KINESIO TAPEING OF THE KNEE FOR CHONDROMALACIA

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TOPIC OF DISCUSS FOR IN-SERVICE

FOUNDER OF KINESIO TAPE CHALLENGES FOR USAGE PRECUTS STYLES PROPERTIES AND BENEFITS FOUR MAJOR FUNCTIONS OTHER USES PROPERTIES AND BENEFITS POSITION OF THE KNEE FOR TAPING

HOW TO PERFORM KINESIO TAPING FOR CHONDROMALACIA OF THE KNEE

PREDISPOSED FACTORS OF CHONDROMALACIA SYMPTOMS, DIAGNOSIS SPECIAL TEST FOR DIAGNOSING VARIOUS WAYS OF TREATMENT MMT FOR PROGRESSION/REGRESSION WHEN TREATMENT UTILIZED
The Kinesio Taping® technique and Kinesio Tex tape was developed by Dr. Kenzo Kase in Japan in the 1970s.

In 1973, Dr. Kase's objective was to create a therapeutic tape and taping technique which could support the joints and muscles, without restricting ROM with a added benefit assisting the lymphatic. Following two years of research into muscle taping, tape elasticity, adhesiveness and breathability Dr Kase developed Kinesio Tex® tape and the Kinesio Taping method.

It is based on 3 important concepts: Space, movement and cooling –

See more at: http://www.physio-pedia.com/Taping#sthash.GCnI3m5T.dpuf

http://www.kinesiotaping.co.uk/history.jsp
Now some challenges with using kinesio tapes include selection of technique, size, and proper application. There are no physical product differences between the colored tapes. In Japan, they use them as a form of color therapy. Beige for edema taping. Pink, black, and blue for sports. The kinesio tape comes in Pre-cut packets designed so you can easily identify where each tape strip should be applied.
Precuts styles of Kinesio Tape

X CUT is utilized for tension that is directly over the target tissue and dispersed through tails at each end.

Y Strip is utilized for tension that is dispersed through and between two tails over target tissue.

I Strip focused directly of the (therapeutic zone) over the target tissue.
PROPERTIES AND BENEFITS OF KINESIO TAPE

Kinesio tape is a heat sensitive acrylic adhesive that is 100% breathable cotton material. This allows for ROM since it has 30-40% of resting length to allow help with support and reduce muscle fatigue it also can be worn for several days without re-application and has approx. six to ten applications per roll which makes it cost effective.

- Prevents overstretching of injured muscles
- Restores strength to weak or injured muscles
- Improves mobility/flexibility in injured areas
- Enhances muscle tone in weak muscles
- Correction of muscle or posture imbalances
- Provides benefits 24/7 the entire time it’s worn
- Relief of both acute and chronic pain
- Reduction of inflammation, swelling, edema
- Improved circulation and lymphatic drainage
- Reduced fatigue in overused muscles
- Prevention/relief of cramps or spasms
- Accelerates healing after injuries or surgery
Dr. Kase lists the following as the four major functions of Kinesio Taping. These functions drive the technology behind the tape:

**Supporting the muscle** -- Proper taping improves the muscle's ability to contract even when it's weakened, reduces a feeling of pain and fatigue, and protects the muscle from cramping, over-extension and over-contraction.

**Removing congestion to the flow of body fluids** -- Kinesiology tape improves blood and lymphatic circulation and reduces inflammation and excess chemical buildup in the tissue.

**Activating the endogenous analgesic system** -- This requirement means that the tape facilitate the body's own healing mechanisms, a central focus in chiropractic medicine.

**Correcting joint problems** -- The goal is improving range of motion and adjusting misalignments that result from tightened muscles.

http://science.howstuffworks.com/kinesiology-tape1.htm
So what can kinesio tape be used for?

Athletes:

Lymphedema;

Tile layer

This patient fell off a horse and got quite a nasty, painful bruise on July 31st. Kinesio Tape made the bruise mostly disappear in 14 days and the pain was gone within a week. The bruise was originally 6” x 3” or 16 cm x 7 cm.
The patella is designed to glide smoothly over the femur, and the joints in your body are cushioned with articular cartilage this tough, rubbery tissue covers the ends of bones inside a joint. As the joint moves, the cartilage helps to cushion the bones and allows them to glide smoothly against one another. Sometimes, the cartilage behind the kneecap (patella) softens and breaks down causing pain, poor alignment and inflammation these conditions are the causes for the pathological changes indicating chondromalacia which can affect any joint, but the most common location is inside the knee patella which is the most. In severe cases, the damaged cartilage can wear away completely, down to the undersurface of the kneecap. If this happens, the exposed kneecap's bony surface can grind painfully against other knee bones. Also, bits of cartilage can float inside the joint, further irritating the cells that line the joint. In response, these cells produce fluid inside the joint (called a joint effusion).
SOME PREDISPOSED FACTORS OF CHONDROMALACIA

Chondromalacia of the knee affects young adults more than any other age group. It is especially common in runners, joggers, skiers, soccer players, cyclists and other athletes who repeatedly stress their knees. Also, workers who spend a lot of time kneeling – particularly carpet layers, tile setters and floor layers – are more likely to develop this problem. Now weak quadriceps (usually the inner one), or tight quadriceps (usually the outer one) tend to be the problem

- Poor strength in the gluteal muscles resulting in poor knee alignment
- Poor biomechanics with running
- Running too many days in a row without proper recovery
- Excessive Supination or Pronation,
- Worn shoes that result in poor cushioning or instability
- Tightness especially in the IT Bands, hamstrings, quadriceps and gluteal
- Trigger points in the IT Bands, hamstrings, quadriceps and gluteal
- These will be many of the patients that will have a great impact in the orthopedic field of physical therapy
The most common symptom of Chondromalacia is a dull, aching pain in the front of your knee, behind your kneecap. Also can make your knee joint "catch" meaning you suddenly have trouble moving it past a certain point, or "give way" (buckle unexpectedly). In some cases, the painful knee also can appear puffy or swollen can cause a creaky sound or grinding sensation when you move your knee. However, creaking sounds during bending do not always mean that cartilage is damaged.

• **Diagnosis**

  • Your doctor will want to know whether you have ever:
  • Fractured your kneecap or any other bone in the knee joint
  • Sprained your knee or injured your knee's meniscus (the disk-shaped, shock-absorbing cartilage inside the knee)
  • Had knee surgery
  • Had bleeding or an infection inside your knee joint
  • Been diagnosed with arthritis in your knee
  • Your doctor also will ask about the type of work you do and your recreational and sports activities.
SPECIAL TEST FOR DIAGNOSING CHONDROMALACIA

• Clarke’s Sign – Clarke’s Sign is a test designed to identify the presence of Chondromalacia patella and can only be done once. A positive test will cause a significant amount of discomfort or pain, and most clients will not allow for its repeat. The patient lies prone. With the web of the hand the therapist presses the patella down towards the feet in an inferior direction. The client is then asked to contract the quadriceps muscle as the therapist continues applying force. The test is positive if the patient cannot complete the contraction without pain, or has a great deal of apprehension about tightening their quads. A positive Clarke’s sign requires a referral; however, quadriceps, hamstring and adductor massage may reduce the pain in the meantime.
VARIOUS WAYS OF TREATMENT

Physical ways to treat

- Chondromalacia Patella responds best when treated early! Restoring the proper muscular balance, strength and flexibility to the knee are the keys to long-term recovery.
- RICE (rest, icing the knee)
- Nonsteroidal anti-inflammatory medications
- Focuses on stretching and strengthening the muscles in the hamstrings, quadriceps, and hip abductor muscles in order to provide more support for the knee joint and to help align the knee cap correctly during activity.
- A brace may be recommended to support the knee joint when resuming activities.
- Improve patellar tracking. Use of Kinesio tape can be helpful
- Correct the imbalance of the quadriceps musculature
- Stretch and use a foam roll on the IT Bands, hamstrings, quadriceps and gluteals
- Strengthen your gluteals and core musculature
- Replace your worn shoes with an appropriate pair for your foot structure
BEFORE YOU START TAPING !!!!!!!

When looking at the knee and patella (knee cap in particular) it is important to remember that the tendon starts above the knee where the individual quad muscles end (there are four quad muscles). This tendon then travels from the end of the femur, over the joint line and inserts onto the tibia tubercle. The knee cap itself sits in the tendon with no direct attachment to those bones. All three bones are lined with cartilage to prevent breakdown and damage to the knee cap. On either side of the knee cap, the tendon is attached to fibrous bands called the retinaculum. These help keep the knee cap from moving too far from side to side. Together, these attachments all help the patella stay in it’s groove as the knee bends and straightens. It is also why this area is such a common spot for injury. In the presence of muscle imbalances or soft tissue restrictions, the knee cap can be pulled out of alignment and inflammation/injury can occur.
POSITION OF THE KNEE FOR TAPING

Before applying the tape one should clean of all items that would prevent good adhesion such as (lotion, oil sweat, and possible hair) also it should be of the same thickness as the skin, the tape is applied over the affected area with the muscles in a stretched position. Then the tape is applied from one end of the muscle to the other with very little to no stretch on the tape. In general, the tape is applied from the ORIGIN to INSERTION of the muscle for SUPPORT and from INSERTION to ORIGIN for REHAB.

Only a certified instructors and practitioners are trained to determine which specific techniques will be most effective for individual patients and injuries

http://www.kinesiotaping.com/global/corporation/about/faqs.html
**HOW TO PERFORM KINESIO TAPEING FOR CHONDROMALACIA OF THE KNEE**

1) Chondromalacia Patella (VMO facilitation + 2 correction strips)

**Key Points**

- Prep the skin first and then measure out your tape. You will need three strips: 1) the first is for the VMO muscle (the smallest, tear drop shaped muscle) which you can find by tightening up your quad and rolling your leg out to the side and 2) two strips that measure from the tibial tubercle all the way around the knee as shown in the video.

- Apply the VMO strip first. You will need to cut two strips in this piece with 1-2" at the end to be the anchor. Apply the anchor with zero tension at the top of the muscle. Tighten the quad and roll your leg out as shown in the video and wrap the two strips around either side of the muscle with medium tension on the tape.

- The secondary strips are applied with medium tension along the side of the knee cap itself with the knee straight. From here, you will bend up the knee so that your foot is flat on the floor (approx 90 degrees of knee flexion). Wrap the remainder of the tape around and then lay the edges down WITHOUT tension. You will do this for both sides of the knee and should have part of the knee cap visible between the two pieces.

- [http://www.youtube.com/watch?v=KtYm7JU9quQ](http://www.youtube.com/watch?v=KtYm7JU9quQ)
OH HOW FAR WE HAVE COME
HTTP://WWW.YOUTUBE.COM/WATCH?V=KTYM7JU9QUQ
Knee Flexion
Biceps femoris, Semitendinosus, and Semimembranosus

Origin:
- Biceps femoris: long head: tuberosity of the ischium and sacrotuberosus ligament, short head: linea aspera and lateral condyle of the femur
- Semitendinosus: ischial tuberosity
- Semimembranosus: ischial tuberosity

Insertion:
- Biceps femoris: long head and short head: lateral head of the fibula and lateral condyle of the tibia
- Semitendinosus: proximal shaft of the tibia and pes anserine
- Semimembranosus: medial condyle of the tibia and the lateral condyle of the femur

Nerve innervation:
- Biceps femoris: long head: tibial, short head: common fibular
- Semitendinosus: tibial
- Semimembranosus: tibial

Patient Position:
- Prone, with knee flexed to about 45°, and the opposite foot hanging off the table.

Therapist and Patient Instructions:
- Standing next to the limb being tested, place the resistance band on the posterior leg just superior to the ankle. Resistance is in the direction of knee extension or essentially downward toward the table. The stabilizing hand should be on the posterior thigh over the hamstring tendons. Ask the patient to, “bring your heel to your buttocks, don’t let me straighten it.”
Knee Extension

Rectus femoris, vastus intermedius, vastus lateralis, vastus medialis longus, vastus medialis oblique

Origin:
- Rectus femoris: anterior space of the ilium and posterior acetabulum
- Vastus intermedius: upper 2/3 of the shaft of the femur
- Vastus lateralis: linea aspera, greater trochanter, and intertrochanteric line of the femur
- Vastus medialis longus: linea aspera and intertrochanteric line of the femur, and the tendons of adductor magnus and longus
- Vastus medialis oblique: linea aspera and superomedial line of the femur, and the tendons of adductor magnus

Insertion:
- Rectus femoris: base of the patella
- Vastus intermedius: base of the patella
- Vastus lateralis: lateral patella
- Vastus medialis longus: medial patella
- Vastus medialis oblique: patella

Nerve Innervation:
- Rectus femoris: femoral
- Vastus intermedius: femoral
- Vastus lateralis: femoral
- Vastus medialis longus: femoral
- Vastus medialis oblique: femoral

Patient Position:
- Sitting, the patient can lean backward slightly to relieve hamstring tension and can place his/her hands on the table for stability. The knee should be in extension.

Therapist and Patient Instructions:
- The therapist should be on the side of the limb being tested. The resistance hand should be placed on the anterior leg just above the ankle. Resistance is given downward in the direction of knee flexion. The stabilizing hand should be on the posterior thigh just above the knee to prevent any rotation. Make sure that the patient is not hyperextended at the knee before performing the test as this might lock it into position. Ask the patient to, “straighten your leg and don’t let me bend it.”

MMT for Grades 2, 1, and 0

Patient Position:
- Patient is supine.

Therapist and Patient Instructions:
- The therapist should palpate the quadriceps tendon between the thumb and two to four fingers. Ask the patient to, “try and push the back of your knee down and into the table.”
REFERENCES

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