

Taping

Tom Hewetson

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Tom Hewetson

- Has lectured at institutions such as: The British School of Osteopathy, the British College of Osteopathic Medicine, Oxford Brookes University and Leeds Metropolitan University.
- Domestically, Tom has worked with Premiership footballers and rugby clubs.
- In 2012, he was an osteopath forming part of the manual therapy team during the Olympics.
- Additionally, he has work for the British Commonwealth and Triathlon teams.
- Tom rewrote the *Illustrated Guide to Taping* for its second edition.

What are the different types of tapes?

- The tape market can be very confusing.
 - There are many claims made about certain tapes such as kinesio tape.
 - Important to dispel certain myths: what is it good at and what is it good for?

K-tape

- Invented in the 1980s by a Japanese-American man named Kenzo Kase.
- Used by the Japanese squad in Seoul in 1988 and has slowly become more popular.
- Could be used daily in clinic as an adjunct to treatment.
- Many types of pain can be reduced with K-tape; including acute lower back pains, disc injuries, sciatica and facet problems.
 - Hit and miss in managing pain in frozen shoulder*.
- Allows a large amount of movement.
 - Highly elasticated
- There are a lot of claims around the effects of K-tape but there's not too much supporting evidence.
 - However, evidence is beginning to grow/ 'absence of evidence isn't evidence of absence'
 - Certain claims are very outlandish (e.g. research has never shown that the tape improves performance).
 - At one point, K-tape was going to be banned from the Olympics due to the fact it was believed to have an ergogenic aid effect- proven to be untrue through research.
- A lot of tapes fall under the bracket of K-tape and will often just have their own name/brand upon the product.
- Pricing can vary from approximately £5- £35 for a roll

- A roll could probably last a practitioner five to six treatments.
- Important to be cost effective
 - The prices of less expensive rolls can easily be absorbed into clinic time.
 - In doing this, the patient does not get handed the cost of the roll.
 - 'Cost-effective tape' works just as well as the more expensive brands.
- Acrylic glue allows the tape to be worn in the shower, unlike the sport and fixation tapes.
- K-tape can be left on for five days.
 - Official research has only tested it on the skin for this length of time.
 - From experience, it is possible that the skin could be damaged if tape is left much longer than perhaps a week.
 - A period of two-three days without wearing tape ensures that skin will not be damaged.
- The sinew-like wave of glue allows for elasticity in the cotton weave.

Sports Tape

- Only useful if you are working with sportspeople and the techniques are very limited for clinic application.
- Restricts movement, allowing a very limited range of motion.
- Usually zinc oxide and/or elastic adhesive bandage.
- If so much tape is required that the patient could not play or train without it, then they should not be taking part.
 - Tape is an adjunct to treatment.

Cohesive bandage

- Can be included with treatment of an acute sports injury.
 - Allow the inflammatory process to take place in the first 72 hours.
- Used as a compression bandage
- Easily adapted for comfort e.g. can be loosened if affecting circulation.
- Highly elasticated but not sticky.
 - Can be removed really easily and is also reusable.
 - Cost-effective
- Used on horses too.
- Does not cause allergic reactions

Zinc oxide-based tape

- Uses a latex-based glue.
 - Risk of allergic reaction.
 - Used for rehabilitation or as an attempt to stop injuries from re-occurring due to restriction of movement.

Elastic Adhesive Bandage

- Does exactly 'what it says on the tin': it's elastic, adhesive and a bandage.
- To be used with a first-aid compression bandage.

- Also can be used towards the end of treatment.
- Additional usages includes sport, whereby EAB can hold zinc oxide tape in place.
 - However, it must be removed immediately after the sport has finished.
 - Risk of cutting the blood supply and compromising the nerve supply in the case of inflammation.
- Within treatment and rehab, EAB can sometimes be used to achieve ‘a bit of give’ in the tape.

Fixation Tape

- Although it has many trade names, typically seen on hospital dressings.
- Incredibly adhesive: sticks on most skins as well as sweaty skin.
 - Reliable at maintaining the placing of your taping technique.

Research

- Studies tend to be carried out by the manufacturers and retailers of the tape.
 - There will always be an element of bias in the research.
 - There must be an expectation that those with a financial interest in the product are going to be the most motivated to conduct the research.
 - Biased research does not necessarily mean bad research.

Application of tapes

- Application of tape should be considered in conjunction with treatment.
 - Hands-on stuff takes priority with tapes and other treatments such as acupuncture being helpful in the rehabilitation process.
 - If a patient requests tape, it is paramount that the practitioner assesses the case and acts accordingly (e.g. treatment may be more worthwhile).
- With K-tape, the tape is stretch to apply it to the skin.
- Sports tape is applied to stretched skin to keep it rigid.
- Experimenting is good however, and even after 20-years experience, Tom tries to look for new ways to use the tape.

Is a huge amount of science knowledge required to apply tapes?

- There is no need for a certificate in order to use tape on patients.
- Recommended that you start with taping you know for practical experience, reading-up on the techniques, watching videos etc.
- Even after 20 years, it is important to research new approaches and review.

Can patients apply tape by themselves?

- If tape is required for sport or training, someone with a good knowledge should apply it.
- When the patient has knowledge of taping techniques, it is fine for them to self-apply.
 - Practitioner could always teach the patient.

(E.g. Application of tape for frozen shoulder) *

- In this condition, pain is seen in the anterior shoulder.
 - Tape is used to unload the neural element by stretching the skin as much as it can go comfortably.
 - This follows the theory of fluid dynamics to try and reduce

inflammation.

- The tape will not improve the condition but it will relieve some of the pain.
- Alongside treatment, it's possible to get (using the visual pain score) a reduction in pain from 8 to 2 over a course of about four to six weeks.

The use of spray-on glues

- It is the Americans that tend to favour glues whilst tape is preferred sticky in Europe.
- The problem with really sticky tape is that warm temperatures can affect it.
 - Needs to be stored correctly in a cool place to avoid this happening.
 - In the correct conditions, the tape has a pretty long-lasting shelf-life.
 - If not, tape can become useless and unusable very quickly.

Activating Glue

- Rubbing glue can activate it.
- However, many tapes such as K-tape are already sticky and whether there is efficacy of activating it further is doubtful.
 - A claim of K-tape is improving fluid dynamics and lifting the skin from the underlying interstitial tissues.
 - Therefore, rubbing is counter-productive as it simply pushes it back down.
- Stickiness is usually effective anyway providing the skin is prepared properly.
 - No grease or oils on the skin, as well as being too hairy.

Allergic reactions

- Be cautious with applying latex-based tapes
 - Ask about any known allergies.
 - If unaware, applying a small piece can test the skin.
 - If reaction is present, quickly remove tape and wash the skin.
- Important to be careful of anaphylactic reactions.
 - Unfortunately, it is impossible to determine a reaction will take place before the tape is applied.
 - Most tapes are pretty innocuous nowadays.
- Underwrap can decrease reaction in those with known allergies.
 - Unfortunately, you can lose the effectiveness of the tape.

Lifting the skin

- A theory but not supported by hard research.
- K-tape could work in a similar way to Jenny McConnell's neural unloading, as well as Ron Alexander's functional fascial taping.
 - They lift and concertiner the skin.
 - In the concertinering of the skin, the underlying interstitial tissues are lifted allowing for an increase of fluid dynamics as well as blood flow away from the area.
- Images on the Internet demonstrate the before/after effects of K-tape on bruising too.

Animals

- Tom has witnessed the effects tape can have on a cat online.
 - The cat's reactions differed.
 - If the tape were placed on the back, the cat would stay crouched.
 - Placed on its side, the cat would only walk sideways.
- There is little knowledge on the effects of tape on animals such as agility dogs or show jumper.

Is there any science behind colours and patterns of tape?

- Colour is just there to appear aesthetically pleasing.
- Design can be useful: certain tapes are fluorescent in the dark.
 - A safety feature for runners.
- Tape in particular patterns or shapes are usually pre-cut to certain areas of the body.
 - Can be difficult to apply.
 - With pre-cuts, the practitioner cannot completely decide the length they want to use.
 - However, pre-cuts can save time (e.g. in a sports changing room where there are a number of individuals who need taping up).

The pattern of tape can affect which tissues are lifted or how the tape works; such as whether it constricts the skin or not.

Inexperience

Tom tries to dispel the myth of taping requiring complicated patterns such as the basket-weave variety showcased by Rose MacDonald.
It's true that nobody is born knowing how to tape, but practice improves technique.

Is it possible to get a combined effect if you mix the different types of tape?

They can be used in unison together.

-E.g. Rugby players wear a mix of K-tape and zinc oxide tape across their bodies as they have different effects.

The neurophysiology of taping

Put simply, taping can be used as a distraction therapy from pain whilst it is applied.

-Delta and C-type fibres detect pain and travel at about a metre per second.

-Conversely, the touch fibres, Alpha and Beta travel at 200m per second.

--Therefore, the touch of the tape on the skin is received by the central nervous system first and shuts the pain gate.

The accommodation effect of the tape takes three to five days.

TENS

Very similar to the theory of TENS.

In some cases, the use of tape is not effective and if it causes discomfort, it should be removed.

Psychology of type (especially in sport)

Important to not tape without reason.

-Sports players look at their heroes wearing tape for specific reasons (after breaking fingers) and believe that they should too.

Some individuals get used to the prophylactic feeling of the tape on them and they

feel like they play better with it.

Is zinc oxide tape ineffective after around 20 minutes?

A paper from the 1960s claimed this was the case but it is a very negative presentation.

-Reverted- after 20 minutes, the tape maintains 40-60% of its effectiveness.

-Back then, the quality of the glues was not like the chemical types we have access to now.

Sports tape only needs to be effective for the first 20-30 minutes as thereafter the body's own proprioceptive mechanism will take over.

-Additionally, when people are warmed up and the adrenaline is running, less pain is felt.

PhD

Hoping to do a PhD in the future.

Worked with Eyal Lederman looking at neuromotor control.

-Ran out of money and time.

Working at BCOM as a senior lecturer and also being involved in research, Tom feels it would make sense to embark on some study that would be helpful in his field- especially in the neurophysiology aspect.

The narrowed focus would be tape.

The plan would be to collate half-a-dozen papers worth of information.

Changing techniques

Sports taping has stayed pretty much the same over the years.

-Sometimes new or different techniques just do not work for the individual practitioner and they go back to ones they prefer.

The Book

When asked by the publishers to look at the book, it was important to consider in what way it could be improved.

-The only possible way would be to produce the evidence which supports the claims.

Neural Unloading

A theory which involves unloading the pull on the nerves (e.g. hitching the shoulder unloads the neural pull on the brachial plexus).

Put simply, it's the shortening, bringing the areas together so there's no pulling and tethering on the nerves.

-Reduction in pain.

There is much more to learn about the theory:

How does it affect the central nervous system?

How does it close the pain gate?

How does it affect the motor neuron pool?

The method can also be applied to neurological symptoms of the cervical disc.

-The techniques, however, are quite different to the shoulder:

E.G. Disc problem is on C5-C6

--By getting the patient to flex away and look down, it stretches the skin in the relevant area.

--Then, the patient can be taped down the back to approximately T4-T5.

--When they come back up, there is a nice concertinering in the neck.

There is a high level of disc problems in asymptomatic individuals.

-The disc may not be the pain generator.

--In this case, the use of tape can be successful.

--If the disc is the pain generator, tape would be ineffective.

Should patients be referred to 'tape specialists'?

First and foremost, practitioners should aim to find out more about how and why tape works.

-Research theories, don't just stick some tape on and hope it works.

-If a technique looks difficult, it probably is. Try the simple tapes first.

Where has research into tape focused thus far?

Two-three years ago, there was no hard and fast evidence around the use of K-tape.

-Different papers are being released on taping, K-taping techniques and its effects.

--Mostly positive findings.

Research into potential placebo effects of tape is still positive.

-If a patient reports feeling better, it is beneficial.

-Important to not sell a product when it has no effect.

Use of K-tape on arthritic joints

Experience with both osteoarthritis and rheumatoid arthritis- very much so with the knee.

Tom applies a typical sweeping pattern of tape around the patellar.

-The knee is bent and taped in the area of the MCL or the LCL producing fair results.

Response is mixed but mostly positive.

Rheumatoid arthritis can be complex as it is an autoimmune problem.

-Reactions to the use of tape can vary from one day to the next.

-- Positive response can quickly be replaced by massive reactions to the tape, depending on how the brain perceives it.

Looking beyond simple pain resolution

More and more people are starting to realise that resolving function is as important as reducing pain.

Manual therapists are becoming harder to ignore as they have a positive effect and achieve positive results.

A UK BEAM study was carried out on the effects of manipulation on low-back pain receiving positive reaction.

-Relating to cost-effectiveness; short-term costs are more expensive due to use of osteopaths and chiropractors whilst long-term costs are cheaper as less drugs are necessary.

The use of tape with TMJ pain

Although Tom has no personal experience with this, it would be something he would attempt.

An idea that is coming out of Malaysia applies tapes for all sorts of things such as sinusitis and earaches.

-No evidence to argue whether it works or not.

Dangers with tape?

'Be your practitioner,' -tape should serve as an adjunct to your treatment.

-Get to know what's going on with your patient and use the tape as a tool of treatment and rehabilitation.

First Draft