

## INTRODUCTION

The following guide is a tool for Ultimate Frisbee players interested in improving their fitness and performance as competitive team players.

Following the natural rise in popularity of our sport is the interest in becoming faster, stronger, more skilled and less susceptible to injury. Most of us recognize the need for some type of pre-season conditioning to help us achieve our goals during the competitive season, or at the very least survive the competitive season without major injury. Because of my professional background, teammates and friends have sought out my advice on training programs and exercise information. My interest in seeing my team, as well as improving the performance and reducing the injury rate of fellow Ultimate enthusiasts has led to the organization of this Ultimate Training Guide.

The training guide is detailed enough to outline a complete season of training for the competitive Ultimate athlete. However, it definitely does not address **specific** needs in terms of strengths, weaknesses and injuries previously identified or not. If you do have specific concerns, please consult with me before beginning this training program. If you have not exercised regularly in the past 3 months or are currently suffering from an injury, (chronic or acute), please consult with your physician before beginning this training program or any other training program.

I am definitely available to anyone who has questions or concerns about this guide. I have included my phone number and email address as well as a list of professional contacts and reference material that might be able to answer your questions. Most of the strength training exercises included in this guide will require the use of a gym or fitness centre. If you do not have a current gym membership and would like one, please let me know and I can arrange for passes to a downtown gym. If you would like to modify the exercises to be able to do them at home, this also can be arranged.

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# **THE ULTIMATE CONDITIONING PROGRAM**

The following conditioning guide follows a schedule of periods or phases within a one year time frame that outlines the conditioning goals for that phase. This specified approach allows training to be more efficient and focused producing better results as the periods are scheduled to match the seasonal requirements of our sport. All of the following phases will include detailed training for the cardiovascular (aerobic and anaerobic), muscular strength and endurance, flexibility and agility systems.

Following the periodized conditioning program, there is an annex section of material to build on the information presented and to introduce other topics such as nutrition and mental preparation.

I have attempted to keep this information concise, informative and easy to understand. It has been modified to reduce the use of technical terms and definitions. Please consult the concept definition section at the back for any technical vocabulary which I did not exclude.

I expect that many of you will start this program at varying times in the year. If you have not been physically active for 3 or more months, please follow the general conditioning phase for 4-6 weeks before progressing into the period scheduled.

Progress at your own pace, this is a general program outline which must be adapted to the individual.

- ⇒ Follow the cues for intensity levels and be aware of your body's response.
- ⇒ If an exercise hurts or feels strange don't do it - consult with me and we will review it to make sure you are doing it correctly.
- ⇒ Try not to skip components of any phase, they are there so that you can progress to the next level and if not performed may result in injury or poor performance at the next phase. On this note, we are amateur athletes and have lives, it is important to schedule your training to fit with your commitments.
- ⇒ Buy a water bottle and use it. Dehydration is your worst enemy when it comes to performance and training.

I strongly recommend that each individual perform a fitness evaluation before beginning this program. Not only will this set the baseline from which you can measure your progress, it can also identify areas of individual weakness which you may need to focus on as well as help in setting performance goals. Ideally a fitness test would be performed at the beginning of each phase, a more realistic approach would be at the beginning of the general conditioning phase to identify any areas of particular weakness and to evaluate sport specific fitness before conditioning, followed by a second evaluation at the beginning of the competition focus phase to re-establish fitness goals.

I have designed a detailed Ultimate Frisbee Fitness Evaluation, which borrows fitness testing elements from CPAFLA, and CFA protocols. I can conduct these evaluations as a team or for individuals.

THE ULTIMATE CONDITIONING PROGRAM

**GENERAL CONDITIONING PHASE**

**Focus:**

- Recovery from injury
- Build strength, speed, power
- Rebuild muscle mass lost during competitive season
- Fitness testing to re-establish training goals
- Use crosstraining to add variety and allow mental recovery
- Continue sport specific skill work, (throws)

This conditioning phase follows recovery from the regular season and occurs during the still active off-season months of OCTOBER, NOVEMBER and DECEMBER. It is a phase that emphasizes rest and recovery from Ultimate, and emphasizes the use of crosstraining to rest overworked muscles and strengthen underused muscles. Use the training schedule in the annex of this guide to organize your training program.

CARDIOVASCULAR

To reduce the risk of injury and to achieve better results, begin each cardiovascular (CV) workout with a warm-up of 5-10 minutes at 60-65% of your maximum HR<sup>1</sup>. Follow this CV warm-up with a gentle stretch of all major muscle groups<sup>2</sup>.

The focus of this phase is to maintain and gradually increase aerobic fitness, and increase strength utilizing crosstraining as the primary conditioning tool to allow recovery from Ultimate.

It is preferable to separate hard training runs from easier ones, i.e. do not follow a Hill or Power run with a Fartlek run the following day.

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>
<b>LST run<sup>3</sup> or Optional Cardio<sup>4</sup> 2x/week</b>	30 min.  60-65 % of max. HR	35 min.  60-65% max. HR	40 min.  60-65% max. HR	45 min.  60-65% max. HR	50 min.  60-65 % max. HR	REST
<b>Hill run or Power Run<sup>5</sup> 1x/week</b>	2 sets of 4 min. at 4-5 6 min. ar	2 sets of 3 min. at 4-5 5 min. ar	3 sets of 3 min. at 5-6 5 min. ar	4 sets of 3 min. at 5-6 4 min. ar	3 sets of 3 min. at 6-7 4 min. ar	REST
<b>Fartlek Form Run<sup>6</sup> 1x/week</b>	20 min. run 50m on 5 min.	20 min. run 75 m on 5 min.	20 min. run 100m on 4:30 min.	20 min. run 100m on 4:30 min.	20 min. run 100 on 4 min.	REST

The Ultimate Conditioning Program

	<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
<b>LST run or Optional 2x/week</b>	40 min.  60-65 % max. HR	45 min.  60-65 % max. HR	50 min.  60-65 % max. HR	55 min.  60-65 % max. HR	60 min.  60-65% max. HR	REST
<b>Hill run 1x/week</b>	4 sets of 2 min. at 7-8 4 min. ar	4 sets of 2 min. at 7-8 2 min. ar	4 sets of 2 min. at 8-9 2 min. ar	5 sets of 1:30 at 8- 9 2 min. ar	5 sets of 1:30 min. at 9-10 2 min. ar	REST
<b>Fartlek Form Run 1x/week</b>	20 min. run 75m on 4 min.	20 min. run 100m on 3:30 min	20 min. run 100m on 3:30 min.	20min.run 100m on 3 min	20 min. run 150m on 3 min.	REST

STRENGTH AND AGILITY

Please see Annex B for complete strength training diagrams and definitions.

The use of basic, comprehensive, multi joint movements is key to this training phase.

Rebalancing muscle strength and rebuilding muscle mass are key elements to the general conditioning phase. All suggested exertion levels are based on the principle of the 1 RM<sup>7</sup>. If you have difficulty in determining your 1 RM for a given exercise, simply follow the suggested repetitions and complete them within a time of approximately 20 seconds per set allowing 2- 3 min. recovery between sets.

Rest is a key element to muscular strength and endurance training. You must stress the muscle and allow it to respond within an appropriate amount of rest. This is the overload/recover principle<sup>8</sup>. Allow 48-72 hours of rest between workouts for a given muscle group, more if you feel the muscle is not sufficiently recovered (DOMS)<sup>9</sup>, if you are still stiff and sore, it is best to take another day of rest.

The following exercise groups should be completed at least twice a week, three times if sufficient recovery has occurred.

Example: *Monday - Day 1*  
*Tuesday - Day 2*  
*Wednesday -OFF*  
*Thursday - Day 1*  
*Friday - Day 2*  
*Saturday - OFF*  
*Sunday - OFF*

The Ultimate Conditioning Program

**DAY 1**

Squats / Leg Press  
 Leg Extension  
 Leg Curl  
 Lat Pulldown  
 EZ Curl Biceps  
 Hyperextension  
 Alt. Arm and Leg lift

**DAY 2**

Bench Press  
 Overhead Press  
 Tricep Dips  
 Pelvic Tilt  
 Alt. Oblique  
 Curl Up

Crunch

\*Abdominal exercises and low back exercises do not require the use of weights.

Complete the indicated number of sets for abdominals of (15, 20 or 30 repetitions). Use fatigue as your exertion indicator.

Perform 3 sets of each exercise.

<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>
2 sets of 12-15 reps. (65% 1RM)	2 sets of 12-15 reps. (70% 1RM)	3 sets of 15-18 reps (72.5 % 1RM)	3 sets of 15-18 reps (75% 1RM)	3 sets of 15-18 reps (75% 1RM)	REST

<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
3 sets of 18-20 reps (75% 1RM)	3 sets of 18-20 reps (80% 1RM)	3 sets of 15-18 reps (80% 1RM)	3 sets of 15-18 reps (80% 1RM)	3 sets of 15-18 reps (80% 1RM)	REST

## **FOCUSED CONDITIONING PHASE**

**Focus:**

- reevaluate fitness testing
- focus in on specific weaknesses the athlete may have
- increase the focus on sport specific movements and training
- establish individual training goals

The focused conditioning phase is the longest conditioning phase of the Ultimate Conditioning Program, encompassing the months of JANUARY, FEBRUARY, MARCH, APRIL, the pre-season months of Ultimate Frisbee.

Plyometric Training<sup>10</sup> will be introduced during this phase with the assumption that previous training has been performed.

### CARDIOVASCULAR

Cardiovascular training during this phase will continue to focus on aerobic conditioning and building of the lactate sink<sup>3</sup>. This focus will gradually shift into more specific running drills which will focus on running form, progressive form speed work, and anaerobic training in the form of sport specific intervals to increase speed.

It is important to precede each training run with a 5-10 minute warm-up at a 65-70% intensity level, followed by a gentle stretch of all major muscle groups.

Organize your training schedule so that hard days are alternated with easy ones.

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>
<b>Threshold run 1x/week<sup>11</sup> Practice Game Optional</b>	20 min. at 75-80% max. HR	25 min. at 75-85 % max. HR	30 min. at 75-85% max. HR	35 min. at 75-85% max. HR	40 min. at 75-85 % max. HR	REST
<b>Hill or Plyos</b>	4 sets of 2 min. at 8-9 2 min. ar	Plyos A	4 sets of 2 min. at 9-10 2 min. ar	Plyos A	5 sets of 2 min. at 9-10 1 min. ar	REST
<b>LST Run</b>	40 min. at 60-65% max. HR	45 min. at 60-65% max. HR	45 min. at 60-65 % max. HR	50min at 60-65% max. HR	60 min. at 60-65% max. HR	30 min. at 60-65% max. HR
<b>Interval Speed<sup>12</sup></b>	4 sets of 2 min. on 4 min. off	4 sets of 2 min. on 3:30 min. off	4 sets of 2 min. on 3 min. off	5 sets of 2min. on 3min.off	5 sets of 2 min. on 2:30min. off	REST
<b>Fartlek</b>	30 min.	35 min run	40 min.	40 min.	40 min.	REST

<b>Form Run</b>	run 100 on 4	100 On 3:30	run 100 on 3	run 100 on 3.	run 100 on 3.	
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	<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
<b>Threshold run 1x/week Practice Game Optional</b>	30 min. at 75-85% max. HR	30 min. at 75-85 % max. HR	30 min. at 75-85% max.HR	30 min. at 75-85% max.HR	35 min. at 75-85% max. HR	REST
<b>Hill or Plyos</b>	4 sets of 2 min. at 9-10 2 min. ar	Plyos B	6 sets of 2 min. at 9-10 2 min. ar	Plyos B	6 sets of 2 min. at 9-10 1 min. ar	REST
<b>LST Run</b>	40 min. at 60-65% of max. HR	40 min. at 60-65% max. HR	40 min. at 60-65% max. HR	45 min. at 60-65% max. HR	45 min. at 60-65% max. HR	REST
<b>Fartlek Form Run</b>	30 min. run 100 m on 3 min.	30 min run 150m on 3 min.	30 min. run 150m on 3 min.	30 min. run. 200m on 3 min.	35min. run 200m on 3 min.	REST
<b>Interval Speed</b>	5 sets of 1:30 on and 2 off	6 sets of 1:30 on and 2 off	6 sets of 1:15 on and 1:30 off	7 sets of 1min. on and 1:30 min. off	7 sets of 1 min. on 1 min. off	REST

	<b>Week 13</b>	<b>Week 14</b>	<b>Week 15</b>	<b>Week 16</b>	<b>Week 17</b>	<b>Week 18</b>
<b>Threshold Run, Practice Game Optional</b>	30 min. at 75-85% max. HR	35 min. at 75-85% max HR	40 min. at 75-85 % max. HR	45 min. at 75-85% max. HR	50 min. at 75-85% max. HR	REST
<b>Hill or Plyos</b>	Plyos C	4 sets of 2 min. at 10-11 2 min. ar	Plyos C	4 sets of 2 min. at 10-11 2 min. ar	Plyos C	REST
<b>LST Run</b>	45 min. at 60-65% max. HR	45 min. at 60 -65% max. HR	50 min at 60-65% max. HR	50 min at 60-65% max. HR	60 min. at 60 -65% max. HR	REST
<b>Fartlek Form Run</b>	30 min. run 200 on 3:30 min.	30 min. run 200 on 3 min.	30 min. run 200 on 3 min.	30 min. run 200m on 2:30	30 min. run 200 on 2:30 min.	REST

<b>Interval Speed</b>	7 sets of 1 min. on 2 min. off	8 sets of 1 min. on 1 min. off	9 sets of 1 min. on 1 min. off	10 sets of 1 min. on 1 min. off	10 sets of 1 min. on 2 min. off	REST
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### STRENGTH AND AGILITY

The focus of strength and endurance training for this phase switches to more sport specific exercise after establishing a strength base. These exercises will train muscle groups specific to our sport in preparation for summer competition. The exercise chosen are meant for the average Ultimate athlete. Some athletes will require more specific muscle conditioning and flexibility work for weak, injured or imbalanced muscle groups. All suggested exertion levels are based on the 1RM principle. Repetitions should be completed within a 20 second interval, allowing approximately 2-3 minutes of recovery between sets.

Perform exercises in a controlled movement pattern i.e. 2 counts on the concentric lift, 3-4 counts on the eccentric release<sup>15</sup>. The following exercise groups should be completed 1 x/week with maximum effort. Perform 3 sets of the indicated number of repetitions for each exercise.

#### 1. LEGS

Squats

Lunges (1-4=stationary, 5-8=dynamic, 9-12=st.bench, 13-16=power)

Leg Curl

Hip Extension

Hip Adduction

Hip Abduction or Hip Flexion

#### 2. ABDOMINALS - SHOULDERS

Military Press

Front Raise

Rotator Cuff

Reverse Cable Fly (one arm)

Incline Curl Up

Plank

Reverse Curl and Extension

Knee Tucks

Obliques Knees Side



### 3. CHEST - TRICEPS

Bench Press

Decline Bench Press

Incline Chest Fly

Tricep Extension

French Rope Press

### 4. BACK - BICEPS

Lat Pulldown

One Arm Cable Row

Upright Row

Dumbbell Bicep Curl

Reverse Bicep Curl

Hyperextension Twist

<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>
2 sets of 12-15 reps. (65% 1RM)	3 sets of 12-15 reps. (65% 1RM)	3 sets of 12-15 reps. (65% 1RM)	3 sets of 12-15 reps. (65% 1RM)	3 sets of 12-15 reps. (65% 1RM)	REST

<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
2 sets of 10 reps. (72.5% 1RM)	3 sets of 10 reps. (72.5% 1RM)	3 sets of 10 reps. (72.5% 1RM)	2 sets of 8 reps. (75% 1RM)	3 sets of 8 reps. (75% 1RM)	REST

<b>Week 13</b>	<b>Week 14</b>	<b>Week 15</b>	<b>Week 16</b>	<b>Week 17</b>	<b>Week 18</b>
3 sets of 8 reps. Power (75% 1RM)	3 sets of 8 reps. Power (75% 1RM)	2 sets of 6 reps. Power (80% 1RM)	3 sets of 6 reps. Power (80% 1RM)	3 sets of 6 reps. Power (80% 1RM)	REST

## **COMPETITION FOCUS PHASE**

### **Focus:**

- Maintenance conditioning focus - volume of conditioning program will reduce to reflect the demands of the competitive season tournament schedule.
- Emphasis on proper warm-up, cooldown, hydration and nutrition habits for the athlete.
- Training during practice will continue, with the inclusion of drills and fitness elements to keep the training motivating, interesting and effective.
- Athletes should focus on mental preparation skills for practice/game situation, relaxation, imagery and injury prevention/rehabilitation.

The competition focus phase takes place during the most intense competitive season months of MAY, JUNE, JULY. It is essential to keep up with training to maintain speed, strength, endurance, power and balance gained during the pre-season training phases. Training during this phase will be reduced in its volume, but not in its efficiency.

### **CARDIOVASCULAR**

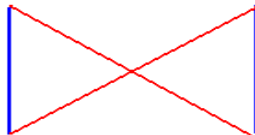
Cardiovascular conditioning will be scheduled with both practice and tournament schedules in mind. Because the competitive season for Ultimate comprises 4 months, we will keep a focus on moderately intense training until the final weeks of the season leading up to the National tournament.

Plyometric training will be slightly more intense and replace the standard Hill training almost completely.

#### **NOTE:**

Because of the intensity of play during this time of the season, there are several alternate choices to the structured training program:

1. Threshold runs are to be conducted regularly during weeks when there is no tournament scheduled. This run may also be replaced by league team play.
2. Fartlek run can be carried out during team practice (as with Stella) 1x/week in the form of a 12 minute run. This is often an informal fartlek style run with speed burst built into the run.



The red lines designate a 80-90% form run sprint, while the blue lines represent a recovery run of 70-75%. The object of this run is to simulate game situation of sprinting and then recovering at a still high intensity.

3. Plyometric drills can be included on a weekly basis during scheduled practices as part of the team conditioning program. Individuals may also benefit from following plyometric drills 1-2x/week on their own training time.

4. LST team training runs scheduled 1x/week in addition to regular team practice are an excellent way to maintain general team condition and build cohesiveness.

It is my suggestion that on occasion your LST workout should be a sport or activity that has nothing to do with Ultimate training, for example:

*in-line skating, cycling, mountain biking, swimming, water running, stairclimbing, aerobics, step, boxing etc.*

This type of training once a week not only gives your mind a rest, it also allows your body to rest actively by taking the stress off of the Ultimate muscles and placing the stress on other muscles to balance out the demand on your body. This type of workout can also be key to injury prevention and care. (My personal suggestions is to choose a low or no impact activity to allow your joints a rest).

Remember, LST (low subthreshold training) indicates a HR zone of 60-65% of your max. predicted HR) for a longer duration.

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>
<b>Threshold run 1x/week</b>	Tourney Game Option 30 min. at 75-85% max. HR	Tourney Game Option 30 min.at 75-85% max. HR	Tourney Game Option 35 min. at 75-85% max. HR	Tourney Game Option 35 min. at 75-85% max. HR	Tourney Game Option 40 min. 75-85% max. HR	REST
<b>Plyos</b>	2x/week	2x/week	2x/week	2x/week	2x/week	REST
<b>LST Run 1x/week</b>	45-60 min. of activity	45-60 min. of activity	45-60 min. of activity	45-60 min. of activity	45-60 min. of activity	45-60 min. of activity
<b>Interval Speed 1x/week</b>	6 sets of 2 min. on 2 min. off	6 sets of 2 min on 2 min. off	6 sets of 1:30 on 1:30 off	7sets of 1:30 on 1;30 off	8sets of 1:30 on 1:30 off	REST
<b>Fartlek Form Run</b>	Practice or 20 min. run 100m on 2:30 min	Practice or 20 min. run 100m on 2:30 min.	Practice or 20 min. run 100m on 2 min.	Practice or 20 min. run 100m on 2 min.	Practice or 20 min. run 100m on 2 min.	REST

	<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
<b>Threshold run Tourney Game Option 1x/ week</b>	40 min. at 75-80% max. HR	40 min. at 75-80% max. HR	45 min. at 75-80% max. HR	45 min. at 75-80% max. HR	45 min. at 75-80% max. HR	REST
<b>Plyos</b>	2x/week	2x/week	2x/week	1x/week	1x/week	REST
<b>LST Run 1x/week</b>	45-60 min. at 65% max. HR	same	same	same	same	REST
<b>Interval Speed 1x/week</b>	8 sets of 1:30 on 1:30 off	7 sets of 2 min. on 2 min. off	6 sets of 2 min. on 2 min. off	5 sets of 3 min. on 3 min. off	5 sets of 3 min. on 3 min. off	REST
<b>Fartlek Form Run</b>	Practice or 20 min. run 100-200m on 5 min.	same	same	same	same	REST

### STRENGTH AND AGILITY

During the competition focus phase maintenance strength training is performed. This is a demanding period in the season and risk of injury is high, therefore putting increased demand on the muscular system is not recommended. The training schedule will return to a DAY 1, DAY 2, OFF day pattern which is repeated 1-2x/week depending on the athlete and the physical demands of that week.

Perform the following exercises in the pattern described above.

#### DAY1

Weeks 1-6

One leg squats  
Leg Extension  
Standing Hamstring Curl  
Hamstring Curls  
Bench Press  
Chest Fly (FW or Cables)  
Tricep Press

#### DAY2

Lat Pulldown  
One Arm Row  
Upright Row  
Rotator Cuff  
Preacher Curl  
Hyperextension (reg., twist)  
ABS\*planks  
\*knee ups  
\*side knee obliques  
\*crunches

<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>
2-3 sets of 10-12 reps. Power (65% 1RM)	2-3 sets of 10-12 reps Power (65% 1RM)	2-3 sets of 8-10 reps Power (72% 1RM)	2-3 sets of 8-10 reps. Power (72% 1RM)	2-3 sets of 8-10 reps. Power (72% 1RM)	REST

<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
2-3 sets of 8-10 reps. (75% 1RM)	2-3 sets of 6-8 reps. (75% 1RM)	2-3 sets of 6-8 reps. (75% 1RM)	2-3 sets of 6-8 reps (75% 1RM)	2-3 sets of 6-8 reps (75% 1RM)	REST

## **PEAKING PHASE**

**Focus:**

- Maintenance training to maintain physical condition gains
- Incorporate workouts into practice and game schedule to reduce training volume
- Increase mental relaxation, imagery, visualization skills

The peaking phase of Ultimate occurs progressively during the season. For the 1998 season, the month of August presents the most demanding part of the season both mentally a physically as Nationals are held at the end of this month. Training will be concise, efficient and maintenance oriented. Ideally we should all have experienced the gains we need for peak performance as a result of our training in the off-season and pre-season months. Intensity of training during this time should reflect the demands of each individuals competitive schedule.

### CARDIOVASCULAR

Relaxed cardiovascular training sessions incorporated into practice or done individually will be the focus of this phase. Maintenance of our increased cardiovascular capacity, speed, agility and power is our goal.

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>
<b>LST Run 1-2x/week</b>	50 min. 60-65% of max. HR	45 min. 60-65% max. HR	40 min. 60-65% max. HR	30 min. 60-65% max. HR
<b>Threshold Run 1-2x/week</b>	30 min.	30 min.	30 min.	REST
<b>Agility/Power Workout</b>	Plyometric style done at practice on your own	same	same	REST

### STRENGTH

Relaxed strength training sessions focusing on the maintenance of strength and power gains, while allowing the muscular system to regenerate and repair in anticipation of the National Tournament.

**Perform 2 Sets of 10-12 Repetitions of the following exercises 2x/week at 70-75% on weeks 1-2 and 1x/week at 60-65% on week 3. Perform no strenght training during week 4 (the week of the National Tournament).**

DAY1

Lunges  
Hamstring Curls  
Push ups  
Dips  
Hyperextension

DAY2

Military Press  
Lat Pulldown  
Upright Row  
Alternate Bicep Curls  
Reverse Curl, Oblique Twist, Crunch

## **RECOVERY PHASE**

**Focus:**

- Allow mental, physical and injury recovery (if required) from the season by participating in a variety of activities and sports to rebalance mind and body
- Stay active so as not to allow significant deconditioning to occur

This is your time to have a different kind of fun away from Ultimate Frisbee. Try some new sports, join a new club or workout the way you want to, when you want to without a little angel (devil?) sitting on your shoulder.

Keep yourself in condition, you never know when Stella (or the rest of you) may be heading to US Nationals or a serious hard-core fall league tournament.

## **CONCEPT DEFINITIONS**

### **1. Calculation of individual maximum heart rate (max. HR)**

The calculation of your individual maximum heart rate can follow several different formulas. Use any one of the following to determine your max. HR.

(1) **Calculate 220-your age and use this number as your max. HR.** Use the indicated percentage of this number to determine your indicated training zone. You may vary + or - 10-12 beats/minute from this number.

(2) This formula allows you to better determine your individual target heart rate zones:

**Working Heart Rate = Max. HR - Resting HR**

(Calculate your resting HR by taking your pulse for 1 minute when you are completely at rest, ideally first thing in the morning.)

Next calculate your threshold target heart rate zone, (the lowest you want to go)

**Working Heart Rate X Lowest indicated percentage + Resting Heart Rate =**

Now calculate the upper limit of your indicated training zone

**Working Heart Rate X Highest indicated percentage + Resting Heart Rate =**

(3) **Karvonen Formula for estimated max. HR**

Target HR = (max. predicted HR - resting HR) x %intensity + resting heart rate

### **2. Stretching**

There are many different forms of effective stretching, however, they need to be used at the correct time during your workout, game or practice to be safe and effective. **Always** precede a stretching sequence with a general body warm-up of 5-10 minutes. Stretching a cold muscle can be just as inefficient and dangerous as not stretching at all.

(1) Static stretching is the preferred method of stretching for individuals following this training program. Static stretches are controlled stretches where the muscle is pulled into a stretch position and held there for several seconds. Static stretches are effective in accessing your existing range of motion (ROM) by elongating the muscle and other soft tissues.

Annex A contains a static stretching program for Ultimate Frisbee athletes.

(2) Ballistic stretches are exercises that stretch the muscle by the force of momentum of a body part that is bounced, swung or jerked. This is not a recommended stretch, especially



when the body is cold. It can be effective after an extensive warm up when performed safely. Because of the nature of this type of stretching and its inherent risks without proper instruction, I have not included it in this training guide. (Ballistic stretching allows you to access only your existing ROM.)

(3) Passive Stretches are stretches imposed on a muscle by an external force (as in another person, weights, another body part etc.). These can be effective stretches after an extensive warm-up and static stretch. They allow the person stretching to relax and focus on the stretch being performed. Communication between the 'stretcher' and the 'stretchee' is important. You can incorporate passive stretching into the static stretching program using the same exercises. Passive stretching allows to access only your existing ROM.

(4) PNF Stretching (or Proprioceptive Neuromuscular Facilitation) are special exercises and techniques that can **increase** the ROM at a particular joint by using the stretch reflex mechanism of the muscle spindles to actively relax the muscle group being stretched. This is a highly effective stretching technique for individuals who are lacking in flexibility at a particular joint. I have included a limited number of PNF partner and passive stretching in Annex A.

Please contact me if you require further stretching guidelines.

*\*Stretching should never be painful, stretch the muscle not the joint*

### **3. LST Run = Low Subthreshold Training Run**

LST Training is essentially endurance training, it is important and effective because it improves the lactate removal system (lactate is a nasty energy sapper when it starts to accumulate it shuts down the ability of the muscles to work), and increases the hearts ability to work as a pump by increasing its strength and stroke volume (how much blood it pumps out per beat). A low heart rate and long duration and key to this type of training.

### **4. Optional Cardio**

These are cardiovascular workouts of any kind including: inline skating, swimming, water running, aerobics, cycling etc. which adhere to the workout style indicated

### **5. Hill or Power Run**

These training runs are focused on achieving the same goal of strengthening the legs and increasing anaerobic power to increase the speed of the athlete.

Precede both Hill Running and Power Run with a 5-10 minute warm-up of light running. Each workout should be performed in the indicated number of sets. One set will be comprised of an interval performed on the indicated incline setting on a treadmill and the recovery period. If you are performing outdoor Hill Training, use increasing speed to increase your workout intensity. Your complete workout during Hill Training is performed at an running intensity of 60-80%. Focus on maintaining your speed during the hill interval, keep the pace powerful and constant.

Power Run is otherwise known as bounding and is plyometric in nature. Power Runs must be performed outside near a moderately inclined hill. Bound the Hill with an exaggerated running stride, while maintaining running form, for the indicated set time and jog in the immediate area for recovery.

### **6. Fartlek Form Run**

Otherwise known as Fartlek running is 'speed play'. It is a combination of sprints, jogging, and running over varying terrain. For our purposes, fartlek running will focus on **form** and **technique** while gradually increasing the speed of the run over a given distance. Warm-up for this type of running for 5-10 minutes at an LST pace. The run is performed over the indicated time, with an increase in pace to 80-90% over the distance indicated on each time period, (you can set your watch to repeat 5-4-3 min. intervals).

### **7. 1 RM or 1 Repetition Maximum**

A value on which most strength training programs are based. Your 1 RM is the maximum amount of weight that you can lift for one repetition of a given exercise. You can determine this value on your own using trial and error (and allowing at least 3 minutes recovery between attempts), or estimate your maximum by completing the indicated number of repetitions where the last 1-2 repetitions are difficult but not impossible to complete.

(If you are using the 1RM principle, please train with a partner !)

## **8. Overload / Recover Principle**

This is the basis for improving all components of physical fitness. It states that you must overload an energy system (cardiovascular, muscular, flexibility) beyond your normal activity to effect a change. Allowing sufficient recovery time to let that energy system respond is also important. The body will react and recover by building itself bigger and stronger. At this point we begin the cycle again by introducing another stress or overload for the body to react to.

It is important to follow your training schedule as outlined as it has allowed for structured recovery. You can monitor your own individual recovery by monitoring your resting heart rate over a week and determining the average, compare this with your heart rate as you progress through the training program. If your resting heart rate increases by 2-3 beats per minute you may be overtraining and need a break from exercise - don't fear taking a day off.

## **9. DOMS = Delayed Onset of Muscle Soreness**

As you progress through this training program you may experience periods of muscle soreness or stiffness. This typically occurs 48-72 hours after a period of intense training and is a result of mild muscle damage that often accompanies intense periods of training. DOMS can be reduced by progressing through the stages of the training program as indicated. DOMS is most likely to reduce in its intensity after your muscles become used to the activity.

## **10. Plyometric Training**

First known as *jump training*, plyometrics are exercises that enable a muscle to reach maximum strength in as short a time as possible. These exercises or drills are aimed at linking strength with speed of movement to produce power.

Please refer to Annex C for the Ultimate Training Program plyometric training exercises.

## **11. Threshold Training Run**

The purpose of this training run is to increase your endurance at your existing pace. It is important to maintain a heart rate zone of 80-85%.

## **12. Interval Speed Training**

Interval Speed Training is a style of redlining training which will increase your speed at a given pace, (threshold). Full recovery from this type of training requires 48 hours and should not be followed by a day of intense leg strength training to allow full recovery of the energy system used.

Monday	Tuesday	Wednesd	Thursday	Friday	Saturday	Sunday
<i>GENERAL COMMITMENTS</i>						
<i>CARDIOVASCULAR WORKOUTS</i>						
<i>STRENGTH TRAINING</i>						

\*Copy this training program guide and use on a weekly basis to organize you training schedule.

## **ANNEX B - STRENGTH EXERCISES**

\* All exercises are listed in relation to their major muscle group

### **ABDOMINALS**

#### 1. Pelvic Tilts

An essential exercise to strengthening the lower abdominal area which is a support to the lower back. This exercise can be performed with both feet on the floor, one foot in the air, or both feet in the air for increased difficulty.

Using the abdominal muscles, pull the lower back to the floor, lifting the hips slightly. Focus on using the abdominal muscles to perform this movement.

#### 2. Obliques

Oblique curl ups are performed in a similar fashion to regular curl ups. At the middle of the movement, add a twisting motion to the right or left (turning the opposite shoulder to the opposite knee). Pause at the top of the movement and return to the start position.

#### 3. Curl Up

This exercise can be performed supine (flat on your back), on an incline or decline. Keep knees bent and feet flat on the floor.

Curl torso toward the knees in a controlled motion, pause at the top and return to the start position. Focus on squeezing the abdominal muscles as you lift. Increase the function of this exercise by performing an assisted curl up. Curl to your maximum range of motion, grasp behind your thigh and use your arm to pull yourself to a fuller range of motion

#### 4. Crunch

A similar version of the curl up with the incorporation of a pelvic tilt. As the torso curls toward the knees, the knees or hips curl toward the torso. Perform these exercises on an incline, decline or supine position.

#### 5. Plank

The plank can be performed at three different levels of difficulty, knees on the floor, one knee on the floor, both knees off the floor. This is an excellent exercise for building muscular strength and endurance in the abdominal muscles and low back muscles. Begin with intervals of 15 seconds building to 1 minute, increase level of difficulty as needed.

#### 6. Reverse Curl Extension

This exercise is performed on the back with knees bent and feet in the air. You can increase the difficulty of the exercise by straightening your legs. Using your abdominal muscles, pull your hips and knees toward you in a reverse curl motion. As you return to

the start position, extend your legs slightly without touching the floor. It is essential to keep the low back pressed to the floor when extending the legs, this is the true test of abdominal strength.

#### 7. Knee Tucks

You will need a chin up bar or dip bar station to perform this exercise. Keep the body controlled (no swing) while pulling the knees into the chest, pause and return to the start position. Focus on using the lower abdominals to perform this exercise.

#### 8. Obliques Knees Side

This exercise is performed on the floor with knees bent and angled to the right or left. Perform a motion similar to a curl up with the knees at this angle. Keep the shoulders equal and the chin in alignment with the top hip

### LEGS

#### 1. Squats

You will need a squat rack station to perform this exercise. Take a stance of shoulder width apart, knees and feet directed straight ahead. Maintain strong abdominals and lower to a half squat position (thighs on a 90<sup>0</sup> angle to the floor), return to the start position in one smooth motion. Be sure to sit your weight back into your heels, keep the toes relaxed. You should notice that your knees and ankles are in alignment and you squat.

#### 2. Leg Extension

Performed on a leg extension station.

Check seat adjustments for low back support and lower bar adjustment resting on the lower part of the shin above the ankle. Raise the weight in a slow controlled movement, pause at the top and return to the start position. Try not to let the weights touch as you return to the start position.

#### 3. Leg Curl

Performed on a leg curl station.

Check bar adjustment to ensure that the pad is resting just below the belly of the large calf muscle.

Lie prone on the bench and maintain contact with the hips resting on the bench at all times. Curl the bar toward the gluteals using a full range of motion, pause at the top and return slowly to the start position. Try not to let the weights touch as you return to the start position.

#### 4. Lunges

*Stationary* - Maintain the lunge position during the complete set of repetitions. Take a large step forward and squat from this position, keeping the knee in alignment with the ankle.

*Dynamic* - Start from a standing position with dumbbells in your hands or a bar across your shoulders. Step into a lunge position, controlling your momentum forward lower toward the floor and return with a strong push off to the start position. Maintain your balance and abdominal stabilizers as you perform this exercise.

#### 5. Hip Extension

Stand facing a low cable pulley with the free leg on a large plate. Maintain abdominal stability and a neutral spine while extending the leg behind you focusing on using the gluteals as the main muscle movers. Do not extend so far that you cause a hyperextension of the low back (don't arch your back). Return slowly to the start position and repeat.

#### 6. Hip Adduction

Stand beside the low cable pulley with the free leg on the outside and the work leg on the inside. Adduct the work leg across the body to a 45 degree angle, pause and return to the start position. Maintain abdominal strength and a neutral spine. You might also choose to use a hip adductio station for this exercise.

#### 7. Hip Abduction

As above with the free leg on the inside and the work leg on the outside. Abduct the leg away from the body to approximately a 45 degree angle. You should not experience a 'break' in your form i.e. leaning to the side or losing the neutral spine position.

### BACK

#### 1. Lat Pulldown

Perform this exercise at the lat pulldown station.

Grasp the bar with both hands at a wide angle, wider than shoulder width apart. Adjust the seat bar so the cushion is snug across your thighs. Pull the bar behind your shoulders touching the top of your back. Return to the start position, allowing yourself a strong stretch and repeat.

#### 2. Hyperextension

Perform this exercise on a roman chair or low back station.

Anchor your legs on the roman chair, the angle will vary according to the equipment. Lower your torso, with arms crossed behind your chest or head, toward the floor and return to a horizontal to slightly hyperextended position. This exercise must be performed in a slow controlled movement.

Hyperextension twist must be performed carefully and with control. As you return to the horizontal position perform a slight twist to the right or left alternating which side you twist to each time.

#### 3. Alternate Arm and Leg Lift

Perform this exercise in a prone position with arms and legs extended.

Raise one leg and the opposite arm off the floor keeping both limbs straight, pause and return to the start position.

#### 4. One Arm Cable Row

Stand facing the low cable pulley. Keep the knees bent, abdominals pulled in and neutral spine position. Grasp the handle attachment and allow the arm to extend into a stretch position. Pull back in a full range of motion keeping the elbow close to the body. Pause and return to the start position.

#### 5. Upright Row

Perform this exercise standing using dumbbells. Begin with hands at your hips and lift the weight toward your shoulders keeping them close together, and close to the front of the body. Lift the weight to shoulder level only, elbows should not come any higher than shoulder level, pause and return to the start position.

### BICEP

#### 1. Dumbbell Bicep Curls

Stand with dumbbells in either hand resting at you sides, palms facing up. Curl the weights toward your shoulder limiting any movement at the shoulder and keeping the torso still (no rocking). Pause at the top of the movement and return to the position.

#### 2. Reverse Bicep Curls

This exercise is performed as above with the exception that the palms are facing down at the beginning of the exercise. This is an excellent exercise for forearm strength.

#### 3. Preacher Curl

You will need a preacher curl bench and a pair of dumbbells to perform this exercise. Sit at the preacher curl bench facing the arm rest, place your chest firmly against the bench with arms extended over the arm rest. Perform a bicep curl motion through a full range of motion, without allowing the elbows to lock on extension.

### CHEST

#### 1. Bench Press

Lie flat on a bench in a supine position, depending on your height you may want to place both feet on the bench with the knees bent. Keep the abdominals contracted and the low back pressed into the bench. Place your hands slightly wider than shoulder width apart on the bar and lift it off the rack. Lower the bar to your chest at point across the nipple line and return to the start position in a controlled press.

#### 2. Decline Bench Press

As described above using a decline bench (where the head is lower than the hips). Be aware of your technique as the change in angle can change your style.



### 3. Incline Chest Fly

Use a slight incline for this exercise (where the head is slightly elevated). This exercise is performed using dumbbells. Begin with arms extended in front of you a chest level, open arms into an arc, lowering the arms until a stretch is felt at the shoulder/chest. It is important to keep the elbows 'soft' or slightly bent when performing this exercise. Pause at the bottom of the movement and return to the start position.

## TRICEP

### 1. Tricep Dips

Perform this exercise on a dip station or with a flat bench. It is important to place the hands as close to the hips as possible with the fingers pointing straight ahead. Keep the body close to the bench or back rest and lower to a 90° angle at the elbow, pause and return to the start position.

Focus on squeezing the tricep muscles (back of the arm), as you press back up to the start position.

### 2. French Rope Press

You will need the high cable pulley station and a the rope attachment to perform this exercise.

Stand facing away from the cable station, grasp the rope attachment in your hands and hold it over your head, keeping the elbows bent on a 90° angle. Step away from the station until tension is felt in the rope. Press the weight by extending the arms away from you, pause and return to the start position. Try to limit the movement through the body and the shoulders during this exercise, use your arms to perform the movement.

## SHOULDERS

### 1. Overhead Press

This exercise is performed seated with the dumbbells held just slightly above shoulder level. Press the weight toward the ceiling to a straight arm position, pause and return to the start position slowly.

### 2. Military Press

This exercise is performed seated or standing, you will need a long Olympic bar and some weight plates to add weight. Stand with feet shoulder width apart, abdominals contracted. Hold the bar in front of you at the level of the collarbone. Press the bar toward the ceiling, full extension of the arms, lower the bar alternating between the front and back of the head.

### 3. Front Raise

This exercise can be performed with dumbbells, but for our purposes we will use a low cable pulley station with a rope attachment.

Grasp the rope between your legs and stand up tall, abdominals contracted, neutral spine. Raise the rope to shoulder level, pause and return to the start position.

### 4. Reverse Cable Pulley Fy

This exercise is performed using the cable station. Stand with feet shoulder width apart sideways to the cable pulley station. Grasp the hand attachment with the outside hand, bend your knees and bend slightly at the waist. Maintain a strong back and keep the abs contracted. Pull the cable across your body using the posterior deltoid (shoulder) just past the level of the shoulder. Pause and return to the start position so that a stretch is felt across the back of the shoulder.

### 5. Rotator Cuff

This exercise is intended to strengthen the muscle group commonly known as the rotator cuff. You will a dumbbell to perform this exercise.

Stand with feet shoulder width apart, abdominals contracted. Bend your elbow to a 90 degree angle keeping the upper arm in contact with the torso and the dumbbell in front of your abdomen. Externally rotate at your shoulder to move the dumbbell away from the abdomen. Keep the movement smooth and controlled.

### **The Ultimate Conditioning Program**

This training program was first outlined in the spring of 1997 as a rough guide to cardiovascular training and muscular strength and endurance conditioning for the pre-season competitive Ultimate Frisbee athlete. It has since been update twice and most currently, is being presented as a formal Ultimate Frisbee Conditioning Program. It is anticipated that many future revisions will occur as a result of new information, strategies and guidelines being developed in the fields of Exercise Physiology, Kinesiology and applicable Sport Science.

This training program will be updated further with the addition of new Chapters that will address such topics as:

- ▷ *individual and team warm up strategies*
- ▷ *nutrition and proper hydration for competitive season play*
- ▷ *specific stretching programs such as PNF, ballistic stretching, passive and static stretching*
- ▷ *Plyometrics: individual and team drills*

Look for these articles and others in upcoming issues of TOUR, WUM and the updated OCUA website.