HANDS ON TAPING

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TAPING BASICS

- **Taping** - form of strapping.
  - To protect and support the injured structure in a functional position during exercise/ proprioceptive program
  - Limit unwanted joint movement
  - Allow optimal healing
  - Protect from further injuries i.e. soft tissue structures
  - Mechanical correction of soft tissues
  - Functional correction through sensory stimulation to either assess or limit the motion

TAPING BASICS

- Lymphatic correction through “channeling”
- Fascial correction – “Holding” to align the tissue in the desired position
- Space correction (lifting)- Used to create more space directly above the area of pain, inflammation swelling or edema.
- Ligamentous and tendon correction through “pressure”. Used to create increased stimulation over the area of the ligament or tendon resulting in increased stimulation of the mechanoreceptors (receptors which respond to mechanical pressure i.e. touch
- “Mechanical Correction” Used to assist in correcting the position of a joint or bone

LEUKOTAPING BASICS

- Reduces pain and aids recovery.
- Restore mobility through proprioceptive feedback
- Taping is usually used to help recover from overuse and other injuries.

Proprioceptive shoulder taping
Morrisey , ***Jour.Bodywork & Movement Therapies 2000***

LEUKOTAPING

- Prevent harmful ranges of motion
- Dynamically support better postural positions
- Enhance biomechanical postures
- Reduce strain on affected muscles
- Dynamically treat hyper-mobility

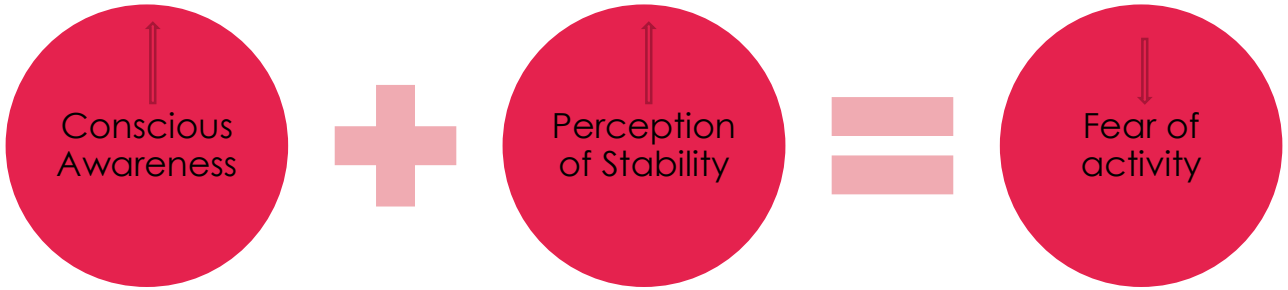
Cools et al, Man Ther 2002
Host, Phys Ther 1995
McConell, Jour. Sc. Med. Sport 2000
Page et al ACSM Annual Meeting 1999
Morrisey 2000;
Alexander et al Man Ther 2003

TAPING PRINCIPLES

- Benefits
  - Improved clinical outcomes
  - Faster return to active strengthening and ROM exercises
  - The patient becomes an active participant
  - Treatment between treatments
  - Corrected mobility => thus less pain

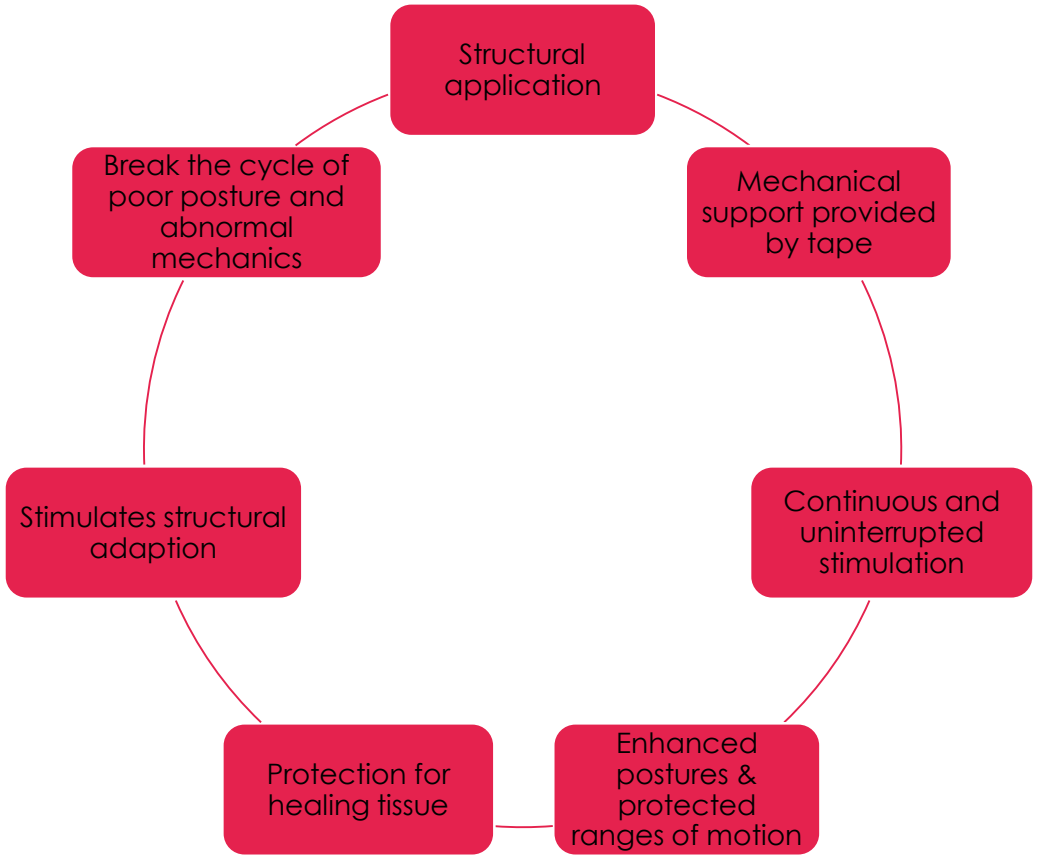
TAPING PRINCIPLES

- Possible categories of therapeutic effect
  - Psychological
  - Structural
  - Neurosensory



TAPING PRINCIPLES

- Proprioceptive input
  - poor posture
  - protect healing tissue



PROPRIOCEPTION DYSFUNCTION

- Causes
  - 1. Injury.
    2. Pain.
    3. Physical dysfunctions.
    4. Inactivity.
    5. Poor training methods.
    6. Some neurological disorders.

- Symptoms: Muscles can't
  - protect the joints.
  - stabilize the body and its parts.
  - react fast enough to protect from a fall or accident
  - help keep a good posture when sitting, standing or moving.
  - react fast enough to change direction or position in sports.

GENERAL TECHNIQUE – LEUKO TAPING

- Cut the tape close to the roll keep it taut
- Hold with thumb and index finger
- Imperative to use cover roll prior to the leuko tape
- Cover roll should be longer than leuko tape

PRE-TAPING ASSESSMENT

- Following questions should be answered
  - Has the injury been thoroughly assessed
  - What structures are damaged
  - What tissues need protection / support
  - What movements must be restricted
  - Is the injury acute or chronic
  - Is immobilization necessary at this stage or familiarity with the biomechanics and parts involved
  - Can you visualize the purpose of the taping
  - Are you familiar with the technique
  - Do you have suitable material at hand

TAPING GUIDELINES

- Prepare area to be tape
  - Check if the patient is allergic to tape
  - Check for open area/ lesions before taping
  - Wash/ dry the skin – remove oils for better adhesion
  - Use of milk of magnesia or benedryl spray for sensitive skin
  - Apply under wraps / cover roll
    - Fixomul Stretch is an aggressive adhering hypoallergenic underwrap
      Porous - allowing for evaporation of perspiration

GENERAL APPLICATION

- Leuko tape application
  - Patient should be in a comfortable position to avoid fatigue
  - Place joint in a functional position with minimal stress on the injured structure
  - Apply tape to skin at room temperature
  - Use the correct type width and amount of tape
  - Apply strips of tape in sequential order
  - Apply tapes smoothly and firmly moving the anchor points on successive taping to prevent skin irritation
  - Flow with the shape of the limb
  - Explain the function of the tape to the patient and how it should feel
  - Make sure the tape is functional and comfortable on completion

PRECAUTIONS OF LEUKO TAPING

- Avoid excessive traction on skin to prevent skin breakdown
- Avoid gaps and wrinkles to prevent blisters
- Avoid continuous circumferential taping
- Avoid excessive layers of tape
- Avoid too tight an application over bony areas

TAPE REMOVAL

- Never rip tape off
- Remove the tape carefully by peeling the tape back on itself and pushing the skin away from the tape
- Pull the tape carefully along the axis of the limb
- Check the skin for damage
- Apply lotion to restore skin moisture after removal
- Avoid leaving the tape on for more than 24 to 36 hours

SIDE EFFECTS

- Contact Dermatitis
  - Contact dermatitis is probably the most common. This is a local skin reaction in response to the tapes adhesives. Cheap tapes use cheap adhesives and as such elicit a greater propensity to cause contact dermatitis.
    - Extremely aggressive zinc oxide adhesive
    - High tensile strength
- Tape Slacking
  - Tape will also slacken over a relatively short period of time. You will need to re-tape to maintain its effectiveness, irrespective of whether the injury site is painful or not.

KINESIO TAPING

KINESIO TAPING

- Properties
  - Not a conventional athletic tape, mimics the quality of the skin
  - Elastic tape with an elasticity of 130 – 140%
  - Designed to allow for longitudinal stretch about 55 -60% of its resting length (*approximates the elastic property of the human skin*)
  - Thickness of the Kinesio Tape is approximately the same as the epidermis of the skin
  - Its comprised of a polymer elastic strand wrapped by cotton fibers (*allows for quick drying and evaporation of body moisture*)

KINESIO TAPING

- Properties continued
  - No latex in the tape
  - Adhesive is 100% Acrylic and heat activated
  - No glue residue after removal of tape (*this allows for multiple tape application without skin irritation*)
  - The elastic qualities of Kinesio tape is only effective for 3-5 days
  - Applied directly on the skin
  - No pre-wrap required

MAJOR FUNCTIONS OF KINESIO TAPING

- **Support Muscle**
  - Improves muscle contraction in weakened muscle
  - Reduces muscle fatigue
  - Reduces over contraction of muscle
  - Reduces cramping and injury to the muscle
  - Increases ROM

- **Microcirculatory effect**
  - Stretch on the tape & muscle

- **Neurosensory effect**
  - Stretch on the muscle not the tape

- **Postural effect**
  - Stretch on the tape not muscle

BASIC APPLICATION ESSENTIALS

- Proper evaluation of patients condition extremely important
- Proper evaluation of Kinesio tape technique
- Unlearned conventional taping application methods
- General concept NOT to take out all stretch out of the tape to limit motion
- Primary effect of Kinesio tape is generally superficial and excessive tension will limit tape effectiveness

BASIC APPLICATION ESSENTIALS

- Skin Preparation
  - Free of oil and lotions and properly cleaned
  - Body hair may have to be removed if it causes adhesion limitation
  - Water resistant K-Tape may be applied in areas of moisture

BASIC APPLICATION ESSENTIALS

- Selection of Kinesio Strip types
  - Y
  - I
  - X
  - Fan
  - Donout

BASIC APPLICATION ESSENTIALS

- Tape Removal
  - Ideally 3-4 days of tape application
  - Easier to remove when tape is moist
  - Remove from top down in the direction of body hair
  - Lift the tape from the skin applying the tension between the skin and tape, push the skin away from the tape

LIMITATION OF BASE TAPING METHOD

- Approximately 20-30 mins required for the glue to be fully activated
- No immediate effects perceived by the patients
- Effects may be noticed at about 2 days after the application of the tape
- Overlapping application may limit adhesive properties
- Lack of clinical studies

ADVANCED APPLICATION TECHNIQUES

- When applying more than one layer first apply the Y strip which will provide the primary therapeutic effect
- If primary goal is pain reduction, use the basic muscle technique from insertion to origin along with a space correction or lymphatic correction
- Modify tape application on the basis of patient feedback / re-evaluate taping technique

EVIDENCE

Therapeutic Effect of Kinesio-taping on Disability of Arm, Shoulder, and Hand in Patients with Subacromial Impingement Syndrome: A Randomized Clinical Trial
Hassan Shakeri, Roshanak Keshavarz, Amir Massoud

J Nov Physiother 2010

.
Conclusions: The application of KT produces improvement in the disability of arm, shoulder and hand in patients
with shoulder impingement syndrome in the 1st week. No significant improvement later

EVIDENCE

- **Kinesio taping for sports injuries- a systematic review of 10 studies**

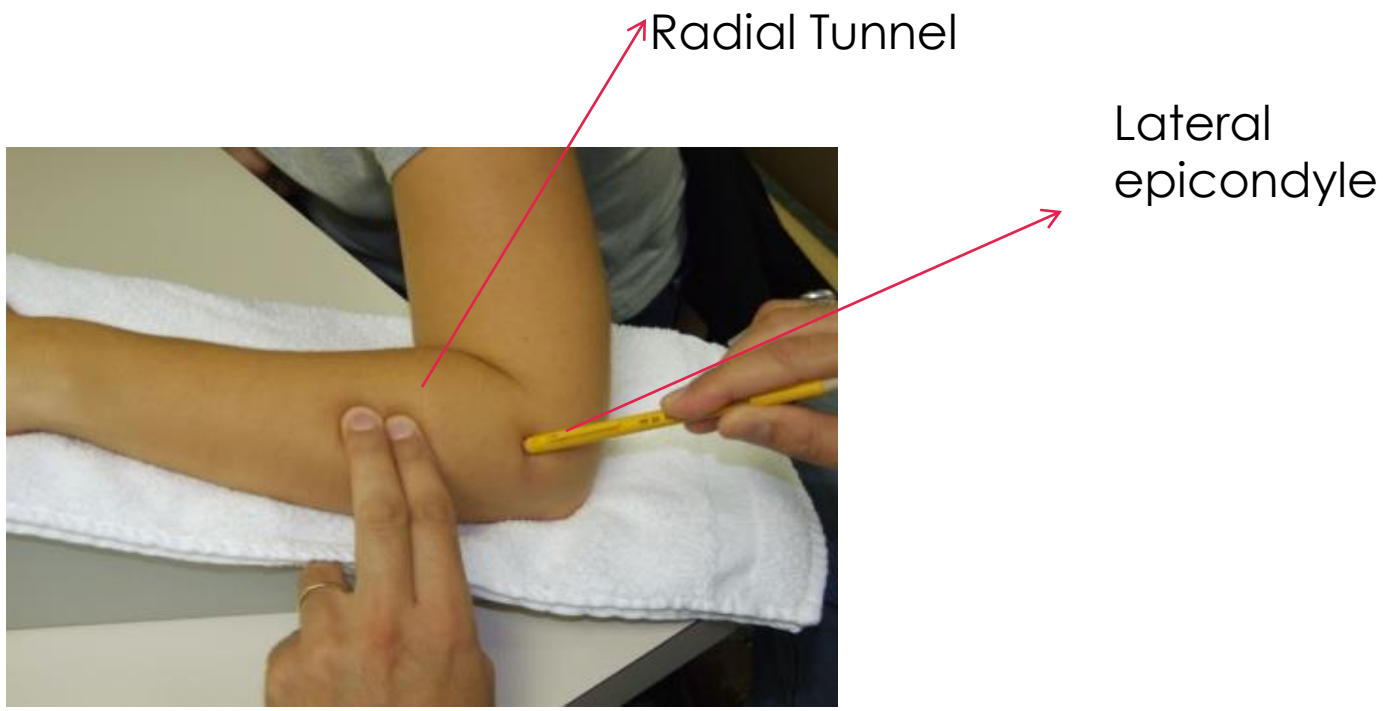
Kamper SJ, Henschke N. Br J Sports Med 2013;47:1128–1129.

CLINICAL IMPLICATIONS

Kinesio taping does not appear to have a beneficial effect on pain when compared with sham treatment. Based mostly on studies of healthy populations, there are inconsistent results for other outcome measures such as ROM, strength, muscle activity
and proprioception

RADIAL TUNNEL SYNDROME

- Palpation for abnormal tenderness over radial tunnel
- Palpate 4-5cm distal to the lateral epicondyle with forearm in neutral



RADIAL TUNNEL – LEUKO TAPING

•Taping for Radial tunnel syndrome- McConnell Tape (Leukotape with coverall)

•Decreasing the pressure from the nerve by lifting the tissues upwards

•Initiate from radial & progress to ulnar aspect of dorsal forearm

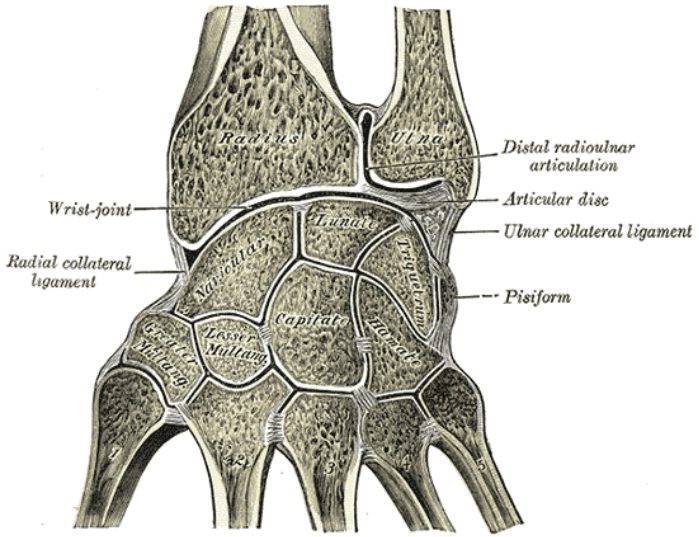
DIMENSIONS

- At 2 fingers below the elbow flexion crease start the tape at medial intermuscular septum
- Take the tape to the end of radius over to the ulna while gently pulling on the mobile wad
- Apply 2-3 layers of the tape until the desired result is achieved.
- There should be an immediate reduction in pain from the tape

TFCC

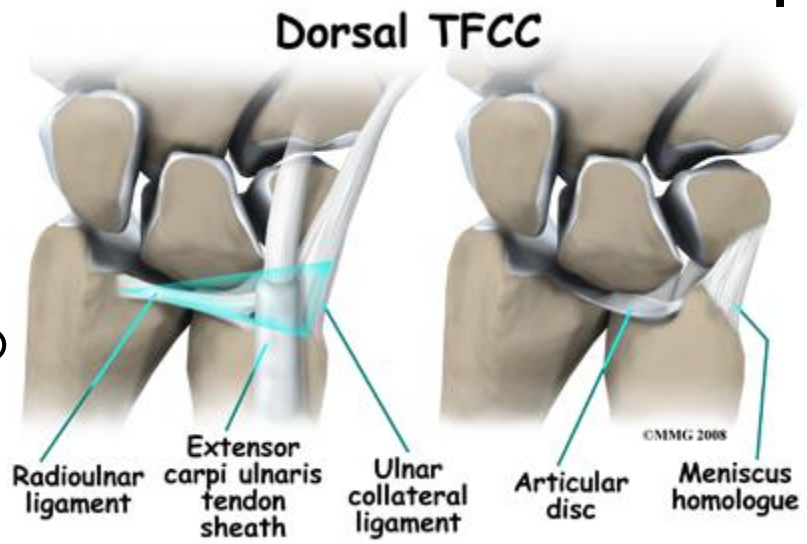
TFCC TEST

TFCC test (Active pron/ sup)



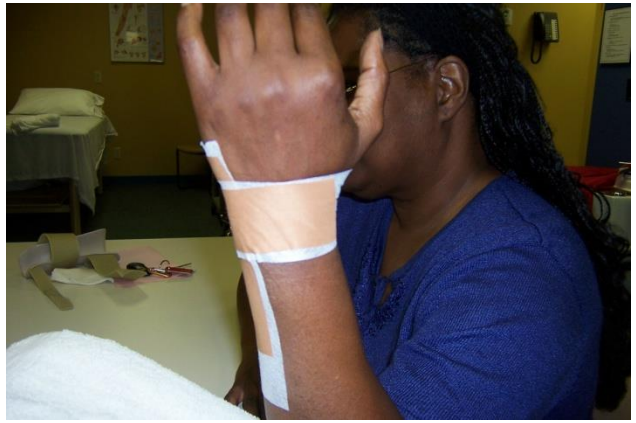
TFCC

- TFCC tears/ sprain
- Can be treated with splints
- Or mild injuries with taping
- Splints can also be weaned off o with taping



TFCC

- Taping also used as an adjunct with ulnar gutter splints in managing TFCC tears



Ulnar taping

Radial taping

DIMENSIONS

- Cut two tapes
- 1st longitudinal tape on the ulnar aspect of the wrist
- 2nd circumferential
- Place the 1st tape with wrist is slight radial deviation
- Apply the second tape going from volar to dorsal ending just ulnar to radial styloid

TFCC

Apply more tape if increased rigidity is required

Taping Tip: Ulnar Taping:
longitudinal tape
below DPC on ulnar aspect.
Circumferential tape: covering ulnar head
dorsally stabilizing it and over pisiform/
scaphoid tuberosity
Radial taping: avoid radial nerve irritaiton

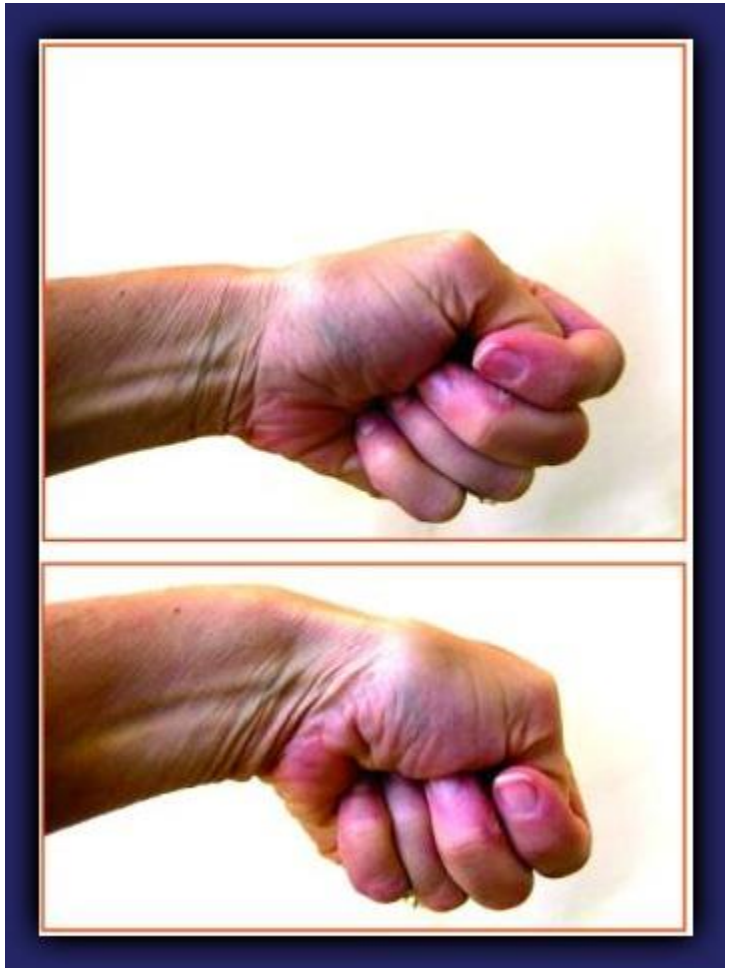
TFCC KINESIO TAPE

TFCC KINESIO TAPE

DEQUERVAINS TENOSYNOVITIS

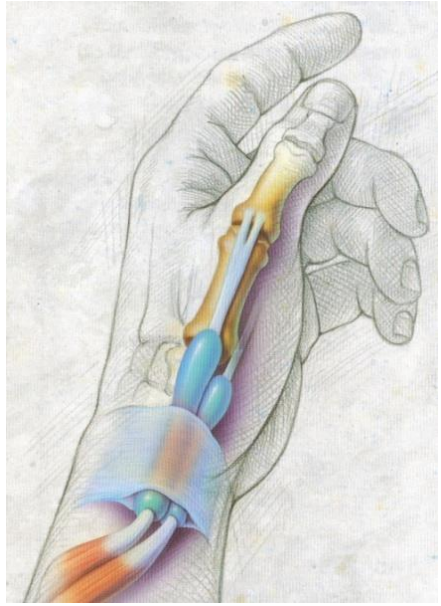
DEQUERVAINS TENOSYNOVITIS

- Tested with thumb in flexion and wrist in UD



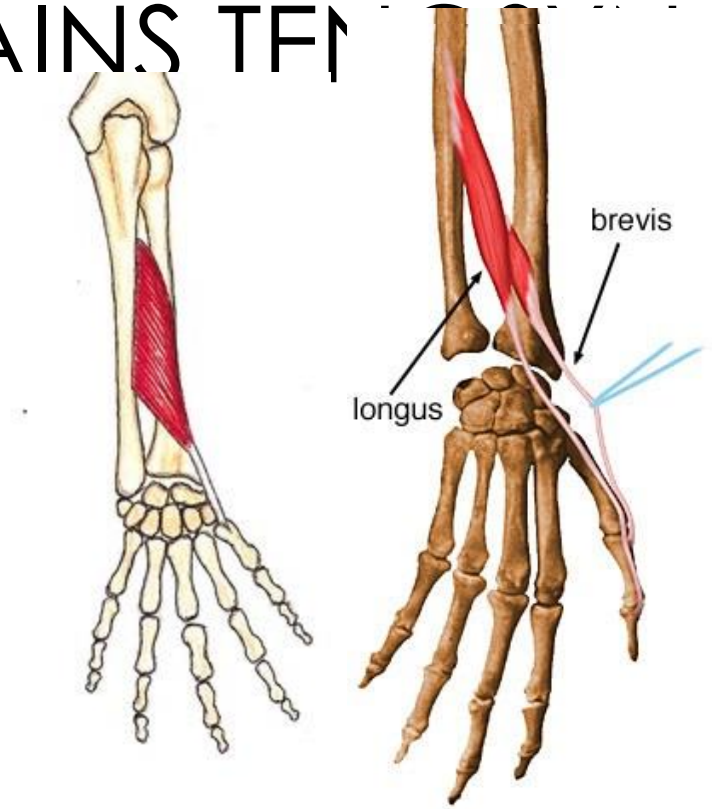
DEQUERVAINS TENOSYNOVITIS

- Mostly treated with splints
- Acute symptoms can be treated with Iontophoresis
- When acute symptoms have subsided, but pain persists, kinesio taping can be initiated within the splint.
- However, when weaning off of splints pts. Still need to avoid ulnar deviation activities and need the input to correct those habits



DEQUERVAINS TEN[illegible]OVITIS

- Preventing thumb flexion and ulnar deviation of the thumb
- 1st tape from the IP of thumb to the origin of the tendon
- 2nd tape from the CMC/APL insertion pulling it across the wrist.



DEQUERVAINS TENOSYNOVITIS – TAPING

- Measure from the IP joint of the thumb to the insertion on the radius /IOM or mid forearm
- Keeping the wrist in Neutral to slight radial deviation apply the tape from the IP joint of the thumb to the dorsum of the forearm and 2nd tape from CMC area to mid forearm

- Dequervains

DEQUERVAINS – KINESIO TAPE

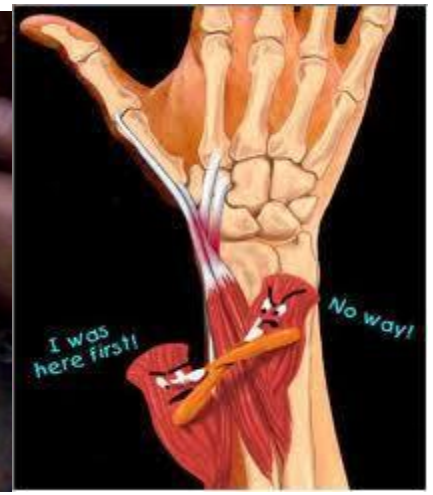
- Measure Y strip from IP joint to Lateral epicondyle
- Start distally with the base of Y strip attached to the IP joint
- Move the wrist into extension and UD with elbow in extension
- Place one tail along the palmer aspect of the thumb leaving a space at the anatomical snuff box going towards the radial styloid and finally towards the lateral epicondyle with 15-25% of tension.
- Move the wrist into flexion and radial deviation and place the other tail dorsally directed towards the radial styloid and lateral epicondyle with 15-25% tension

DEQUERVAINS – KINESIO TAPE

- Mechanical correction
- Y strip measure circumferentially around the wrist
- Apply the base of the Y strip on the palmer aspect of the wrist with 50-75% tension
- End the tension where the Y splits
- Split should start before the snuff box
- Have the patient move the wrist in flexion and apply the tapes distally and proximally to the snuff box

Intersection Syndrome

- Etiology
  - Involvement of APL/EPB &ECRB/L proximal to dequervains area
  - It is a painful condition of the forearm and wrist.
  - 1st and 2nd dorsal compartment affected
  - Repeated wrist / thumb extension
    - weight lifters,
    - downhill skiers,
    - canoeists.



INTERSECTION TAPING -KINESIO

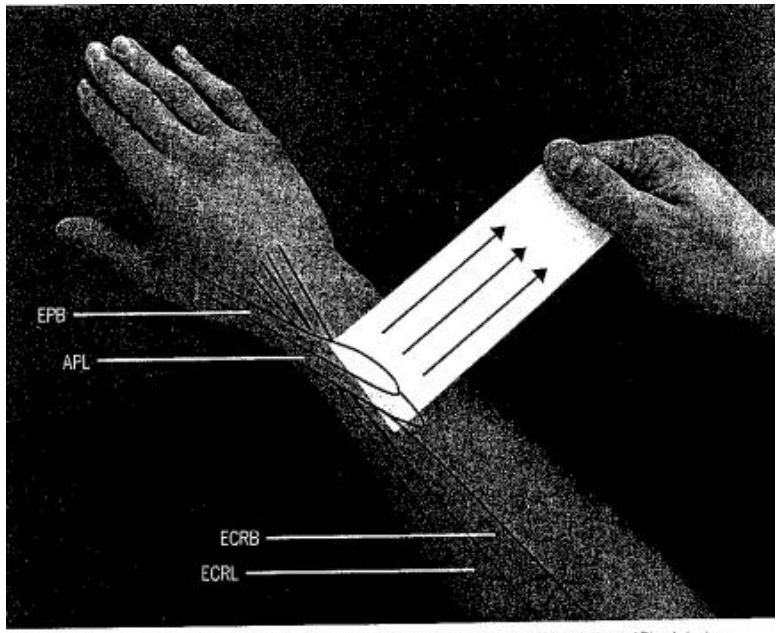


FIGURE 1. Taping over the dorsal forearm with an ulnarly directed tension force. Abbreviations: APL, abductor pollicis longus; ECRB, extensor carpi radialis brevis; ECRL, extensor carpi radialis longus; EPB, extensor pollicis brevis.

DORSAL GANGLION TAPING

Straight tape technique

OTHER DX TREATED

- Carpal Tunnel
- Correcting typing /mousing technique
- Lateral epicondylitis

THANK YOU