

The focus on USA Olympic Beach Volleyball player Kerri Walsh's right shoulder has piqued the public's interest about Kinesio tape.

What is Kinesio tape?

Kinesio tape is an adhesive cotton athletic tape with an elasticity that allows it to stretch up to 120% to 140% of its original length without any tension. The Kinesio tape is claimed to reduce swelling, pain and decrease muscle spasm. Invented by a Japanese chiropractor, Kenzo Kase, his taping technique has been used by sports medicine professional world-wide.

Research on Kinesio Tape

There is some limited published research on the effects of Kinesio tape and muscle or athletic function. We have reviewed several of the studies below: A 2007 study from the Department of Rehabilitation and University of Warsaw, Poland looked at the impact of Kinesio taping on muscle activity of the vastus medialis (part of the quadriceps muscle) in healthy adult volunteers. A total of 27 subjects had EMG testing of the vastus medialis before and after application of the Kinesio tape to determine if the tape had any effect on measurable muscle activity. The researchers measured muscle activity over 5 repetitions of 3 seconds of muscle contraction followed by 3 seconds of muscle relaxation.

On the first day of taping, they did not see an appreciable difference in muscle activity in the short term (ten minutes after applying the Kinesio tape). However, after 24 hours of wearing the Kinesio tape, they did see a measurable increase of muscle activity of 54% from initial testing. This increase in muscle activity and peak torque from the Kinesio tape would be higher than expected due to simply day-to-day fluctuations of muscle activity as reported in previous studies. After 24 hours, the researchers removed the tape and continued to measure peak muscle torque at 72 and 96 hours to determine if there was a lasting effect from the Kinesio tape. Interesting, they found that there was still an increase in the peak muscle torque and muscle recruitment at 72 hours from the initial Kinesio tape application and 48 hours after removing the Kinesio tape. This finding would suggest that the mechanical properties of the Kinesio tape itself while on the skin are not the only contributing factors to increasing muscular activity. This study, while apparently well done, only targeted subjects without any knee pain or injury. It would be interesting to compare uninjured and injured groups in this study.

A more recent study published in the Journal of Sports Physical Therapy in July 2008 by US Army physical therapists found the Kinesio taping helped with increasing shoulder range of motion in subjects diagnosed with rotator cuff tendonitis. The subjects studied either had Kinesio tape applied in a specific pattern to the affected shoulder or had "sham" Kinesio taping to the shoulder that was not designed to facilitate and improve shoulder range of motion.

The Kinesio taped subjects demonstrated an immediate measurable increase in their pain-free range of motion following taping in comparison to the "sham" Kinesio tape group. The study would suggest that Kinesio taping of patients with rotator cuff tendonitis may experience an immediate measurable improvement in their pain-free range of motion. It would be interesting to continue the study for a longer time

period to quantify how long the improve lasts - if only for the duration of the Kinesio tape application or longer as demonstrated in the first study.

Another recent study from the Journal of Science and Medicine in Sport looked at the effect of Kinesio tape on muscle function and strength of the anterior knee and thigh of healthy college kickboxers from the National College of Physical Education and Sport in Taiwan. Any athletes with a history of knee pain or injury within 3 months of starting the study were excluded from the study. The researchers used a Y-shaped Kinesio tape on the dominant-side quadriceps following Kenzo Kase's Kinesio taping manual and tested concentric and eccentric quadriceps and hamstring contraction two different speeds. The measurements were taken before Kinesio taping, immediately after Kinesio taping and then 12 hours after the Kinesio tape had been applied.

The researchers found that there was no significant measurable difference in quadriceps and hamstring muscle strength before and 12 hours after Kinesio taping. The researcher did attempt to determine if there was facilitation or inhibition of the quadriceps by also measuring the antagonist hamstring muscle group. One limitation of the study is that it did not measure a longer time interval after the Kinesio tape application to determine if a longer time was required before a measurable difference was found.