters are starters and never sit during tournaments unless the coach wants to tell her something, then she is pulled out and put right back in. All the crab crawls are on top of other conditioning exercises and drills. The practices end with the last 30 minutes of the three-hour practice scrimmaging. One of my daughters ended up in a sports medicine office the next day, missed school and today is still swollen and sore. My other daughter made it to school but also hurt really badly. We iced, took ibuprofen, used wet heat, etc. Both girls are still sore, have practice from 6-9 tonight then a tournament this Saturday, Sunday and Monday.

I am seriously concerned about an injury.

Your thoughts would be appreciated. The sports medicine physician said it was "absurd and unnecessary".

Kindest regards,

Concerned Parent

Part 2 - Accepted Practices in Developing a Safe Strength and Conditioning Program for Volleyball

The purpose of this document is to provide anyone interested in establishing a volleyball-specific strength and conditioning program a way to do so by following safe and accepted practices. It is not intended to offer a specific program. The actual program that is designed will incorporate many variables unique to a specific situation and the individual needs of the athlete. By incorporating these safe and accepted practices, the process of designing a program will ensure the very best for the volleyball athlete in realizing full athletic potential.

#1 Exercise Techniques

Correct techniques must be performed at all times and should be taught by a qualified instructor who has had hands on experience in teaching all the exercises selected for the program. The instructor should demonstrate correct techniques, observe the athlete doing them and correct as needed. Athletes must demonstrate correct techniques with their own body weight before any external loading (weight) is added. When external loading is introduced, the instructor must remain diligent so that correct techniques continue to be performed. If proper techniques are compromised, the loading must be reduced to the point where correct techniques are once again performed.

When correct technique is maintained, all resistive exercise can be considered incrementally so long as the application of the resistive exercise does not diminish technique performance quality.

#2 Exercise Selection/Sequencing

Exercises must be selected based on the equipment available, the time allotted to program completion and the individual needs of the athlete. Exercises that increase strength and power (quality-intensity) should be performed before endurance activities (quantity-volume).

#3 Testing

The first step in developing a volleyball-specific program is to establish a testing program. It will help identify the individual needs of the athlete. The testing program should measure volleyball athleticism including volleyball skill-specific vertical jump, court movement/agility and endurance.

Tests should be conducted reliably with consideration to consistent test dates, test sequencing, testing surface and testing personnel. Test results should be used to measure the effectiveness of the strength and conditioning program, motivate the volleyball athlete and provide performance data to indicate recovery from an injury. Data from the testing program should be maintained year after year for comparison.

#4 Program Design Objectives

A well-designed program should have injury prevention qualities as well as performance enhancement. Injury prevention strategies should ensure strong joint, tendon, ligament and muscle with special considerations to postural balance based on the side-dominant nature of volleyball activity. Performance enhancement is accomplished by building on the strength base and transferring it to the explosive power movements (work done in relation to time) of volleyball and the metabolic (endurance) demands of the game.

#5 Program Design Training Age/History

An athlete with no training experience or history will progress at a faster rate than a more experienced athlete. As the athlete gains this experience, the program intensity (loading) should be varied to assure progression. Progression is also determines where the athlete is on the maturation continuum.

#6 Program Design Seasonal Considerations

The strength and condition program objective varies by the seasons. The off-season's priority is strength gains. The pre-season's priority is the transfer of strength to power specific to volleyball activity and endurance requirements to provide adequate recovery through the duration of a match. Ability to recover adequately is based on a three to one rest-to-work ratio specific to volleyball with average rally time of 4.4-6 seconds and average rest of 11-15 seconds between rallies. The in-season's priority is to provide the athlete adequate recovery opportunities, maintain strength and conditioning levels and enhance volleyball skills.

#7 Program Design Gender Considerations

Based on the increased frequency of knee injury due in part to the anatomical differences of the female and male athletes, the program construction should be adjusted to reflect this difference. During initial evaluation, have each female jump from a two-foot platform and watch how they land from the front. If the athlete's kneecaps drop in toward each other into valgus angulation (or "kissing knees"), that athlete needs ACL prevention principles incorporated into her program. This might include focused hamstring muscle strengthening and training on landing mechanics, including soft landing during plyometric training.

#8 Achieving Seamless Integration

The ultimate responsibility of the strength and conditioning program belongs to the volleyball coach. This is done by establishing an annual calendar that identifies and integrates total work load based on competition, practice and strength and conditioning training. Competition should include scholastic and club play. Practice should consider strength and/or conditioning activities done on court including warm-up and jump training. Strength and conditioning should include training with the school/club's strength and conditioning coach and other training outside the volleyball coach's control such as at a private gym. In the case of a multi-sport athlete, the volleyball coach should have the additional task of communicating with other sport coach(es) about the athlete's progress. The final outcome is to provide adequate recovery based on total workload to allow the athlete to progress physically, improve volleyball skills and reach their full athletic potential through this seamless integration process.

Acknowledgements SMPC members:

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Part 3 Applying Accepted Practices to This Situation

Dear Concerned Parent:

I sent you the accepted practices with my last correspondence. Your coach's program would appear to be in conflict with several of these practices. Here are the accepted practices specific to your situation and my comments.

Accepted Practice #1 Exercise Techniques

"If proper techniques are compromised, the loading must be reduced to the point where correct techniques are once again performed."

My guess is that the crawl techniques start to erode as the number of trips up and down the court increase. This sets up the athlete for potential injury.

Accepted Practice #4 Program Design Objectives

"A well-designed program should have injury prevention qualities as well as performance enhancement. Injury prevention strategies should ensure strong joint, tendon, ligament and muscle with special considerations to postural balance based on the side-dominant nature of volleyball activity. Performance enhancement is accomplished by building on the strength base and transferring it to the explosive power movements (work done in relation to time) of volleyball and the metabolic (endurance) demands of the game."

Accepted Practice #6 Program Design Seasonal Considerations

"...transfer of strength to power specific to volleyball activity and endurance requirements to provide adequate recovery through the duration of a match. Ability to recover adequately is based on a three to one rest-to-work ratio specific to volleyball with average rally time of 4.4-6 seconds and average rest of 11-15 seconds between rallies."

Such high volume activity is not in line with the metabolic (endurance) demands of the game. Volleyball is a power game and such high-endurance activity interferes with power development. Endurance activity should be enough to allow for adequate recovery between rallies to the end of the fifth set. This type of continuous crawling activity is not volleyball specific.

Accepted Practice #8 Achieving Seamless Integration

"...establishing an annual calendar that identifies and integrates total work load based on competition, practice and strength and conditioning training...The final outcome is to provide adequate recovery based on total workload to allow the athlete to progress physically, improve volleyball skills and reach their full athletic potential."

Doing this type of activity does not allow for adequate recovery or progression. This could set up the athlete to injury, especially with a tournament coming up so soon.

There you have it. I encourage all volleyball coaches to take a close look at what they do, and why they do it and adopt these practices. We are not training Marines—we train volleyball players to achieve optimum performance in a safe and progressive way. ●

THE HOW'S AND WHY'S OF THE COLLEGIATE OFF-SEASON/POST-SEASON STRENGTH AND CONDITIONING PROGRAM AT UNIVERSITY AT ALBANY, SUNY

Rich Zwolinski, Assistant Volleyball Coach, University at Albany, SUNY

Rich Zwolinski is involved in the design of the Great Danes Volleyball Strength Program. Rich has worked at the collegiate level for six years with several different programs. He was introduced to collegiate strength and conditioning as an assistant at Loyola University, Maryland, where he assisted in the development of a volleyball specific program with current S&C Coach, Brian McGivern. During his tenure at Loyola, Rich began expanding his knowledge of strength training by meeting with local strength coaches, working with several NSCA and NASM certified trainers, and furthering his own education through studying the NSCA curriculum and reading professional journals and books. Rich is an active member of the AVCA and the NSCA and plans to complete testing for certification in 2012.

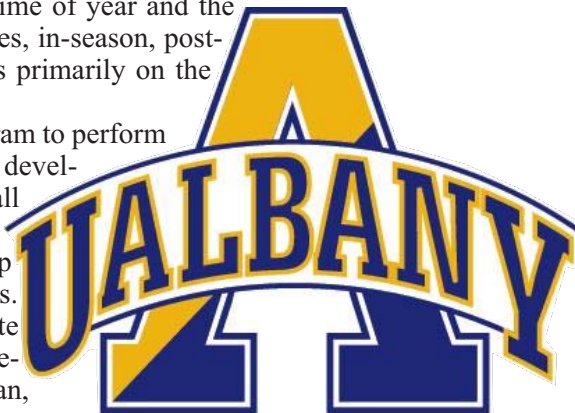


Rich Zwolinski



The modern athlete is a combination of speed, strength, agility, and explosiveness unlike any previous generation. This new breed has the benefits of advances in sport training, strength training, and nutrition that help them perform at higher and higher levels. While the average person benefits from a general strength and conditioning program, athletes require periodized programs that are more specialized in order to optimize their performance. Periodized programs vary training intensity and volume based on the time of year and the goal of the period. (Baechle, Earle, 2008) These programs shift through four phases, in-season, post-season, off-season, and pre-season. (Baechle, Earle, 2008) This article will focus primarily on the post-season, which occurs directly after the season.

As previously mentioned, athletes require more than a general strength program to perform at their best. For a volleyball player, the post-season is the time where players can develop strength and explosiveness without adversely affecting their play. The volleyball athlete is strong, explosive, agile, quick, and has a level of endurance that allows them to perform at high levels for several hours in competition. In order to develop these characteristics, their post-season program must reflect all of these elements. While no coach will argue the importance of strength in athletics, there is great debate over the effectiveness of a program that fails to reflect the volleyball athlete's movements. If one were to examine the top International teams, they would find long, lean,



toned athletes that show tremendous strength on the ground and in the air. It is my intention to explain the importance of a well-designed strength and conditioning program from a coach's perspective while addressing some of the issues associated with designing a program.

Rationale for a Program

As a coach, I see athletes that struggle from a lack of strength and explosiveness every day. They lack the strength to maintain posture and perform skills with proper technique, or they are strong but lack the explosiveness to do the skill quickly. While these weaknesses won't prevent them from playing volleyball per se, it will limit their level of accomplishment, or worse, leads to an injury due to over-compensation mechanisms. Here are a few examples that help to illustrate the need for strength and conditioning: 1) a player that struggles to stay in a low posture and dig balls hit in front and laterally around her, 2) a player that serves with a low elbow, or 3) a player that is slow to close the block and get off the floor. While all coaches will notice the flaw in skill execution, few will notice the root cause - a lack of strength. While the technique portion of a skill can be coached to perfection, if it isn't performed with the strength and explosiveness required to execute the move in a game-like situation, little to no improvement will be seen over time

How do we solve these issues? By using a post-season strength and conditioning program that meets the needs of the athlete, periodic testing to evaluate improvement, and adjusting the program as needed to accomplish the desired goal.

What are the issues?

Several issues and questions need to be considered when creating an appropriate program for the volleyball athlete. The following are just a sampling of questions that need to be addressed with every program.

How much time can I dedicate to the strength and conditioning of my athletes?

What facilities or equipment do my athletes have access to in order to train?

What are my athletes' needs?

How long have my athletes been in training?

Time, there's never enough time.

It has been said that an athlete should spend 80% of their time performing sport specific activities (practicing the skills for the game) and 20% doing performance enhancement training (weights, plyometrics, flexibility, agility, etc.). (John, 2011) In a utopian training world, everybody would have access to a facility and unlimited time to train. As this is not the case, a three day per week weight program with two days of plyometrics is a great five-day program to build speed, strength, and explosiveness during the post-season. At approximately one hour per weight workout and 20 minutes per plyometric workout, the athletes have the opportunity to improve in less than four hours per week.

In addition to overall time limitations, the time required to learn proper technique for all movement patterns, factors in to the program design. Some people will read this as "technique for lifting weights", but this goes beyond the weight room. Surprisingly, athletes need training in basic movement skills, running, jumping, landing, and using their core. Nothing is more important and requires a greater attention to detail than training technique for athletic movement. Teaching a player to jump and attack becomes very difficult if they struggle to run with forward lean, pivot their feet, and use their arms to transfer horizontal momentum into vertical movement for a jump.

While some feel the more the weight or the resistance increases the better the results that will be seen, the importance of proper form in maintaining a healthy athlete and gaining strength cannot be stressed enough. I have had the experience, on various levels, with athletes that cannot do a push-up, cannot hold a plank position, and struggle to perform a bodyweight squat. It is a disservice to the athlete to risk injury by complicating the lifts or adding weight before proper form is developed and a level of base strength is gained. Patience must be exercised by both the coach and athlete during this phase. Although the numbers aren't increasing linearly, it is important to understand that learning proper technique will allow the athlete to get stronger, in turn helping them to become a better athlete.

I know there are some coaches reading this thinking "I don't have the time." I pose the question; do you have the time to wait while your athlete recovers from an injury?

Facilities and Equipment

Every coach has to evaluate their space and equipment in order to design a program for their athletes. I am fortunate in my situation with a collegiate facility that is just for athlete usage stocked with a variety of weight and plyometric equipment. In our case, we have several Olympic Platforms with bumper plates along with power racks, adjustable benches, bands, chains, dumbbells, and various other pieces of equipment. Had I lacked the traditional equipment, this program would be designed using sandbags, water jugs, ropes, bands, stadium stairs, and bodyweight.

The Athlete

One of the primary goals of a coach should be to bring out the best in their athletes, a goal that cannot be accomplished if the athlete is injured. Several steps can be taken to help keep your athletes injury free. The first suggestion is to have the athlete screened for muscle imbalances, a very common and often ignored condition. There are a myriad of functional screens used by strength and conditioning professionals to detect muscle imbalances. Should an imbalance be found, it is critical that the imbalance be rectified, not only to help the athlete get stronger, but to better alleviate the risk of injury. The second suggestion is to

have the athletes perform stretching and myofascial release every day. Flexibility is important for quick athletic movements and only comes from consistent stretching. The final suggestion is to watch the athletes in a few practices / playing situations to identify any weak movement skills. Some examples of on-court indicators of weakness are the athlete's inability to maintain a low posture, slow lateral movement, inability to control upper torso without a stable base, and loss of body control in the air. These are nearly impossible to see in a structured weight-training environment, but are extremely important to on-court performance. Now that the needs of the athlete have been defined, a program can be developed.

The Program Design

In an ideal world, we have unlimited time and unlimited access to all the elements we need to train our athletes to become quick, agile, strong, and explosive. We could web search "perfect strength program for volleyball" and come up with the magic formula that will work for every athlete. Many believe in the "one program fits all" or that a program that shows increases in brute strength translates to better performance on the court. While there is no perfect program, there are similarities in all effective programs. First, there are multiple microcycles for hypertrophy, strength, and power. Second, the program has a variety of exercises that develop the entire athlete through various ranges of motion. Finally, the program allows for testing and modification to achieve goals for each athlete.

One variable not listed in most programs is the training age of the athlete. An untrained athlete (training age of 0) may take time to develop the correct form but they have no bad habits to break. In addition, the need to increase load is extremely low since the athlete will exhibit strength gains as the nervous system learns to activate muscles. The athlete with a training age greater than zero may have ingrained poor movement patterns through repetition, which will take time to break before learning the correct movement. The athlete could also feel the need to increase the load because of their previous maximum lifts.

After listing the resources available and the time available for strength and conditioning, I looked at the needs of our athletes and set about designing a program that would work to strengthen the common weaknesses of our athletes while also improving their ability to perform volleyball related movements. In designing the program, I applied the fundamentals of a post-season program design as stated by the NSCA, my experience as a weight lifter, and consulted multiple certificated individuals and professional journals in fine-tuning the details of the program.

The following program is designed with three phases: a hypertrophy phase, a combined hypertrophy and strength phase, and power phase. Given a 24-week post-season to train and a broad range of experience, the program seeks to increase the strength and explosiveness of the athlete without creating unnecessary bulk. Our team has access to the weight room three days per week for an hour each and we will be completing two days of plyometric training per week on the court. The first three weeks are dedicated to re-establishing weight workouts with a focus on hypertrophy. Following the hypertrophy phase, the program shifts to a combination of strength and hypertrophy for weeks four through fifteen. The program also introduces speed sets, where the repetitions are performed as fast as possible for a set amount of time. Additionally, the training load decreases as the season goes on in an attempt to prevent over-training. Finally, weeks 16 through 24 are focused on the generation of explosive power.

In each weight segment, there are several lifts implemented to focus on the upper, lower, and entire body. The lifts were chosen to build general strength, mimic movements performed in volleyball, and pre-habilitate area susceptible to injury. Basic upper-body movements, including the row, overhead press, and bench press variations are utilized to increase the general strength of the athlete. Additionally, this program uses variations of the squat along with lunges and RDL's to develop lower-body strength. Multiple core movements are also included that will help players effectively torque and control their upper body when not over a stable base. Finally, the inclusion of Olympic lifts ties lower-body, upper-body, and core strength together in explosive movements. I feel it is extremely important to reiterate that the athletes must master the technique of the exercises before increasing load. There must be a focus on the quality of the exercise, not the load being moved.

The plyometric segments are focused primarily on jump and lateral movement patterns, two volleyball related actions that can always be improved. There are single and multi- jump segments, landing segments, approaches, and lateral slides incorporated in the two day per week program. There are also medicine ball segments working on rotational force generation. Many programs will use plyometric training as a way to increase heart rate and perform cardio. As with the weight portion of the workout, the focus is on quality and explosiveness of movement, not on speed of completion. Subsequently, the pace of the movement will vary by individual.

Into the Off-Season

As a college coach, one of the many challenges we face with training our team is the period beginning with final exams and concluding with the first day of pre-season. This is the true "off-season", during which, we cannot mandate workouts, nor are the coaches (including strength and conditioning staff) allowed to do more than monitor the workout facility to maintain the athlete's safety. In fact, many athletes return home for the summer, where there is nobody available to hold the athlete accountable. In what could be the most critical training period, the lack of contact generates several concerns.

One of the largest concerns is the potential loss of strength gains. During the post-season, athletes spend hours honing their skills and building strength and explosiveness only to transition to a three-month training period without supervision. While coaches have no direct recourse for athletes that cease to work hard during this period, the potential negatives of coming back out of shape drive most athletes to continue training. Athletes risk losing playing time, scholarships, or even their position on the team. Unfortunately, not all athletes will complete the workouts despite the associated risks.

A secondary concern occurs the final few weeks of summer break, as the athlete transitions from summer break into the

pre-season. It is during this time that athletes feel they can “make-up” for poor post-season and off-season training. I have known athletes to train up to three times a day, seven days a week, believing a quick cram of workouts will equal the accumulated efforts of their teammates. Once pre-season begins, the athlete will have little time to recover from the stress the cram sessions creates. Without adequate rest and recovery, there is high potential for over-training. An over-trained athlete reacts slower, seems burned out, and is at risk for over-use injuries, not to mention sub-par practice performance.

In designing a program, it is important that it taper the athlete workload and volume, allowing for recovery while maintaining strength gains as the pre-season begins. For this reason, it is crucial that athletes understand the risk of not following the prescribed program and complete the assigned workouts to the best of their ability so they can enter the pre-season rested and prepared, ready to perform at the highest level.

Entering the Season

As the team begins pre-season training, the strength and conditioning program is designed to maintain the strength and explosiveness of the athlete without over-training. During the season, little gain will be seen by all but the rookies. By working with the head coach and utilizing experience from previous seasons, a flexible pre-season practice and lifting schedule is skel-tonized in advance. The flexible schedule allows the coaching staff to insert an additional day of rest, or cancel a weight workout if it is deemed necessary for team health and performance. As an alternative to days off and canceled workouts, it is possible to shorten practices and change workouts to focus only on the most important skills. The challenge to determining these modifications is in assessing the overall performance level of the team. It is expected that athletes come to pre-season in-shape and prepared to face the rigorous daily challenges, but when this does not happen, programs and coaches must remain flexible in order to bring out the best in their athletes.

Wrapping Up

In summary, post-season strength and conditioning is important because athletes can increase their strength and explosiveness without adverse effects on their match performance. This work will also help minimize the risk of injury over time and set the foundation for off-season workouts. The process of designing and implementing an appropriate post-season workout takes time, but the results are worth the effort. Through proper planning and research, a flexible program can be designed in conjunction with a strength and conditioning professional to fit the needs of the athletes. Remember, it is important to monitor the athletes for over-training and emphasize correct technique throughout the workouts. While the results are not immediate, they will appear when the season begins and they are stronger and more explosive, ready to face the challenges of a long season. O

References

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 John, Daniel. *“Intervention: Course Corrections for the Athlete and Trainer.”* Aptos, CA: On Target Publications, 2011. 42. Print.

22 Week Off-Season Plyometrics

	Week 1	Week 2	Week 3	Week 4
Tuesday	Box Jump 3x6	Box Jump 3x6	Step to Box Jump 3x7	Step to Box Jump 3x7
	Ankle Hops 3x6	Ankle Hops 3x6	Pyramid Box Jump 3x4	Pyramid Box Jump 3x4
	Depth Drop (Stick) 3x6	Depth Drop (Stick) 3x6	Vertical Jumps 3x7	Vertical Jumps 3x7
	Jump Tuck 3x6	Jump Tuck 3x6	Stair Hops 3 Flights	Stair Hops 3 Flights
	Seated MB Twist Throw 3x6	Seated MB Twist Throw 3x6	Rotation Throws 3x8	Rotation Throws 3x8
Thursday	Lateral Box Jump 3x6	Lateral Box Jump 3x6	Step to Lat Box Jump 3x7	Step to Lat Box Jump 3x7
	Side to Side Ankle 3x6	Side to Side Ankle 3x6	Lat Pyramid Box Jump 3x4	Lat Pyramid Box Jump 3x4
	Lat Depth Drop 3x6	Lat Depth Drop 3x6	Slide Boards 3x8	Slide Boards 3x8
	Lat Jump Tuck 3x6	Lat Jump Tuck 3x6	Wall Jump 3x5	Wall Jump 3x5
	Seated MB Twist Throw 3x6	Seated MB Twist Throw 3x6	Seated MB Twist Throw 3x6	Seated MB Twist Throw 3x6

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 5	Week 6	Week 7	
Tuesday	Drop to Double Wall 3x8	Drop to Double Wall 3x8	Box Jump-Drop-Box Jump 3x6	
	Drop to Double Box Jump 3x8	Drop to Double Box Jump 3x8	Box Jump-Block Jump 3x6	
	Wall Block Jump 3x8	Wall Block Jump 3x8	Drop Jump over Hurdle 3x6	
	Stair Hops 3 Flights	Stair Hops 3 Flights	Double Leg Hops Uphill 3x6	
	Rotation Throws 3x8	Rotation Throws 3x8	Approach Jumps 3x4	
Thursday	Crossover Block Jump 3x8	Crossover Block Jump 3x8	Lat Box Jump - Drop - Lat Box 3x6	
	Lat Drop to Lat Box Jump 3x8	Lat Drop to Lat Box Jump 3x8	Slide Boards 3x8	
	Slide Boards 3x8	Slide Boards 3x8	Lat Hop to Lat Slide 3x6	
	Lat Slide 3x8	Lat Slide 3x8	Block Jump-Lat Slide-Block Jump 3x6	
	Kneeling Twisting Throw 3x8	Kneeling Twisting Throw 3x8	Kneeling Twisting Throw 3x5	
	Week 8	Week 9	Week 10	Week 11
Tuesday	Box Jump-Drop-Box Jump 3x6	Pyramid Box Jump 3x5	Pyramid Box Jump 3x5	Approach Jump 3x8
	Box Jump-Block Jump 3x6	Broad Jump to Box Jump 3x6	Broad Jump to Box Jump 3x6	Drop Jump to Box Jump 3x8
	Drop Jump over Hurdle 3x6	Drop Jump - Box Jump 3x6	Drop Jump - Box Jump 3x6	Box Jump 3x8
	Double Leg Hops Uphill 3x6	Stair Hops 3 flights	Stair Hops 3 flights	Double Jump 3x8
	Approach Jumps 3x4	Rotation Throws 3x6	Rotation Throws 3x6	Off Center Twist Throw 3x8
Thursday	Lat Box Jump - Drop - Lat Box 3x6	Crossover Plant Jump 3x6	Crossover Plant Jump 3x6	Lat Slide to Block Jump 3x8
	Slide Boards 3x8	Broad jump to Lat Slide 3x6	Broad jump to Lat Slide 3x6	Lat Drop - Box Jump 3x8
	Lat Hop to Lat Slide 3x6	Slide Boards 3x8	Slide Boards 3x8	Lat Box Jump 3x8
	Block Jump-Lat Slide-Block Jump 3x6	Lat Pyramid Box Jump 3x5	Lat Pyramid Box Jump 3x5	Lat Hop to Block Jump 3x8
	Kneeling Twisting Throw 3x5	Kneeling Twisting Throw 3x8	Kneeling Twisting Throw 3x8	Slide Boards 3x8
	Week 12	Week 13	Week 14	Week 15
Tuesday	Approach Jump 3x8	Drop Jump / Block Jump 3x8	Drop Jump / Block Jump 3x8	1 Step Box Jump 3x8
	Drop Jump to Box Jump 3x8	Broad Jump / Block Jump 3x8	Broad Jump / Block Jump 3x8	Block Jump / X-Over / Block Jump3x8
	Box Jump 3x8	Drop Jump / Barrier Jump 3x8	Drop Jump / Barrier Jump 3x8	Barrier Jump / Block Jump 3x8
	Double Jump 3x8	Approach Jump 3x8	Approach Jump 3x8	Drop jump / Block Jump 3x8
	Off Center Twist Throw 3x8	Speed Rotations 3x8	Speed Rotations 3x8	MB Forward Twist Throw 3x8
Thursday	Lat Slide to Block Jump 3x8	3 yd slide to Box Jump 3x8	3 yd slide to Box Jump 3x8	Lat Step / Lat Box Jump 3x8
	Lat Drop - Box Jump 3x8	Broad Jump / Lat Slide 3x8	Broad Jump / Lat Slide 3x8	Block Jump / X-Over / Wall Jump 3x8
	Lat Box Jump 3x8	Lat Hill Slides 3x8	Lat Hill Slides 3x8	Lat Barrier to Wall Jump 3x8
	Lat Hop to Block Jump 3x8	Slide Boards 3x8	Slide Boards 3x8	Lat Drop Jump / Block Jump 3x8
	Slide Boards 3x8	MB Back 2 Back Pass 3x8	MB Back 2 Back Pass 3x8	MB Forward Twist Throw 3x8

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 16	Week 17	Week 18	Week 19
Tuesday	1 Step Box Jump 3x8	Repeat Jumps 3x9	Repeat Jumps 3x9	Drop Jump / Box Jump 3x8
	Block Jump / X-Over / Block Jump 3x8	Pyramid Box Jump 3x8	Pyramid Box Jump 3x8	Triple Box Jump 3x8
	Barrier Jump / Block Jump 3x8	Lat Hops 3x8	Lat Hops 3x8	Approach Jump 3x8
	Drop jump / Block Jump 3x8	MB Rotation Throw 3x8	MB Rotation Throw 3x8	MB Forward Twist Throw 3x10
	MB Forward Twist Throw 3x8	Drop Jump / Box Jump 3x8	Drop Jump / Box Jump 3x8	Repeat Block Jumps 3x9
Thursday	Lat Step / Lat Box Jump 3x8	Repeat Lat Jump 3x8	Repeat Lat Jump 3x8	Depth Jump / Lat Box Jump 3x8
	Lat Step / Lat Box Jump 3x8	Lat Pyramid Box 3x8	Lat Pyramid Box 3x8	Lat Box Jump 3x8
	Lat Barrier to Wall Jump 3x8	Slide Board 3x8	Slide Board 3x8	3 yd slide to Block Jump 3x9
	Lat Drop Jump / Block Jump 3x8	MB Stand Twist Throw 3x8	MB Stand Twist Throw 3x8	MB Off-Center Twist Throw 3x10
	MB Forward Twist Throw 3x8	Drop Jump / Lat Box 3x8	Drop Jump / Lat Box 3x8	Repeat Lat Box Jump 3x9
	Week 20	Week 21	Week 22	
Tuesday	Drop Jump / Box Jump 3x8	1 step Box Jump 3x10	1 step Box Jump 3x10	
	Triple Box Jump 3x8	Approach Jump 3x10	Approach Jump 3x10	
	Approach Jump 3x8	Box / Drop / Box 3x10	Box / Drop / Box 3x10	
	MB Forward Twist Throw 3x10	MB Rotation Throw 3x10	MB Rotation Throw 3x10	
	Repeat Block Jumps 3x9	Repeat Block Jump 3x9	Repeat Block Jump 3x9	
Thursday	Depth Jump / Lat Box Jump 3x8	1 step Box Jump 3x10	1 step Box Jump 3x10	
	Lat Box Jump 3x8	Approach Jump 3x10	Approach Jump 3x10	
	3 yd slide to Block Jump 3x9	Box / Drop / Box 3x10	Box / Drop / Box 3x10	
	MB Off-Center Twist Throw 3x10	MB Rotation Throw 3x10	MB Rotation Throw 3x10	
	Repeat Lat Box Jump 3x9	Repeat Block Jump 3x9	Repeat Block Jump 3x9	

The USADA latest issue of the USADA Spirit of Sport newsletter is now available at <http://www.usada.org/spirit-of-sport>. Click on the link to access stories that demonstrate how USADA has remained committed its mission: preserving the integrity of competition, inspiring true sport, and protecting the rights of athletes.

Highlights include:

- Peace of Mind Comes with a Level Playing Field: USADA Athlete Ambassador, Jeremiah Bishop shares his take on the team effort between USADA and U.S. Athletes.
- Introducing Athlete Express: USADA has created a new way for athletes to contact USADA.
- Lending a Helping Hand: USADA teams up with the Pikes Peak Habitat For Humanity Chapter to serve the Colorado Springs community.



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24 Week Off-Season Program

	Week 1	Weights	Week 2	Weights	Week 3	Weights	Week 4	Weights
Monday	Squat Cleans 3x6		Squat Cleans 3x4		Squat Cleans 4x6		Split Jerk 4x3	
	Front Squats 3x10		Front Squats 3x8		Front Squats 4x10		Bench 4x4	
	RDL 3x10		RDL 3x8		RDL 4x10		Pike Trunk Raise 3x15	
	Crunch 3x20		Crunch 3x20		Crunch 3x20		Man GHR 3x10	
	Bent Row 3x10		Bent Row 3x8		Bent Row 4x10		DB Shoulder Press 4x3	
	Shoulder Horn 3x12		Shoulder Horn 3x12		Shoulder Horn 3x12		Shoulder Horn 2x12	
Wednesday	DB Push Press 3x4		DB Push Press 3x2		DB Push Press 4x4		DB Snatch 4x4	
	DB RFESS 3x6		DB RFESS 3x4		DB RFESS 4x6		Bear Squat 4x10	
	Trunk Twist 3x20		Trunk Twist 3x20		Trunk Twist 3x20		Diag Lunge 4x10	
	Back Ext 3x12		Back Ext 3x12		Back Ext 3x12		Partner MB Twist 3x15	
	MB Chest Throw 3x6		MB Chest Throw 3x4		MB Chest Throw 4x6		MB Chest Throw 4x10	
	MB Pullover 2x8		MB Pullover 2x8		MB Pullover 2x8		DB Row 4x10	
	Y/T/W 2x12		Y/T/W 2x12		Y/T/W 2x12		Y/T/W 2x12	
Friday	High Pull 3x6		High Pull 3x4		High Pull 4x6		Squat Clean 4x3	
	Bench 3x10		Bench 3x8		Bench 4x10		RDL 4x3	
	Seated Twists 3x20		Seated Twists 3x20		Seated Twists 3x20		Lat Lunge w/ Squat 4x3	
	Twist Back Ext 3x12		Twist Back Ext 3x12		Twist Back Ext 3x12		Twist Crunch 3x15	
	DB Shoulder Press 3x10		DB Shoulder Press 3x8		DB Shoulder Press 4x10		Twist Back Ext 3x10	
	Int / Ext Rotation 2x12		Int / Ext Rotation 2x12		Int / Ext Rotation 2x12		DB Pullover 4x3	
							Int / Ext Rotation 2x12	

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 5	Weights	Week 6	Weights	Week 7	Weights	Week 8	Weights
Monday	Split Jerk 4x5		Split Jerk 4x3		Split Jerk 3x3		Split Jerk 3x5	
	Bench 4x5		Bench 4x4		Bench 3x3		Bench 3x5	
	Pike Trunk Raise 3x15		Pike Trunk Raise 3x15		Pike Trunk Raise 3x15		Pike Trunk Raise 3x15	
	Man GHR 3x10		Man GHR 3x10		Man GHR 3x10		Man GHR 3x10	
	DB Shoulder Press 4x5		DB Shoulder Press 4x3		DB Shoulder Press 3x3		DB Shoulder Press 3x5	
	Shoulder Horn 2x12		Shoulder Horn 2x12		Shoulder Horn 2x12		Shoulder Horn 2x12	
Wednesday	DB Snatch 4x6		DB Snatch 4x4		DB Snatch 3x4		DB Snatch 3x6	
	Bear Squat 4x12		Bear Squat 4x10		Bear Squat 3x10		Bear Squat 3x12	
	Diag Lunge 4x12		Diag Lunge 4x10		Diag Lunge 3x10		Diag Lunge 4x10	
	Partner MB Twist 3x15		Partner MB Twist 3x15		Partner MB Twist 3x15		Partner MB Twist 3x15	
	MB Chest Throw 4x10		MB Chest Throw 4x10		MB Chest Throw 3x10		MB Chest Throw 3x12	
	DB Row 4x12		DB Row 4x10		DB Row 3x10		DB Row 3x12	
	Y/T/W 2x12		Y/T/W 2x12		Y/T/W 2x12		Y/T/W 2x12	
Friday	Squat Clean 4x5		Squat Clean 4x3		Squat Clean 3x3		Squat Clean 3x5	
	RDL 4x5		RDL 4x3		RDL 3x3		RDL 3x5	
	Lat Lunge w/ Squat 4x5		Lat Lunge w/ Squat 4x3		Lat Lunge w/ Squat 3x3		Lat Lunge w/ Squat 3x5	
	Twist Crunch 3x15		Twist Crunch 3x15		Twist Crunch 3x15		Twist Crunch 3x15	
	Twist Back Ext 3x10		Twist Back Ext 3x10		Twist Back Ext 3x10		Twist Back Ext 3x10	
	DB Pullover 4x5		DB Pullover 4x3		DB Pullover 3x3		DB Pullover 3x5	
	Int / Ext Rotation 2x12		Int / Ext Rotation 2x12		Int / Ext Rotation 2x12		Int / Ext Rotation 2x12	

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 9	Weights	Week 10	Weights	Week 11	Weights
Monday	Hang Cleans 3x4		Hang Cleans 3x2		Hang Cleans 3x4	
	Front Squat 3x4		Front Squat 3x3		Front Squat 3x3	
	RDL 3x4		RDL 3x3		RDL 3x3	
	DB Press Crunch 3x12		DB Press Crunch 3x12		DB Press Crunch 3x12	
	DB Twist Press Crunch 3x12		DB Twist Press Crunch 3x12		DB Twist Press Crunch 3x12	
	DB Row 3x4		DB Row 3x3		DB Row 3x3	
	Shoulder Horn 2x12		Shoulder Horn 2x12		Shoulder Horn 2x12	
Wednesday	DB Alt Push Press 3x6		DB Alt Push Press 3x4		DB Alt Push Press 3x6	
	Bear Squat 3x9		Bear Squat 3x7		Bear Squat 3x9	
	MB Walking Lunge 3x9		MB Walking Lunge 3x7		MB Walking Lunge 3x9	
	Man GHR 3x10		Man GHR 3x10		Man GHR 3x10	
	DB Pullover 3x9		DB Pullover 3x7		DB Pullover 3x9	
	Y/T/W 2x12		Y/T/W 2x12		Y/T/W 2x12	
Friday	Hang Snatch 3x4		Hang Snatch 3x2		Hang Snatch 3x4	
	Bench 3x5		Bench 3x4		Bench 3x5	
	MB Off-Center Throw 3x12		MB Off-Center Throw 3x12		MB Off-Center Throw 3x12	
	Twist Rev Hyper 3x10		Twist Rev Hyper 3x10		Twist Rev Hyper 3x10	
	Wrist Curls 3x12		Wrist Curls 3x12		Wrist Curls 3x12	
	Incline DB Press 3x4		Incline DB Press 3x3		Incline DB Press 3x3	
	Int / Ext Rotation 2x12		Int / Ext Rotation 2x12		Int / Ext Rotation 2x12	

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 12	Weights	Week 13	Weights	Week 14	Weights
Monday	Rack Clean 4x4		Rack Clean 4x2		Rack Clean 4x4	
	Hang Clean 4x4		Hang Clean 4x2		Hang Clean 4x4	
	Squats 4x6		Squats 4x4		Squats 4x6	
	DB Jump Squat 4x6 (9s)		DB Jump Squat 4x4 (8s)		DB Jump Squat 4x6 (9s)	
	Lat Lunge 4x6 (9s)		Lat Lunge 4x4 (8s)		Lat Lunge 4x6 (9s)	
	Bent Row 4x6 (9s)		Bent Row 4x4 (8s)		Bent Row 4x6 (9s)	
	Int/Ext Rotation 2x12		Int/Ext Rotation 2x12		Int/Ext Rotation 2x12	
Wednesday	DB Snatch 4x5		DB Snatch 4x3		DB Snatch 4x5	
	1 Arm DB Snatch 4x5		1 Arm DB Snatch 4x3		1 Arm DB Snatch 4x5	
	Bear Squats 4x8 (16s)		Bear Squats 4x10 (17s)		Bear Squats 4x8 (16s)	
	Diag lunge 4x8 (16s)		Diag lunge 4x10 (17s)		Diag lunge 4x8(16s)	
	MB Ankle Chop 3x10		MB Ankle Chop 3x10		MB Ankle Chop 3x10	
	DB Bench 4x8 (16s)		DB Bench 4x10 (17s)		DB Bench 4x8 (16s)	
	Shoulder Horn 2x10		Shoulder Horn 2x10		Shoulder Horn 2x10	
Friday	High Pull 4x4		High Pull 4x2		High Pull 4x4	
	Bench 4x6		Bench 4x4		Bench 4x6	
	MB Chest Throw 4x6 (9s)		MB Chest Throw 4x4 (8s)		MB Chest Throw 4x6 (9s)	
	DB Pullover 4x6 (9s)		DB Pullover 4x4 (8s)		DB Pullover 4x6 (9s)	
	MB Rev Throw 3x10		MB Rev Throw 3x10		MB Rev Throw 3x10	
	Twist Rev Hyper 3x8		Twist Rev Hyper 3x8		Twist Rev Hyper 3x8	
	MB Overhead Throw 2x6		MB Overhead Throw 2x6		MB Overhead Throw 2x6	

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 15	Weights	Week 16	Weights	Week 17	Weights	Week 18	Weights
Monday	Rack Clean 4x2		Rack Clean 4x3		Rack Clean 4x2		Rack Clean 4x3	
	Hang Clean 4x2		Hang Clean 4x3		Hang Clean 4x2		Hang Clean 4x3	
	Squats 4x4		Squats 4x5		Squats 4x3		Squats 4x5	
	DB Jump Squat 4x4 (8s)		DB Jump Squat 4x5 (6s)		DB Jump Squat 4x3 (6s)		DB Jump Squat 4x5 (6s)	
	Lat Lunge 4x4 (8s)		Side Lunge 4x5 (6s)		Side Lunge 4x3 (6s)		Side Lunge 4x5 (6s)	
	Bent Row 4x4 (8s)		GHR 3x8		GHR 3x8		GHR 3x8	
	Int/Ext Rotation 2x12		Int/Ext Rotation 2x12		Int/Ext Rotation 2x12		Int/Ext Rotation 2x12	
Wednesday	DB Snatch 4x3		DB Snatch 4x6		DB Snatch 4x4		DB Snatch x6	
	1 Arm DB Snatch 4x3		1 Arm DB Snatch 4x6		1 Arm DB Snatch 4x4		1 Arm DB Snatch 4x6	
	Bear Squats 4x10 (17s)		Bear Squats 4x10		Bear Squats 4x8		Bear Squats 4x10	
	Diag lunge 4x10 (17s)		Ankle Chop 3x10		Ankle Chop 3x10		Ankle Chop 3x10	
	MB Ankle Chop 3x10		Twist GHR 3x8		Twist GHR 3x8		Twist GHR 3x8	
	DB Bench 4x10 (17s)		DB Bench 4x10 (12s)		DB Bench 4x8 (12s)		DB Bench 4x10 (12s)	
	Shoulder Horn 2x10		Shoulder Horn 2x12		Shoulder Horn 2x12		Shoulder Horn 2x12	
Friday	High Pull 4x2		Power Jerk 4x3		Power Jerk 4x2		Power Jerk 4x3	
	Bench 4x4		DB Jerk 4x3		DB Jerk 4x2		DB Jerk 4x3	
	MB Chest Throw 4x4 (8s)		Bench Press 4x5		Bench Press 4x4		Bench Press 4x5	
	DB Pullover 4x4 (8s)		DB Pullovers 4x5 (6s)		DB Pullovers 4x3 (5s)		DB Pullovers 4x5 (6s)	
	MB Rev Throw 3x10		MB Rev Throw 3x10		MB Rev Throw 3x10		MB Rev Throw 3x10	
	Twist Rev Hyper 3x8		MB Twist 2x12		MB Twist 2x12		MB Twist 2x12	
	MB Overhead Throw 2x6		MB Low Throw 2x12		MB Low Throw 2x12		MB Low Throw 2x12	

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 19	Weights	Week 20	Weights	Week 21	Weights	Week 22	Weights
Monday	Rack Clean 4x2		Rack Clean 4x3		Rack Clean 4x2		Rack Clean 4x3	
	Hang Clean 4x2		Hang Clean 4x3		Hang Clean 4x2		Hang Clean 4x3	
	Squats 4x3		Squats 4x5		Bench Press 4x3 (4s)		Bench Press 4x4 (4s)	
	DB Jump Squat 4x3 (6s)		DB Jump Squat 4x5 (6s)		DB Pullovers 4x3 (4s)		DB Pullovers 4x4 (4s)	
	Side Lunge 4x3 (6s)		Side Lunge 4x5 (6s)		Bus Drivers 3x10		Bus Drivers 3x10	
	GHR 3x8		GHR 3x8		Rev Hyper 3x8		Rev Hyper 3x8	
	Int/Ext Rotation 2x12		Int/Ext Rotation 2x12		Int/Ext Rotation 2x12		Int/Ext Rotation 2x12	
Wednesday	DB Snatch 4x4		DB Snatch 4x6		DB Snatch 4x5		DB Snatch 4x4	
	1 Arm DB Snatch 4x4		1 Arm DB Snatch 4x6		1 Arm DB Snatch 4x5		1 Arm DB Snatch 4x5	
	Bear Squats 4x8		Bear Squats 4x10		Bear Squats 4x10		Bear Squats 4x8	
	Ankle Chop 3x10		Ankle Chop 3x10		MB Diag Lunge 4x10 (10s)		MB Diag Lunge 4x8 (10s)	
	Twist GHR 3x8		Twist GHR 3x8		MB Twist Throw 3x10		MB Twist Throw 3x10	
	DB Bench 4x8 (12s)		DB Bench 4x10 (12s)		1 Arm DB Bench 4x10 (10s)		1 Arm DB Bench 4x8 (10s)	
	Shoulder Horn 2x12		Shoulder Horn 2x12		Shoulder Horn 2x10		Shoulder Horn 2x10	
Friday	Power Jerk 4x2		Power Jerk 4x3		DB Snatch 4x2		DB Snatch 4x3	
	DB Jerk 4x2		DB Jerk 4x3		Rack Snatch 4x2		Rack Snatch 4x3	
	Bench Press 4x4		Bench Press 4x5		Squat 4x3		Squat 4x4	
	DB Pullovers 4x3 (5s)		DB Pullovers 4x5 (6s)		DB Jump Squat 4x3 (4s)		DB Jump Squat 4x4 (4s)	
	MB Rev Throw 3x10		MB Rev Throw 3x10		MB Lat Lunge 4x3 (4s)		MB Lat Lunge 4x4 (4s)	
	MB Twist 2x12		MB Twist 2x12		Back Ext 3x8		Back Ext 3x8	
	MB Low Throw 2x12		MB Low Throw 2x12		OH Plate Rotation 2x10		OH Plate Rotation 2x10	

HOW'S AND WHY'S OF COLLEGIATE OFF/PRE SEASON PROGRAM

	Week 23	Weights	Week 24	Weights
Monday	Rack Clean 4x2		Rack Clean 4x3	
	Hang Clean 4x2		Hang Clean 4x3	
	Bench Press 4x3 (4s)		Bench Press 4x4 (4s)	
	DB Pullovers 4x3 (5s)		DB Pullovers 4x4 (4s)	
	Bus Drivers 3x10		Bus Drivers 3x10	
	Rev Hyper 3x8		Rev Hyper 3x8	
	Int/Ext Rotation 2x12		Int/Ext Rotation 2x12	
Wednesday	DB Snatch 4x5		DB Snatch 4x4	
	1 Arm DB Snatch 4x5		1 Arm DB Snatch 4x5	
	Bear Squats 4x10		Bear Squats 4x8	
	MB Diag Lunge 4x10 (10s)		MB Diag Lunge 4x8 (10s)	
	MB Twist Throw 3x10		MB Twist Throw 3x10	
	1 Arm DB Bench 4x10 (10s)		1 Arm DB Bench 4x8 (10s)	
	Shoulder Horn 2x10		Shoulder Horn 2x10	
Friday	DB Snatch 4x2		DB Snatch 4x3	
	Rack Snatch 4x2		Rack Snatch 4x3	
	Squat 4x3		Squat 4x4	
	DB Jump Squat 4x3 (4s)		DB Jump Squat 4x4 (4s)	
	MB Lat Lunge 4x3 (4s)		MB Lat Lunge 4x4 (4s)	
	Back Ext 3x8		Back Ext 3x8	
	OH Plate Rotation 2x10		OH Plate Rotation 2x10	

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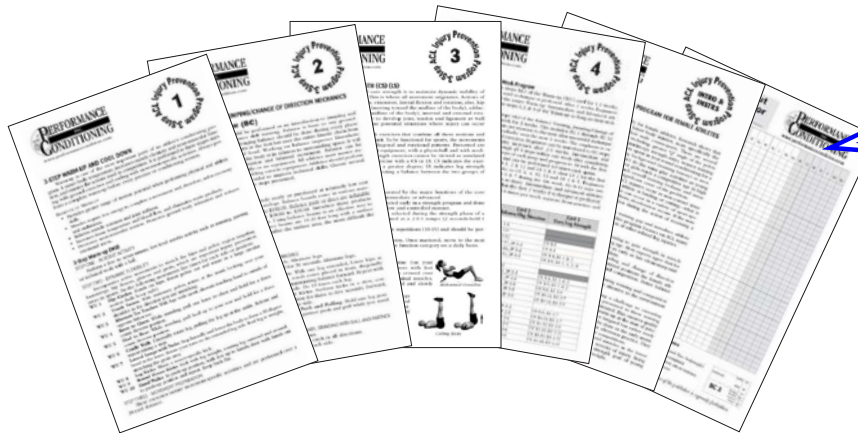
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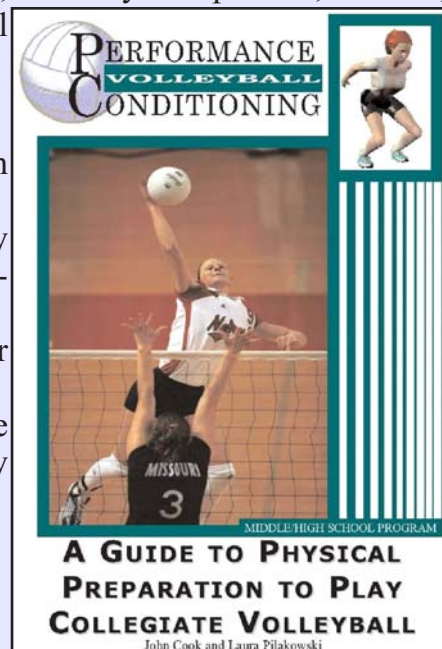
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