

FC EDMONTON – MADE IN CANADA | FUTSAL – THE PRESENT AND FUTURE OF INDOOR SOCCER

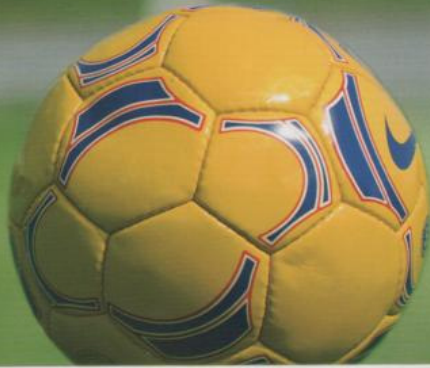
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Guide to Indoor SOCCER



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Fit Facts

The Optojump Next

A Revolutionary New Tool to Assess Leg Power, Elasticity, and Reactive Strength

By Richard Bucciarelli

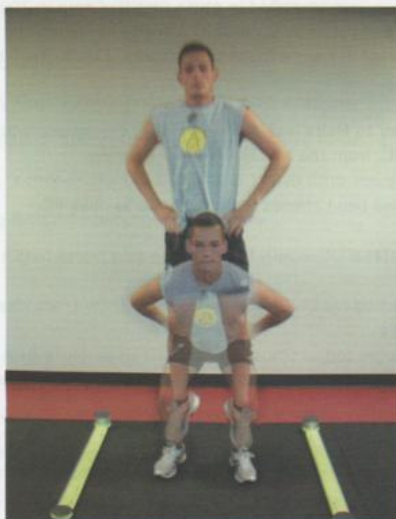
Leg strength and power are key components to physical performance in soccer players. A challenge among soccer fitness coaches has been to define exactly what aspects of leg strength are specific to the sport of soccer, as well as to determine how best to assess athletes' leg power, and subsequently to train and improve it in order to improve performance.

A review of the literature regarding leg power in soccer has determined three separate factors which together contribute to optimal performance in the sport:

- Leg Muscle Power
- Leg Muscle Elasticity
- Reactive Leg Muscle Strength

Leg muscle power is defined as the ability of the legs to produce a large amount of force in a short amount of time. Leg muscle elasticity is related to leg muscle power, but it also takes into account the ability of the leg muscles to stretch, and then contract quickly to produce force (an action known as the "stretch-shortening cycle"). Finally, reactive leg muscle strength has to do with the speed of stretching/contracting muscles, or the stretch-shortening cycle as it applies to a reactive force such as landing from a jump or slowing down/ decelerating from a run.

Before a training program can be implemented, soccer fitness coaches need to assess these specific abilities in their players. Conventional methods of vertical jump assessment, including



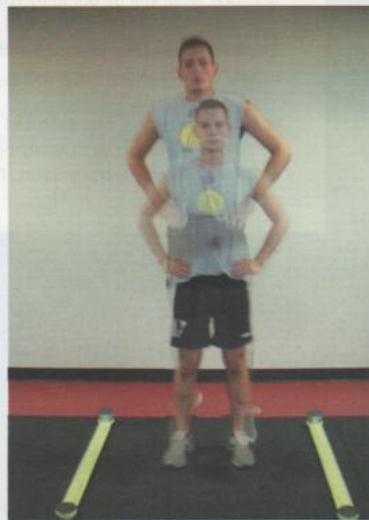
Above, the Squat Jump

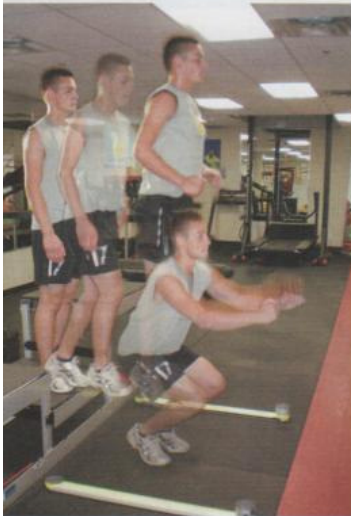
the 'wall-and-chalk', and Vertec system, are effective only in measuring leg muscle power and elasticity, with no real means of measuring reactive leg muscle strength. Furthermore, the wall-and-chalk and Vertec are also limited by a specific technique – of jumping with the arm raised – as well as limb length, which can adversely affect the reliability of the tests.

The Optojump Next electronic timing system, used by professional clubs from around the world, including in Italy, Spain, Germany, and the Netherlands to name a few, is a tool that enables soccer fitness coaches to quickly and accurately assess leg muscle power, elasticity, and reactive

strength. The system consists of two bars, each one metre in length, that face each other and transmit/receive 100 infra-red lasers – one laser every one centimetre – along the ground. The system measures both the time duration and the exact placement of interruptions in the lasers, with incredible accuracy of over 1/100th of a second. Based on the athlete's weight and time spent in the air while jumping, an accurate measurement of leg muscle power and leg muscle elasticity can be made that eliminates the aforementioned technique and limb length problems associated with conventional vertical jump assessments. In addition, because

Below, the Counter Movement Jump





Left, the Drop Jump

the time the athlete's feet are in contact with the ground is recorded, the Optojump Next system also provides an accurate and reliable assessment of leg muscle reactive strength.

Following is a detailed description of Soccer Fitness' lower body assessments conducted using the Optojump Next electronic timing system:

Squat Jump:

- athlete must stand inside the Optojump bars, with feet shoulder-width apart, and place hand on hips
- athlete must squat to a 45-degree angle of knee flexion, and hold that position
- keeping the hands on the hips, and without lowering the body and/or bending at the hip or knee any further, athlete must jump as high as possible, finishing the jump with extended (straightened) hips, knees, and ankles
- The best score from three trials is recorded

Counter Movement Jump:

- athlete must stand inside the Optojump bars, with feet shoulder-

- width apart, and place hand on hips
- keeping the hands on the hips, athlete must jump explosively by extending (straightening) the hips, knees, and ankles
- the best score from three trials is recorded

- upon landing, athlete jumps explosively upwards by extending (straightening) the hips, knees, and ankles
- the best score from three trials is recorded



Drop Jump:

- athlete must stand on a 24cm box, placed directly behind the Optojump bars
- athlete lowers the body by dropping into the area inside the Optojump bars

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Science-Based, Soccer-Specific Training Including:

- ⊗ High-Speed Treadmill Training
- ⊗ Plyometric Training
- ⊗ Soccer-Specific Running & Kicking Cords
- ⊗ Soccer-Specific Fitness Assessments

ATHLETES WHO HAVE BEEN THROUGH OUR PROGRAM:

<p>Sotiri Varlokostas Goalkeeper, York Lions Men's Varsity Soccer Team, 2009-present 2010 CIS National Champions</p>	<p>Nana Attakora-Gyan Defender, Toronto FC, 2008-2010, San Jose Earthquakes 2011-present, MLS Canadian Men's Senior National Team, 2010-present</p>	<p>Jelani Smith Defender, Florida Gulf Coast University, 2009-present Canadian Men's U-20 National Team, 2010-present</p>
<p>Nicole Markowitz Midfielder, York Lions Women's Varsity Soccer Team, 2007-present 2009 OUA Champions</p>	<p>Spyros Stergiotis Goalkeeper, Wilmington University, 2009-Present</p>	

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Find Out More at www.soccerfitness.ca