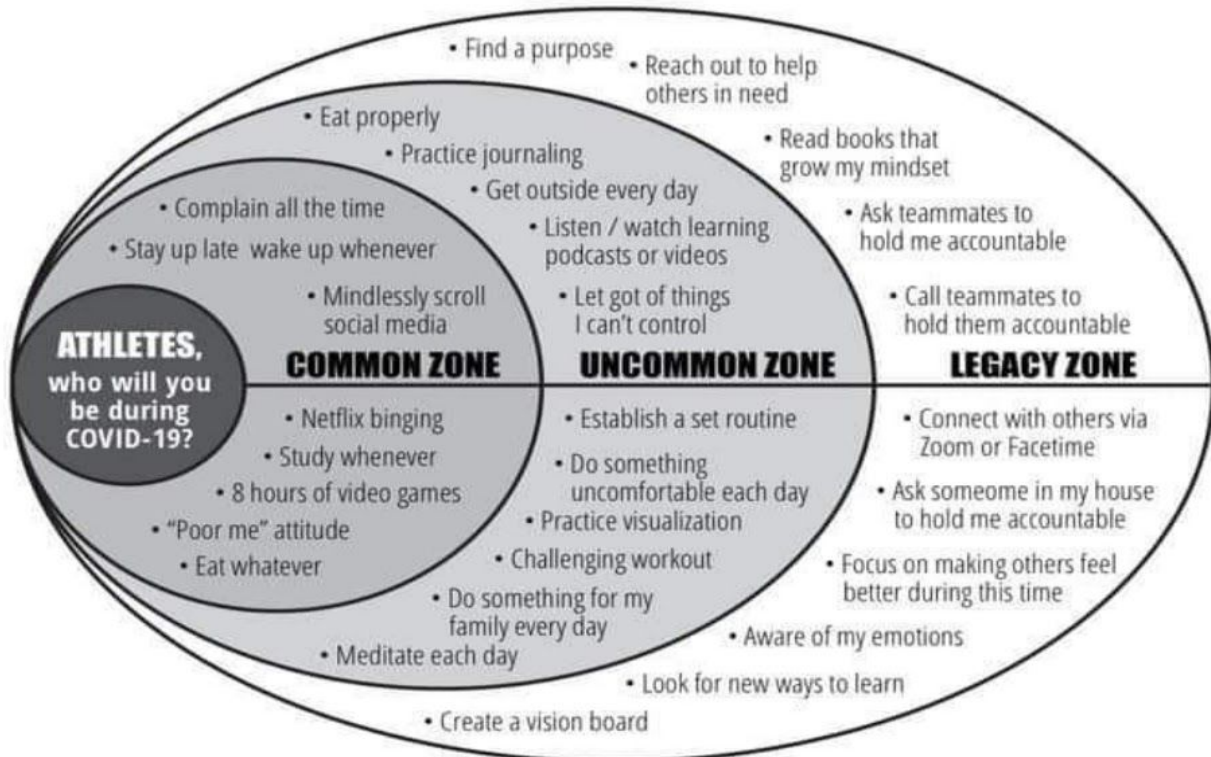


STRENGTH **PIIS** CONDITIONING

Spring 2020 Multi-Sport Strength & Conditioning Manual

ATHLETES, WHO WILL YOU BE?

Which zone do you want to be in during this
COVID-19 Pandemic?



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Program Philosophy and Design

The following Spring workout manual was created to maximize your athletic potential. It is a 12 week program broken up into 3 phases which contain lifting, plyometrics, speed, conditioning, and rest days. It is important that you follow the program, 1) so you don't overtrain, 2) so you maintain fitness levels gained in the summer, fall and, winter seasons, and, so you can build upon them this spring.

This manual contains a bodyweight and/or home object (backpack, buckets, bed sheets, etc.) workout. Be creative and think "outside the box" on ways to increase load or resistance. There are many good ideas on social media on how to achieve this. If you click on the exercises, you will be led to a video depicting the exercise. Additionally, only the first 4 weeks of the bodyweight and/or home object workout are included in this manual. These workouts will be updated every four weeks. I will forward them to your coaches who, in turn, will make them available to you. There is also an 11 week speed, plyometric, change of direction/agility, and conditioning program included. Additionally, each of the above Table of Contents sections have been made into a link and/or attachment and accompanied the manual in the email to your coaches. These links/attachments should be included in your coaches email to you. The links or attachments may be easier to use for accessing the workouts. Make sure you read the entire manual first before you begin the workouts.

This manual contains the basic components necessary for sport performance. Each of these components will enhance your physical development in a manner aimed at optimizing performance while decreasing the likelihood of injury.

The 12 week program is designed to have 3 total body lifting sessions per week, 2 plyometric sessions, 2 sprint sessions, 2 change of direction/agility sessions, and 2 conditioning sessions per week. Lifting days should typically happen M/W/F with conditioning days being on T/TH. If for some reason, plyo, sprint, lifting, COD/agility, and conditioning sessions have to be done on the same day, the following progression should be used: 1) Plyo, 2) Speed 3) COD/Agility 4) strength training, followed by 4) conditioning.

SAQC (Speed, Agility, Quickness, Conditioning) & Strength Training Schedule:

Weeks 1-12

<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>	<u>Friday</u>
Plyo/Sprint	Agilities	Plyo/Sprint	Agilities	Total Body Lift
Total Body Lift	Conditioning	Total Body Lift	Conditioning	

Speed, Agility, Quickness and Conditioning

Please see the attached agility diagrams that showcase the movements, as well as, conditioning drills. 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 cardiorespiratory exercises.

Warm-Ups

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:

Illiotalibial Band (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

Drop Squat/Snap Down x8

Good Morning x8

Lunge x8 each

3 Push-ups followed by arm circles while in the front leaning rest position - each arm forward and backward circles 3x

Shoulder to floor touches x8 each

Fire Hydrant x8 (each leg)

Glute Bridges x8

Additional Warm-up Exercises

Band Pull-aparts x15

Band Rows x15

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 5x

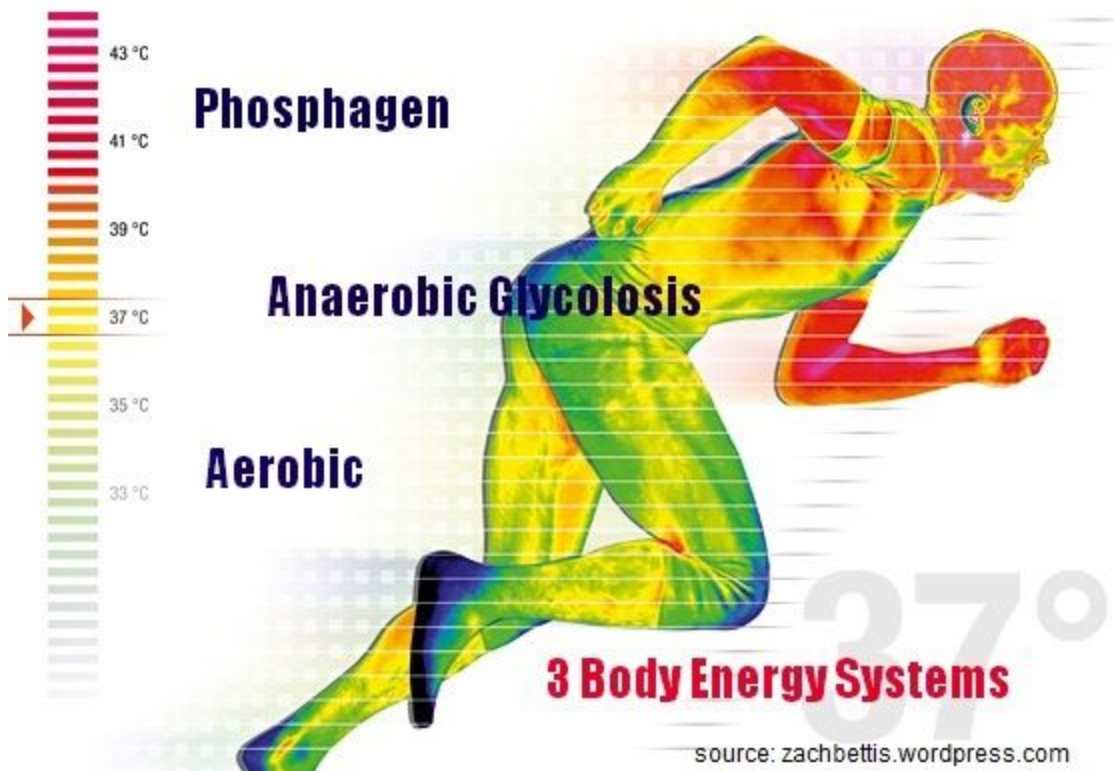
Reverse lunge with hip flexor stretch 1x5e

Single Leg Glute Bridge 1x8 each

Energy Systems and Sport Conditioning Tests & Drills

The following is designed to help athletes and coaches understand the different energy systems utilized in sport performance, as well as, some of the conditioning drills and/or tests that can be utilized and tested in order to prepare for various sports. Included in this packet are the conditioning test requirements for the listed sport as required by their respective head coach.

Energy Systems and Sports



All bodily functions and movement of body parts need a constant supply of energy. This energy is provided to the body by the food we eat. But that food needs to be converted into a chemical compound for use within the body, call it a common currency used by the body for the supply of energy. This chemical compound otherwise known as ATP is that common currency regardless of the energy system employed. There are essentially 3 main energy systems in the human body and either

one of them or a combination of them get activated depending upon the type of activity being performed. It is imperative that Sports coaches and athletes design their training sessions keeping in mind the workings and interplay of the various energy systems.

Furthermore, it is also important to understand that no energy system works independently and that different activities and sports have a dominant system at play, and therefore training and program design need to be planned around the dominant energy system. For example, a marathoner cannot perform short distance sprints while training to compete, as the training demands would not match the Sport specific demands.

A. The ATP-PC System (a.k.a. Phosphagen Energy System)

The ATP-PC System is the high power, short duration energy system of the body. In the absence of oxygen and with the help of enzymes, the body breaks down ATP (Adenosine Triphosphate), and as a result another chemical compound ADP (Adenosine Diphosphate) is produced when the last group of Phosphate is broken. This process is also accompanied with the release of energy of approximately 7.3 Kcal. Although this is a massive release of energy from just a single chemical reaction, it is insufficient to produce more than a few seconds of work. Therefore, this system of energy generation is very effective for activities that require short bursts of energy where the duration is no more than 10-15 seconds. Activities such as the 100-meter dash and the 25-meter swim. In addition to Adenosine, muscle cells also have another high-energy compound stored in them called CP (Creatine Phosphate or Phosphocreatine System). CP plays a vital role in re-synthesizing ATP, thereby replenishing ATP for energy generation.

B. The Anaerobic Glycolytic System (a.k.a. Lactic Acid Energy System)

The Glycolytic system is the moderate power and short duration energy system of the body. When the body requires a high burst of energy for a duration longer than 10-15 seconds it engages the Anaerobic Glycolytic System. This system has a higher proportion of energy storing capability. Energy is provided by the breaking down of Blood Glucose and or Glycogen which is stored in the muscles and liver. Glucose is then further broken down through the process of Glycolysis to create ATP at approximately 16 [calories](#) of energy per minute.

C. The Aerobic Energy System (a.k.a. Oxidative Energy System)

The Aerobic system is the low power and long duration energy system of the body. The Aerobic system produces ATP through either **Fatty Acids** (Fats), Carbohydrates and as a last resort protein. Since the Aerobic system produces ATP in the presence of oxygen it has the capability to provide an endless supply of energy albeit at a much slower pace than the other two energy systems. Energy from this system fuels any activity that lasts longer than 3 minutes at low intensity or at complete rest and is estimated to create approximately 10 calories of energy per minute.

Summary of Energy Systems and Application to Various Sports

Summary of the Various Energy Systems and their Application			
Energy System	ATP – PC	Anaerobic Glycolytic	Aerobic
Duration	1 – 15 Seconds	15 Secs – 2 Mins	Longer than 3 Mins
Description	Strength-Speed-Power	Muscular Endurance-Speed Endurance	Muscular Endurance-Aerobic Power
Sport	Track – 100 meters Swim – 25 meters Field Events	Track – 200, 400, 800 Meters Swim – 50, 100, 200	Mile, 2 Miles or more
Training for Optimal Performance	Utilize short explosive movements and exercises	Longer sessions but still maintaining high intensity. For e.g. Interval training for track, cricket, football etc.	Perform activity in the steady state for a minimum of 20-30 minutes (65-85% VO: max)
Capacity to Generate Power	36kcal per minute	16kcal per minute	10kcal per minute

The Sport Specific Utilization of Various Energy Systems

As you can see from the table above that all three energy systems are interconnected but there will always be a dominance by one or a combination of two energy systems, coaches can effectively utilize this to plan and implement Sport specific energy system training.

Relative Contribution of each Energy System (%)				
Sr. No	Sport/ Activity	ATP – PC	Anaerobic Glycolytic	Aerobic
1.	Aerobic Dance	5	15–20	75–80
2.	Baseball	80	15	5
3.	Basketball	60	20	20
4.	Hockey	50	20	20
5.	Football	90	10	0
6.	Golf Swing	95	5	0
7.	Gymnastics	80	15	5
8.	Rowing	20	30	30
9.	Skiing	33	33	33
a.	Skiing Jumping	80	15	5
b.	Skiing Downhill	50	30	20
c.	Skiing Cross-Country	5	10	85
10.	Soccer	50	20	30
a.	Soccer Goalie, Wing, Strikers	60	30	10
b.	Soccer Half-backs or Sweeper	60	20	20
11.	Swimming	10	20	70
a.	Diving	98	2	0
b.	Swimming 100-m	80	15	5
c.	Swimming 400-m	20	40	40
d.	Swimming 1500-m swim	10	20	70
12.	Tennis	70	20	10
13.	Walking	0	5	95
Source: ptdirect.com				

ATP-PC Energy System Conditioning

Drills/Tests (1-15 Seconds)

20x Shuttle Test

Test Distance: 20yd x 20yd

Test Time: < 8sec with 30sec recovery

- You must start with your foot behind the line. Each trial will begin on the coach's signal. A false start is a failed try.
- The first 10 trials will be a right hand touch at the midpoint line. The second 10 will be a left hand touch. Failure to touch the line or touching with the wrong hand will be a failed try.
- Failure to make it back to the start line within the allotted time will result in a failed trial.
- You must complete all trials and pass 19 of the 20 trials to successfully pass the test.

50yd Sprint

Sprint 50 yards. Rest 30 seconds. Repeat 10 - 20 times.

Excellent: 8.4

Very Good: 8.6

Good: 8.8

Average: 9.0

Fair: 9.2

*** The above conditioning tests/drills are ideal for Football**

Football is well defined in terms of average work duration, work to rest ratios, etc. Consider the following:

- An average play lasts 4-9 seconds.
- On Average, there are roughly 30 seconds of downtime between plays.
- One quarter contains 11-15 minutes of "playing time", depending on the level.
- Each play demands almost max effort from each player on the field.
- Football is a change of direction sport, it is not played exclusively with linear movement.

Considering such, a [conditioning](#) test that demands short bursts of high-intensity with a work to rest

ratio of about 1:5 is ideal.

Anaerobic Glycolytic Energy System (15 Seconds - 2 Minutes) Conditioning Tests/Drills

3x300 Shuttle Test

Test Distance: 25yd x 25yd

Goal: 1 minute

Recovery: 2 minutes

- You must start with your foot behind the line. Each trial will begin on the coach's signal. A false start is a failed try.
- Your foot must cross the line at every 25yd interval.
- Failure to make it back to the start line in the allotted time will result in a failed trial.
- You must complete all 3 trials successfully to pass the test.

100's (sprint- jog back)

Sprint the length of the field (100 yards) then jog/walk back (active recovery) in goal time of 1min for each repetition.

Excellent: 15 repetitions

Very Good: 14 repetitions

Good: 12 repetitions

Average: 10 repetitions

Fair: 8 Repetitions

Cornell Conditioning Test and Goals:

Place two cones 25 yards apart from each other.

50: Goal Time 10 seconds: Recovery 20 seconds

100: Goal Time 20 seconds: Recovery 40 seconds

150: Goal Time 30 seconds: Recovery 60 seconds

200: Goal Time 40 seconds: Recovery 90 seconds

300: Goal Time 60 seconds: Recovery 120 seconds

Test:

200yd: Recovery 1:30

100yd: Recovery :40

300yd: Recovery 2:00

50yd: Recovery 20

150yd: Recovery 1:00

200yd: Recovery 1:30

50yd: Recovery 20

300yd: Recovery 2:00

100yd: Recovery :40

50yd: Finished

300's

Sprint 300 yards ($\frac{3}{4}$ of track) then jog/walk remainder $\frac{1}{4}$ of track (active recovery) in goal time for each repetition. Football field can also be used. Set one cone at each 20yd line on both sides of the field (4 total). Must run from 20yd line to 20yd line, then around 1st goal post, to the opposite side of the field 20yd line to 20yd line, then around 2nd goal post and back to the 20yd line where started.

Excellent: 1 minute

Very Good: 1:05 minutes

Good: 1:10 minutes

Average: 1:15 minutes

Fair: 1:20 minutes

Aerobic Energy System Conditioning Tests

1.5 Mile Run

Run 1.5 miles.

Excellent: 9:30 minutes

Very Good: 10:00 minutes

Good: 10:30 minutes

Average: 11 minutes

Fair: 12 minutes

1.0 Mile Run

Run 1.0 mile

Excellent: 6 minutes

Very Good: 6:30 minutes

Good: 7 minutes

Average: 8 minutes

Fair: 9 minutes

Beep Test (a.k.a Bleep Test, a.k.a. 20 Meter Shuttle Test, a.k.a. Pacer Test)

See link for test variations and standards: <https://beepfitness.com/help.html>

The beep test is a multi-stage [fitness](#) test used to measure cardiovascular fitness and maximum oxygen uptake (VO2 max). It is commonly used by coaches and trainers to measure athlete fitness, or used as a pre-requisite for police, emergency and military organizations. The test is also known as the bleep test, pacer test, 20m shuttle run test or Léger test.

- [Beep Test Rules](#)
- [Scoring and VO2 Max](#)
- [Test Variations](#)
- [Test History](#)
- [App Notes and Support](#)

Test Rules

The Standard test has 21 [levels](#), and each level consists of a different number of shuttles. The test is performed by running between two markers placed 20 meters (65.6 feet) apart, at an increasing pace as indicated by the beeps. The test ends when you can no longer keep pace, or level 21 is completed.

The test can be performed by an individual without assistance, or used by a coach to test an entire team.

Equipment

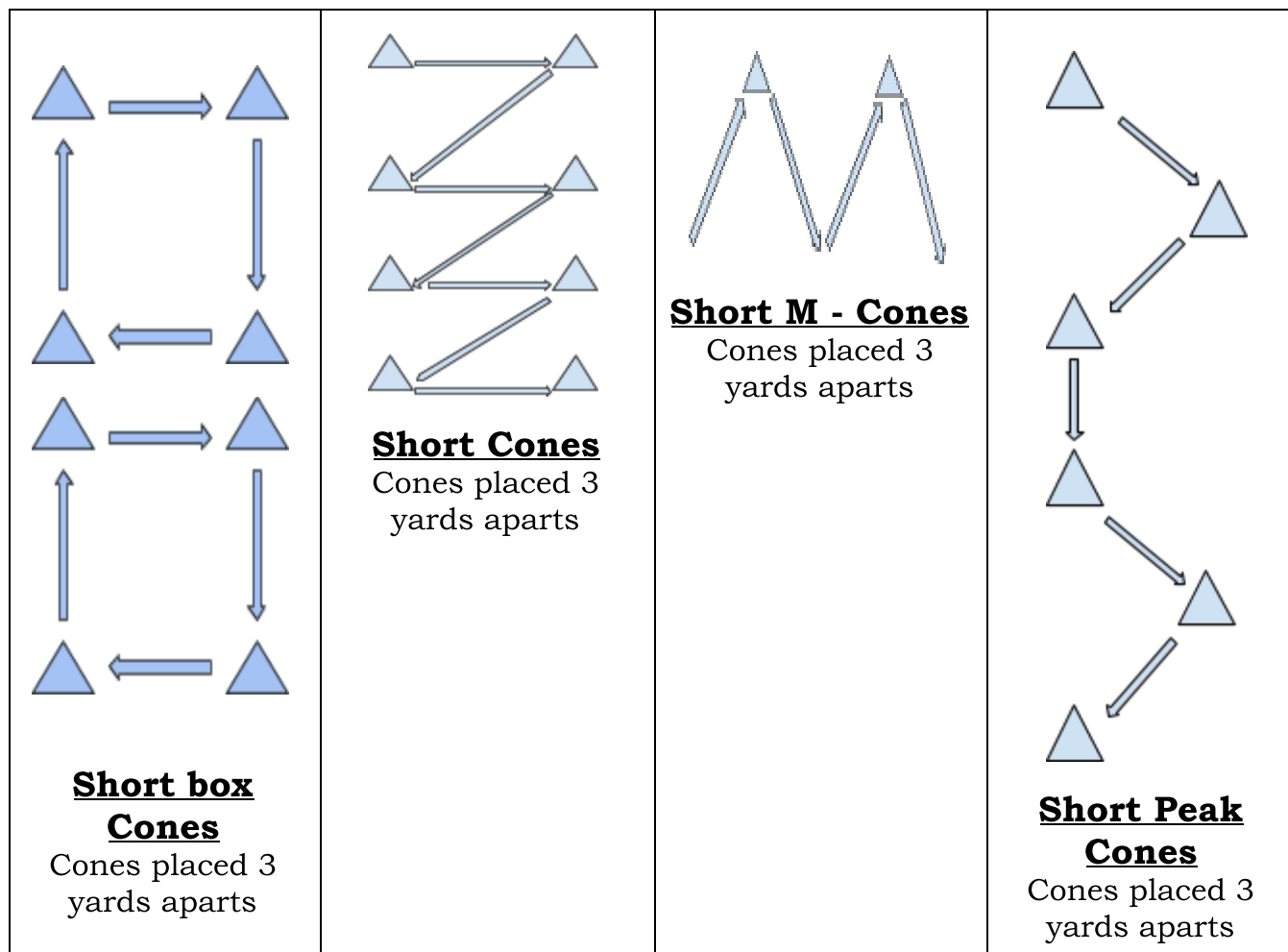
1. [Beep Fitness Test](#) for iOS.
2. Two or more markers, e.g. traffic cones.
3. A flat surface, suitable for running, which is at least 20m long with adequate space at each end for coming to a stop.

Procedure

1. Place markers 20 meters apart.
2. Position yourself, or athletes, at one of the markers.
3. Press the start button of the [Beep](#) Fitness Test app.
4. Run 20 meters to the opposite marker, getting there before the next beep sounds.
5. Wait there until the beep sounds before running back to the other marker.
6. Repeat this process for each shuttle until you are unable to keep up with the beeps. Remember, you must wait for the beep before starting the next shuttle.
7. 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.
8. Your final score is the last level and shuttle you completed before missing a beep.

Change of Direction/Agility Drills

AGILITY GROUP 1 - WEEKS 1-4



Weeks 1-2

Choose 3

Short Box Cones	Sprint, Slide, Back Pedal, Slide	X 2
Short Box Cones	Slide Left, Sprint, Slide Right, Sprint	X 2
Short Box Cones	Slide Left, Slide Right	X 2
Short Box Cones	Sprint & Touch Each Cone	X 2

Choose 3

Short Cones	Sprint, Back Pedal	X 2
Short Cones	Slide Right, Slide Left	X 2
Short Cones	Slide Left, Slide Right	X 2
Short Cones	Sprint & Touch Each Cone	X 2

Weeks 3-4

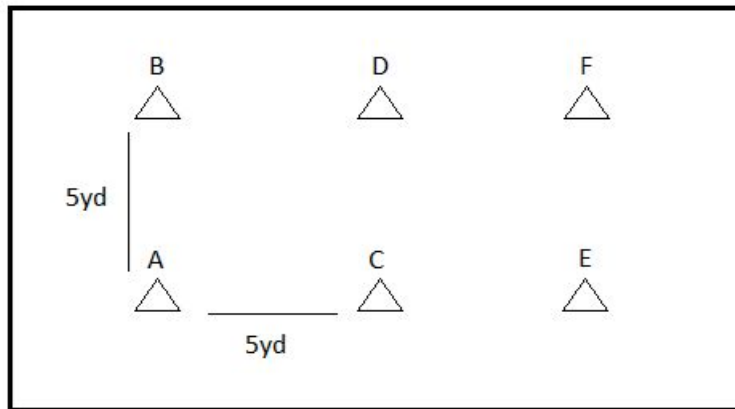
Perform all 3

Small M – Cones	Sprint, Back Pedal	X 2
Small M – Cones	Slide	X 2
Small M – Cones	Sprint, Slide	X 2

Perform all 5

Short Peak Cones	Sprint, Back Pedal, Slide	X 2
Short Peak Cones	Back Pedal, Sprint, Slide	X 2
Short Peak Cones	Slide Left, Slide Right, Sprint	X 2
Short Peak Cones	Slide Right, Slide Left, Sprint	X 2
Short Peak Cones	Sprint & Touch Each Cone	X 2

AGILITY GROUP 2 – WEEKS 5-7



A) Choose 2 drills

2x each:

Figure eight - Start inside cone A – sprint to and around cone B, sprint to and around A, finish through E

Figure eight - Repeat coming back the opposite way (Start inside cone E)

Sprint-Backpedal - Begin outside cone A – Sprint to cone B, backpedal the angle to C, sprint to D, backpedal the angle to E, finish through F

Sprint-Backpedal - Repeat coming back the opposite way (outside of cone E)

Sprint-Shuffle - Start behind cone A – shuffle to cone B, sprint to D, shuffle to C, sprint to E, shuffle through F

Sprint-Shuffle - Repeat coming back the opposite way (start behind cone E)

H-Drill - Start inside of cone B – sprint to D, shuffle to C, backpedal to and around cone A, sprint to and around cone E, sprint to C, shuffle to D, backpedal to and around cone F, sprint to finish through B

H-Drill - Repeat starting inside cone A

B) Choose 2 drills

2x each:

Sprint Shuffle Shuffle – Start behind cone A, shuffle to B then back to A, sprint to C, shuffle to D then shuffle back to C, sprint to E, shuffle to F then shuffle through E

Sprint Shuffle Shuffle – Repeat coming back opposite way (start behind cone E)

360's – Start inside cone A, sprint to and around cone B, sprint to and around cone F, sprint to and around cone E, finish through cone A

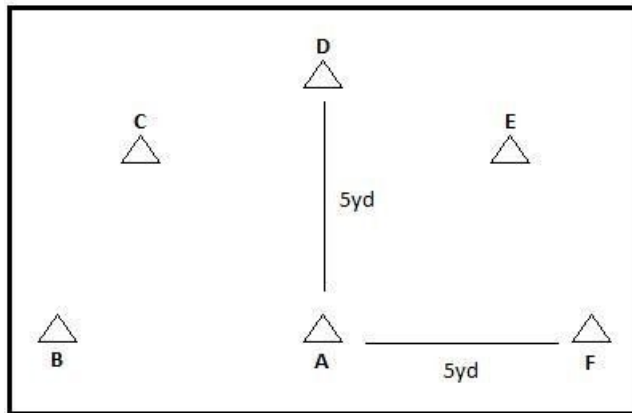
360's – Repeat coming back the opposite way (start inside cone E)

T-Drill – Start behind cone C, sprint to D, shuffle to B, shuffle to F, shuffle back to D, backpedal to finish through cone C

T-Drill – Repeat the opposite direction

Pro-Agility – Start behind and facing Cone C with right hand on the ground, sprint to and hand touch cone E, sprint to and hand touch cone A, sprint and finish through cone C **Pro-Agility** – Repeat the opposite direction

WHEEL AGILITIES & CONDITIONING



Complete the following for “Wheel (Full)” on Thursday Conditioning in Weeks 5-7

Start at Cone A – shuffle to B, shuffle back to A
Sprint to Cone C, plant with Left foot, sprint to A
Sprint to Cone D, drop hips then backpedal to A
Sprint to Cone E, plant with Right foot, sprint to A
Shuffle to Cone F, shuffle back to A

Complete as quickly as possible, then repeat beginning with the opposite direction. Repeat 6x

Complete the following for “Wheel Agilities” in Weeks 8-10

Begin at Cone A every rep. Pick any 3 cones, returning to cone A after the first 2 cones (see below). Finish through the 3rd cone, then jog around the wheel back to cone A and rest :10 **Reps should be completed with 100% effort. Choose 5 patterns and repeat each 2x.**

Examples:

- 1) Start at Cone A – shuffle to B, shuffle back to A Sprint to Cone C, plant with Left foot, sprint to A Sprint and finish through Cone D
Jog around wheel back to A, rest :10, repeat
- 2) Start at Cone A – sprint to Cone C, plant with Left foot, sprint to A Sprint to Cone D, drop hips then backpedal to A
Sprint and finish through Cone E
Jog around wheel back to A, rest :10, repeat
- 3) Start at Cone A – shuffle to cone B
Shuffle to Cone F, shuffle to A
Sprint and finish through D
Jog around wheel back to A, rest :10, repeat
- 4) Start at cone A – sprint to cone E, plant with Right foot, sprint to A Shuffle to Cone B, shuffle back to A
Sprint and finish through

Conditioning Workouts

(refer to Energy System section for description of drills)

Weeks 1-2

Tuesday

Dynamic Warm-up for SAQC

300's

Reps	Run Time	Rest Time
6	1:00	2:00

Static Flexibility

Thursday

Dynamic Warm-up for SAQC

100yd Shuttles

Reps	Run Time	Rest Time
8	:25	1:00

Static Flexibility

Weeks 3-4

Tuesday

Dynamic Warm-up for SAQC

300's

Reps	Run Time	Rest Time
8	1:00	2:00

Static Flexibility

Thursday

Dynamic Warm-up for SAQC

150yd Shuttles

Reps	Run Time	Rest Time
8	:30	1:30

Weeks 5-7

Tuesday

Dynamic Warm-up for SAQC

200yd Shuttles

Reps	Run Time	Rest Time
6	:45	2:30

Static Flexibility

Thursday

Dynamic Warm-up for SAQC

Shuttle Test

– 2 Sets – Extended Recovery Between Sets

Reps	Run Time	Rest Time
8+8	:07	:30/1:00

Static Flexibility

Weeks 8-9

Tuesday

Dynamic Warm-up for SAQC

300yd Shuttles

Reps	Run Time	Rest Time
2	1:00	3:00

Static Flexibility

Thursday

Dynamic Warm-up for SAQC

Shuttle Test

– 2 Sets – Extended Recovery Between Sets

Reps	Run Time	Rest Time
10+10	:07	:30/1:00

Static Flexibility

Weeks 10-11

Tuesday

Dynamic Warm-up for SAQC

300yd Shuttles

Reps	Run Time	Rest Time
3	1:00	3:00

Static Flexibility

Thursday

Dynamic Warm-up for SAQC

Shuttle Test

– 2 Sets – Extended Recovery Between Sets

Reps	Run Time	Rest Time
10+10	:07	:30/1:00

Static Flexibility

Plyo Workouts

***Perform after Dynamic Warm Up**

Week 1 Static Jump - Stick the Landing 3x5

Week 2 Static Jump - Stick the Landing 3x

Week 3 Dynamic Jump (when you land, jump again, very little ground contact time) 3x5

Week 4 Lateral Jump - Stick the Landing 3x5ea

Week 5 Lateral Jump - Stick the Landing 3x5ea

Week 6 Lateral Jump to Lateral Jump 3x5

Week 7 Lateral Jump to Lateral Jump 3x5

Week 8 Lateral Jump to Vertical Jump 3x5ea

Week 9 Lateral Jump to Lateral Jump to Vertical Jump 3x5ea

Week 10 Single Leg Lateral Jump to Opposite Leg Stick 3x5ea

Week 11 Single Leg Lateral Jump to Single Leg Lateral Jump With Stick 3x5ea

Sprint Workouts

Sprint #1 – Weeks 1-4

Dynamic Warm-up for SAQC

Plyos

Falling Start – 10yd sprint + Stride 10yd x2

Push-up Start – 10yd sprint + Stride 10 yd x2

Gears x3(weeks 1&2) x4(weeks 3&4) :60 recovery after each rep

Half speed 10yd

$\frac{3}{4}$ speed 20yd

Full Speed 20yd

Decelerate 10yd

Hollows x3(weeks 1&2) x4(weeks 3&4)

Full speed 20yd

Half speed 10yd

Full Speed 20yd

Decelerate 10yd

Sprint #2 – Weeks 5-7

Dynamic Warm-up for SAQC

Plyos

Push-up Start – 10yd sprint + stride 10yd x4

Kneeling Lateral Start (inside leg down) – 20yd Sprint x3ea w/:60 recovery after each rep

Back Start (flip over and get out) – 30yd sprint x2ea way w/:60 recovery after each rep

Balanced Start/Athletic Position – 30yd sprint x2 w/:60 recovery after each rep

Weeks 8-9

Dynamic Warm-up for SAQC

Plyos

Half Gassers (sideline to sideline)

Reps	Run Time	Rest Time
12	:17	:45

Static Flexibility

Week 10

Dynamic Warm-up for SAQC

Plyos

Half Gassers (sideline to sideline)

Reps	Run Time	Rest Time
14	:17	:45

Static Flexibility

Week 11

Dynamic Warm-up for SAQC

Plyos

Half Gassers (sideline to sideline)

Reps	Run Time	Rest Time
16	:17	:45

Static Flexibility

Heel Raise (use stairway)	4	x10e a	4	x10e a	4	x12e a	4	x12ea
TRX or Towel(s) or Bedsheet(s) Row	4	8 or max	4	8 or max	4	10 or max	4	10 or max
pair w/								
Quadrupled Thoracic Rotation	4	5ea	4	5ea	4	5ea	4	5ea
Towel or Paper Plate Eccentric Hamstring Curl w/:05 Eccentric	4	6	4	8	4	8	4	8
pair w/								
Brettzel Stretch (:30sec each side)	4	1ea	4	1ea	4	1ea	4	1ea
Shoulder Lateral Raise (use household item)	3	8	3	8	3	10	3	10
pair w/								
Seated Bent Over Rear Delt Raise (use household item)	3	8	3	8	3	10	3	10
TRX or Towel(s) or Bedsheet(s) Tricep Extension		4x10		4x10		4x12		4x12
pair w/								
TRX or Towel(s) or Bedsheet(s) Bicep Curl		3x10		3x10		3x12		3x12
Ab/Core Circuit								
Towel or Paper Plate Roll Out		3x15		3x15		3x15		3x15
Side Crunch		3x15		3x15		3x15		3x15
Supermans		3x10		3x10		3x10		3x10
Recovery: Foam Roll/Stretch/Nutrition Uptake								

1/2 Kneeling Quad/Hip Flexor Puse	4	5ea	4	5ea	4	5ea	4	5ea
Front Delt Raise	3	8	3	8	3	10	3	10
pair w/								
DB/Household Item Single Arm Row	3	8	3	8	3	10	3	10
DB/Household Item Curl	4	4x10	4	4x10	4	4x12	4	4x12
pair w/								
Single Arm DB/Household Item Overhead Tricep Extension	4	3x10	4	3x10	4	3x12	4	3x12
Ab/Core Circuit								
Plank	10	:10/:0 5	10	:10/:0 5	12	:10/:0 5	12	:10/:0 5
Hip Dips	1	15ea	1	15ea	1	15ea	1	15ea
Repeat Above One Time								
Recovery: Foam Roll/Stretch/Nutrition Uptake								

Fire Hydrants	4	5ea	4	5ea	4	5ea	4	5ea
Pike Shouler Press	3	8	3	8	3	10	3	10
pair w/								
Double DB/Household Item Row	3	8	3	8	3	10	3	10
Biceps Towel Curl	4	4x10	4	4x10	4	4x12	4	4x12
pair w/								
Diamond Push Up	4	3x10	4	3x10	4	3x12	4	3x12
Ab/Core Circuit								
Weighted Overhead Sit Up	3	10	3	10	3	10	3	10
Side Crunch	3	10ea	3	10ea	3	10ea	3	10ea
4 Point Superman	3	5ea	3	5ea	3	5ea	3	5ea
Recovery: Foam Roll/Stretch/Nutrition Uptake								

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

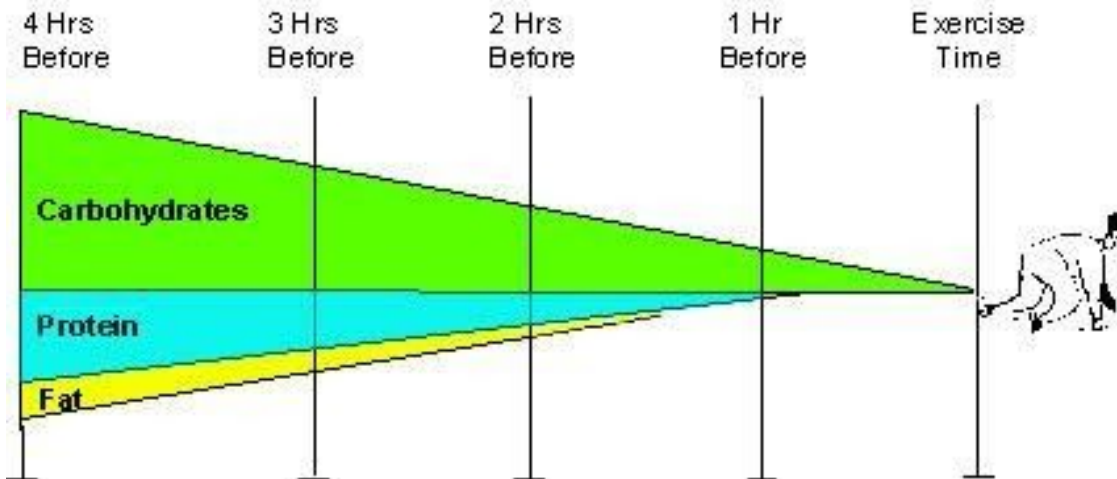
- **2-4 oz. of lean protein:** chicken, turkey, egg whites, pork, ham

- 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)

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

● **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

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, 3rd 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

Informed Choice

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



ARE YOU HYDRATED?

DON'T WAIT UNTIL URINE TROUBLE.

Products with caffeine should be avoided before practice and competition (supplements, energy drinks, etc...) Sports drinks can provide supplementary electrolytes, but water is KEY!

Monitor your urine color with the chart below. Don't let dehydration take you off the field!



HIGHLY DEHYDRATED

Go drink a large bottle of water immediately.

SERIOUSLY DEHYDRATED

You are still seriously dehydrated. Drinking a bottle of water now will make you feel much better.

MODERATELY DEHYDRATED

You lose water on a regular basis throughout the day. Drink more water.

PROPERLY HYDRATED

You're almost there. Get some water in your system to flush out all those toxins from your workout. Stay hydrated and healthy!

HYDRATED & HEALTHY

Great job! To stay hydrated, experiment during training to find the amount of fluid to drink that feels comfortable and allows you to perform at your best (6 - 12 glasses/day).



If you have questions, the Resource Exchange Center(REC) has answers. Protect your health and eligibility, submit nutritional/dietary supplement and drug questions to your ATC, physician, and the REC for review.