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Kinesiology Taping – a evidence based method?

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abstract (italiano)

introduzione: Kinesiology Taping è un metodo conosciuto in tutto il mondo ed usato molto durante il lavoro clinico da medici e fisioterapisti in aggiuntiva e come supporto al trattamento riabilitativo. Fino ad oggi le basi scientifiche non sono ancora chiare.

obiettivo: L'obiettivo di questo lavoro scientifico è di valutare se c'è evidenza per l'efficacia del Kinesiology Taping in letteratura.

materiali e metodi: È stato fatto un review della letteratura attuale. La maggior parte degli studi presenti hanno valutato gli effetti del Kinesiology Tape sul dolore, libertà di movimento (ROM), forza ed attività linfatica. Così i risultati sono stati divisi nelle categorie: dolore, libertà di movimento (ROM), forza, attività linfatica, durata dell'efficacia dell'applicazione Tape e durata dell'efficacia dopo l'applicazione del Tape.

risultati: È stata trovata evidenza per riduzione del dolore, incremento della libertà di movimento (ROM), incremento del reclutamento delle fibre muscolari ed incremento dell'attività linfatica

conclusioni: In letteratura sono attualmente presenti studi che dimostrano l'efficacia del Kinesiology Tape per dolore, libertà di movimento (ROM), attività muscolare ed attività linfatica.

abstract

introduction: Kinesiology Taping is a all over the world known method that is used a lot in clinical working especially by doctors and physiotherapists for supporting rehabilitation. Until now evidence base of this method is not clear.

objective: The purpose of this study is to evaluate if there is some evidence for the efficacy of Kinesiology Taping method in literature.

materials and methods: A literature review was made. The most of the founded studies studied the effect of Kinesiology Tape on pain, range of motion, strength and lymphatic activity. So the results of the studies were divided in the categories: pain, range of motion (ROM), strenght, lymphatic activity, duration of efficacy of Tape application and duration of efficacy after Kinesiology Tape.

results: Evidence was shown for pain reduction, range of motion increasing, increasing of recruitment of the muscle's motor units and increased lymphatic activity.
conclusions: There are studies that show evidence for Kinesiology Taping for pain, ROM, muscle and lymphatic activity.

introduction:

Kinesiology Taping is a all over the world known method that is used a lot in clinical working especially by doctors and physiotherapists for supporting rehabilitation. It reduces pain, increases range of motion, supports joint function, activates lymphatic system and endogenous analgesic system, improves microcirculation and has effects on muscle function.² Furthermore it facilitates or inhibits muscle function and provides proprioceptive feedback.¹⁰ Also it has facilitatory effect of cutaneous mechanoreceptors.¹

It does not limit movement but it supports movement and activates the healing process.⁵

A correct application of the tape is necessary for having the best effects of tape.

The Kinesiology Taping is used for: prophylaxes, pain, postoperative and posttraumatic, orthopaedic, neurological, paediatric, lymphologic and gynaecologic patients and in sports physiotherapy.⁵

Kinesiology Tape is an elastic tape that can be stretched to 130-140% of the normal length. It is made of cotton. Glue is applied wave-shaped on the bottom part.

It has approximately the same weight and thickness of the human skin, and has no medicinal qualities.¹ The tape can be worn from 3-7 days or more, it is water resistant and allows the skin to breath. So patients can take a shower with the tape on, athletes can wear the tape during sport activity and athletes like swimmers can wear the tape during their sport activity in the pool.

objective:

The most of the methods in Physiotherapy are founded by working clinically on patients. A evidence basing for the methods follows later. Kinesiology Taping,

already founded in the 1970's in Japan by Dr. Kenzo Kase and Nitto Denko ⁵ is a new method in western medicine that is actually used a lot and that has already shown good results in clinic working. The purpose of this study is to evaluate if there is some evidence for this method in literature.

materials and methods:

A literature review was made searching the following words: 'kinesiology taping', 'kinesiology tape', 'kinesio', 'taping' and 'elastic taping'. 129 studies were found in literature. The most of them studied the effect of Kinesiology Tape on pain, range of motion, strength and lymphatic activity. So the results of the studies were divided in the categories: pain, range of motion (ROM), strenght, lymphatic activity, duration of efficacy of Tape application and duration of efficacy after Kinesiology Tape.

results:

pain:

In a case study on a mastectomy patient with upper extremity oedema pain was reduced significantly with Kinesiology Taping.⁸

The Inha University Hospital of Korea made a study on patients with non-specific low back pain. This were divided in 2 groups, a group with application of Kinesiology Tape and a control group. Pain was measured with visual-analogue pain scale (VAS). After treatment pain reduction was higher in Kinesiology Taping group than in the control group.⁶

The same result was found in a pilot study done on patients with chronic unspecific low back pain, where Physiotherapy + Kinesiology Taping was shown to be more effective in pain reduction than Physiotherapy without Kinesiology Taping.⁹

In stroke patients Kinesiology Tape was applied once a week for 12 week. After that time pain was reduced significantly compared to a control group. In the experimental group also depression decreased significantly.¹¹

Increased pain reduction in the Taping group compared to the control group was also observed by Evermann. He treated patients with diagnosed lower back pain, cervical

spine syndrome, pes anserinus syndrome and tibialis anterior syndrome. The patients were examined clinically immediately after application, after 24, 48 and 72 hours, and after one and two weeks. Patients of the taping group were symptom-free in significantly less time than those of the control group. Patients with lower back pain were symptom-free after 2,3 days (control group: 9,6 days), with cervical spine syndrome after 1,44 days (control group: 11,2 days), with pes anserinus syndrome after 1,67 days (control group: 10,5 days), and with tibialis anterior syndrome after 3,0 days (control group: 8,73 days). So patients with application of Kinesiology Taping had faster recovery from pain. ³

range of motion (ROM)

Yoshida and Kahanov have found that the application of Kinesiology Tape over the lower trunk increases lower trunk ROM in flexion compared to a control group. There was founded no difference between the two groups for range of motion in trunk extension and lateral flexion. ¹²

In another study made in 2000 on two people active range of motion in knee extension was improved by the application of Kinesiology Tape compared to no tape condition. ¹

Kwon applied Kinesiology Tape and Cross Tape on stroke patients once a week for 12 weeks. When treatment was completed range of motion increased significantly in the taping group compared to the control group. Range of motion improved significantly in shoulder (flexion and abduction), elbow (flexion and extension), hip (flexion) and knee (flexion). ¹¹

strenght

Muscle power of m. quadriceps and hamstrings muscles were assessed without tape, immediately after the application of Kinesiology Tape and 12h after the application of the tape. No difference has been found in muscle power between taped and no taped conditions. ⁴

In a preliminary study surface EMG measurements on m. quadriceps in active knee extension revealed an immediate increase in the amplitude of the EMG measure. ¹

Another study has shown that the Kinesiology Tape increases significantly recruitment of the muscle's motor units in m. vastus medialis 24 hours after application.²

lymphatic activity

Patients with unilateral breast-cancer-related were divided in two groups. In every treatment all groups got manual lymphatic drainage, pneumatic compression therapy and 20 minutes of physical therapy exercises. In addition group one got a short-stretch bandage and group two got a Kinesiology Tape application. Limb size, water composition of upper extremity, lymphedema-related symptoms, physical therapy assessment, quality of life and acceptance to the bandage or tape were assessed.⁷

Excess limb size and excess water composition were reduced significantly in both groups and there were no significant difference in both groups for all values. Acceptance was better in the Kinesiology Taping group, where also longer wearing, less difficulty in usage and increased comfort and convenience have been seen.⁷

In a case study on a patient with bilateral mastectomy 10 tapes were applied with a change every 7 days. After the first application the edema was reduced by 21%, after 10 applications the edema was reduced by 9%.⁸

duration of efficacy of Tape application

The bioelectrical activity of m. vastus medialis increased significantly 24 hours after application. This significantly increased activity persisted also by 72 hours after application, but was lower than 24 hours after application. 4 days after Kinesiology Taping application the bioelectrical activity of m. vastus medial decreased to the baseline value.²

duration of efficacy after Kinesiology Tape

Also when Kinesiology Tape was removed 24 hours after applications a higher activity persisted by 72 hours after application.²

conclusions:

This study has showed that there are studies in literature that show some evidence for Kinesiology Taping, especially for pain reduction, range of motion increasing, increasing of recruitment of the muscle's motor units and increased lymphatic activity. More studies are needed to understand all effects of Kinesiology Taping and to give the explanation about the ways Kinesiology Taping is working .

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