



**2017**  
**MULTI-SPORT**  
**STRENGTH & CONDITIONING**  
**SUMMER MANUAL**

*“The price of excellence is discipline. The cost of mediocrity is disappointment”*

**John Torrey, CSCS, USAW**

Head Strength & Conditioning Coach, Princeton High School

Email: [johntorrey@princetonk12.org](mailto:johntorrey@princetonk12.org)

Phone: 609.558.2000

Website: [phs.princeton12.org](http://phs.princeton12.org)

Social Media:

**Table of Contents:**

- 1) Program Philosophy and Design
- 2) Exercise Database and Workout Template
- 3) Warm Up
- 4) Strength
- 5) Speed, Agility, Quickness, Conditioning Schedule
- 6) Sports Nutrition
- 7) Dietary Supplement Safety
- 8) SAQC Drills, Diagrams, & Descriptions

## Program Philosophy and Design

The following summer workout packet was created to maximize your athletic potential. It is a 10 week program broken up into 3 phases which contain lifting, conditioning, and rest days. It is important that you follow the program, 1) so you don't over train, 2) so you maintain fitness levels gained in the fall and spring seasons so you can build upon them in the upcoming season, 3) so when you return in the fall we can begin with more sport specific strength exercises and conditioning drills as a team.

Your sports demand GPP (general physical prep – stability, mobility, movement quality, endurance, work capacity, flexibility, pre-hab, re-hab, etc.), Max Strength, Max Power, Multi Directional Speed, Change of Direction and Agility, and Anaerobic and Aerobic Conditioning. This manual covers every one of those needs.

The 10 week program is designed to have 3 lifting sessions per week and 2 speed-agility-quickness-conditioning (SAQC) sessions per week. Lifting days should typically happen M/W/F with SAQC days being on T/TH. If for some reason, SAQC and lifting sessions have to be done on the same day, the following progression should be used: 1) Speed/Agility/Quickness, followed by 2) strength training, followed by 3) conditioning.

## The Schedule:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Off Day	Day 1 Lift	SAQC	Day 2 Lift	SAQC	Day 3 Lift	Off Day

- **Athletes new to sports performance training and Olympic lifts** – Do not perform any of the exercises and/or movements that you are unfamiliar with unless supervised by a qualified Strength and Conditioning Coach.

For instance, you cannot Power Clean until you have mastered the proper progressions, beginning with **1. RDL**:

- 1. RDL**
- 2. Clean Pull**
- 3. Jump Shrug**
- 4. High Pull**
- 5. Hang Clean**
- 6. Power Clean**

- So when that progression shows up on your workout please perform the exercise that you feel most comfortable and safe with (refer to the enclosed Exercise Database and Template). Do not try to teach yourself how to clean from a YouTube video. Only a qualified Strength Coach can properly teach the clean.
- **Returning Players and experienced lifters** – Do the workouts as written. Use the Exercise Database and Workout Template to substitute exercises if your gym does not have the equipment needed or if you cannot safely perform the prescribed exercise.

## *Speed, Agility, Quickness and Conditioning*

Please see the attached agility diagrams that showcase the movements, as well as, conditioning drills. You should perform your speed and agility work and conditioning in the same session, but, on a different days as your lifting session. If, due to your schedule, you absolutely need to do a running workout the same day as a lifting workout; perform SAQ BEFORE strength training and perform conditioning AFTER strength training. Static stretching can be performed after SAQC.

## *Plyometric Training*

Plyometric exercises are quick, powerful movements using a pre-stretch or countermovement that involves the stretch-shortening cycle. The purpose of these exercises are to increase the power of the movements by using the natural elastic components of muscle and tendon and the stretch-reflex.

The exercises should be performed after properly going through the warm-up regimen and prior to the strength training exercises of this program. Please be sure to focus on using proper mechanics and generating maximal effort into each rep performed. These exercises are about maximal power training, NOT, as cardio respiratory exercises.

## *Exercise Database and Workout Template*

Not everyone will have the opportunity to use a sports performance training facility for their summer training. Therefore, please utilize the below database so that you will be able to substitute exercises based on needs, ability, and equipment available. The Workout Template allows you to create your own workout. Choose exercises from the Database and plug them into the Workout Template.

<b>Exercise Database</b>		
<b>Back - vertical</b>	<b>Shoulders</b>	<b>Biceps</b>
1 neutral chin up	1 BB shoulder press	1 EZ bar curl
2 angled chin up	2 DB shoulder press	2 DB curl
3 angled pull up	3 neutral DB shoulder press	3 Hammer curl
4 wide pull up	4 BB Push Press	4 BB Reverse Curl
5 neutral pulldown	5 Handstand pushup	5 incline DB curl
<b>Power</b>	<b>Back - horizontal</b>	<b>Chest</b>
1 Hang Snatch	1 Deadlift	1 BB incline Chest press
2 Hang clean	2 Rack pull	2 DB incline chest press
3 High pull	3 T-bar row	3 DB flat chest press
4 Deadlift	4 DB 1 arm row	4 BB chest press
5 Rack pull	5 Chest supported row	5 Weighted TRX pushups
<b>Lower - pull</b>	<b>Lower - push</b>	<b>Triceps</b>
1 Glute Ham raise	1 BB Squat	1 Dips
2 TRAP Bar Deadlift	2 Front squat	2 close grip bench press
3 RDL	3 Bulgarian Squat	3 close grip weighted pushup
4 Reverse Hyper	4 Belt squat	4 close grip weighted incline pushup
5 BB Hip Thrust	5 Leg press	5 DB triceps pullover

## Warm-Up

It is imperative that you, as an athlete, engage in a proper and thorough warm up before strenuous physical activity, such as speed/agility and conditioning or strength training. The following protocols should be followed for each session.

- A. Foam Roll:** Foam rolling pre-workout provides your tissues a myofascial release. This means that by applying gentle sustained pressure into the myofascial connective tissue you will help to eliminate pain and restore motion.
- B. Dynamic Warm-up:** This will consist of dynamic movements to help you stimulate blood flow to active muscle groups, increase core temperature increase joint viscosity, enhance neurological and biomechanical efficiency, and stimulate sport specific movements.

### Foam Rolling:

Illiotalband (IT Band – outside of leg, knee to hip)

Adductors (inside of leg, knee to groin)

Quads

Hamstrings

Calves

Back

Lats

Glutes

**Dynamic Warm Up for SAQC and Conditioning Sessions** (Perform each exercise for 20 yards):

Forward skips with lateral arm swings

Skip forward while swinging your arms back and forth

Backward skips with forward arm circles

Skip backward while doing forward arm circles

Forward A-skips

Skip forward focusing on keeping the toes up while staying on the ball of the foot

High knees/butt kickers

Jog forward while kicking your butt with high knees

Side shuffle with arm swings (R)

Stay low and slide without heels touching

Side shuffle with arm swings (L)

Stay low and slide without heels touching

Walking knee hugs

Maintain an erect posture, pull your knee with both hands into the chest and release

Toy soldiers/high steps

Kick your foot to your opposite hand. Snap the foot back to the ground.

Heel up and grab (quad stretch)

Catch your ankle with the opposite hand behind your butt and pull.

Walking lunge with hip flexor stretch

Lunge forward and press the kneeling hip forward and down

Walking RDL stretch (hamstrings)

Kick one leg behind you while you reach for your grounded foot

Lunge + elbow to instep

Lunge forward and put the right hand on the ground next to the left foot and drive the left elbow to the instep

Inch Worm w/Thoracic Extension to Pike (Downward Dog)

With straight legs reach to the ground and walk your hands out to a push-up position, press hips to the ground and raise chest, move to downward dog position, raise one leg and drive foot to same side hand, bring other foot in and recover

### **Dynamic Warm-up/Pre-hab for Lifting Sessions:**

Jumping Jacks x10

Seal Jacks x10

Deep Squats x10 (slow)

Bent leg iron crosses x5 (each side)

Rolling V-Sit x5

Outside of Hand Mountain Climbers (foot comes to the outside of hand) x5 each side

Fire Hydrant Circles x10 (each leg, both directions)

Seated Piriformis Stretch/or Pigeon Pose x20-30 seconds each side

Rear Foot Elevated Hip Flexor Stretch 2x30sec. each

Band Pull-aparts (scap pulls) x25



Band External Rotations x25  
Band High Pull with Overhead Rotation x15  
Pronated letters x15 (using 3-5lb DB's make a letter "Y" with your arms for 15 reps then make a letter "W" with your arms)  
Mini-Band Protocol (lateral walks, forward and backward walks, knees out) 1x20 each  
PVC Overhead Squats x10  
Push-up Plank with Shoulder Tap to Fly 5x each  
Squat with Thoracic Rotation 5xe  
Reverse lunge with hip flexor stretch 1x5e  
Glute Bridge 1x20  
Single Leg Glute Bridge 1x15 each

Click here for a video description of most of the above stretches:

<https://www.youtube.com/watch?v=FSSDLDbacc>

## *Sports Nutrition*

Your ability to recover and grow from your workouts is directly related to your nutrition. Nutrition also directly affects your ability to lose body fat and/or gain muscle.

## **Fast Nutrition Facts**

---

- **Training doesn't stop on the field or in the weight room**
  - Smart Food Choice is just as important during your training/practice days as it is before a game. You must always be conscious that you are "training" your body with the correct food choices.

- **Benefits of Daily Good Nutrition:**
    - Decreased time of recovery
    - Increased energy
    - Decreased loss of muscle tissue in-season
    - Increased stamina
    - Decreased body fat percentage
    - Injury prevention
    - Improved health
  - **Eat CARBS before a workout to increase your energy levels!!**
    - Toast with jelly
    - Gatorade or juice
    - High carbohydrate energy bar
    - Fruit
    - Cereal
  - **Protein + CARBS = RECOVERY**
    - Be sure to EAT after a workout
    - CARBS – Restore used muscle energy stores
    - Protein – Help start repairing muscle damage and grow bigger
  - **GET SLEEP!** In order for your muscles to fully recover, you must get an adequate amount of sleep. A majority of muscle tissue growth and repair occurs during a deep sleep.
-

# Pre-Exercise Meals: The Good and the Bad

- **Why eat prior to exercise?**
  - Eating breakfast prior to exercise would replenish muscle and liver glycogen stores from an overnight fast.
  - Eating a meal high in carbohydrates raises blood glucose levels. Muscles can then use blood glucose rather than their own glycogen stores for energy, saving the glycogen for exercise.
- **When to eat the pre-competition meal:**
  - A large meal should be eaten **3-4 hours prior** to the event.
    - This allows for maximum digestion, absorption, and metabolism of the nutrients.
    - Ensures that the stomach has emptied prior to the event.
- **Foods to increase consumption of:**
  - **Carbohydrates**
    - Digest and absorb quickly by the muscles as glucose, sparing muscle glycogen for exercise.
    - Carbohydrates are the primary source of energy for anaerobic and prolonged high intensity aerobic activity.
    - It costs the body less energy to digest carbohydrates than protein or fat – saves your energy for your sport.
  - **Fluids**
    - Hydrate and prevent dehydration from occurring too soon during exercise
    - 17-20 fl. oz., 2-3 hours before practice/competition
    - 7-10 fl. oz. after the warm-up (10-15 minutes before practice/competition)
- Foods to Reduce Consumption of:**
  - **Protein and Fat-**
    - Both **digest slowly** and require a higher metabolism for digestion and absorption, the additional metabolic heat generated may impair hot weather performance.
    - Too much prevents carbohydrates from quick digestion and absorption to the muscles.
    - A **small amount of lean protein** in the pre-exercise meal will provide a small amount of energy to muscle cells, decrease the breakdown of muscle protein, increase protein synthesis in muscle after the workout, and delay hunger prior to the exercise.
  - **Fiber**
    - Too much fiber in a pre-competition meal may lead to **gastric distress** during the competition/activity.
    - Fiber **decreases the absorption of glucose** and delays gastric emptying.
    - Avoid raw vegetables and high bran cereal.
  - **Avoid high fructose based drinks 1 hour before and during exercise.**
    - High sugar content may cause gastric distress when not given proper time to be absorbed prior to exercise
  - **Limit caffeinated beverages:**
    - They may cause gastro-intestinal distress.

- **Pre-competition meal:**

- **600-1,200 calories of carbohydrates**

150-300 grams of carbohydrate

- **Complex-carbohydrates** that are easy to digest and are low to moderate in fiber content.

- **Low glycemic index carbohydrates** may be best in order to avoid a spike in blood sugar and will then aid in fueling the body for prolonged exercise

- Examples: spaghetti, cereal, wheat, rye or pumpernickel bread, banana, orange juice, apple, pears, grapefruit, oranges, strawberries, carrots, peas

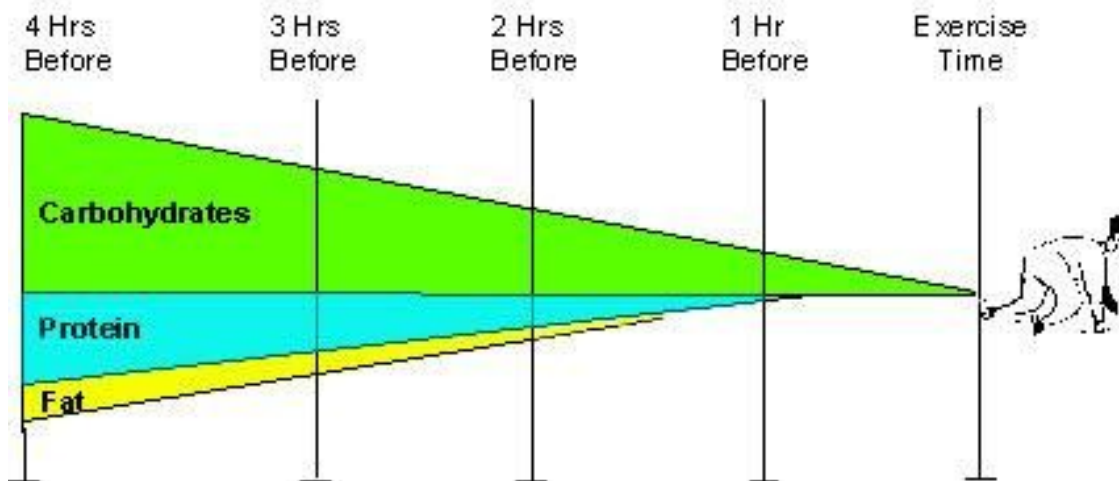
- **2-4 oz. of lean protein:** chicken, turkey, egg whites, pork, ham

- Try to avoid nuts, seeds, high-fat cuts of meat, and full-fat dairy prior to a competition or workout.

- **Low-fat, carbohydrate and protein containing foods:**

- Chickpeas, kidney beans, lentils – eat only a small amount of these due to high fiber content

- Low-fat dairy products: low-fat cottage cheese, skim milk, yogurt



Your pre-meal 3-4 hours before exercise can include carbohydrate with some protein and fat. As you near the time of exercise the size of the meal/snack should decrease and the selection should be primarily carbohydrates with minimal fat and protein.

## Post-Exercise Nutrition: Recovery

### 3 Reasons to eat after exercise:

- **Refuel** for next bout of exercise

- **Rehydrate**
- **Repair Muscles**

#### Who should eat after exercise?

- **Athletes that benefit MOST** from post-exercise nutrition recovery **are those who:**
  - **Engage in regular intense exercise**
  - **Play tournament competitions or multiple qualifying round sports**
  - **Involved in competitive events/sports with only 1-2 days for recovery**

#### When to eat after exercise:

- **IMMEDIATELY:** “Window of Opportunity” – **first 2 hours post-exercise** is when the rate of CARB storage in muscles is the FASTEST.
- For **MAXIMUM** replacement of CARB stores (GLYCOGEN):
  - Eat **small meals** consisting mainly of CARBS and some protein **every 2-3 hours** until a maximum of 2,000 calories has been eaten depending on the level of rigorousness of the exercise
- OR**
- Eat a **large meal** high in CARBS **within 2 hours** of exercise and a CARB and protein-rich snack a few hours later

#### What to eat after exercise:

- **Carbohydrates:**
  - Replenishing your CARB stores is vital to the recovery process and necessary for optimal energy levels during future workouts.
  - **YOUR GOAL: EAT** within **first 15 minutes of ending exercise** to initiate replenishment of CARB stores (glycogen) within the muscles.
  - **Continue to eat/drink 200-300 calories from CARBS every 2 hours after exercise:** giving the body a steady stream of CARBS allows for optimal replacement of used stores.
  - **Moderate to high glycemic index CARBS replace CARB stores the FASTEST**

1. Potatoes
2. Carrots
3. Honey
4. Corn
5. Peas
6. Pasta
7. Bananas or Oranges
8. Cereal
9. Rice (white or brown)
10. Bread (white or wheat)

- **Fluids:**
  - **Gulping hydrates better** than sipping
  - Drink even if you aren't thirsty
  - For every **1lb. lost** due to sweat = **drink 16 oz.** of water
    - Fluids with sodium, potassium, and magnesium help **SPEED UP** rehydration

#### Protein:

- “Feeding” the muscle with necessary building materials helps **stimulate muscle repair and growth**
- Aids in replenishment of glycogen when paired with CARBS post-exercise

# Muscle Gain Strategies

---

- **Eat more calories**
  - How many?
    - **500-700 more** calories than what you are currently eating
      - **50% carbohydrates**
      - **50% protein**
    - For Example: PB&J sandwich and a glass of milk or a turkey and cheese sandwich with a banana and chocolate milk
- **Total caloric intake**
  - Need to increase the amount of calories you eat on heavy activity days.
  - If **lean muscle** is to be **increased**, the amount of calories you eat must exceed the amount of calories burned during exercise
  - You must take in enough calories to meet the physical demands of your day-to-day activities. If not, the body is forced to sacrifice lean muscle tissue for energy.
- **Nutrient dense diet:**
  - Dairy products, vegetables, fruit, beans, meat, and grains must all be a part of your diet. Eating from only a few of the food groups doesn't provide your body with all the nutrients that you need to perform at maximum capacity.
- **Post-workout snack:** Eaten within 2 hours of exercise, it should be both carbohydrate and protein rich.
  - The carbohydrate restores used muscle energy stores and the protein will stimulate muscle repair and growth.
- **Eat snacks throughout the day:**
  - Fruit, nuts, or granola.
- **Bedtime snack-** One hour before sleep, have a nutrient dense snack like a sandwich with milk or juice or a bowl of cereal
- **How long until I see results?** Muscle growth is a slow process. A half pound to a pound of muscle growth a week can occur when extra calories are combined with weight training

## Muscle Gain Foods

---

- **Milk** – High in protein, carbohydrates, Vitamins D, A, and calcium and is an easy way to take in the extra calories for muscle growth. **Chocolate milk is highest in calories!**
- **Juice** – Drink juice with meals instead of water; this will keep calories and carbohydrates up.
- **Sandwiches** –
  - Peanut butter and honey sandwich for a snack
  - Add an extra piece of **cheese** to your turkey or ham sandwich for an extra **115 calories**
  - Make it a triple-decker sandwich with an extra slice of bread
- **Lean protein** –
  - Chicken, eggs, fish, pork, beans, and red meat.
- **Salad** – Pile on the vegetables and protein choices like beans, eggs, ham, and cheese
- **Pasta** – Rich in energy and when combined with meat sauce the meal would include three food groups: meat, grain and vegetable.
- **Apple sauce** – Higher in calories than a piece of fruit
- **Add a tablespoon of olive oil to your pasta or salads** – 120 extra calories!
- **Soups** – Cream based are higher in calories
- **Peanut Butter** – 2 Tablespoons = 190 calories!

## Body Fat Loss Strategies

---

- **Eat fewer calories** than what you are expending every day – 1 pound = 3,500 calories
  - **500 calories** is the most you should cut back daily
  - If more than 500 calories are cut, then you could experience low energy levels during exercise.
- **Never Skip Meals – Why?**
  - Lowered energy levels for exercise
  - Muscle break down for energy
  - May lead to overeating later
- **Cut out the fat** – Cut any full fat items from your diet and replace with low-fat food choices to ensure your body uses its current fat stores.
- **Avoid processed foods and “snack foods” like chips or pretzels.**
- **Do not fry foods in oil or fat.** Bake, broil, sauté, or microwave foods instead.
- Eat plenty of **vegetables throughout the day.**
- **Increase dietary fiber** to help **satisfy** hunger by choosing whole wheat breads, fruits, and vegetables.
- **Increase your water intake** up to 1 oz per ½ lbs of body weight
- **Eat high-quality proteins that are low in fat.**
  - Lean ground meat, chicken, turkey, pork, ham, Canadian bacon, fish, eggs, skim milk
- **Eat smaller food portions:** By decreasing the amount you eat at meals by ¼, you will decrease the number of calories you eat by ¼.
- **Eat slowly:**
  - It takes time for your body to sense that it is full
  - This will help prevent overeating
- **How long until I see results?** Only lose **1-2 lbs/week** safely. This is to ensure that you maximize fat loss and minimize muscle loss.

**1 lb. = 3,500 calories:** 500 calories fewer a day for 7 days. Losing weight is a DAILY awareness of calorie intake vs. expenditure.



# Body Fat Loss Foods

---

- **Choose:**

- **Skim milk** versus whole or chocolate milk
- **Water** instead of Gatorade or juice at meals or during the day
- **Plain Toast** instead of Jam or butter on toast
- **No dressing or Extra Virgin Olive Oil w/ Balsamic Vinegar** instead of full fat dressing
- **Broth-based soup** instead of creamy
  - Soups are great because the high water content fills you up and keeps you hydrated!

- **Do eat**

- **Fruits and vegetables** as snacks
  - **They are higher in fiber to help keep you full!**
  - **Lower in fat and calories**
  - 2 pieces of whole fruit
  - 2 cups of sliced fruit or berries
  - Eat lots of fresh, canned, or frozen vegetables
- **Low-fat meats** like chicken or turkey instead of bacon, sausage, or pepperoni
- **Whole grains** – they keep you full longer due to the fiber content

- **Reduce intake of:**

- **Fried foods** such as French fries, chicken fingers, hash browns, onion rings
  - **Sweets** like cakes, cookies and ice cream
-

# Hydration Tips

---

1. **2 Hours before exercise:** drink at least 2 cups (16 oz.) water
2. **5-15 minutes before:** drink 1 cup (8 oz.) water
3. **Every 10-15 minutes during:** ½ cup – 1 cup water
4. **In hot weather drink as often as possible**

## Sport Tips:

- COOL fluids do DOUBLE DUTY:
  - Help COOL the body
  - Leaves the stomach FASTER for better hydration
- Carry around a bottle of water during the day to keep you drinking
- Drink even if you are not thirsty – Thirst is our body's way of saying that we are already dehydrated
- Gulping down water/sports drink hydrates the body FASTER than sipping
- Sports drinks are great for long duration activities and hot weather – the CARBS keep you energized and fluid and electrolytes keep you hydrated

## How to tell if you are dehydrated:

1. Weight: Weight before & after exercise helps determine how much you need to drink.  
Every 1 lb. of weight lost via sweat = 16 oz. of fluids
2. Thirst = Dehydration ... drink even if you aren't thirsty!
3. Urine: COLOR should be light yellow and not have a strong ODOR

# Using Nutrition to Prevent Muscle Cramping

---

## What is a muscle cramp?

A painful involuntary skeletal muscle contraction that will not relax

## Why do athletes get muscle cramps?

1. **Dehydration** – large loss of water and electrolytes
2. **Lack of minerals** in food or drinks
3. **Muscle fatigue** due to inadequate training

## How you can AVOID them ...

1. Guzzle plenty of **fluids** before, during, and after exercise
2. While exercising in the heat or for longer than 30 minutes, grab an **electrolyte enhanced beverage**, like **Gatorade or PowerAde**
3. Devour **foods high in electrolytes and minerals (fruits & vegetables)**
4. **Stretch** before exercise
5. **Gradually increase intensity and duration** of exercise
6. Wear **loose fitting clothing**

## Foods high in minerals

- **Calcium:** dairy products: milk, cheese, yogurt
- **Magnesium:** nuts, green leafy vegetables, milk, meat

## Foods high in electrolytes

- **Potassium**
  - o Fruits and vegetables: bananas and potatoes
- **Sodium**
  - o Processed/canned goods: soups, canned vegetables, condiments, tomato sauce, deli meat
  - o Sports drinks or enhanced water
- **Chloride**
  - o Table salt: 60% chloride
  - o Processed foods/canned goods

## What to do if you get a cramp:

Stretch, ice, massage, and gradually begin to move it. Make an [Ice Roller HERE](#).

---

# Dietary Supplement Safety

Dietary supplements are not regulated by the Food and Drug Administration (FDA). Therefore, the safety of those supplements could be compromised. As a result 2, 3<sup>rd</sup> party organizations test dietary supplements for safety. PLEASE NOTE: They are checking to make sure what is on the label is in the bottle. Red Bull has been tested "safe". That does not mean it is a safe choice for you to drink, it means you are safe to know what is inside the bottle or can. Look for these logos on your products

NSF Certified for Sport

[http://www.nsf sport.com/listings/certified\\_products\\_results.asp](http://www.nsf sport.com/listings/certified_products_results.asp)

Informed Choice

<http://informed-choice.org/registered-products>







## Great Resources

The great thing about the Internet is the copious amount of information available to us. The problem with the Internet is that there's a copious amount of information available to us. Here are the sites I read daily:

### Powerlifting and Strength Training –

- Elite FTS
- T-Nation

### Olympic Lifting –

- Catalyst Athletics
- Wil Fleming

### Core Training –

- Dr. Stuart McGill
- Mike Robertson

### Nutrition –

- Precision Nutrition
- My Sports Dietician

### Sport Specific Workouts –

- STACK

### Athletic Performance Exercise Videos -

- XL Athlete

### Speed Training -

- Lee Taft
- Pete Bommarito

