

The Movement Analysis of a Jump Squat

INTRODUCTION

According to Marian, Katarina, David, Matus, and Simon from the Journal of Sports Science and medicine, including jump squats in a workout, will increase isometric half-maximal force production (Fmax), rate of force development over 100ms (RFD100), countermovement jump (CMJ) and squat jump (SJ) height, and 50 m sprint time in moderately trained men.. The movement itself would be considered to have an eccentric load, this when the muscle lengthens while producing tension.

According to Loturco, et al., jump squat training can enhance performance for athletes through loaded or unloaded training programs. It is really seen during the descend of the body, when coming back down to the ground from the jump. This movement also utilizes the calves, glutes, hamstrings, core, and quads which is why all athletes utilize this complex movement to enhance their workout routines. It is an all-around versatile movement that is utilized by all types of athletes. It is completely performed in the sagittal plane meaning when any form of flexion or extension movements are done.

CONCLUSION

In conclusion, a lot of what we already knew about the jump squat was just confirmed from our research but it was interesting to see who all can benefit from doing this movement during their normal workouts. When actually breaking down the movement you realize all the different components that go into performing this exercise as well as the benefits on the body it provides.

PHASE 1



The body is in the fundamental starting position. With the feet placed shoulder-width apart, knees are at a normal extension and the trunk is upright at this time. During this whole process, we can see this movement is occurring in the sagittal plane.

From here we see the hyperextension of the shoulders to occur during the process of the load. With this, you begin to see a slight flexion of the trunk and there is a slight flexion in the knees.

PHASE 2



Plantar flexion of the foot begins as the knees and hip fire rapidly to extension. During this motion, the arms will swing upward causing extension of the elbow and hyperflexion of the shoulders as the arms are at full extension.

The athlete must explosively jump upward as high as they can while reaching up. Make sure to land in the same position.

PHASE 3



Now we see the body is descending back down and this is where the squat occurs. At this point the trunk is flexed, knees are flexed and there is flexion at the hips. Elbows are flexed to the side, helping the body in maintaining stability as the descend occurs.

The core is what is being used as the main sense of support when performing the end of the movement.

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