Therapeutic Taping
for the
Elbow, Wrist and Hand

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Carpal Tunnel Syndrome
Modified Technique

- **2” strip with moderate stretch**
  - Diamond cut-outs over 2\textsuperscript{nd} & 3\textsuperscript{rd}
  - Apply in wrist extension
  - Extend up medial forearm

- **Space Correction**
  - On dorsum to open volar surface
Brachioradialis Kinesio® Technique

- Facilitate elbow flexion and forearm supination
- **Kinesio® Technique**
  - Supinate forearm and flex elbow to about 45 degrees
  - Start at the brachioradialis origin – lateral supracondylar ridge of the humerus
  - Move the elbow into extension as tape is applied with a 50% stretch to the brachioradialis insertion – lateral intermuscular septum
- **Modified Technique Practical Application**
  - Tape over brachioradialis moderate stretch with wrist in flexion and elbow extension, pronation
Supinator

Kinesio® Technique

• Facilitate Supination
• Kinesio® Technique
  – Apply an I strip to the lateral epicondyle with the forearm in full pronation and slight elbow flexion
  – As the elbow is brought into full supination and extension, apply the tape with a 50% stretch to the medial aspect of the proximal 1/3 of the forearm.

• Modified Technique Practical Application
  – Tape over supinator with moderate stretch with forearm in pronation
**Pronator Teres**

**Kinesio® Technique**

- Facilitate pronation
- **Kinesio® Technique**
  - With the forearm in supination and slight flexion, apply an I strip to the medical humeral epicondyle
  - Apply the tape with a 50% stretch towards the lateral forearm to the proximal third of the radius as the arm is brought into pronation and extension
- **Modified Technique Practical Application**
  - Apply over pronator with forearm supinated moderate stretch
Palmaris Longus
Kinesio® Technique

- Facilitate hand/wrist flexion
- Kinesio® Technique
  - Utilizing a Y strip start with the base over the medial condyle of the humerus with the elbow and wrist in slight flexion
  - Apply the tape with a 50% stretch over the anterior forearm to the flexor retinaculum
  - As the wrist and elbow are extended apply the tails to the palmar aspect of the 1st and 5th MCPs
- Modified Technique Practical Application
  - Medial distal humerus to flexor retinaculum moderate stretch
  - (Palmaris attaches to flex retinaculum and palmar fascia
Extensor Pollicis Longus
Kinesio® Technique

- Facilitate thumb extension, assist wrist extension
- Utilizing a Y strip with two short tails, apply the tails around the proximal phalanx of the thumb
- With a 50% stretch and the wrist and thumb in flexion, apply the I portion of the Y tape proximally to posterior 1/3 of the ulna
Extensor Digiti Minimi
Kinesio® Technique

• Facilitate finger extension and assist with wrist extension

• Apply a 1” Y strip with the tails on the 4th & 5th dorsal digits

• With the hand and fingers in flexion, apply tape with a 50% stretch towards the lateral epicondyle of the humerus
Tenosynovitis
Kinesio® Technique

- Decrease inflammation and inhibit overuse
- Apply an extensor pollicis longus taping, but with minimal (20%) stretch
- Space correction with an X strip to the lateral base of the thumb (maximal tension in middle 1/3, no tension on the ends)
Valgus Laxity of Elbow (Mechanical Correction)

Athletic Training

- Reinforced for extreme laxity or throwing sports
- Two 2” strips maximal stretch medial elbow
- Two 2” strips in X over medial elbow
Elbow Hyperextension
Athletic Training

- Two 2” strips maximal stretch anterior elbow
- Two 2” strips in X over anterior elbow
Olecranon Bursitis
Space Correction Technique

- Space Correction strips over olecranon bursa
Lateral Epiconylylitis
(Tennis Elbow)
Athletic, Mulligan & Kinesio®

• Utilizing an 2” strip, fold over last square and cut two triangles (will be diamonds when opened)
• Place 2nd & 3rd digits through the diamonds and apply end of strip to palmar aspect of hand
• Apply I strip towards lateral epicondyle with mild stretch
• Mulligan lateral glide
Taping for chronic Lateral Epicondylalgia
Improvement in Grip & Pain

- Single-blind, placebo control, randomized, crossover, experimental study with repeated measures. To determine the initial effects of a taping technique on grip strength and pain in individuals with lateral epicondylalgia.
- Sixteen participants with chronic lateral epicondylalgia (mean duration, 13.1 months) participated in a placebo control study of an elbow taping technique. Outcome measures were pain-free grip strength and pressure pain threshold taken before, immediately after, and 30 minutes after application of tape.
- The taping technique significantly improved pain-free grip strength by 24% from baseline (P = .028). The treatment effect was greater than that for placebo and control conditions. Changes in pressure pain threshold (19%), although positive, were not statistically significant.
Kinesio® Taping for Lateral Epicondylalgia
US Images Indicate Improved Motion

- Kinesio Tape® is used in patients with lateral epicondylitis. The ultrasonic image sequences of elbow are recorded dynamically, and then motion tracking is applied to assist in understanding the effect of the therapy. Motion tracking, based on optical flow method, is used to track certain landmark on the ultrasound image, which is very ambiguous, for estimating the motion of muscle. Hierarchical block tracking technique is proposed to perform this task. The motions with and without Kinesio® Taping are compared and can be used as quantitative indicators for the treatment.
- The experimental results show that Kinesio® Taping makes the motion of muscle on the ultrasonic images enlarge. It means that the performance of muscle motion improves.
Medial Epicondylitis
(Golfer’s Elbow)
Kinesio® & Mulligan

• Same as lateral epicondyle with diamond cut-out, but over flexor group
• Mulligan medial glide
Trigger Finger
Athletic Training

- Facilitate extension
- Apply a 1” strip with split tails around the involved distal phalanx
- With the wrist and fingers in flexion, apply tape with a 50% stretch to proximal dorsal forearm
Mallet Finger
Athletic Training

• Apply a 1” strip to distal palmar aspect of involved digit and wrap around to the dorsal finger with no tension

• While holding the distal phalanx in extension, apply maximum tension to approximately 1” distal to MCP

• Continue lying tape down with minimal tension (20%) with the finger flexed

• Anchor tip of finger
Taping Fingers

• 1” tape can be utilized for mallet/trigger/swan-neck/boutonnière, tendonosis, immobilization.

  – Tape according to what you want to accomplish:
    • Extension of DIP – maximal stretch dorsal joint
    • Normal motion of PIP – no stretch
    • Flexion of DIP – maximal stretch volar joint
    • Collateral ligament protection / Unload one joint – X strips on either side of joint, anchor the ends
Taping Fingers

– Tape according to what you want to accomplish:
  • Decrease strain on flexor tendon – tape with moderate stretch on volar surface of digit up muscle to origin
  • Immobilize a digit – “Buddy Tape” two fingers together with two 1” strips
  • Space correction over entrapment site
Taping Elbow, Wrist, Hand Joint Mobilization

– Mulligan Concepts
– Use tape to carry over joint mobilization
– Use one strip of tape to mobilize the joint in same direction as JTM
– Can use a second strip of tape to stabilize other segment in opposite direction
Ulnar Collateral Ligament Sprain
(Gamekeeper’s / Skier’s Thumb)
Athletic Training & Kinesio® Technique

- Ligament correction to the ulnar side of the 1st MCP with 1” tape maximal stretch
- Second 1” strip in a figure 8 around the thumb and wrist to provide adduction pressure
- Edema (fan) strips can be used in the acute phase for swelling
H-Tape Application to A2 Pulley Following Rupture
Improved Strength Compared to Circumferential Taping


• Evaluate whether a new H-taping method can effectively change the course of the flexor tendon and therefore reduce the tendon-bone distance for chronic pulley rupture.

• Standardized ultrasound examinations of 8 subjects with singular A2 pulley rupture and multiple pulley ruptures of A2 and A3 pulleys were performed with H-Tape, Circumferential tape and no tape at a preset position on the proximal phalanx. Secondly grip strength was evaluated on 12 subjects with different pulley ruptures with injuries older than 1 year.

• The H taping method decreased the tendon-bone distance in the injured finger significantly by 16%, whereas the other taping methods did not. The strength development was significantly better with the new tape for the crimp grip position (+13%), but there was no significant improvement for the hanging position.
Kinesio® Taping
Improved UE Function following Neuro Insult

- 15 children (10 F, 5 M) ages 4-16 at Rehab Institute of Chicago following neurological insult (brain tumor, encephalitis, SCI, CVA, TBI) with UE involvement
- Tested on day of taping and 3 days later for improved motor function of involved UE
- Had statistically significant improvement in function
- There was no control group and 13 of the subjects this was their first therapy after their event, could be attributable to physiological healing
Clinical Evidence-Based

- Select pre/post test based on your purpose of taping:
  - Pain
    - rating scales (VAS)
    - % perceived improvement
    - at rest / re-test aggravating activities
  - Strength testing
    - grip / pinch dynamometer
    - Number of reps against a fixed resistance (endurance)
Clinical Evidence-Based

• AROM – increased range, improved pain
• Dexterity Tests (standardized)
• Functional Activities
  – Grip, lift, slice, chop, cut with scissors, typing, writing
  – ADL and occupational
• Outcome Measures
• Volumetric Measures
Upper Quarter Summary

• Evidence-Based Practice
  – Research is limited to lower tiers of pyramid
    • Small Subject Size, Case Studies
    • Significant portion based on “normal” subjects
    • Lacking Large Subject, RCT, published in peer-reviewed journals
    • Very few articles comparing similar techniques
  – Utilize Objective Measures (* Sign) to document efficacy and validate use
  – Tape for function, then pain (pain generally follows function)
Questions, Comments, Discussion

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