

BOILER PUMP

THE OFFICIAL NEWSLETTER OF PURDUE SPORTS PERFORMANCE

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Spotlight On: Training Rotational Sports

Coaches Becker, Roberts and Specos team up to bring you the best training considerations for rotational-based sports.

Almost every sport has a rotational component to it. After all, each athlete will be in a position where he or she needs to change direction, throw or hit a ball, turn, etc.— some more repetitively than others. Our student-athlete features for April are golf and tennis, and with this in mind, we have decided to present the biggest needs, concerns and most beneficial training ideas to enhance performance and decrease the risk of injury for sports that are highly repetitive in a rotational nature.

For optimal performance, rotational athletes need:

- Adequate **MOBILITY** through the hips and T-spine (i.e. aid in the creation of torque)
- Adequate **STABILITY** through the trunk (lumbar spine) (i.e. maintaining dynamic control)
- EFFICIENCY**: Ability to absorb and produce force at high level and with speed (i.e. golf swing acceleration and deceleration)
- Ability to rapidly apply **FORCE** downward (i.e. tennis serve)
- BALANCE** and **COORDINATION** (i.e. to recover from movements and move into the next)

With repetitive single-sided motions, there also are potential concerns that can and should be addressed within training:

- imbalances and asymmetries between right and left sides (i.e. back and abdominal imbalances leading to oblique strains and back pain)
- core and power weaknesses potentially leading to peripheral (limb) issues in terms of sidedness (i.e. shoulders, elbows)

Complete programs include:

MOBILITY AND FLEXIBILITY WORK

- Self myofascial release, joint mobilizations, stretching, etc.

GENERAL STRENGTH AND POWER EXERCISES

- squats, lunges, pushups, pull-ups, jump variations, Olympic lifts, etc.

ISOMETRIC/ ANTI-ROTATION TRAINING

- chops, lifts, stability presses, bird dogs, dead bugs, etc.

SINGLE LIMB CORE STABILITY EXERCISES

- single arm off-set dumbbell bench press, single leg off-set dumbbell RDL, single arm overhead presses, etc.

SPINAL ROTATION POWER EXERCISES

- medicine ball wall throws, cable rotations, landmines, etc.

ACCESSORY AND PREVENTATIVE/CORRECTIVE EXERCISES

- special needs such as shoulder/forearm, balance, etc.



Log onto Boiler Power's YouTube page for video descriptions of various exercises mentioned above:
<http://bit.ly/1IMFOa3>

Inside The Huddle

Coach Becker talks with a pair of golfers.

- (1) Which aspect of your sports performance training has impacted your performance the most?**
- (2) What exercise or exercises do you find the most beneficial for your sport?**
- (3) What would you say are the attributes of the a successful golfer?**

Women's Golf: Aurora Kan

(1) The conditioning and weight training has made the biggest impact on my performance. I think both are important, and each has its own benefits.

(2) The exercises I have found to be the most beneficial are rotary med ball exercises (mostly because they help strengthen my left side since I golf right handed, and therefore am significantly weaker on that side, weighted abdominal exercises (planks with weighted plate) and exercises for my back and shoulders (lat pulldowns, TRX I, Y, & T Raises) since I get fatigued at times carrying around my golf bag.

(3) To be a successful golfer, you need to have your priorities straight and you need self-discipline. That means doing things on your own (practicing, extra workouts, etc.) without someone watching you or telling you what to do, because you WANT to be better. You must also prioritize your life. This includes taking the steps necessary to recover from training (getting sleep, fueling before/during/after practices and competition, eating healthy to nourish the body, etc.) Lastly, a successful golfer needs a great support system. This could come from family, friends, a sports psych, any of your coaches or trainers. There needs to be feedback, constructive criticism, encouragement, and sometimes just an open ear to listen to what the athlete has to say. These are the most important attributes to being successful.



Men's Golf: Ben Marvin-Egel

(1) I believe that to be successful in golf, you need a wide range of training. I would say the strength aspect has helped me the most as it focuses on golf specific movements and muscles. Having focused on those golf specific workouts has definitely helped me in my swing and protecting my body from possible injuries.

(2) I find the stability and balance exercises the most beneficial for golf as balance and a solid lower body is key to making a good swing. There are several exercises we do that work on our stability, core strength, and balance that I find most beneficial for golf.

(3) I think to be a successful golfer, you have to have a wide variety of skills, abilities, and mental toughness. Golf is a very mental sport but takes a lot of talent and skill to be good at it. Having the right mix of all of these is key, as having just one or the other will only get you so far.



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Inside The Huddle

Coaches Specos and Roberts talk with two tennis players.

- (1) Which aspect of your sports performance training has impacted your performance the most?**
- (2) What exercise or exercises do you find the most beneficial for your sport?**
- (3) What would you say are the attributes of the a successful tennis player?**

Women's Tennis: Nicole Robinson



- (1) The mental toughness I gained through the hardest workouts I thought I would not be able to finish have made me a better competitor and stronger person. When I go into a match, I know I can outlast my opponent because I have fought through some of the most difficult times and overcame the obstacles, so there is nothing that can stop me.
- (2) The most beneficial exercises for tennis are on court short sprints, while having to change direction quickly. Having the ability to react quickly on the court is important with an explosive first move. Leg strength is crucial, so lunges and squats are very beneficial.
- (3) To be a successful tennis player, you have to be very physically fit to last a match that may go four hours and strong enough to keep up the fire power. Tennis is also very mental, so being a quick thinker, the ability to stay calm in pressured situations, and having the will power to work as hard as you can on every point makes a successful player.

Men's Tennis: Matt Bouggy



- (1) The upper body work that we do like benching and pull-ups has impacted my performance the most. The power on my serve and when I hit the ball has increased since I have begun training.
- (2) I have two exercise that I find the most beneficial. I think benching and running are the most beneficial exercise for my sport.
- (3) A well-conditioned and mentally tough tennis player is always tough to beat. I think these attributes contribute the most to a successful tennis player.

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Sports Science Report

This Month's Report is Brought to you by Coach Dawson

Progressive Overload



You don't just pick up a barbell and get stronger, faster, or more powerful ... at least not in the long run. Sure, you can pick up said barbell a few times a week for a while and see some benefits, but eventually your body says "alright chief don't you have anything more challenging to offer me?" When the stimulus is left unchanged the human body adapts, grows stronger and eventually experiences performance plateaus in the weight room and on the field of play. In the world of athletics, where performance is ultimately paramount to success, how do we prevent or more realistically delay the plateau? One solution is the concept of progressive overload or systematically increasing the demand placed upon the body during exercise (Baechle & Earle, 2008, p. 105). The manipulation of volume and intensity is the primary tool used to increase the level of stress experienced by the athlete during training. When we discuss volume we are referring to sets and repetitions of a certain exercise while intensity refers to a certain percentage of a 1RM, 3RM, 5RM, etc. or simply the weight being lifted by the athlete. As strength and conditioning professionals this is where our programming for certain training phases becomes extremely important. Our job must include that we ensure our athletes are either increasing volume, intensity, or both in order to prevent the plateau and continue the athlete down a path towards strength and power gains.

Example:

GPP/ Hypertrophy Phase (without Deload)

	Week 1		Week 2		Week 3		Week 4	
	Sets/Reps	Intensity	Sets/Reps	Intensity	Sets/Reps	Intensity	Sets/Reps	Intensity
Back Squat	3x10	60-65%	4x8	65-70%	4x8	70-75%	4x8	70-80%

Basic Strength Phase (without Deload)

	Week 1		Week 2		Week 3		Week 4	
	Sets/Reps	Intensity	Sets/Reps	Intensity	Sets/Reps	Intensity	Sets/Reps	Intensity
Back Squat	3x6	75%	4x6	75%	4x4	80%	4x4	80-90%

Max Strength Phase (without Deload)

	Week 1		Week 2		Week 3		Week 4 (Max Week)	
	Sets/Reps	Intensity	Sets/Reps	Intensity	Sets/Reps	Intensity	Sets/Reps	Intensity
Back Squat	3x3	85-90%	4x2	90-92.5%	5x1	90-95%+		100% +

Reference:

Baechle, T. (2008). *Essentials of strength training and conditioning* (3rd ed.). Champaign, IL: Human Kinetics.

Purdue Sports Nutrition

Community Garden

**An exciting opportunity for
Purdue student-athletes to
help their community and
and themselves!**



Student-athletes can help grow:



Tomatoes
Potatoes
Squash
Zucchini
Onions
Cucumber
Green Beans
Broccoli
Cauliflower
Carrots
Peppers
Fresh Herbs



Then take some home!

**Gardening is a
rewarding skill that
can lower your
grocery bill, help the
environment, and
improve your health!**



**Every \$2 tomato plant
typically yields at least
\$20 worth of tomatoes!
That's a 1:10 profit ratio!**

Why join?



Many low-income families feel that produce is too expensive and fear that it will go bad. This compels them to buy cheap, processed foods that can compound their health problems.

Help low income families

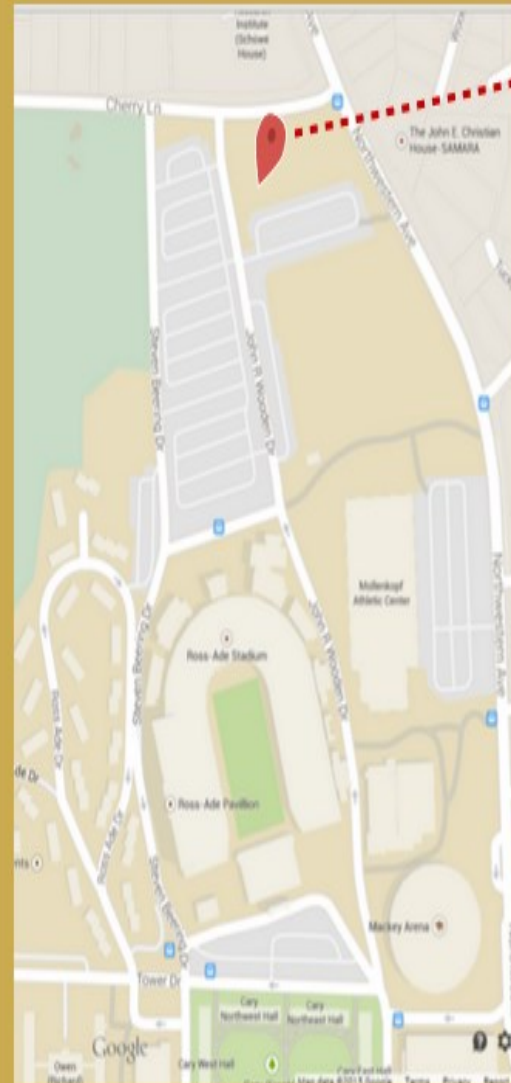
Get fresh produce to take home yourself

Learn about sustainable food

Think you might be interested? Let us know!

No long-term commitment required, help as your schedule allows and reap the benefits!

Lauren Link – LaurenLink@purdue.edu
Christine Steinmetz – Csteinm@purdue.edu



The garden will be conveniently located near the corner of John R. Wooden Dr. and Cherry Ln. – directly behind the football practice field and the H lot.

Follow us for important updates and info!
@Boilerfuel

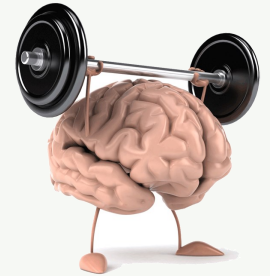




Mental Conditioning

"Boiler Focus"

By Dr. Chris Carr, Sport Psychologist



ADVERSITY: Dealing with Challenges

One of the greatest joys I have as a sport psychologist is observing how great athletes come back from an adverse situation (e.g. a loss). To be a truly elite-level athlete, you must learn to deal with and confront loss. Here are the results of research studies that have examined how elite athletes best deal with adversity:

****Let go of the past ... Focus on the Present:** Great performers can acknowledge the pain of loss, but are able to "let go" and direct their energies to the next practice and performance. Once some event has occurred, it will never change .. so let it go and move on – physically and mentally. Your goals for today direct your performance of today.*

****Why do you play the game?:** When you can refocus on the "essence" of your sport, and think about your love for it, then great performances are possible. YOU alone can determine your future performances ... not by worrying about "ifs and buts"; FOCUS ON WHY YOU PLAY YOUR SPORT AND YOUR ROLE ON THIS TEAM!*

****Visualize Perfect Performance:** Elite athletes are able to re-visualize past mistakes, then correct them in their mind. You can visualize great plays as part of your travel/mental preparation so that your subconscious has BELIEF and CONFIDENCE. If you remember only the past, you will feel doubt and confusion; instead, VISUALIZE MAKING GREAT PLAYS!*

****Remember the "Highlights":** There is no guaranteed Big Ten champion until the last game. Every team will lose games. Focus on the "highlights" (great plays) of this year ... this will help to refocus and gain positive energy.*

We get stronger when we test ourselves. Adversity can make us better. We must be challenged to improve, and adversity is the challenger.

-John Wooden

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"The measure of what we are is what we do with what we have."

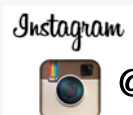
-Vince Lombardi



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