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# KINESIO TAPING IN PREVENTING AND TREATMENT OF SPORT INJURIES

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**Summary.** *The article deals with innovative treatment options in Physiotherapy and Rehabilitation. The emphasis is on the Kinesiotherapy treatment technique analyzing its effectiveness and benefits in preventing and treatment of sport injuries. It is claimed that KT supports injured muscles and joints and helps relieve pain by lifting the skin and allowing improved blood and lymph flow. Studies investigated Kinesiotherapy as a part of Physiotherapy have shown positive effects of KT to improve circulation, support muscles, foster healing, and help prevent injury or further injury.*

**Key words:** *Kinesiotherapy, the Kinesio Taping Method, sport injuries, medical rehabilitation, athletes.*

Muscles are not only attributed to the movements of the body, they also control the circulation of venous and lymph flows, body temperature, etc. Therefore, the failure of the muscles to function properly induces various kinds of symptoms. Consequently, more attention was given to the importance of muscle function in order to activate the body's own healing process. When using the kinesio tape it was discovered that muscles and other tissues could be helped by outside assistance, because it affects the activation of the neurological and the circulatory systems [9, C. 259-270].

*The Kinesio Taping Method* involves taping over and around muscles in order to assist and give support or to prevent over-contraction. Kinesiotherapy – therapy involving active or passive movement of parts of the body in order to strengthen and stabilize joints. Kinesiology is an anatomical science that focuses on the treatment of connective tissue, joints, muscles, and tendons – the science of muscular and skeletal movement [5, C. 19–72].

**Scientific novelty lies** in understanding of innovative treatment options like Kinesio taping, which offers a range of benefits for various musculoskeletal conditions by applying elastic adhesive tape to areas of pain or dysfunction. Theorized mechanisms of action include reducing pain through sensory afferent stimulation and enhancing local circulation for increased range of motion. Despite its popularity among athletes, the clinical benefits of Kinesio taping are still unclear.

**The subject of the report** is to highlight a Kinesiotherapy treatment technique using meta-analyses for providing new insights in rehabilitation and athletic settings.

**The aim of the report** is to evaluate the effectiveness of kinesio taping method in the prevention and treatment of sports injuries.

In recent years there has been an increased interest in exploring method for Kinesio tape. Some studies show minimal or moderate gains. Many studies indicate that kinesiology taping is most effective when used together with conventional treatment methods. In our report we will represent how physical and sports therapists use it, its benefits, tips and what to know.

Kinesio tape or Kinesio Tex Tape, was developed in 1973 by Dr Kenso Kase, a Japanese chiropractor who wanted a tape that provided support but didn't limit movement the way traditional athletic tapes do. Kinesio tape (KT) is an elastic therapeutic tape used for treating sports injuries and a variety of other disorders. The material used in the Kinesio tape and the original concept of the taping technique was first introduced in Japan in 1979 and the United States in the 1990s. The profile of KT rose after the tape was donated to 58 countries for use during the 2008 Olympic Games, and was seen on high-profile athletes [10, 153–164].

Dr. K. Kase claimed that by applying the KT, physiological effects would include a decrease in pain by stimulating the neurological system, restore correct muscle function by supporting weakened muscles, remove congestion of lymphatic fluid or hemorrhages under the skin, and correct misalignment of joints by reducing muscle spasms. After applying the tape, the taped area forms convolutions, thus increasing the space between the skin and muscles. It is claimed that KT supports injured muscles and joints and helps relieve pain by lifting the skin and allowing improved blood and lymph flow [5, C. 19–72].

Kinesio Taping is currently regarded by physiotherapists B. Firth, P. Dingley, E. Davies, J. Lewis, C. Alexander as a method supporting rehabilitation and modulating some physiological process. This sensory method supports joint function by exerting an effect on muscle function, enhancing activity of the lymphatic system and endogenous analgesic mechanisms as well as improving micro circulation [2, C. 416–421].

The effectiveness of Kinesio Tapes applications in managing scars and keloids as evaluated by patients themselves or carers of children who had undergone such treatment were investigated by J. Karwacinska, W. Kiebzak, B. Stepanek-Finda. They claimed that Kinesio Tape applications contribute to a positive cosmetic outcome and reduce limitations with respect to scar mobility, which confirms the validity of introducing this form of treatment as one of the methods for scar management [4, C. 50-57].

Balance taping is an effective treatment for football players with a hamstring muscle injury and traumatic knee pain. Therefore, S. Lee, J. Lee investigated the effects of balance taping on hamstring muscle injury and traumatic knee pain incurred by an amateur university football player as a result of tackling during a football game. Balance taping enabled an amateur university football player to resume playing because it decreased the pain associated with his hamstring muscle and traumatic knee flexion injuries [6].

Physical therapists S. Williams, C. Whatman, P. Hume in their report investigated sports-related injuries (shoulder impingement), and studies attending

to musculoskeletal outcomes in healthy participants using Kinesio-taping had implications for the prevention of sporting injuries. KT may have a small beneficial role in improving strength, range of motion in certain injured cohorts and force sense error compared with other tapes, but further studies are needed to confirm these findings [10, C. 153–164].

**Main material.** Kinesitherapy, as a part of physical therapy, represents one of the most important aspects of medical rehabilitation. The main objective of Kinesiology is to prevent injuries from occurring, through the promotion of physical activity and healthy body choices. This is different from a physiotherapist, who works with patients to rehabilitate their bodies after an injury has already occurred. Kinesitherapy is used in prevention, rehabilitation and recreation programmes. Therapeutic indications in Kinesitherapy cover such problems as: disorders of the loco-motor system, mobility problems, back pain, discography and degenerative changes in backbone and joints, limb paresis, post-injury or neurological changes, faulty posture, chronic cardiologic and respiratory diseases, diabetes, obesity, osteoporosis, it is also used after stroke, heart infarct, abdominal surgeries, etc. The treatment may be given in both pre- and post-operative stages. Kinesitherapy is applied in almost all medical branches in numerous pathological conditions, as well as a method of prevention. Practically, there are no absolute contraindications, and exceptions are extremely rare. Moreover, Kinesitherapy can be used as supplementary treatment or as basic treatment form [3, C. 699-709].

Since its inception almost 50 years ago, Kinesio tape has been popularized in the main stream with high-profile athletes across the globe seen wearing it. Physical therapists sometimes use kinesiology taping as one part of an overall treatment plan for people who've been injured. Kinesiology tape is used for:

*Supporting weak ones.* Kinesiology tape is also used to add extra support to muscles or joints that need it. Studies on athletes have shown that when kinesiology tape is used on fatigued muscles, performance improves.

*Re-educating muscles.* Kinesiology tape can help re-train muscles that have lost function or that have used to an unhealthy way of working. For example, kinesiology taping can be used to correct posture in your head and neck.

*Enhancing performance.* Some athletes use kinesiology taping to help them achieve peak performance and protect against injury when they're competing in special events. "A lot of runners use this tape every time they run a marathon."

*Managing scars.* Although you should never use kinesiology tape on an open wound, there is some scientific evidence to suggest that kinesiology tape can improve the long-term appearance of scars after surgery or injury [7].

Kinesio-taping, also commonly referred to as athletic taping, is used as a non-invasive way to manage joint and muscle inflammation and pain. The goals of kinesiology taping are to improve circulation, support muscles, foster healing, and help prevent injury or further injury [8]. The main proposed benefits of Kinesio tape include reduction of pain, protection of weak areas, increasing sensory input and improved performance. With this, Kinesio tape can be utilized by athletes and rehabilitation professionals as a potential tool in order to decrease recovery time. Although commonly used by athletes to improve performance, so its benefits include:

1. *Decreased Pain*: By gently applying pressure, kinesiology tape helps to disrupt and dissipate pain.

2. *Increased Circulation and Decreased Inflammation*: The tape can help remove congestion while allowing efficient circulation of oxygenated blood and lymphatic.

3. *Improved Posture and Muscle Support*: Taping areas that veer away from correct posture can help gently support proper posture. Proper taping also enables weak muscles to function efficiently, reduces pain and fatigue, and protects against cramping, over-extension, and over-contraction.

4. *Reduction of inflammation*: Kinesio taping helps to improve blood circulation around the affected area. This aids in the removal of fluids and other waste products from the injured area. This in turn reduces swelling and other effects of inflammation.

5. *Improved Athletic Performance*: By supporting unstable joints and delivering slight pressure to "sleeping" muscles, taping can prompt higher performance.

6. *Supported endogenous analgesic system*: The tape enables the body's own healing mechanisms to work in the recovery process.

7. *Aids faster recovery*: With increased blood circulation to the affected area, the tissues will heal much faster. Correct taping therefore helps to speed up healing of affected tissues.

8. *Providing relief from muscle spasms*: Muscle spasms often occur as a result of fatigue or overuse of the muscles. Taping the affected muscles helps to improve blood circulation and thereby increase the delivery of nutrients and oxygen to the tired muscles, helps to eliminate the muscle cramps and spasms [1].

**Conclusions.** It is reasonable to conclude that *Kinesio tape* can be greatly beneficial to both the rehabilitation professional and athlete. When used correctly, it has the potential to decrease pain and swelling, provide feedback and protect injured areas. It is primarily used by physical therapists, athletic trainers and chiropractors to help their patients and athletes return to their prior level of function. KT tape has been shown to be effective in reducing inflammation, which is thought to be due to the tape's ability to restrict blood flow. KT tape is an easy-to-use sports recovery tool that has a variety of potential benefits for athletes and active individuals.

Although the effectiveness of kinesiology taping is not well researched, it may provide support, increase circulation, reduce pain, and improve the way your joints and muscles work. For most practitioners, Kinesio tape has its place as a tool in the toolbox. Although it may not be the correct mode of treatment for everyone, it is something that rehabilitation professionals and athletes should try.

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