

Knock Out Knee Pain With TKEs

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As an athlete and performance coach, one issue that is constantly coming up with my clients and myself is knee pain, specifically patellar tendonitis, a.k.a. Jumper's Knee. This is not the acute knee pain that shows up every once in a while at the gym, but rather the chronic, irritating knee pain right below the kneecap that is with you all hours of the day, regardless of how much ice you've put on it. If you know exactly what I am talking about because you experience this on a daily basis then continue reading because I may have found your answer.

Terminal Knee Extensions (TKEs) are basic knee extensions that target the Vastus Medialis Oblique (VMO) by limiting the range of motion to approximately 20-30 degrees^{1,2,3}. The most important part to take away from that last statement is the strengthening of the VMO, which is important because it will aid in tracking the patella correctly⁴. TKEs can be performed many ways, including using multi-hip machines and bodyweight, but what I like using best are resistance bands. This is a good initial starting point for most people, as it is a simple motion on solid ground and the resistance of the band can vary to accommodate different strength needs. The basic set-up is as follows: Loop the band around some type of hook or stable piece of equipment and then loop the other end of the band behind the knee. Essentially the motion you are going for is to rise up onto your toes of the leg that is banded by bending that knee, then rock back onto that heel, extending your knee in the process. Your other leg will be planted firmly on the ground, being used to stabilize this action. Because the VMO is a slow-twitch postural muscle you will be looking at a lower number of sets with a higher number of reps, somewhere in the range of 2-3 sets for 15-20 reps each^{1,2,3}. It is my opinion, as well as the opinion of many others, that TKEs are best-served to be performed as a part of an athlete's warm-up.

The body adapts to TKEs just like it does any other exercise, so it is important to vary how you perform this exercise every couple weeks or so. The following exercises are a brief progression of TKEs, starting with the least difficult and becoming more difficult as you move down the list:

- Banded TKEs
- Low-box (approximately 2") TKEs
- Medium-box (4-6") TKEs
- High-box (inferior height of the patella) TKEs
- Slant-box TKEs

These are just a few of the exercises in the whole progression. If you want to see these exercises performed correctly, please check out the Buddy Morris interview

¹ <http://www.youtube.com/watch?v=fZYIMSpZNZo&feature=related>

² <http://www.youtube.com/watch?v=G6is1stGcP0&feature=related>

³ <http://www.youtube.com/watch?v=bXpBXxzLxmY&feature=related>

⁴ http://www.fiba.com/asp_includes/download.asp?file_id=351

conducted by EliteFTS on YouTube, specifically segments 2, 3, and 4. In fact, if you are reading this article search for this interview as it is incredibly informative and the main source of information for this article.

As you strengthen your VMO through these different TKE techniques it will be imperative that you work on corrective flexibility, especially for your IT band and gluteus medius. One of the most effective ways of doing this is through self-myofascial release, or SMR, such as foam rolling. To get a complete demonstration of a lower-body foam rolling routine, including the IT band and gluteus medius, check out my SMR/Foam Roller video on the video page of this website. And always, always, always make sure to ice your knees after activity if you struggle with patellar tendonitis, regardless of whether they hurt right then or not.

Knee pain is something that many athletes, including myself, have to deal with on a daily basis. While patellar tendonitis can be incredibly annoying and painful, there are ways to treat it. Through use of corrective stretching techniques, icing post-workout, and adding in TKEs to your warm-up you can minimize pain caused by patellar tendonitis in a relatively short period of time. I've been performing TKEs as part of my warm-up for the last two weeks and my knees have never felt better!

Get big or die tryin'.

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