



Taping: knee osteoarthritis

Intervention

Application of strong, adhesive tape or strapping aiming to realign the patella and unload painful soft tissues.

Indication

Knee OA is the most common cause of knee pain in people older than 50.

Chronic pain related to knee osteoarthritis (OA).

Malalignment of the patella, with abnormal distribution of force on the lateral facet, is thought to contribute to pain in knee osteoarthritis. Taping increases patellofemoral contact area, decreasing joint stress and thereby reducing pain.

Taping is a very effective pain-relieving strategy and can assist participation in other strongly recommended therapies for knee osteoarthritis, such as cardiovascular and resistance land-based and aquatic exercises.

Precautions

A physiotherapist experienced in assessment and taping techniques should show the patient how to apply the tape:

- Precise placement of tape is needed for maximum benefit.

Taping is not recommended as a sole intervention:

- Exercise programs and weight loss (for overweight patients) are strongly recommended in conjunction with any other therapy.

Skin care is important:

- Use hypoallergenic tape to protect the skin from direct contact from rigid strapping tape
- The majority of skin damage is done during tape removal, so remove and re-apply tape less frequently in older patients
- Ensure tape is removed slowly and carefully. Hand cream may be applied to the skin after tape removal
- If skin irritation occurs, a skin preparation (spray, roll-on, plastic film or even calamine lotion, which must dry first) can be applied prior to tape application.

Adverse Effects

Taping is associated with negligible adverse effects, which generally include minor skin irritation.

Availability

Physiotherapist visit (unsubsidised) is approximately \$70–80.

Physiotherapists typically use an adhesive, non-stretch (rigid) sports tape (e.g. Leuko Sportstape Premium Plus, Beiersdorf, 38mm) to restrict undesired motion and improve patella positioning. This is used in combination with a hypoallergenic underlay tape such as Fixomull (Beiersdorf), which is available for around \$10–20. Both tapes are available over the counter from pharmacies.

Pre-cut tape such as KT Tape is available at around \$20 per package. Packages contain 10–20 applications of strong, pre-cut elastic tape that can be used in the pool or shower. This tape is not rigid it so initially may not be as effective in reducing pain. Depending on usage, a package may last 40–60 days.



Description

Tape is applied before painful activities, such as exercise; however, each application can be left in place for days to weeks, depending on adhesion durability.

Before applying tape it may be necessary to shave the skin, which should be done 12 hours before application.

Ensure the skin is thoroughly cleaned and dried before applying tape.

Before applying the tape, ask the patient to perform a symptom-provoking activity such as a step-down so the level of pain can be re-assessed following tape application. Better results will be obtained if immediate reductions in pain can be obtained with tape.

Apply the tape with the patient either lying or sitting on the edge of a chair, with the leg extended and thigh muscles relaxed.

Several different taping methods can be used. The choice will depend on which combination is most effective in reducing the patient's pain. Prior to placing each piece of rigid tape, place several strips of hypoallergenic tape across the knee region to cover the patella and the medial and lateral knee regions.

A 2-3 step method

This taping method consists of steps 1 and 2, with or without step 3.

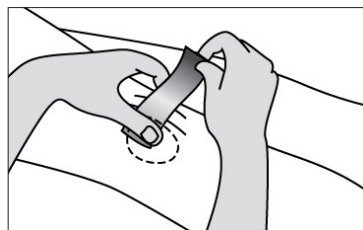


Figure 1. Medial tilt and medial glide

1. Medial tilt and medial glide

Start the tape in the middle of the patella at the level of its superior aspect, lift the skin on the medial side of the knee towards the patella and pull the tape medially. Fix the tape to the medial aspect of the knee just short of the hamstring tendons, ensuring there is some slight wrinkling of the skin (Figure 1). This tilts the lateral patellar border away from the femur.

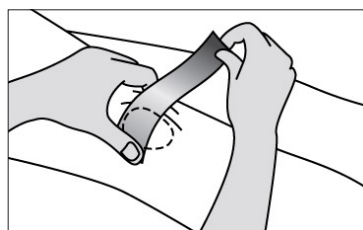


Figure 2. Anteroposterior tilt and medial glide

2. Anteroposterior tilt and medial glide

Start the rigid tape on the lateral aspect of the knee at the level of the superior aspect of the patella. Gently lift the skin on the medial side of the knee towards the patella as you pull the tape medially.

Fix the tape to the medial aspect of the knee just short of the hamstring tendons, ensuring there is some slight wrinkling of the skin (Figure 2).

Refer to training video 1 for a demonstration of steps 1 and 2 .

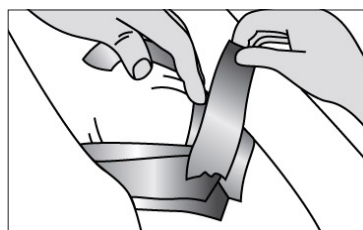


Figure 3. Unloading of the infrapatellar pad

3. Unloading the infrapatellar fat pad and reducing stretch of inflamed soft tissue

Commence the tape at the tibial tubercle and lift the soft tissue towards the patella, while firmly pulling the tape to the medial joint line. Repeat with a second piece of tape, but firmly pull the tape toward the lateral joint line (Figure 3).

Refer to training video 2 for a demonstration of step 3.



Tips and Challenges

Patients can be taught to self-tape, enhancing their ability to self-manage.

Patients with concurrent hand OA may find taping difficult. Pre-cut tape could offer some advantages.

Even tape that does not exert appreciable force on the patella can provide some pain relief. This may be due to a sensory or placebo effect.

Taping has been shown to have immediate and short-term pain-reducing effects while it is being worn, but also to provide benefits for some weeks after tape removal.

Training

- Video 1 – Steps 1 and 2 (refer to HANDI website)
- Video 2 – Step 3 (refer to HANDI website)

Grading

NHMRC Level 1 Evidence (for pain relief).

References

Hochberg MC, Altman RD, April KT, Guyatt G, McGowan J, Towheed T, Welch V, Wells G, Tugwell P. American College of Rheumatology 2012 Recommendations for the Use of Nonpharmacologic and Pharmacologic Therapies in Osteoarthritis of the Hand, Hip and Knee. *Arthritis Care & Research* 2012 Apr; 64(4): 465-74

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Warden SJ, Hinman RS, Watson MA Jr, Avin KG, Bialocerkowski AE, Crossley KM. Patellar Taping and Bracing for the Treatment of Chronic Knee Pain: A Systematic Review and Meta-Analysis. *Arthritis & Rheumatism* 2008 Jan 15; 59(1): 78-83

Knee taping intervention

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