



PERFORMANCE SOCCER CONDITIONING

A NEWSLETTER DEDICATED TO IMPROVING SOCCER PLAYERS

WWW.PERFORMANCECONDITION.COM/SOCCER

Postural Restoration Institute® Presents the New Off-Season: Balanced Regeneration Series #7 - Weekly Program

Lisa Bartels, Crossroads Physical Therapy, Lincoln, NE

Lisa was a member of the University of Nebraska volleyball team from 1995-1997. She was introduced to the science of Postural Restoration as a patient under the care of Ron Hruska. She had suffered from long-standing injuries sustained during her collegiate volleyball career and found success with the treatment techniques she learned at the Hruska Clinic and later received from the Postural Restoration Institute. Lisa returned to practice physical therapy at the Hruska Clinic Restorative Physical Therapy Services in Lincoln, Nebraska after completing her Doctorate of Physical Therapy from the University of Nebraska Medical Center in Omaha. Lisa is a member of the American Physical Therapy Association.



Lisa Bartels



Welcome to the new off season: Balanced Regeneration; a series of articles dedicated to promoting healthy/functional athletes who participate in a side dominant sport. A side dominate sport is defined as a sport in which skills are performed utilizing a preferred side of the body on a repeated basis. Athletes can easily become imbalanced because of these repetitive and asymmetric sport demands. Each issue of this publication has presented a new installment that serves 2 purposes; first it introduces various Postural Restoration and biomechanical concepts that build upon each other to help the reader understand the reasoning for specific muscle training emphasis; second it provides a progressive step by step plan in writing and carrying out a strength and conditioning program that integrates Postural Restoration methodology. This article will serve to provide readers with an actual week by week Balanced Regeneration program that will specifically direct and explain which exercises to be performed first or last, when new exercises should be added, and how to integrate with traditional sports conditioning activities.

The Problem-Anatomy of Imbalance

If the members of an athletic team were instructed to stand shoulder to shoulder in a straight line with their arms at their sides, it would appear that the pelvis and trunk of all players was neutral, facing straight ahead. Despite appearances, the pelvis may not be in a neutral resting position in several of those athletes. If you casually observed all members walking from a front and back view it may appear that the right and left sides move symmetrically, but with closer observation you will likely see differences in stance time, leg swing, trunk rotation, arm swing, shoulder height, and hip rotation. The Postural Restoration Institute assumes that all right side dominant athletes have at least some postural instability because of their asymmetric sport demands. Most competitive athletes that are evaluated with Postural Restoration methodology initially present with significant left side versus right side differences; differences in bony position, differences in muscle length, strength, and function, and differences in the integrity of various joint sockets. The reason for these differences is due to right sided dominance and repetitive right extremity demands which can over time generate an unlevelled pelvis. Specifically, the left side of the pelvis will commonly rotate forward relative to the right side, a left pelvic torsion. This is significant because athletes will compensate in one or more areas of the lower extremities, trunk, and upper extremities to remain balanced over the unlevelled pelvis. Thus they acquire faulty movement and muscle strategies that can result in various pain patterns as they continue to train and compete. Specifically, athletes lose the ability to achieve/perform AFIR on the left side of the body, while also losing AFER ability on the right side of the body.

The Solution

Conditioning programs need to have a built in counter mechanism that significantly reduces an athlete's tendency towards left pelvic torsion. The solution is to asymmetrically train and isolate musculature that restores AFIR ability to the left hemi pelvis, while also restoring AFER ability to the right hemipelvis. This training needs to occur in both gravity eliminated and against gravity positions to enable formation and development of optimal neural pathways. In other words the athletes' nervous and muscular systems must relearn optimal movement strategies during upright functional activity. Upright dynamic activity can take many forms and can be modified to specific intensities and loads. The Balanced Regeneration program has been set up in a way to provide specific instructions while at the same time allowing the reader to have autonomy in choosing what upright dynamic drills to use and in what combination. In an attempt to communicate clearly utilizing a sports and conditioning dialogue, I used three terms to describe various upright dynamic activity; field/court conditioning, resistance training, and plyometrics training.

The Balanced Regeneration program assumes that all of your athletes are in varying degrees of left pelvic torsion. The initial weeks in this program lay the ground work in preparing athletes for progression to intense high load double and single leg activity. You will notice that field/court conditioning is integrated with PRI activity starting Day 1. A word of caution however; activities that highly recruit the hip flexor groups need to be avoided. Turf, grass, and hard court activities are fine, just make sure you set up activities so your athletes are not always rotating, turning, and pushing off in the same direction with the same leg. You could even start some drills with the athletes balancing in left single leg stance. Keep in mind that the first 4 weeks of this program is strictly neural strengthening; in other words the athlete is simply developing the ability to turn on and perceive certain muscles in a given plane of motion. Actual muscle growth and hypertrophy does not begin to occur until after week 4. That is why resistance training in an ideal situation should not be implemented until week 4 and plyometric training is not implemented until week 6. If the athlete can not correctly perform PRI#7 and #8, they technically should not be performing resistance training such as rack squats. They will perform in a left pelvic torsion position and further strengthen the faulty movement strategies they have acquired.

Over the course of the last six article installments, ten separate PRI activities were explained and introduced. I'm going to refer back to eight of those techniques for the purpose of integrating them into a week by week program. I'm also going to introduce two more activities; a sidelying knee toward knee activity that is a progression of PRI 5 and a squat activity that serves additional testing purposes. For the benefit of the reader I have organized the PRI exercises in a specific order based on the biomechanical concepts that have previously been discussed. It is imperative that the athletes perform them in the order they are written. It is also important to note that the program is written with the assumption that all athletes are initially able to correctly perceive all core muscle groups. If an athlete is struggling with an activity I would encourage the reader to refer back earlier in the series for trouble shooting tips. Following is a numbered list of the nine PRI activities utilized in the Balanced Regeneration program and the week by week instructions.

PRI Exercises

1. Prone reciprocal hamstring curls (Article 2)
2. 90-90 hip lift hemibridges (Article 2)
3. Right sidelying left adductor pullbacks (Article 3)
4. Retro stairs (Article 4)
5. Left sidelying right glut max (Article 5)
6. Left sidelying knee toward knee (New)
7. Right squat with left hip approximation (Article 5)
8. Left single leg squat with right lateral dip (Article 6)
9. Right single leg squat with left hip approximation and left knee flexion (Article 6)

Week 1

Warm up (15-20 minutes)

-PRI #1 (10-20 sets with 15-20 second hold on left, 3-5 second hold on right)

-PRI #3 (5-10 sets)

-PRI #5 (5-10sets)

Conditioning (20-30 minutes)

Cool down (10 minutes)

-PRI #3 (5-10 sets)

-PRI #5 (5 sets)

Week 2

Warm up (20 minutes)

-PRI #1 (10-20 sets with 15-20 second hold on left, 3-5 second hold on right)

-PRI #3 (5-10 sets)

-PRI #5 (5-10sets)

-PRI #4 (5-6 sets of shift and hold only, lift not included)

Conditioning (20-30 minutes)

Cool down (10 minutes)

-PRI #2 (3-4 sets)

- PRI #3 (5-10 sets)
- PRI #5 (5 sets)

Week 3

Warm up (20 minutes)

- PRI #1 (10-20 sets with 15-20 second hold on left, 3-5 second hold on right)

-increase resistance

- PRI #3 (5-10 sets)
- PRI #5 (5-10sets)

-add resistance loop

- PRI #4 (12 sets)

-add lift and perform 4 sets left to 1 set right

-PRI #7 (5 sets)

Conditioning (20-30 minutes)

Cool down (10 minutes)

- PRI #2 (3-4 sets)
- PRI #3 (5-10 sets)
- PRI #5 (5 sets)

Prior to initiating lower body resistance training in week four of the program, you need to test your athletes' ability to perform a full squat (Figure 1). If an athlete has appropriate range of flexion in the lumbar spine, good congruence between the femoral head and the acetabulum (hip socket), and enough dorsiflexion at the ankles, they should be able to descend into a full squat keeping the spine in roughly a 45-60 degree angle from the floor. It is important to note that many athletes do not have enough dorsiflexion range of motion at the ankle joint to squat without recruiting the back extensors. This may be due to excessive restriction of the calf muscles, over pronation, or may simply be congenital. You, the coach, can test this by watching them attempt a squat. If the spine position moves into a nearly parallel position with the floor they have limitation in the low back, posterior hip capsules, or the ankles. Have the athlete reattempt the squat with a 1-2 inch board/block under the heels. Frequently this solves the problem because the heel lift puts the ankle in a position of plantar flexion, thus increasing the amount the ankle can dorsiflex. Don't focus on why the ankle has limitation, just make sure these athletes use a heel lift when they rack squat. They might not always need a heel lift if they lengthen their plantar flexors or use orthotics, but periodically test them.

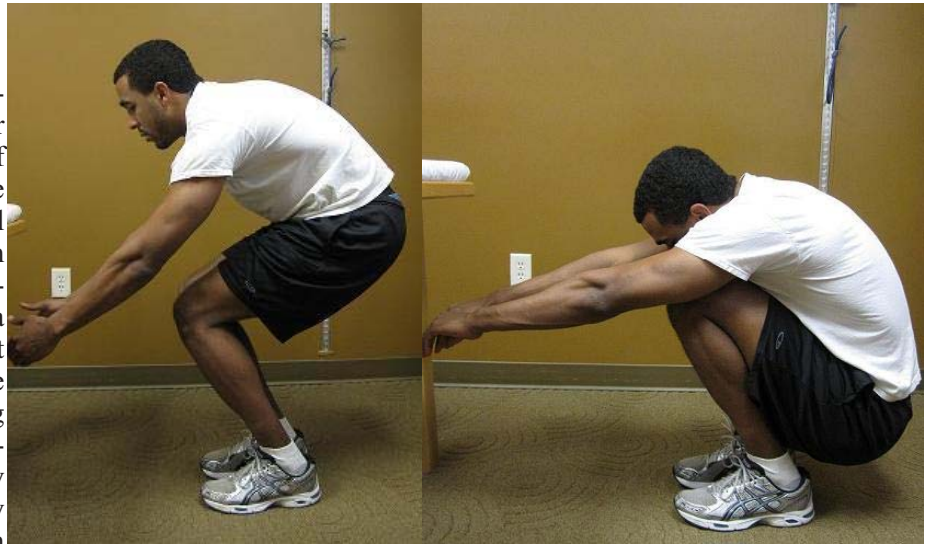


Figure 1

Week 4

Warm up (20 minutes)

- PRI #1 (10-20 sets with 15-20 second hold on left, 3-5 second hold on right)

- PRI #3 (5-10 sets)

- PRI #5 (5-10sets with resistance loop)

- PRI #4 (12 sets; perform 4 sets left to 1 set right)

- PRI #7 (5 sets)

Conditioning/Resistance training (30-45 minutes)

-PRI #8 (5-10 sets total mixed with resistance training)

-Example; athlete would perform 1 set of PRI #8 between rack squat sets

-PRI #9 (5-10 sets total mixed with resistance training)

Cool Down (10 minutes)

- PRI #2 (3-4 sets)
- PRI #3 (5-10 sets)
- PRI #5 (5 sets)

Beginning week 5 you can introduce the left sidelying knee toward knee activity. It is basically a progression of left sidelying right glut max, and very challenging (Figure 2). The athlete still shifts the right knee forward, but not as far, and rotates the right knee up. They should feel the right glut max. The next step is to push the left hip down and turn or rotate the left knee up. The left

knee will only lift 1-2 inches and the leg should feel extremely heavy to the athlete. Watch your athletes carefully. This activity is easy to cheat on. The pelvis should remain motionless, only the left femur should move or rotate. The athlete should report strong perception of the left inner thigh and left outer hip. You can make the exercise harder by shifting the right knee forward further. Many athletes will need to start without shifting the right knee forward rather start with the knees lined up and progress to adding the right knee shift.



Figure 2

Week 5

Warm up (15 minutes)

-PRI #1 (10-20 sets with 15-20 second hold on left, 3-5 second hold on right)

-PRI #6 (5 sets, see Figure 2)

-PRI #5 (5 sets with resistance loop)

-PRI #4 (12 sets; perform 4 sets left to 1 set right)

Conditioning/Resistance training (30-45 minutes)

-PRI #8 (5-10 sets total mixed with resistance training)

-PRI #9 (5-10 sets total mixed with resistance training)

Cool Down (10 minutes)

-PRI #2 (3-4 sets)

-PRI #3 (5-10 sets)

-PRI #5 (5 sets)

Week 6

Warm up (15 minutes)

-PRI #1 (10-20 sets with 15-20 second hold on left, 3-5 second hold on right)

-PRI #6 (5 sets)

-PRI #5 (5 sets with resistance loop)

-PRI #4 (12 sets; perform 4 sets left to 1 set right)

Conditioning/Resistance training/Plyometrics (30-45 minutes)

-PRI #8 (5-10 sets total mixed with resistance/plyometrics sets)

-Example; athlete would perform 1 set of PRI #8 between rack squat and/or between box jump sets

-PRI #9 (5-10 sets total mixed with resistance/plyometric sets)

Cool Down (10 minutes)

-PRI #2 (3-4 sets)

-PRI #3 (5-10 sets)


-PRI #5 (5 sets)

Week 7-Continue per the order of week 6. You can progress PRI 8 by adding a resistance loop around the ankles.

Week 8- Continue per the direction of weeks 6 & 7. Add stove pipe squats to both PRI 8 and 9, but make sure the positions of left AFIR and right AFER are maintained

In summary the outlined program is by no means perfect for every coach and their environment or coaching situation. It does provide a specific example of how to integrate Postural Restoration techniques into a conditioning program and it can be modified based on the amount of time available, the size of group, and the type of athletes the coach is working with. This program is ideal for small groups, 5-15 athletes, but can be modified at your discretion to apply to larger conditioning groups, greater than 20 athletes. The involved nature of some of the gravity eliminated exercises-specifically the prone reciprocal hamstring curls- would be very difficult to have 20 or more athletes performing. It may be necessary to reduce the number of times per week you implement this activity. If you omit this activity on some days replace with PRI activity #2 (90-90 hemibridges). Or you instruct the athletes one on one initially then have them perform these activities on their own prior to their scheduled workout with you. Another issue coaches may have with this program is the delay in adding resistance training. I understand this is not realistic for some coaching situations, particularly those working with male athletes. If you have to start sooner, as early as week 1 or 2, keep the weight low

and watch your athletes carefully, but do not change the progression of the Postural Restoration exercises.

Initially, implementing Balanced Regeneration with your accustomed conditioning and resistance training methods will be somewhat time consuming. As you familiarize yourself with the techniques the process will become more efficient and will streamline nicely into your scheduled workouts. Following this article installment will be a final synopsis that revisits functional strength testing, summarizes key biomechanical concepts, and discusses implementation of an abbreviated version of Balanced Regeneration during in-season training. 

Contact Lisa at lisabartels@earthlink.net