**SECTION 5.** 

# <text>







## **COMBINING STRENGTH AND EXPLOSIVE POWER.**

When modern strength and conditioning principles were developed in the 80's and more formalised procedures for the development of different areas of fitness were produced, the approach was typically focussed on developing one bio-motor ability at a time.

As modern training methods have developed and more consideration has been given to crossovers in sport and everyday function, there has been a development in the way different areas of fitness are combined in the same session and in same set protocol.

A common area to combine is strength and power training due to its application in most sports.

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# **HOW IS IT DONE?**

Combining a strength-based exercise followed by an explosive power exercise utilizing the same, or similar movement pattern, is the basis for this style of training.

The strength exercise is performed at relatively high loads, circa 75% - 90% of 1 rep max and after adequate rest, the explosive power exercise is performed at much lower weight, circa 10% - 20% of 1 rep max. in some cases, even just bodyweight is ample to get the benefits.

Examples:

EXERCISE OBJECTIVE: STRENGTH. STATION: LIFT.	EXERCISE OBJECTIVE: EXPLOSIVE POWER. STATION: LIFT.
EXERCISE: Deadlift Two Hands	EXERCISE: Jump Two Hands
GRIP: Neutral Grip	GRIP: Neutral Grip
STANCE: Neutral	STANCE: Neutral
<b>REPS:</b> 5	R <b>EPS:</b> 5
% 1 RM: 85%	% 1 RM: 10% (of Deadlift)
<b>REST:</b> 3 to 5 minutes	REST: 2 minutes

EXERCISE OBJECTIVE: STRENGTH. STATION: DRIVE.	EXERCISE OBJECTIVE: EXPLOSIVE POWER. STATION: EXPLOSIVE POWER.
EXERCISE: Two Arm Drive	EXERCISE: Two Arm Drive
GRIP: Neutral Grip	GRIP: Hand Release Neutral Grip
STANCE: Neutral	STANCE: Split
<b>REPS:</b> 5	<b>REPS:</b> 5
% 1 RM: 85%	% 1 RM: 10% (of Two Arm Drive)
REST: 3 to 5 minutes	REST: 2 minutes





# WHAT'S HAPPENING DURING A SET?

#### FORCE VELOCITY CURVE AND POST-ACTIVATION POTENTIATION.

In the first exercise where the objective is strength, the user is performing the exercise close to the top left of the force velocity curve where maximal strength is developed. This single set primes the muscles without fatiguing the energy systems excessively and with the following rest period allows the energy systems the necessary recovery time. During this first exercise an acute excitation of the neuromuscular system takes place, which can then improve performance in the following explosive movement. This phenomenon is known as Post-Activation Potentiation (PAP).

There are multiple studies available providing suggested rest periods to optimise PAP, with recommendations up to 12 minutes between exercise 1 and 2. Following that guidance would obviously be very prohibitive in most group and PT cases. There are still benefits to gain from shorter rest periods and therefore advisable to take this approach unless working with an elite level athlete who may be able to appreciate the need for it.

In the following explosive power exercise, the user has not only primed the muscles to work, but they also have the potential to be more explosive. The neural priming also helps the user learn the movement and be better prepared mentally for the exercise.



The graph illustrates, hypothetically, the relationship between PAP and fatigue following an initial stimulus. When the intensity is moderate to high, the window for performance is realized after considerable rest periods.





# **COMBINING STRENGTH AND POWER FOR BETTER CONDITIONING.**

In the above examples the objective is to create the best possible environment for the development of explosive power. But there are other benefits to performing these combos and adjusting the variables accordingly to achieve different outcomes.

#### **SPORTS CONDITIONING.**

This style of training can be exceptionally good for sports that involve the use of multiple energy systems. By reducing the rest period between exercises and subsequently reducing the load in exercise 1. Users can still get some of the benefits of PAP but more than this, they can get the benefits from the demands placed on the energy systems and muscles.

#### **METABOLIC CONDITIONING.**

Like the principles above for sports conditioning, users who are looking for metabolic conditioning can get impressive results from this style of training. Not only is there a high demand on the cardiovascular system during the exercises, but there is also a greater demand placed on the metabolic system post exercise and increase in EPOC.

#### Examples:

EXERCISE OBJECTIVE: STRENGTH. STATION: LIFT.	EXERCISE OBJECTIVE: EXPLOSIVE POWER. STATION: LIFT.
EXERCISE: Deadlift Two Hands	EXERCISE: Jump Two Hands
GRIP: Neutral Grip	GRIP: Neutral Grip
STANCE: Neutral	STANCE: Neutral
<b>REPS:</b> 8	<b>REPS:</b> 6
% 1 RM: 75%	% 1 RM: 10% (of Deadlift)
REST: 90 seconds	REST: 60 seconds

EXERCISE OBJECTIVE: STRENGTH. STATION: DRIVE.	EXERCISE OBJECTIVE: EXPLOSIVE POWER. STATION: LIFT.
EXERCISE: Two Arm Drive	EXERCISE: Two Arm Drive
GRIP: Neutral Grip	GRIP: Hand Release Neutral Grip
STANCE: Neutral	STANCE: Split
<b>REPS:</b> 8	<b>REPS:</b> 6
% 1 RM: 75%	% 1 RM: 10% (of Two Arm Drive)
REST: 90 seconds	REST: 60 seconds



escape



## WHY THE LOAD RANGE EXCELS IN STRENGTH AND POWER COMBOS.

The LOAD range makes it incredibly easy to perform strength and power combinations. For the strength exercise, plates can be stacked onto the arms and all resistance bands attached. Then during the rest period, the plates can be quickly removed to leave just the resistance bands, where a user can select the correct number of bands to produce a high velocity movement. As well as this ease of adjustment, the movement pattern is the same creating the best possible transfer and preparation for the explosive exercise.





