

## Video transcript



**Video title:** 2.3 Plyometric training

**Learning outcome:**

- To describe what plyometric training is
- To understand the stretch shortening cycle
- To describe a range of plyometric training examples
- To consider programming requirements of plyometric training

### Slide 4

I hope you enjoyed that sample of some of the best jumpers in the world. What each and everyone of those jumpers have in common, is the fact they have spent a considerable amount of time doing plyometric training.

Plyometrics is often called jump training and can be defined as any form of exercise that involves rapid and repeated stretching and contracting of the muscles.

Plyometric training leads to dramatic increases in muscular power, resulting in increased vertical jumping ability and straight line speed. These

It develops a process called the stretch shortening cycle that we will briefly explain shortly.

Because of the high demands of plyometric training on the body, it is suggested that you only need to perform 2 times per week to see results. When paired with a quality strength resistance programme your results can be considerably greater, as strength training increases your potential to develop muscular power.

### Slide 5

The stretch-shortening cycle (SSC) refers to the 'pre-stretch' or 'countermovement' action that we often see when performing movements such as a vertical jump.

It consists of a rapid cycle where a muscle performs eccentric contraction, followed by a transitional period called the amortization phase, before moving into the concentric contraction.

The stretch shortening cycle is a very scientific process, so I'm going to try to describe it in a more simple form. It's like compressing a spring. If you compress the spring, it will rebound off a surface. If you increase the speed by which you compress it, or you apply more force to the spring, it will

rebound much higher off the surface.

This is what plyometric training improves. It serves to develop your eccentric strength, making for a quicker transition to the concentric phase, improving jumping ability.

## **Slide 6**

Some examples of plyometric training include:

Jumps that develop the stretch shortening cycle. These are jumps that emphasise spending as little time on the ground as possible. The most common version of a stretch shortening cycle exercise is the depth jump, where you drop off a small box. The instant you make contact with the ground, you explode back up again.

Habitual jump training was developed over 25 years ago and consists of high repetition jumping movements. An example of habitual jump training is the programme called air alert, which can now be accessed for free. Although aspects of it develop the stretch shortening cycle, much of it emphasises muscular endurance and can up to thousands of repetitions in a single session.

Strength shoes such as Jump Soles came to prominence in the early 1990s and are more of a gimmick than solid training tool. While wearing the shoes you perform normal jumping movements. The only difference is the placement of the weighted shoe loads up your calf muscles more.

Finally, plyometrics is not just a lower body exercise. Medicine ball throws can help develop the stretch shortening cycle in the upper body. This can be a common exercise for gymnasts.

## **Slide 7**

For specificity, attempt to mimic movements from the sport you are training for. If your sport emphasises single leg movements, then the majority of your exercises should be single leg jumps.

For progressive overload you can increase the weight lifted or number of foot contacts. Don't play with your rest periods too much as maximum recovery is needed between sets.

As mentioned, large rest periods to allow max recovery between sets. Also allow at the up to 72 hours between plyometric sessions.

You shouldn't exceed a frequency of more than twice per week.

Maximum intensity is required for plyometric training. You should always aim to jump or throw with a maximum effort.

In terms of time, no longer than 20 – 40 minutes per session, but for plyometric training use foot contacts to guide your training time. Between 80 to 100 for a novice athlete, 120 to 140 for a more advanced athlete. And a highly trained athlete can manage between 200 to 300 foot contacts. These athletes are most likely to be those involved in sports or events that require a lot of jumping.

## **Slide 8**

To summarise,

Defined plyometric training which was any form of exercise that involves rapid and repeated stretching and contracting of the muscles.

we briefly looked at the stretch shortening cycle and compared it to the compression of a spring.

We considered examples of plyometric training. These were stretch shortening cycle jumps, habitual jump training, strength shoes and medicine ball throws.

And finally, we considered how we might programme for plyometric training.

**Copyright © 2017 by Augmented Learning Limited**

All rights reserved. This document or any portion thereof may only be used by individuals or schools with a current subscription to My Study Series. It may not be reproduced or used in any manner whatsoever without the express written permission of the publisher.

**Ordering information:**

Please visit <https://www.mystudyseries.co.nz/> for more information on accessing a subscription to the My Study Series learning platform.