

STRENGTH AND CONDITIONING PHILOSOPHY

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1 Introduction

The purpose of this document is to establish my strength and conditioning philosophy and to catalogue assessment protocols, warm-ups, progressions, prehab routines, and conditioning routines for future use. If you have any feedback or questions, please let me know!

1.1 Basic Philosophy: Injury Prevention & Increased Performance

The purpose of my strength and conditioning program is to prevent injuries and to increase the performance of my athletes.

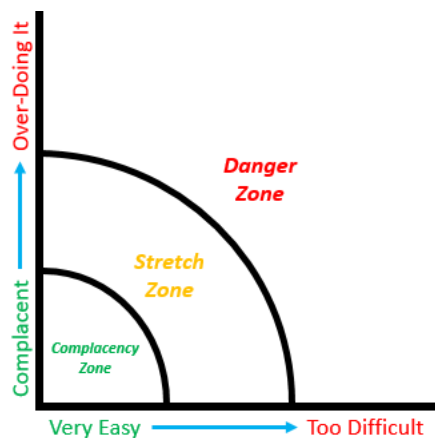
As always, I believe safety comes first. Not only do I want my athletes to be safe in the weight room and in every form of training, but much of the training itself is geared towards decreasing the likelihood of the athletes becoming injured in their sport. Nothing is more important than the safety and well-being of our athletes, and our strength and conditioning program is designed to ensure that.

Beyond safety, our training is designed to increase student-athletes' performance in their sport. Everything we do is geared towards performance-enhancement. If it's not performance-enhancing, then we won't do it. Let's get better together in a safe and productive manner!

1.2 Core Value: Toughness

The core value that is prized above all others in the weight room is toughness. We believe that toughness is the bridge between goals and accomplishment. If you truly want to achieve what you want to achieve, then you will need toughness to do what you need to do to get there. We seek to build toughness, reinforce toughness, and praise toughness in our athletes. If we build tough individuals inside the weight room then simultaneously we are building tough individuals outside the weight room.

Needless to say, we do not want our athletes to be so "tough" that they are negligent about their injuries or about becoming injured. We believe that there is a Complacency Zone, a Stretch Zone, and a Danger Zone. We want our athletes to be in the Stretch Zone. If they are in the Complacency Zone, then they are not pushing themselves and they are not getting better. If they are in the Danger Zone, then they are at risk of injury. The Stretch Zone is where athletes are pushing themselves and getting better, and they are doing so in a safe and healthy manner. That's where a tough athlete will be.



“Say ‘Yes’ to the hard things.” – Mickey Marotti, Strength Coach, Ohio State Football

2 Core Competencies & Other Components of This Program

At the end of the day, we want our athletes to be able to squat, hinge, lunge, push, pull, and carry. These are the fundamental movement patterns that will allow our athletes to have success in their sport.

We also want our athletes to develop power, which means being able to move weight quickly. In our programs, we develop power through power cleans and snatches.

In addition, we want our athletes to be able to change direction, and land well. That is why we incorporate speed & agility routines as well as plyos into our program.

In addition, we like to incorporate ankle stability, shoulder stability, and hip mobility routines during the season to help prevent injuries.

Finally, we want our athletes to be able to run well. We incorporate form-running and conditioning into our off-season program.

Training our athletes to do these things well will decrease their chances of injury and better their performance.

If you aren't training the 6 foundational movement patterns hard and heavy, you're leaving your results and health to chance. –Dr. John Rusin

3 What We're Typically Dealing With

When athletes first get into our gym, here are some qualities that typically describe them:

- They have little to no strength and conditioning training experience
- They lack total body strength, particularly upper body strength
- They struggle with single-leg strength & balance
- They aren't tough

It's important for athletes who step into our weight room for the first time to understand that this is all ok! We want to meet you where you are, and we believe we can build a path to get you where you want to go.

The most important thing is to understand that becoming tough is going to be the key to unlocking your potential in the gym. We can be the best teachers and build the best workouts for you, but if you aren't tough then you aren't going to improve. On the other hand, if and when you do develop toughness, you will be shocked at how quickly you will improve. So toughen up and let's get to work!

4 Assessments

It's essential that we have baseline strength measures, conditioning tests, speed tests, and jumping tests so that we can make a plan and track our progress. Typically we like to get all our testing done in one or two days. Here is a rough outline of what that a typical testing looks like:

Strength Measures – Morning Session

Goal: 1RM, defined as the maximal weight a player can lift for 1 repetition with correct technique, tests assess the players' strength capacity.

Procedure: Warm up, select a weight that is within perceived capacity, progressively increase resistance, ~3-5min rest between sets, progressively increase resistance until the player cannot complete the repetition, the final weight is your 1RM

Tests: **Bench Press, Back Squat, Trap Bar Deadlift, Power Clean, Snatch, Overhead Press**

Conditioning, Performance, and Speed Tests – Afternoon Session

Goal: Test athletes' conditioning, vertical jump, and speed

- **T-Test** – combines different types of locomotion and tests your change of direction and speed. Start at a base cone, sprint 10yds forward, touch the cone in the middle, shuffle to your left 5yds, shuffle all the way over to your right 10 yds, shuffle back to the middle 5yds, and then back pedal 5yds.
- **Vertical jump** – countermovement and non-countermovement.
- **Beep Test** – tests cardio. Layout 2 cones 20 meters apart. When you hear the beep, run to the other side and get there before the next beep sounds. Wait until the next beep, and then run back. Repeat this process until you are unable to keep up with the beeps. When you miss a beep, you must continue to run to the marker in front of you. Turn at the end and try to catch up with the pace within 2 more beeps. The test ends when you fail to reach the opposite marker for two consecutive beeps. Your final score is the last level and shuttle you completed before missing a beep.

5 Warm-Ups

Each type of workout requires its own type of warm-up. What follows is a catalogue of warm-ups for different types of workouts:

Upper body lift warm-up

- Wrist circles (10 reps each direction)
- Horizontal arm swings (10 reps)
- Contralateral arm swings (10 reps)
- Full arm circles (10 reps forward and backward)
- Trunk rotations (10 reps each side)
- Band dislocations (10 reps)

- Band pull-a-parts (10 reps)
- Banded internal & external rotation, field goals & sideways field goals (10 reps each arm)
- Scap push-ups (10 reps)

Lower body lift warm-up

- Cycle @ easy pace (50-60% of Max HR) for 5mins
- Forward leg swings (10 reps each side)
- Sideways leg swings (10 reps each side)
- Clam shells x 2 (10 reps each side x twice per side)
- Scorpion stretch (6 reps each side)
- Mountain climber stretch (6 reps each side)
- Knee-drive rotating squat (6 reps each side)

Speed & agility warm-up

- Jog 15 yds fwd & backward
- Skip w/ arm swings 15 yds fwd & backward
- Side shuffle hop w/ arm swings 15 yds facing each way
- Karaoke 15 yds facing each way
- Knee hugs for 15 yds
- Skipping knee raises 15 yds
- Step lunges 15 yds
- Backward step lunges 15 yds
- Straight leg kicks 15 yds
- Butt-kicks 15 yds
- 70% cuts (15 yds fwd, 15 yds back, 30 yds forward)
- 90% cuts (15 yds fwd, 15 yds back, 30 yds forward)
- 100% cuts (15 yds fwd, 15 yds back, 30 yds forward)

Conditioning warm-up

- Toe-walking (15 yds fwd & back)
- Heel-walking (15 yds fwd & back)
- Baby skips w/ arm circles (15 yds fwd & back)
- Sideways jumping jacks (15 yds facing each way)
- Karaoke w/ step-over (15 yds facing each way)
- Butt-kicks (15 yds)
- Straight-leg kicks (15 yds)
- Straight-leg quick-strides (15 yds)
- Power-skip (15 yds)
- Fast skips (15 yds)
- 70% sprint (15 yds)
- 90% sprint (15 yds)
- 100% sprint (15 yds)

Pre-game warm-up

- Reflexive Performance Reset (RPR) Wake-up Drills (belly-breathe in and out throughout drills):
 - Zone 1:
 - Thumb up & down sternum (diaphragm)
 - Pointer & middle finger bottom of rib cage side to side (diaphragm)
 - Pointer & middle finger two inches outside belly-button & two inches down (Psoas)
 - Pointer & middle finger trace the outline of back of skull (glute)
 - Zone 2:
 - Thumbs trace circles around bony knobs on top of butt cheeks (hamstrings)
 - Thumbs trace upper butt side to side (hamstrings)
 - Thumbs trace body just above hip bones fwd & back (saw your body in half)
 - Bottom of hand rub on top of and medial to knee cap (quad)
 - Thumb trace medial side of quads (inner thigh)
 - Karate chop inner thigh up & down
 - Rub groin area up & down inner thigh (core)
 - Thumb trace hip bones back & forth
 - Zone 3:
 - Pointer & middle finger, 45-degree angle up from belly-button a few inches (supraspinatus)
 - Thumbs opposite spot on the back (tibialis)
 - Thumbs to rib cage (right below pecks)
 - Pointer & middle finger trace collar-bone (right below neck)
 - Thumb & middle finger trace jaw line (glute)
 - All four fingers trace the sleeve-line under shoulders
 - Claw up and down the lateral part of rib cage
 - Thumb trace around the pectoral muscles
- Dynamic warm-up as needed followed by pre-game team drills

6 Landing/Plyos

To avoid injuries, it's critical that we teach our athletes how to land well. The following is a good "Landing/Plyos" progression, some of which we incorporate in our lifts throughout the year:

- 1) Box-drops w/2ft land (4 reps front, 4reps left, 4reps right)
 - a. Step-off w/ alternating feet
 - b. Feet land @ same time
 - c. Break your hips and land soft w/ hands straight back
 - d. Knees stay directly under hips and back stays straight
 - e. Keep eyes up
- 2) Box-drops w/ single-leg land (2 reps each leg front, 2 reps each leg left, 2 reps each leg right)
 - a. Land soft, w/ hands in front
- 3) Bosu-ball jumps (10 reps)
 - a. Jump from the floor onto the Bosu ball using correct technique
 - b. "Stick" the landing like a gymnast
- 4) Reverse Bosu-ball jumps (10 reps)
 - a. Jump from the floor onto a Bosu ball that is turned upside-down

- 5) Split Squat jumps (20 reps)

7 Conditioning

In-season, we strongly believe that we will not need extra conditioning because our practices will be difficult enough. We also recognize in-season that not everyone plays an equal amount in the games. That is why we tend to have bench players play more in practice and starters play less in practice. This evens-out the conditioning load on the entire roster throughout the season, and avoids us having to do a separate conditioning program for our bench players.

Out-of-season, we generally have two conditioning days. One day is Wind Sprints, another day is Hill Sprints. For both days, we want our athletes going FULL SPEED during their sprints. If they find themselves no longer at FULL SPEED, then they should stop. We also like to encourage Pose Method Running and Nasal Breathing Only.

For Hill Sprints, the # of reps depends on the hill but generally between 8-12 reps will do.

For Wind Sprints, we tell our athletes to sprint 45-55 yards for 15-20 reps, depending on their fitness level.

Conditioning Day 1

- 1) Conditioning Warm-Up
- 2) Stationary single-leg butt-kickers (4x30secs each leg)
 - a. Heel to butt
 - b. Everything stays in straight line
 - c. Mid-foot/ball of foot touches ground first
 - d. Minimize the time your foot is in contact w/ the ground
- 3) Stationary alt-leg butt-kick-hops (2x60secs)
 - a. Look 30/40yds ahead of you
 - b. Keep chest up and shoulders slightly back
 - c. Hands are lightly moving with your step
- 4) Stationary run (2x60secs)
 - a. Look 30/40yds ahead of you
 - b. Forefoot hits ground first
 - c. Minimize the time your foot is in contact w/ the ground
 - d. Hands move with feet back and forth, not side-to-side
- 5) 30-yd runs (1@60%, 1@70%, 1@90%, 1@100%)
 - a. Lean your whole body forward to run, not just upper body
 - b. Feet always land beneath center of body
 - c. Amount you lean forward determines how fast you go
- 6) Hill sprints (8-12 reps)
 - a. Recovery = walk back down hill

Conditioning Day 2

- 1) Conditioning Warm-Up
- 2) Stationary single-leg butt-kickers (4x30secs each leg)

- a. Heel to butt
 - b. Everything stays in straight line
 - c. Mid-foot/ball of foot touches ground first
 - d. Minimize the time your foot is in contact w/ the ground
- 3) Stationary alt-leg butt-kick-hops (2x60secs)
- a. Look 30/40yds ahead of you
 - b. Keep chest up and shoulders slightly back
 - c. Hands are lightly moving with your step
- 4) Stationary run (2x60secs)
- a. Look 30/40yds ahead of you
 - b. Forefoot hits ground first
 - c. Minimize the time your foot is in contact w/ the ground
 - d. Hands move with feet back and forth, not side-to-side
- 5) Wind sprints (15-20 reps, 45-55 yds per rep)
- a. Recovery = walk back to the start line

8 Speed & Agility

The following is a good Speed & Agility routine:

- 1) Forward Pogos (2x15yds)
 - a. Eliminate the knee and the hip
- 2) Single-leg Pogos (2x15yds each foot)
 - a. Eliminate the knee and the hip
- 3) Alt-leg Pogos (2x15yds)
- 4) Lateral Pogos (2x15yds each direction)
- 5) Lateral Line hops (6x10secs)
- 6) Single-leg lateral line hops (3x10secs each leg)
- 7) Karaoke (2x15yds each direction)
 - a. Flip the hip
 - b. Toes stay forward
 - c. Cross over your body
 - d. Flip arms up and down when you cross over
- 8) Cross-over run (2x15yds each direction)
- 9) Cross-over w/ 180-degree change of direction (4x5yds each direction)
 - a. "Plant and punch"
- 10) Sprint w/ 180-degree change of direction (4x5yds each direction)
- 11) Spring w/ zig-zag change of direction (4x4 45-degree turns @ 5yds)

9 Prehab

In-season, we always do ankle and shoulder prehab to ensure our athletes are healthy. Here are the prehab routines:

9.1 Ankle Prehab

No shoes!

The following exercises are all unilateral (need to do both legs)

On ground:

- Single-leg toe touch (opposite hand, opposite foot) x10
- Single-leg Supermans (forward & back) x10
- Single-leg lateral Supermans x10

On Foam Square or Bosu Ball:

- Single-leg star-touches (around the world, then back)
- Reverse lunge x5
- Forward lunge x5
- Lateral lunge x5

9.2 Shoulder Prehab

- Side-lying internal rotation w/ weight x12
- Side-lying external rotation w/ weight x12
- Stomach-lying Is, Ts, Yx, & Ws w/ weight x12
- 1min bar hangs x3

9.3 Hip Mobility

- Seated hip swivels x20
- 90:90 Internal rotation stretch (left side, 20 secs)
- 90:90 Internal rotation lifts (left side, 10 secs)
- 90:90 Hip Swivel (left side, 10 reps)
- 90:90 Internal rotation stretch (right side, 20 secs)
- 90:90 Internal rotation lifts (right side, 10 secs)
- 90:90 Hip Swivel (right side, 10 reps)
- Low Hip Flexor Lunge (right side, 20secs)
- Low Hip Flexor Twists (right side, 10 secs)
- Low Hip Flexor Lunge (left side, 20secs)
- Low Hip Flexor Twists (left side, 10 secs)
- Standing Pancake Fold (30 secs)

10 Periodization

We want to make sure that our training makes sense with respect to the basketball calendar and academic calendar. Here is what we think about for each phase of the year:

10.1 Off-Season

Our goal in the off-season is to increase work capacity. We achieve this by:

- General Physical Preparedness (GPP)/Developing Aerobic & Alactic Systems
- Developing relative/max strength through progressive overload
- Developing eccentric & isometric strength through progressive overload
- Acceleration & max velocity running

Here is a sample summer workout:

- A1) KB Swings: 4 x 6
- A2) Standing Cable Chop 3 x 8/side
- A3) Push up to downdog: 3 x 6
- B1) KB Goblet Split Squat: 3 x 6
- B2) TRX Rows: 3 x 12
- B3) Band Pull apart: 3 x 8
- C1) Single leg step up: 3 x 6/side
- C2) Split stance landmine press: 3 x 8/side
- C3) ¼ TGU: 3 x 3/side
- D1) Hill Sprints: 8 – 12 reps, walk down the hill for rest, try to use nasal breathing only

10.2 In-Season

Our goal in-season is to maintain or increase work capacity while peaking for the playoffs. Some in-season considerations are:

- All conditioning happens in-practice
- Bench players get more practice reps than starters, to even out conditioning load
- Add competitive speed work into dynamic warm up (tag games)
- Continue strength training 3x/week (quality over quantity)
- Strength training post game if time permits
- Static stretching post game if time permits
- Rebound workouts day-after-game

Here is a sample in-season workout:

- Dynamic warm-up (10 minutes, focus on CONTROL)
- Speed and agility work (10 minutes)
- Strength Training (3-4 exercises)
- A1) Single-leg Romanian Deadlift (2-3 sets x 4 reps)
- A2) Med Ball Slams (2x8 reps)
- A3) KB 1 arm press (2x6 reps/arm)
- A4) KB Goblet Squat (2x6 reps)

10.3 Dead Time

We believe it's critical to give athletes time off from training so that they can re-charge and avoid burnout. We generally grant these 3 weeks immediately after the season ends (usually in March).

11 Gamification

If you tell an athlete to run a sprint, they'll run it fast. If you line up two athletes next to each other and make it a race, they'll run it even faster. To take advantage of the human psychology of this, to the extent possible we try to gamify (1) warm-ups, (2) speed & agility work, and (3) conditioning. Gamification takes many forms, but it usually looks the same: like athletes having fun.

It's important to remember that we're building athletes, not weight room warriors. Gamification keeps everything fun & functional, and makes the practice of strength and conditioning more than just putting up big numbers on the rack.