

NEW RICHMOND

Tiger Strength,  
Conditioning, &  
Performance



2015-2016

## **TSC CORE PURPOSE**

Inspire each student-athlete to achieve to their full athletic potential.

## **TSC CORE VALUES**

ATTITUDE

EFFORT

CHARACTER

COMMITMENT

## **TSC GOALS**

1. Increase by 15% the 1 rep max (1RM) of student-athletes in TSC.
2. 100% of boys and girls athletic teams participating in Tiger Strength & Conditioning for the 2015-2016 athletic seasons.
3. Reduce student-athlete injury % by 10%.
4. Provide effective, relevant education for coaches in the district on strength & conditioning.

## **TSC MISSION STATEMENT**

The purpose of the Tiger Strength and Conditioning Program is to maximize the potential of each student-athlete through a comprehensive, year-round program that develops all of the vital components necessary in achieving athletic excellence.

## **TSC VISION**

To consistently produce elite athletes in the state of Wisconsin.

To develop high quality, well-educated coaches in strength and conditioning.

## TSC PHILOSOPHY

**Safety is #1. Student-athletes will train in a safe, supervised environment using proper technique in a program that is developmentally appropriate.** <sup>(7, 19, 21, 25, 28)</sup>

The philosophy of the varsity Tiger Strength program is to train athletes to win through the consistent improvement of their physical capacities. <sup>(3-5, 7, 10, 14, 16, 20, 21, 24)</sup> Training will focus on functional movements that are multi-joint, multi-directional, multi-planar, and multi-level prescribed in a sequence that has a purpose. <sup>(27)</sup> Training will improve general, overall athleticism – speed, power, agility, quickness, balance – and provide the student-athlete the opportunity to participate in many athletic activities at a high level. <sup>(27)</sup>

The New Richmond High School Tiger Strength & Conditioning Program will challenge our student-athletes in the aspects of leadership, attendance, work ethic, attitude, effort, character, and commitment. These criteria are used when determining the athlete chosen for TSC athlete of the year. Student-athletes that exemplify the highest levels of achievement also become eligible for the NSCA (National Strength & Conditioning Association) All-American Strength and Conditioning Athlete of the year as determined by the NSCA in conjunction with the President’s Council on Fitness, Sports and Nutrition. <sup>(19, 25)</sup>

## TSC YOUTH PHILOSOPHY

The philosophy of the youth Tiger Strength and Conditioning program is to focus on developing general, overall athleticism. <sup>(1, 2, 4, 7, 8, 10, 14, 16, 17, 20, 21, 24)</sup> Student-athletes will be provided a variety of locomotion patterns and all gross motor movements that develop youth comprehensively. The youth TSC program will employ FUNdamental movements that encourage and provide the opportunity to participate in multiple sports. <sup>(10, 12)</sup> Training will be fun and participation based. Student-athletes will learn to train, and train to compete. <sup>(3)</sup>

## TSC PROGRAM OVERVIEW

Based on the mission to maximize the potential of each student-athlete through a comprehensive, year-round program, all student-athletes will follow a similar year-round macrocycle. <sup>(27)</sup> The year-round macrocycle is divided into five mesocycles, each roughly 9-12 weeks long. Four of the mesocycles correlate with the four quarters of the academic year; the fifth mesocycle is the summer strength program. Mesocycles vary in length due to the season an athlete is competing in. If a playoff berth overlaps with the beginning of a new season, the

athlete should continue training with the playoff team until the season is over. <sup>(27, 28)</sup> Following the playoff season, the athlete should have one week of rest before beginning the next mesocycle. Training sessions follow a consistent pattern: <sup>(23)</sup>

1. Dynamic Warm-Up
  - a. Core of Four
  - b. Dynamic
  - c. Plates Circuit
2. SAQ or Plyometric Training
3. Strength Training Exercises
4. Core Work
5. Conditioning
6. Stretching Routine
7. Refuel

Not every component is present in every workout and it may not be possible to administer a training session in this sequence every time, but it is the preferred method and, if possible, is followed every time.

#### TSC Core Lifts

- Squat
- Bench Press
- Power Clean
- Hex Deadlift

## **IN-SEASON PROGRAM**

In-season athletes are required to complete a strength training session **2 times per week**.<sup>(18, 27, 28)</sup> The in-season strength training session will focus on increasing flexibility and increasing strength. As with any cycle of the TSC program, the focus is on improving overall athleticism through functional, multi-joint strength building movements. Sport-specific lifts are not implemented into the program because of the needs of the athletic program.<sup>(27)</sup> Sport specificity takes place during the practice sessions the student-athlete has with his/her coach. Lifts will be selected to improve strength and reduce the chance of injury in high-need areas.

In the first few weeks of the in-season mesocycle, athletes have a tendency to experience muscle fatigue or soreness because of the demands of the beginning of a new season. Sport-specific practices put stress on their bodies they have not experienced in some time. During this time in the weight room, emphasis is placed on avoiding overuse injuries and increasing technique and form.

### **In-Season Strength Training Schedule**

#### **Day 1**

Bench Press

Back Squat

Clean

2-4 Auxiliary Lifts

#### **Day 2**

Bench Variation

Squat Variation

Hex Bar Dead Lift

2-4 Auxiliary Lifts

## OFF-SEASON PROGRAM

Off-season athletes are asked to strength train 3 days per week<sup>(18, 27, 28)</sup> (Monday, Wednesday, Friday), and participate in SAQ and plyometric training 2 days (Tuesday, Thursday). The mesocycle focuses on developing the athlete overall outside of an athletic season. Again, the primary goal is to improve general athleticism through functional, multi-joint, multi-muscle lifts. The number of auxiliary lifts is increased in the off-season program because the student-athletes are not participating in a sport-specific practice at any time.

### Off-Season Weekly Strength Training Schedule

#### Day 1

Squat Variation

Bench Variation

GHD/ Reverse Hyperextension

2-4 Auxiliary Lifts

#### Day 2

Power Clean

Hex Dead Lift

GHD/ Reverse Hyperextension

2-4 Auxiliary Lifts

#### Day 3

Back Squat

Bench Press

GHD/ Reverse Hyperextension

2-4 Auxiliary Lifts

## SUMMER PROGRAM

The summer program is run Monday-Thursday with 5 different training sessions from 7:30am-12:00pm. The training sessions are organized to serve athletes of varying abilities and needs. Most students will not have the demands of an academic schedule during this time and the primary focus is athletics. This allows for the inclusion of SAQ, plyometric, conditioning, and core work to be included in each training session. The summer program is broken down into a general preparedness phase, strength phase, and a power phase. <sup>(15)</sup> The general preparedness phase allows student-athletes with little experience or returning from an injury to rebuild their strength and develop proper technique before building strength. The strength phase uses multi-joint, multi-muscle exercises to increase strength and speed, improve technique, and prepare the athlete for the power phase. The power phase will again use multi-joint, multi-muscle exercises to increase power and explosiveness and prepare the athlete for the upcoming season. The summer program also prepares athletes to transition to the off-season program if they are not participating in a fall sport.

## TSC COACHES EXPECTATIONS

### **Program Supervision & Instruction** <sup>(19, 25)</sup>

The main causes of athletic injuries and incidences in the weight room are poor facility maintenance, defective equipment, and inadequate instruction or supervision. The importance of staffing is readily apparent in each circumstance.

Participants in a Tiger Strength & Conditioning must be properly supervised and instructed at all times to ensure maximum safety, especially because of the athletic, skillful nature of the activities implemented in the TSC program.

Cardinal principles:

- Always be there.
- Be active and hands-on – coach the athletes!
- Be prudent, careful, and prepared.
- Be qualified and educated (on the program, exercise technique, athletes in the session, etc.).
- Be vigilant.
- Be informed on safety and emergency procedures.
- Know the participants in the session.
- Monitor and enforce rules and regulations.
- Monitor and scrutinize the environment.

### **Facility & Equipment Set-up, Inspection, Maintenance, Repair & Signage**

The Daily Log for Facility and Equipment Inspection can be found in a black 3-ring binder in the weight room office.

#### **Daily Checklist**

- Make sure all of the weights are in the proper place
- Check the First Aid kit to see if anything needs to be replaced
- Document any excessive wear or damage to equipment – document under Daily Log for Equipment Inspection tab
- Document any maintenance performed – document under Daily Log for Equipment Inspection tab
- Inspect all flooring for damage and wear
- Monitor air temperature to stay between 68-72 degrees
- Sweep the floor



- Sweep the platforms
- Wipe down the cardio equipment
- Bench side of Brute racks: bar hooks at position # 9, safety bars at position #5, benches flat
- Squat side of Brute racks: bar hooks at position #12, safety bars at position #6
- Each rack should have an extra bar, a hex bar, and a box
- Plates on either side of Brute rack: two 2.5's, two 5's, four 10's, two 25's, unlimited 45's
- Organize the rack of bumper plates
- Each platform should have an Olympic bar
- Med balls and stability balls stored properly
- Miscellaneous equipment stored in proper location – e.g. cable machine, reverse hyper, etc.
- Plyometric boxes stored properly
- All cards and folders stored properly

#### Weekly Checklist

- Dust squat racks
- Wipe down med balls
- Organize and clean weight room office
- Spot vacuum low traffic, high debris areas of weight room
- Disinfect weight room equipment
- Dust dumbbell racks
- Sweep under dumbbell racks
- Mop high traffic areas

#### Coaching Staff Roles and Responsibilities

##### Head Strength & Conditioning Coach

- Develop, schedule, and monitor performance training programs for athletic teams and athletes with intensities that are implemented gradually and progressive to encourage proper exercise acclimatization and to minimize the risk of adverse health effects.
- Instruct proper resistance training exercise techniques; speed and agility development, and conduct testing and evaluation of physical performance.
- Work with administration and assistant coaches on budget, staff and facilities including general maintenance of the training facilities.
- Conduct annual orientation for staff, sport coaches and athletes to administer policies and emergency procedures.

- Work with trainer to insure health and safety of participants.
- Communicate and collaborate with athletic director, head sport coaches, and assistant strength & conditioning coaches at the high school and middle school.
- Demonstrate flexibility in implementation of auxiliary lifts.

#### **Assistant Strength & Conditioning Coach**

- Assist in development, schedule, and monitoring of performance training programs for athletic teams and athletes.
- Instruct proper resistance training exercise techniques; speed and agility development, and conduct testing and evaluation of physical performance.
- Assist in annual orientation for staff, sport coaches and athletes to administer policies and emergency procedures.
- Communicate and collaborate with athletic director, head sport coaches, and strength & conditioning coaches at the high school and middle school.

#### **Relationship with Head Sport Coaches**

- The Tiger Strength & Conditioning Staff will develop and present the recommended plan for training. If the sport coach wants to change the plan, his/her recommendations will be considered. However, the final decision will come from the Tiger Strength & Conditioning Staff.

#### **Professional Development**

- The Tiger Strength & Conditioning Staff will attend at least 1 strength, conditioning, & performance clinic during the academic year.

## TESTING AND EVALUATION

### Goals <sup>(19, 25)</sup>

- Alert coaches of the importance of standardization of testing and evaluation procedures
- Learn to identify athletic potential
- Increase the awareness of appropriate test selection
- Provide a system to track athletes' progress and provide referenced standards
- Educate coaches on how to properly administrate performance, strength, endurance and baseline testing for athletes
- Determine strengths and weaknesses of individual athletes so realistic goals can be set
- Guide the design of Tiger Strength and Conditioning to achieve the desired goals
- Compare pre and post test data to determine the effectiveness of Tiger Strength and Conditioning
- Compare annual test data to determine the progress of the team and individual athletes
- Continue to strengthen the Tiger Strength and Conditioning credibility

### Testing & Evaluation

Tiger Strength and Conditioning will offer 4 testing windows throughout the calendar year. These testing windows will occur at the completion of a TSC mesocycle. Testing results will provide guidance for the coach and student-athlete for the next mesocycle, whether it is in-season, off-season, or the summer program.

Testing will allow the coach and student-athlete to learn their strengths and weaknesses and direct their training to achieve maximum results. Testing also helps determine if the program is effectively achieving the goals desired and most importantly, how the athlete is progressing. Testing serves as a great motivator. Testing correctly will provide student-athletes the necessary positive reinforcement the need to obtain maximum results. Once athletes begin to achieve their goals they will be eager to train harder and set higher goals.

2015-2016 Testing Windows:

**#1 – May 26-May 29, 2015**

**#2 – July 27-July 31, 2015**

**#3 – December 21-December 23, 2015**

**#4 – March 14-March 17, 2016**

**Test Data Collection Card Example**

Test Data Collection Card			
Name:			
Sport(s):			
Age:		Height:	
Date:		Weight:	
Performance Tests			
Test	Score	Goal	
Vertical Jump			
Broad Jump			
Pro Agility			
40-Yard Dash			
Strength Tests			
Test	Score	Goal	
Back Squat			
Bench Press			
Power Clean			
Hex DL			

**Order of Performance Testing Procedures** <sup>(19, 25)</sup>

The order of tests is as follows: height, weight, vertical jump, broad jump, pro-agility run, 40-yard dash.

**Performance Testing Procedures**

**Height**

Equipment and materials needed to measure an athlete’s height:

- Device to measure height or flat wall against which the athlete stands
- Measuring tape or marked area on wall
- Device to place on the head of the athlete that forms a right angle with the wall

Procedure:

1. Athlete must take shoes off
2. Athlete must stand with heels, buttocks, back and head against the wall
3. Place device on athlete’s head so that a right angle is formed with the wall

4. Measure to the nearest  $\frac{1}{2}$  inch and record height on card

### **Weight**

Equipment and materials needed to measure an athlete's weight:

- Scale

Procedure:

- Athlete must weigh-in with only t-shirt, shorts, and socks (no shoes, sweats, or equipment)
- Athlete should weight prior to any activity to avoid fluctuations due to dehydration
- Round body weight to the nearest whole pound

### **Vertical Jump**

Equipment and materials needed to measure an athlete's vertical jump:

- Device or unit to measure vertical jump

Procedure:

1. Athlete stands with side to the unit
2. Make sure feet and hips are next to the unit
3. Athlete then reaches as high as possible with one hand
4. With feet flat, the athlete jumps, touching the highest vane possible (no steps or shuffling of the feet are allowed)
5. The jump is recorded and displayed to the nearest  $\frac{1}{4}$  inch
6. Record the better of two trials

### **Pro-agility Run**

Equipment and materials needed to measure an athlete's pro-agility run:

- Electronic Brower Timing System
- 20 yards or more of flat running surface on wood basketball floor

Procedure:

1. Refer to diagram in the Brower Timing System bag and instructions on how to set up and use timer.
2. Start in the athletic position straddling the center line.
3. The athlete will place the right hand on the starting sensor.

4. The athlete always begins by running to the right first – the second test the athlete will put the left hand on the sensor and run to the left first.
5. Run 5 yards and touch the line with the right hand
6. Return running 10 yards to the left and touch the line with the left hand
7. Run back to the right through the center line and sensor
8. Record time to the nearest .01 of a second

Timer Procedure:

1. Sensor should start facing the ceiling
2. After the athlete passes in front of you to touch the line the **second time**, the time should be quickly lowered to allow the athlete to register a time.

\*Tripod locks in location to allow for accuracy.

### **40-Yard Dash**

Equipment and materials needed to test an athlete's 40-yard dash:

- Electronic Brower Timing System
- 40 yards or more of flat running surface

Procedure:

1. Athlete places one hand on the starting sensor
2. Athlete runs through finish line and timer will record time
3. Record time to the nearest .01 of a second

### **Order of *Strength Testing* procedures**

The order of recommended strength tests is the power clean, bench press, back squat, hex deadlift.

### **Power Clean**

- A platform or rubber floor with 30 x 36 in. area on it
- An Olympic bar, bumper plates, and locks

Procedure for the power clean:

1. Set the power position
2. Squat down to the bar
3. Keeping the back flat, deadlift the weight quickly to just above the knees

4. Extend immediately at the hips, knees, and ankles explosively to achieve triple-extension and accelerate the bar upward while extending onto the balls of the feet and shrugging the shoulders
5. Drive through the big toes and begin pulling the body under the bar by flexing at the elbows and keeping them high to keep the bar close to the body
6. Jump the feet into an athletic stance keeping them in the area and flex at the hips, knees and ankles to sit into a quarter-squat position
7. Quickly rotate the elbows down and then up ahead of the bar catching it on the front portion of the shoulders
8. Stand erect with the feet flat on the ground and shoulders directly over the balls of the feet for the repetition to count
9. Lower the bar in a slow, controlled manner between reps by keeping the elbows slightly flexed, sitting into a squat position, and allowing it to land on the thighs aiding its deceleration

Comments:

- Once the bar is lifted off the platform the lift begins
- Each athlete is allowed one attempt of maximum of five consecutive repetitions
- Lower the bar to the thighs, then the floor in a controlled manner between repetitions
- Stand erect after each repetition
- If the bar is dropped to the platform the lift is over. The bar must remain under control at all times; during the downward phase of the lift, between repetitions, and including lowering the bar to the platform at the completion of the fifth repetition

### **Bench Press**

Equipment and materials needed to measure an athlete's bench press:

- Flat bench and Olympic set

Procedure:

1. The bench press is performed on a flat bench with a spotter
2. Grasp the barbell wider than shoulder-width apart with a pronated, closed grip
3. Both feet should be flat on the floor, and the back flat on the bench
4. With the assistance of the spotter, the bar is taken off the rack and brought over the lifter's shoulders
5. The bar is lowered to the chest (the athlete cannot bounce the weight off the chest)
6. Keeping the feet on the floor and the back flat on the bench, the athlete pushes the bar back up, and slightly toward the head.

7. The repetition is good only when the arms are fully extended with the bar above the shoulders

## **Squat**

Equipment and materials needed to measure an athlete's back squat:

- Squat rack and Olympic set

Procedure:

1. The bar should be placed across the center of the shoulders with the hands grasping it tightly with a pronated, closed grip
2. Place the feet hip-width to shoulder-width (athletic stance, power position) with the toes pointed slightly out
3. Head and eyes should be focused straight ahead to prevent arching and rounding of the back
4. Inhale and hold, isometrically contracting the abs and low back to stabilize the torso-trunk
5. The torso should be kept flat and straight with the axis of flexion running through the hip thigh joint (the torso-trunk should be held between 35 and 45 degrees)
6. Push the hips back and down while simultaneously flexing at the knees and distribute body weight to the heels
7. Maintain torso-trunk position and descend slowly in a controlled manner not allowing the knees to extend past the toes (DO NOT bounce, jerk, or stop the squat at the bottom)
8. Drive the feet through the floor while simultaneously raising the hips and shoulders
9. Keep the abs tight; maintain proper head-eye and torso-trunk position to stand erect and tall back in the starting position for the repetition to count

Comments:

- When performing the back squat, the proper depth has been achieved when the mid-thigh is parallel to the floor, while still maintaining the proper back squat form
- Squatting to additional depth with proper back squat form will result in greater core flexibility, muscular development, and strength of the lower body than the mid-thigh position
- Squats will vary based on differences in body types, length of the legs, and flexibility of the ankles

## **Hex Deadlift**



Equipment and materials needed to measure the athlete's hex deadlift:

- Hex bar and bumper plates

Procedure:

1. Athlete should step into the bar and set the power position with an athletic stance
2. Head and eyes should be focused straight ahead to prevent arching and rounding of the back
3. Inhale and hold, isometrically contracting the abs and low back to stabilize the torso-trunk
4. Drive the feet through the floor while simultaneously raising the hips and shoulders
5. Keep the abs tight; maintain proper head-eye and torso-trunk position to stand erect for the rep to count
6. Lower the bar back to the floor in a controlled fashion without dropping the weight

Comments:

- For athletes 6'2" and taller the hex bar may be flipped for use of raised handles

### **Reliability**

Reliability is dependent upon the consistency of testing conditions and results. The testing results will be different if testing is done outside on the grass one time, then inside on the basketball court another time. Weather conditions or condition of the field will affect the testing results. If possible, the same coach should administer the test each time.

Reliability checklist

- Check with the trainer before testing an injured athlete
- Use the same warm-up routine prior to testing (never test without a warm-up)
- Use the same coach to perform testing procedures
- Test fresh - not after a workout
- Perform tests on the same surface each time
- Perform tests using the same equipment each time
- Perform tests at the same time of the day each time
- With small groups test all athletes at one station then move to the next test station
- With large groups - have athletes move from test station to test station
- Announce number of attempts for each test
- Announce number of recommended warm-ups
- Post the test procedures

- Record the best effort
- Cool-down or stretch prior to completing tests

## References:

1. American Academy of Pediatrics. Intensive training and sports specialization in young athletes. *Pediatrics*. 106: 154-157, 2000.
2. American Academy of Pediatrics. Strength training by children and adolescents. *Pediatrics*. 121: 835-840, 2008.
3. Balyi, I, and Hamilton, A. Long-term athlete development: windows of opportunity – optimal trainability. Victoria, British Colombia, Canada: *National Coaching Institute British Colombia & Advanced Training and Performance Ltd*: 1-8, 2004.
4. Balyi, I. Sport system building and long term athlete development in Canada, the situations and solutions, coaches report. *The Official Publication of the Professional Coaches Association*. 8(1): 25-28, 2001.
5. Barmett, LM, Van Beurden, E, Morgan, PJ, Brooks, LO, and Beard, JR. Does childhood motor skill proficiency predict adolescent fitness? *Medicine & Science in Sports & Exercise*. 40(12): 2137-2144, 2008.
6. Bazylar, C, Abbott, H, Bellon, C, Taber, C, and Stone, M. Strength training for endurance athletes: theory to practice. *Strength and Conditioning Journal*. (37)2: 1-12, 2015.
7. Beachle, TR, and Earle, RW. *Essentials of Strength Training and Conditioning*. (3<sup>rd</sup> ed.) Champaign, IL: Human Kinetics, 2008.
8. Boyle, M. Starting a high school strength program. *Strength and Conditioning Journal*. 23(4): 73-74, 2001.
9. Brown, L. Box squats for high school athletes. *Strength and Conditioning Journal*. 20(6): 21, 1998.
10. Faigenbaum, AD, Meadors, L. A coaches dozen: 12 FUNdamental principles for building young healthy athletes. *Strength and Conditioning Journal*. 32(2): 99-101, 2010.
11. Faigenbaum, AD, Mediate, P, and Rota, D. Sleep need in high school athletes. *Strength and Conditioning Journal*. 24(4): 18-19, 2002.
12. Gorman, C. How we're harming young athletes. *Time Magazine*. September 10, 2006.
13. Johnson, J. Overuse injuries in youth athletes: Cause and prevention. *Strength and Conditioning Journal*. 30(2): 27-31, 2008.
14. Lanners, G. Training young athletes: long-term athletic development. *NSCA North Central Regional Conference*. 2015.
15. Macaluso, T. Periodization and complex training in a high school summer program. *Strength and Conditioning Journal*. (32)6: 95-98, 2010.
16. Meadors, L. Practical application for long-term athletic development. *National Strength & Conditioning Association*. 2012.
17. Meadors, L. Program design for the junior high school athlete. *Strength and Conditioning Journal*. 17(2): 70-75, 1995.
18. Murlasits, Z, and Langley, J. In-season resistance training for high school football. *Strength and Conditioning Journal*. (24)4: 65-68, 2002.
19. National Strength and Conditioning Association. *Emergency Policies and Procedures*. 2011.

20. Rhordi, LS, and Oliver, JL. The youth physical development model: A new approach to long-term athletic development. *Strength and Conditioning Journal*. 34(3): 61-72, 2012.
21. Rhordi, LS, Oliver, JL, Meyers, RW, and Moody, JA. Long-term athletic development and its application to youth weight lifting. *Strength and Conditioning Journal*. 34(4): 55-66, 2012.
22. Takano, RK. Weightlifting in the development of the high school athlete. *Strength and Conditioning Journal*. 35(6): 66-72, 2013.
23. Johnson, R. *Trojan Power: The Wayzata Trojan Pillars of Strength*. Wayzata High School. 2015.
24. The Aspen Institute's Project Play. *What does science say about athletic development in children?* 2015.
25. Triplett, T. Williams, C, McHenry, P, and Doscher, M. Strength and conditioning professional standards and guidelines. National Strength and Conditioning Associations Position Paper. 2009.
26. Whaley, O. A high school weight-training curriculum model. *Strength and Conditioning Journal*. (21)2: 25-27, 1999.
27. Williams, CA. Program development for the multisport high school athlete. *Strength and Conditioning Journal*. 30(4): 51-55, 2008.
28. Unification. Bigger Faster Stronger Position Paper. 2009.