

TAPING IN SPORTS PHYSIOTHERAPY MANAGEMENT

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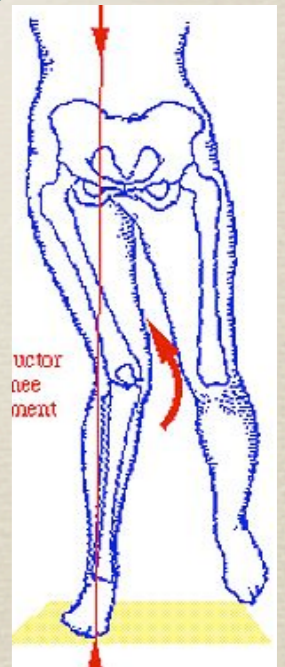
Physiotherapy management in Sports

* Clinical Assessment - Physical, Functional, Biomechanical

patella
tendon
inflammation
signs

unable to
lunge

Flat
feet with knee
valgus



* Diagnosis - Physical & Orthopedic Dx

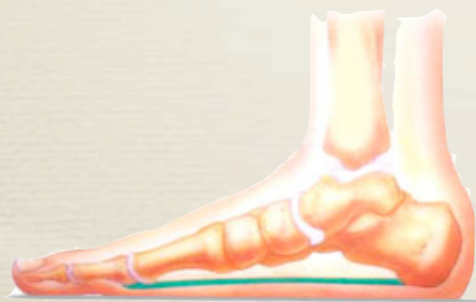
Patella tendonitis

Patella tendonosis

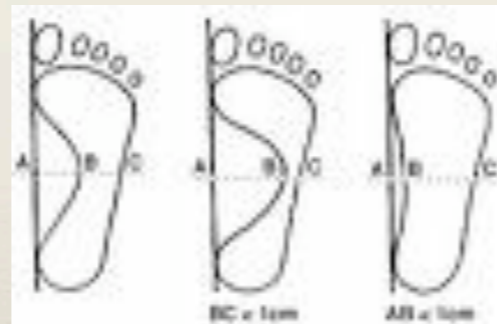
* Cause/ Source of problem - pathomechanical analysis



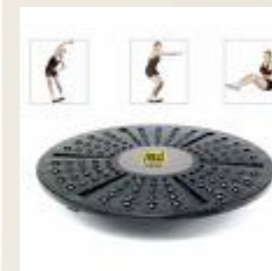
Normal Arch



Flat Arch



* Treatment - Manual, Electrical, Heat/cold, Exercise, Taping



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- * Rehabilitation - return to sports, sports specific
- * exercise x ROM, strength, endurance, CVS, motor control, kinetic chain, proprioception, agility, sports specific



The first of the three systems



11 8 2004

* Injury Prevention

- **passive**: Bracing, strapping, splinting, *taping*
- **active**



How taping help in clinical management?

- &• Fixation, Immobilization, Support, Restriction
- &• Facilitation, Motor control, Inhibition
- &• Clinical & Biomechanical Assessment

* Fixation, Immobilization, Support, Restriction

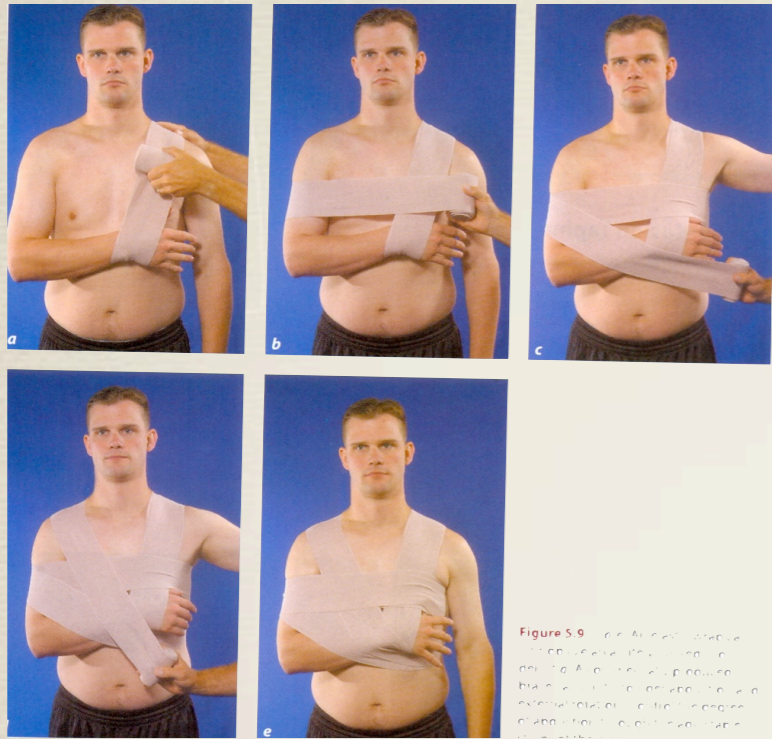
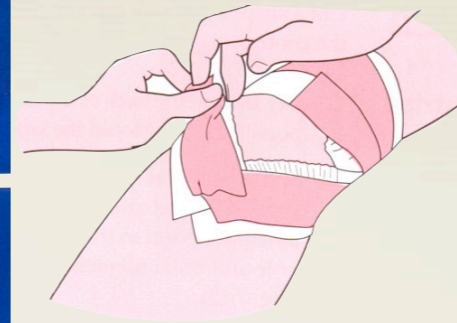


Figure 5.9 The Athletic Support and Restriction wrap is used to provide support and restriction to the trunk. The wrap is applied in a crisscross pattern to provide support and restriction to the trunk. The wrap is applied in a crisscross pattern to provide support and restriction to the trunk.



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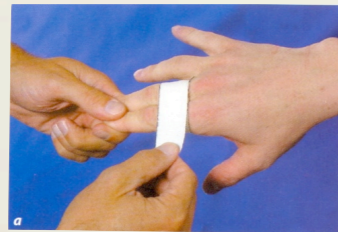
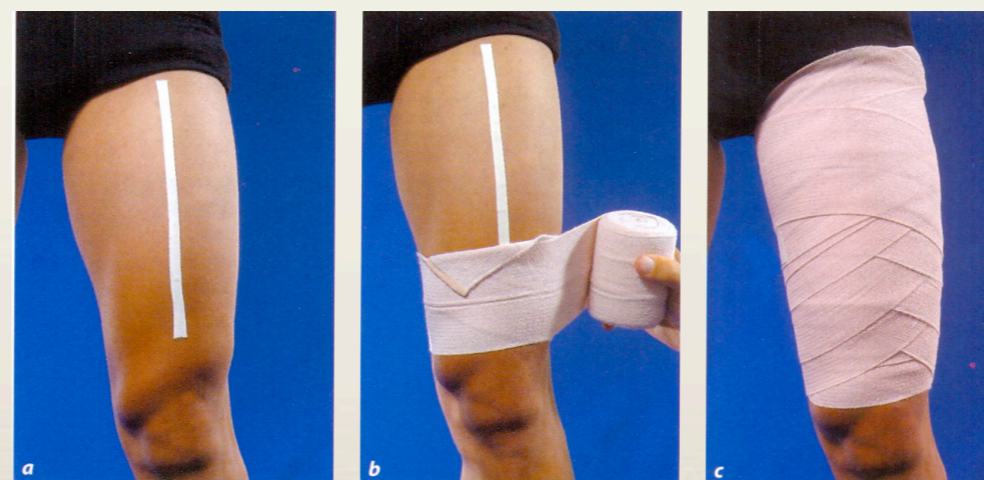


Figure 7.11 The Athletic Support and Restriction wrap is used to provide support and restriction to the trunk. The wrap is applied in a crisscross pattern to provide support and restriction to the trunk. The wrap is applied in a crisscross pattern to provide support and restriction to the trunk.



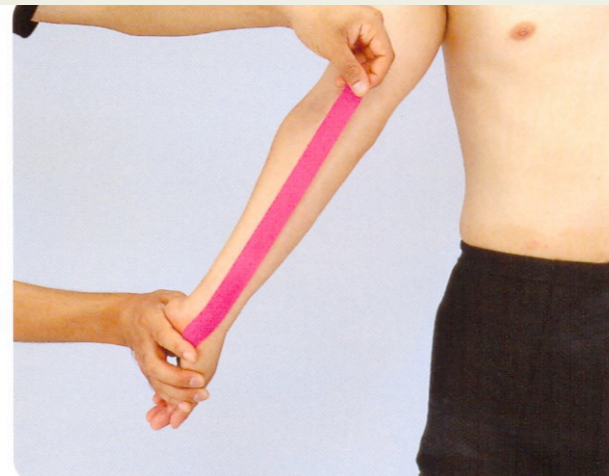
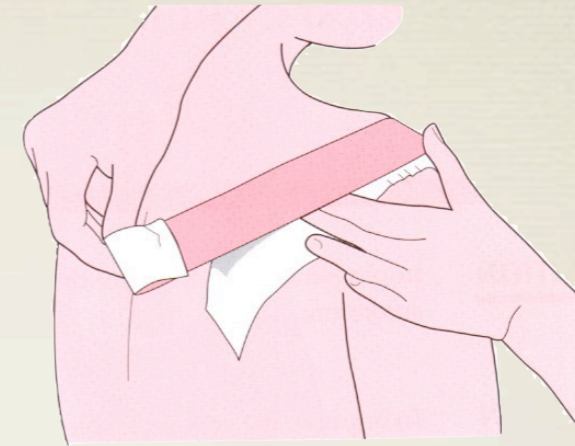
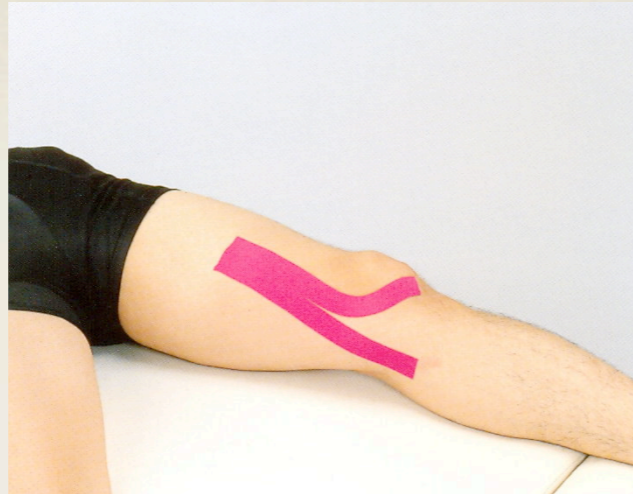
- 1 Place the affected area (the joint) to be taped in the neutral position of tension.
- 2 Begin tape application at the distal end of selected joint with no tension.

- 2 Place the joint in dorsiflexion.
- 3 Apply 50-75% of available tension in the central portion of the tape and adhere the second base of the tape at the proximal end of the selected joint. Apply the second base with no tension.



- 3 With one hand placed on each base, both proximal and distal, have the patient actively move the joint into plantarflexion.
- 4 To finish the tape application, move both hands towards the middle of the joint and apply remaining tape.

* Facilitation, Motor control, Inhibition



- 1 ● Patient position: prone.
● Apply the base of the Kinesio-Tex® to the medial plantar surface of the calcaneus passing over the navicular tuberosity.



- 2 ● Dorsiflex and evert the ankle joint. Strapize the calcaneus.
● Apply the Kinesio-Tex® posterior to the medial malleolus.
● Peel the Kinesio-Tex® from the paper liner and place the tape temporarily on the skin. Do not activate the glue by rubbing.

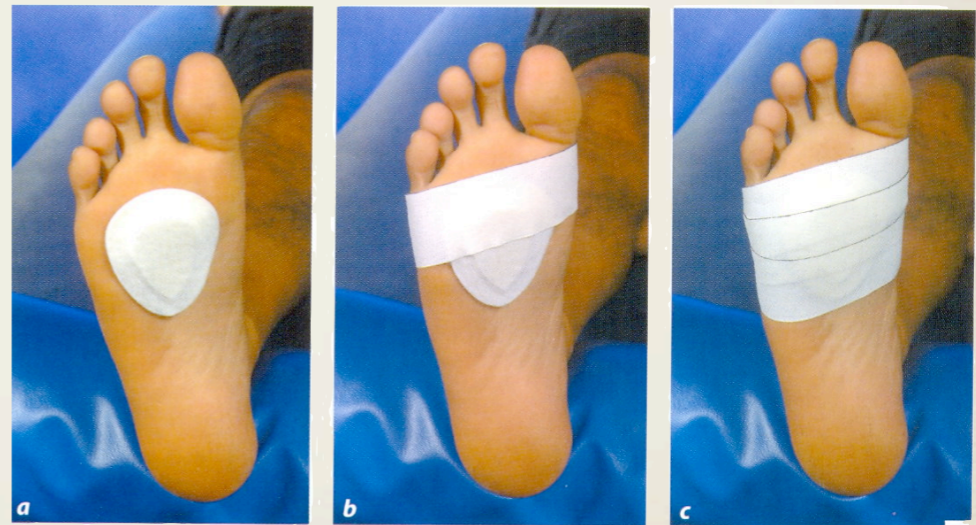
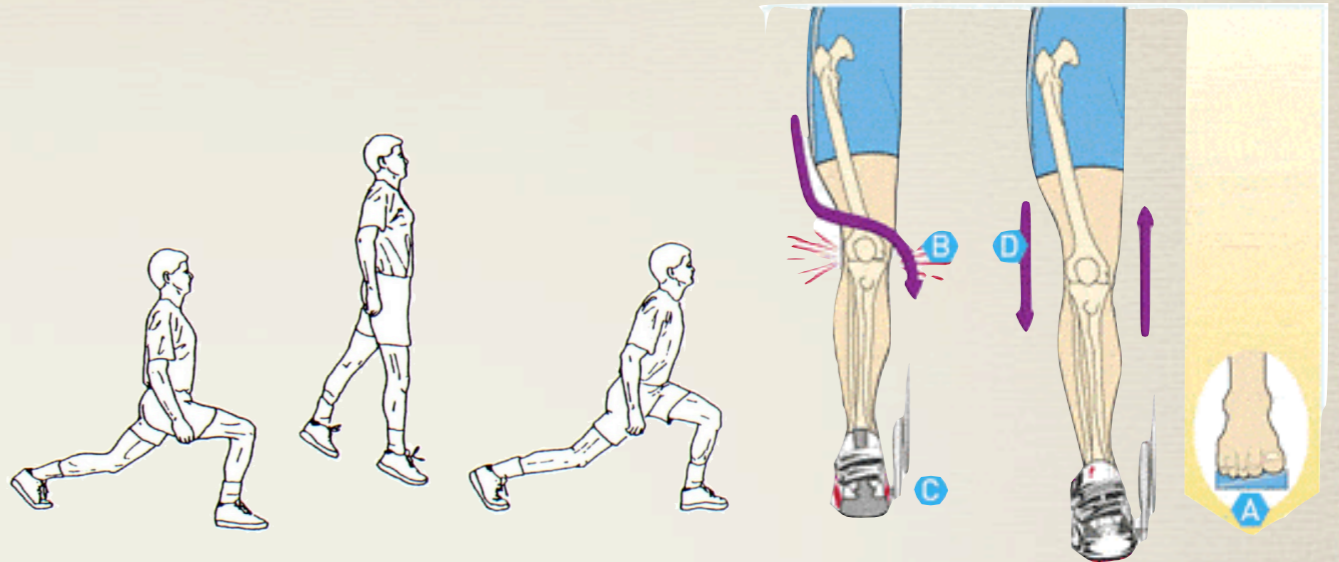


- 3 ● Apply the lateral "Y" tail to the olecranon enclosing the lateral border of the muscle.



- 4 ● Apply the medial "Y" tail to the olecranon following the medial border of the triceps enclosing the muscle.

* Clinical & Biomechanical Assessment



Literature support on taping

Support /range limitation OK, last long?

- * **Earlier rehab** with taping for support - quicker return to functions & sports (10 days diff.) compared with immobilization ^{1, 2}
- * **ROM** (26-46%) immed. after rigid taping ^{3,4,5}
- * however, 20mins of running -- ↓ 20% (loosening) ⁶
 - Volleyball -- ↓ 37% ⁴

Facilitation/ motor control /inhibition? underlying mechanism ?

- * Taping may stimulate skin receptor & facilitate muscular response through **neuromuscular mechanism** ⁷
- * EMG - significant **shorter reaction time** (peroneal muscles) in taped unstable ankle than untaped one, but not to the normal level in a stable one. ⁸
 - taping cannot substitute active rehab
- * VMO **recruitment sequence** earlier than VL when taped on Patello-femoral Pressure Syndrome(PFPS) patients in stair stepping task. (un-taped:VL earlier) ⁹

- * Taping on Scapular muscles (up/mid/low trap) on shoulder flexion / abduction movement - **no diff. on recruitment level** with untaped on healthy subject ¹⁰
- * Rigid tape along lower trapezius - inhibit the **motoneurone pool excitability** (H-reflex) on that muscle ¹¹
- * Patella taping review -improve patella **alignment** (measured radiographically) & **quads function** (torque production) ¹²
- * VMO / VL recruitment - limited by quality & quantity of evidence ¹²
- * McConnell taping **change the skin's response to stimuli** to exert an influence on pressure pain tolerance ¹³
- * In normal subject, hop distance ↓ by taping on patella ¹⁴

How the tape work on foot? Taping as an assessment tool?

- * low-dye taping - **alter peak & mean plantar pressure** in flat feet with navicular drop. ↑ lateral, ↓ heel & forefoot ¹⁵
- * treatment direction test - **successful outcome** from taping with low-dye indicate the success of orthotic usage ¹⁶

How to choose the Right Tape?

* *purpose of your taping??*

* Fixation, Immobilization, Support, Restriction

* rigid tape, elastic tape with high tension, strapping

* *muscle length / joint angle specific*



Figure 3.2 Collateral and cruciate knee sprain taping. (a) First position the knee with slight flexion by placing a lift under the heel. (b) Apply proximal and distal anchor strips at an equal distance above and below the knee. Support the collateral ligaments by placing an X with elastic tape over (c-e) the medial and (f-h) lateral collateral ligaments. (i) leaving the patella open (continues)



- 1 • Place the affected area (the joint) to be taped in the neutral position of tension.
• Begin tape application at the distal end of selected joint with no tension.



- 2 • Place the joint in dorsiflexion.
• Apply 50-75% of available tension in the central portion of the tape and adhere the second base of the tape at the proximal end of the selected joint. Apply the second base with no tension.

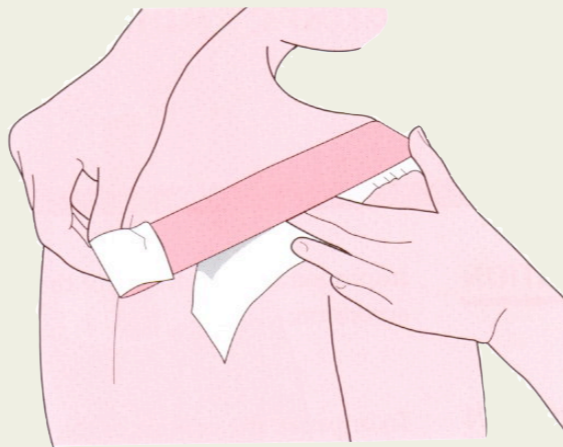
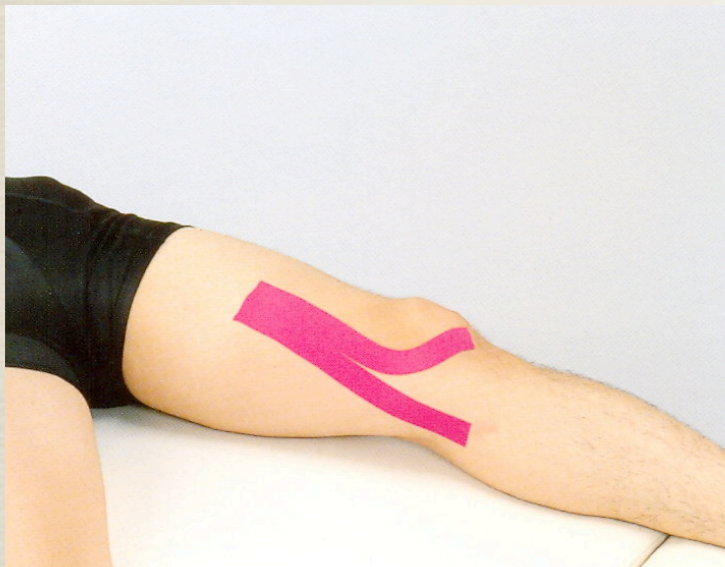


- 3 • With one hand placed on each base, both proximal and distal, have the patient actively move the joint into plantarflexion.
• To finish the tape application, move both hands towards the middle of the joint and apply remaining tape.

* Facilitation, Motor control, Inhibition

* elastic tape, kinesio tape

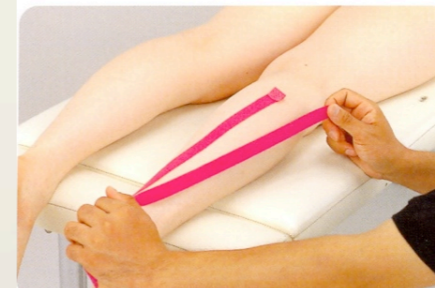
* *muscle specific, taping direction specific*



- 1 ● Patient position: prone.
● Apply the base of the Kinesio Tex® to the medial plantar surface of the calcaneus; passing over the navicular tuberosity.



- 2 ● Dorsiflex and evert the ankle joint. Stabilize the calcaneus.
● Apply the Kinesio Tex® posterior to the medial malleolus.
● Peel the Kinesio Tex® from the paper liner and place the tape temporarily on the skin. Do not activate the glue by rubbing.



* Clinical & patho-mechanical Assessment

* rigid or elastic tape

* biomechanical correction, cause & result



1 • Tear the paper backing away from the central portion of the tape, leaving the backing on the tails

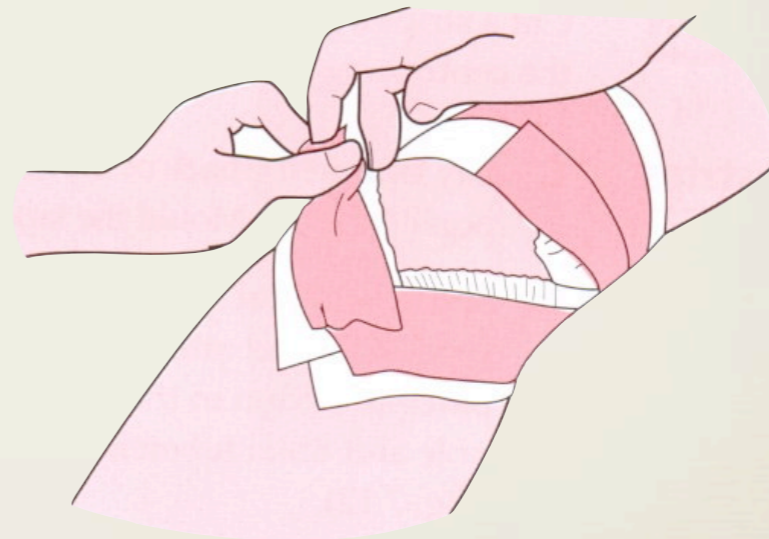


2 • Move the joint into its full available range of motion to increase *issue tension under the tape.

• Holding the Kinesio Tex® by the tails, pull the central portion of the tape with moderate to severe (50-75%) available tension and apply the central portion of the tape to the affected area. Up to 100% of available tension can be used. Make sure to initiate glue activation prior to movement, otherwise the Kinesio Tex® will pull away from the treatment area.



3 • Apply the ends of the Kinesio Tex® with no tension.



* *Environment consideration*

* Waterproof - windsurfing, swimming, rowing...



* Permeability - sweat, humidity, temperature



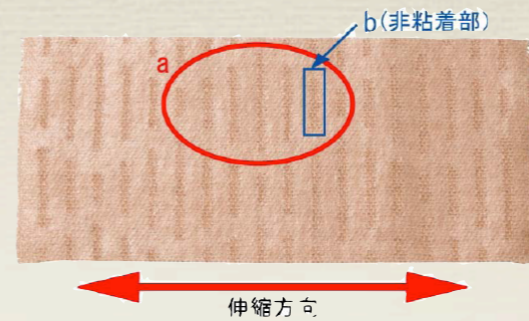
* *special considerations*

* glue pattern - flat, scattered

* thickness of tape - protection / facilitation / permeability

* elasticity - fixation, motor control

【キネシオ テックス 粘着面のパターン配列】



* Precautions:

* Skin allergy - zinc oxide, underwrap, hypafix



* circulation - not too tight, no closed loop, tension on right pt

* skin fiction- blister, padding, skin-prep, remove, hair shave

What is the right method?

- No Golden method
- * Depends on your assessment & clinical reasoning
- * Right tape, wrong method - failed
- * Wrong tape, right method - failed
- * Right tape, right “method”, no clinical reasoning - failed

Right method thro' clinical reasoning

* Patho-physiology

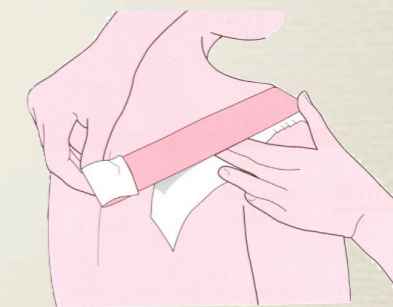
- stage of injury: acute, sub-acute, chronic, prophylactic

* Biomechanics fault

-correction - mechanical support / block/ deloading,
direction of force, cause & result

* Physical Dx

-muscle? joint? ligament? fascia? motor control? tightness?
stiffness? weakness? subluxation? proprioception?



How to evaluate the effect?

- Good evaluation - a *MUST* for a good taping management
- * functional assessment with main complained problem
- * e.g. squat with knee pain, jog with heel pain



decrease 60-70% of pain / dysfunction?

BRING HOME MESSAGE...

- Taping - one of treatment tools, not the only one!
- Based on clinical assessment, no golden method!
- Tape & reassess the functional problem, not just good looking!

Reference:

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Thank you for your coming !!

