OFF-SEASON STRENGTH CONDITIONING
FOR POWER ATHLETES

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INTRODUCTION

Before we discuss training for power sports, we must consider exactly what is a power sport and power training.

The understanding of power capacity and how it can be created is one of the keys to optimizing athletic performance. Power should not be confused with strength. Power is the capacity to do a given amount of work as rapidly as possibly. Power includes the elements of strength and speed. It is dynamic strength coupled with movement speed. Speed is the ability to apply force rapidly, for example when doing a clean and jerk, jumping, throwing and sprinting.

One of the major advantages of being physically powerful is the ability to accelerate. An athlete who is powerful can get up to full speed faster than an athlete who is just strong. To be able to accelerate is not the same as simply being fast. Acceleration refers to the ability to change velocity quickly. Velocity is speed in a given direction. Therefore there is a big difference between lifting very heavy weights slowly and lifting them quickly.

![Diagram: Force vs Time]

Figure 1 1. Beginner - little power, much time  
2. Advanced - great power, shorter time

Power and explosiveness can only be developed by means of athletic type strength training. Athletic type strength is the ability to apply optimal muscular force through a full range of multiple joint movement with speed for a set distance or time as required to execute a specific athletic movement. It offers the greatest training transfer value biomechanically, physiologically and psychologically to a sport, especially if it is a power dominated sport.

The intrinsic value of athletic type strength training is its capacity to duplicate the large muscular and explosive force required when sprinting, jumping, throwing, striking or tackling.

One of the purposes of athletic type training, if not the main one, is to train and condition the sportsman to generate maximum muscular force at higher and higher movement speed. In competitive sport, when all other factors are equal, power is the deciding factor between winning an losing.
The working relationship between strength and speed is illustrated by the force-velocity curve, also known as the power-velocity curve.

**Figure 2** The Force-Velocity Curve Training Effects

To become a power athlete, your training must focus on shifting the middle portion of the curve to the right by either increasing strength or speed or both.

Athletic type strength training develops neuropsychological and neuropsychological systems to a degree that is impossible to achieve through general body building or machine training.
ATHLETIC WEIGHT TRAINING

The Greatest Transfer of Training for Athletics

Results from Lifts Which Allow

POWER

To Manifest Itself to the Greatest Degree

OLYMPIC LIFTING

ATHLETIC-TYPE LIFTS WHICH IN THEIR EXECUTION REQUIRE:

1. Use of all major muscle groups
2. Full range multiple joint movement in multiple directions
3. A strong ballistic impulse (maximum recruitment of fast twitch fibres)
4. Acceleration & Speed
5. Technique-Balance-Timing
6. Maximum Neuromuscular Conditioning
7. The athlete to think in terms of

STRENGTH * SPEED * TECHNIQUE & HIGH VELOCITY POWER
Athletic type lifts (power snatch, power cleans, high pulls and squats) are free standing muscle groups lifts. These exercises are also called Core Exercises and develop the "Power Zone" of the body.

![Image of a person lifting weights]

**Figure 3** The body's "Power Zone" concentric circles radiate out from the body's largest and strongest muscle groups to the smaller weaker groups.

These exercises are full range multiple joint ballistic movements which generate strong hip and torso rotational forces in multiple directions.

In the execution of these movements, you are forced to think in terms of strength, speed and technique.

The primary goal of athletic type strength training is to maximize the development of true genetic potential for strength, speed and power. These three elements must be worked on simultaneously and progressively while maintaining a balance with technical development.
THE OFF SEASON PROGRAMME

Many factors may affect athletic performance, luck is not one of them. Any world class athlete can tell that luck is 5% inspiration and 95% perspiration. The off-season phase in an athlete's year programme is a very important phase. During the off-season it is important to establish a good physical base (foundation). Although the technical demands of each sport are not the same, the physical demands are quite similar in terms of explosive strength, speed and power.

Periodization serves the framework around which a strength and conditioning programme is constructed. Periodization provides for maximum control of the variables of strength training, the intensity, volume, frequency, variation and rest.

The off-season consists of three phases starting with the Active Rest or Transition Phase.

Active rest is very important following a peaking or competitive period or season. During the period, it is important not to lay off completely of physical activities. The athlete should participate in another sport or recreational activities at a low to moderate intensity. The purpose of active rest is to help the athlete regenerate physically and emotionally and to rebuilt his/her motivational level before starting with the off-season programme.

The off-season training period consist of cycle 1 (preparation/conditioning phase) and cycle 2 (basic strength and power phase). The purpose of cycle 1 is to prepare the body to engage in future physically intensive athletic type strength and power training. During the second cycle of the off-season programme, gains in broad base strength proved the required foundation for further high intensity training. Strength, especially in the large muscle of the legs hips, abdominal and lower back, increases sharply. This is the so called power zone that is the most important aspect for the power athlete.
OFF SEASON PROGRAMME

CYCLE 1 (Basic Conditioning)

Duration : 6 weeks

Low intensity high volume work

Intensity : 70 - 80% of 1 ORM for 10 reps, 4 sets

Major aims

- Synchronize the mind and body back into rhythm of a regular workout schedule.
- Develop broad base physical conditioning strength, endurance, flexibility and agility.
- Reduce body fat.
- Prepare for future heavy training cycles.
- Work to improve lifting mechanics in the power snatch and power clean.

Weight training emphasis

- Athletic-type lifting.
- General bodybuilding.
- Optional: Interval weight training. A 2-week micro cycle between Cycles 1 and 2.

General conditioning activities

Cycling, running, swimming, in-line skating, cross-country, soccer, squash.

Technical work

Sports specific skill training to develop technically superior performance.

Total training

15 - 18 hours week. Does not include sports specific technical work.
<table>
<thead>
<tr>
<th>Monday (heavy day)</th>
<th>Tuesday (light day)</th>
<th>Wed &amp; Sat (endurance day)</th>
<th>Thursday (light day)</th>
<th>Friday (heavy day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warm-up</strong></td>
<td><strong>Warm-up</strong></td>
<td><strong>60-90 of one or two of the following activities:</strong></td>
<td><strong>Warm-up</strong></td>
<td><strong>Warm-up</strong></td>
</tr>
<tr>
<td>* Stationary bike or Stair master</td>
<td>* Same as Monday</td>
<td>* Cycling</td>
<td>* Same as Monday</td>
<td>* Same as Monday</td>
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<tr>
<td>* Stretching</td>
<td>Core lifts</td>
<td>* Hill running</td>
<td>Core lifts</td>
<td>Core lifts</td>
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<tr>
<td>Core lifts</td>
<td>* Incline press</td>
<td>* Soccer</td>
<td>* Power clean</td>
<td>* Power clean</td>
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<tr>
<td>* Power clean</td>
<td>Auxiliary lifts</td>
<td>* In-line skating</td>
<td>* Front squat</td>
<td>* Push press</td>
</tr>
<tr>
<td>* Squat (hi-bar)</td>
<td>* High pulls (snatch grip)</td>
<td>* Cross-country skiing</td>
<td>* Bench press</td>
<td>from rack</td>
</tr>
<tr>
<td>Auxiliary lifts</td>
<td>* Hanging leg lifts</td>
<td>* Basketball</td>
<td>Auxiliary lifts</td>
<td>* High pulls</td>
</tr>
<tr>
<td>* Good mornings (bent legs)</td>
<td>* Parallel bar dips</td>
<td>* Raquetball, etc.</td>
<td>* Good mornings (bent legs)</td>
<td>(clean grip)</td>
</tr>
<tr>
<td>* Abdominal crunch</td>
<td>* Front dumbbell raise</td>
<td>Technical work</td>
<td>* General bodybuilding, 30 min.</td>
<td>* Front dumbbell raise</td>
</tr>
<tr>
<td>Aerobic cool down</td>
<td>Aerobic cool down</td>
<td>* Sports specific</td>
<td>Aerobic Cool down</td>
<td>Aerobic cool down</td>
</tr>
<tr>
<td>* Stationary bike or Stair master, 20 min.</td>
<td>* Same as Monday</td>
<td></td>
<td>* Same as Monday</td>
<td>* Same as Monday</td>
</tr>
<tr>
<td><strong>Technical work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport specific</td>
<td></td>
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</tbody>
</table>

**Notes:**
- Weekdays are organized to include both strength and endurance training.
- Monday is considered a heavy day, focusing on lower body exercises.
- Tuesday is a light day, incorporating more flexibility and core work.
- Wednesday and Saturday are endurance days, emphasizing cardiovascular training.
- Thursday is a light day, similar to Tuesday.
- Friday is a heavy day, continuing the intensity of Monday.
OFF SEASON PROGRAMME

CYCLE 2 (Basic Strength)

Duration : 4 weeks. take one week rest before starting with Cycle 3.

High intensity, moderate volume.

Intensity : 70-80% of 5RM for 5 reps, 3-4 sets following the progressive overload system.

Major aims

Broaden base strength, especially in the power zone.

Weight training emphasis

* Same as Cycle 1.
* Learn the Olympic full squat snatch of Functional Isometrics between Cycles 2 and 3. (Functionals can be of special importance to athletes with several years of lifting experience).

General conditioning activities

* Same as for Cycle 1.
* Shift emphasis from endurance conditioning to more sports specific explosive-type, for example, speed/quickness drills and sprint cycling or running.

Technical work

Same as for Cycle 1

Total training time

12 hours per week. Does not include sports specific technical work.
<table>
<thead>
<tr>
<th>Monday (heavy day)</th>
<th>Tuesday (light day)</th>
<th>Wednesday</th>
<th>Thursday (light day)</th>
<th>Friday (heavy day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warm-up</strong>&lt;br&gt;* Stationary bike or Stairmaster&lt;br&gt;* Stretching</td>
<td><strong>Warm-up</strong>&lt;br&gt;* Same as Monday</td>
<td><strong>Warm up</strong>&lt;br&gt;* 10 min jogging and stretching&lt;br&gt;* Speed/quickness drills&lt;br&gt;* Technical drills, sports specific</td>
<td><strong>Warm up</strong>&lt;br&gt;* Same as Monday</td>
<td><strong>Warm-up</strong>&lt;br&gt;* Same as Monday</td>
</tr>
<tr>
<td><strong>Core lifts</strong>&lt;br&gt;* Power clean (floor and hang)&lt;br&gt;* Squat (hi-bar)</td>
<td><strong>Core lifts</strong>&lt;br&gt;* Push press&lt;br&gt;* Incline press</td>
<td><strong>Core lifts</strong>&lt;br&gt;* Power clean&lt;br&gt;* Incline dumbbell press</td>
<td><strong>Core lifts</strong>&lt;br&gt;* Power snatch (floor &amp; hang)&lt;br&gt;* Bench press</td>
<td><strong>Core lifts</strong>&lt;br&gt;* Block high pulls (clean grip)</td>
</tr>
<tr>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;* Block high pulls (snatch grip)&lt;br&gt;* Good mornings (bent legs)</td>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;* Learn and practice full squat snatch</td>
<td><strong>Technical work</strong>&lt;br&gt;* Sports specific&lt;br&gt;<strong>Saturday</strong>&lt;br&gt;* Running-Interval work &amp; hurdling</td>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;* Good mornings (bent legs)&lt;br&gt;* Lean &amp; practice full squat clean</td>
<td><strong>Aerobic cool down</strong>&lt;br&gt;* Same as Monday</td>
</tr>
<tr>
<td><strong>Aerobic cool down</strong>&lt;br&gt;* 10-5 min Stationary bike or Stairmaster</td>
<td><strong>Technical work</strong>&lt;br&gt;* Sports specific</td>
<td></td>
<td></td>
<td><strong>Aerobic cool down</strong>&lt;br&gt;* Same as Monday</td>
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</table>
OFF SEASON PROGRAMME
CYCLE 3 - The cycle of pain (Strength and Power)

Duration : 4 weeks. Take one week rest before starting with Cycle 4.

Very high intensity, low volume

Intensity : 80-90% of 3RM for 3 reps, 2-3 sets following the progressive overload system.

Major aims

* Facilitate maximum neuromuscular conditioning and full-range body power.

* Optimize the relationship between strength speed-power for peak throwing performance.

Weight training emphasis

Athletic-type lifts with greater utilization of full squat snatch and squat clean.

General conditioning activities

Sports specific acceleration, speed, and plyometric drills (i.e. sprinting, bounding, jumping).

Technical work

Strive to maintain a balance between increasing strength and sports specific skill technique.

Total training time

12 plus hours per week. Does not include sports specific technical work.
<table>
<thead>
<tr>
<th>Monday (heavy day)</th>
<th>Tuesday (light day)</th>
<th>Wed &amp; Sat</th>
<th>Thursday (light day)</th>
<th>Friday (heavy day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warm-up</strong>&lt;br&gt;*Stationary bike or Stairmaster 5 min&lt;br&gt;*Stretching</td>
<td><strong>Warm up</strong>&lt;br&gt;Same as Monday</td>
<td><strong>Technical drills</strong>&lt;br&gt;(Sports specific)</td>
<td><strong>Warm up</strong>&lt;br&gt;*Same as Monday</td>
<td><strong>Warm-up</strong>&lt;br&gt;*Same as Monday</td>
</tr>
<tr>
<td><strong>Core lifts</strong>&lt;br&gt;*Incline press or *Incline dumbbell press</td>
<td><strong>Core lifts</strong>&lt;br&gt;*Incline press or *Incline dumbbell press</td>
<td><strong>Speed/quickness acceleration.</strong>&lt;br&gt;Plyometric:&lt;br&gt;*Hurdle jumps&lt;br&gt;*Horizontal jumps&lt;br&gt;*Hops&lt;br&gt;*Rebounds &amp; depth jumps</td>
<td><strong>Core lifts</strong>&lt;br&gt;*Hang power clean&lt;br&gt;*Front squat plus push press</td>
<td><strong>Core lifts</strong>&lt;br&gt;*Power squat snatch&lt;br&gt;(floor &amp; hang)</td>
</tr>
<tr>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;*Power snatch plus squat</td>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;*Power snatch plus squat</td>
<td><strong>Aerobic cool down</strong>&lt;br&gt;*Same as Monday</td>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;*Power clean&lt;br&gt;*Technical work squat clean&lt;br&gt;*Good mornings</td>
<td><strong>Auxiliary lifts</strong>&lt;br&gt;*High pulls from blocks</td>
</tr>
<tr>
<td><strong>Aerobic cool down</strong>&lt;br&gt;*10 min Stationary bike or Stairmaster</td>
<td><strong>Aerobic cool down</strong>&lt;br&gt;*10 min Stationary bike or Stairmaster</td>
<td><strong>Technical work</strong>&lt;br&gt;*Sports specific</td>
<td><strong>Aerobic cool down</strong>&lt;br&gt;*Same as Monday</td>
<td><strong>Aerobic cool down</strong>&lt;br&gt;*Same as Monday</td>
</tr>
<tr>
<td><strong>Technical work</strong>&lt;br&gt;Light</td>
<td><strong>Technical work</strong>&lt;br&gt;Light</td>
<td></td>
<td><strong>Technical work</strong>&lt;br&gt;*Sports specific</td>
<td><strong>Technical work</strong>&lt;br&gt;*Sports specific</td>
</tr>
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</table>
Recommended readings


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