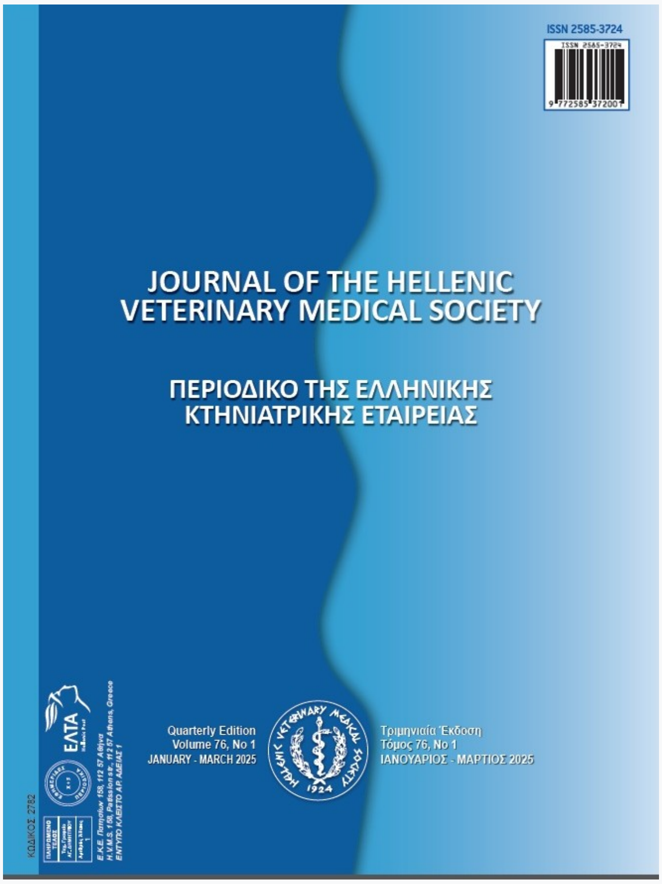
Journal of the Hellenic Veterinary Medical Society

Vol 76, No 1 (2025)



Immediate Effects of Kinesiotape on Gait and Static Weight-Bearing in Dog

N Altinkaya, NO Pekyavas, GC Gungor

doi: [10.12681/jhvms.38009](https://doi.org/10.12681/jhvms.38009)

J HELLENIC VET MED SOC 2025, 76 (1): 8829-8836
ΠΕΚΕ 2025, 76 (1): 8829-8836

Research article
Ερευνητικό άρθρο

Immediate Effects of Kinesiotape on Gait and Static Weight-Bearing in Dog

N. Altinkaya[1,*], N.O. Pekyavas[2], G.C. Gungor[3]

[1]*Department of Physiotherapy and Rehabilitaiton, Final International University, 99370 Kyrenia, TRNC, Mersin-10 Turkey*

[2]*Department of Physiotherapy and Rehabilitaiton, Baskent University, 06790 Ankara, Turkey*

[3]*Faculty of Veterinary, Near East University, 99138, Nicosia, TRNC, Mersin-10 Turkey*

ABSTRACT: While the advantages of Kinesiotape applications in animals are acknowledged, there remains a gap in controlled studies specifically focusing on dogs. This study aims to assess the impact of Kinesiotape application in dogs experiencing gait issues. Twenty dogs presenting with gait abnormalities were randomly allocated into two groups. The experimental group (KT,n=10) received Kinesiotape application, while the control group (CG,n=10) received identical taping with rigid tape. Gait duration, step count, and static weight-bearing scores were measured both before and after tape application. The KT group demonstrated a significant improvement in the number of steps taken, gait duration, and weight-bearing compared to baseline ($p<0.05$). In contrast, the CG exhibited improvement only in gait duration, with non-significant changes in the number of steps and weight-bearing ($p>0.05$). Between-group comparisons revealed that the KT group exhibited superior outcomes in both the number of steps and weight-bearing ($p<0.05$), while no significant difference was observed between the two groups regarding gait duration ($p>0.05$). Our findings suggest that Kinesiotape application yields superior outcomes compared to rigid taping concerning gait and static weight transfer in dogs. Importantly, this study represents the first randomized controlled trial examining Kinesiotape application in dogs.

***Key words*: Dog; Kinesiotape; Lameness; Physiotherapy, Rehabilitation**

Corresponding Author:
Neyran Altinkaya, Department of Physiotherapy and Rehabilitaiton, Final International University, 99370 Kyrenia, TRNC, Mersin-10 Turkey
E-mail address: neyranaltinkaya@gmail.com

Date of initial submission: 04-06-2024
Date of acceptance: 20-09-2024

INTRODUCTION

Kinesiotape, an elastic therapeutic tape developed by Dr. Kenzo Kase in Japan in 1979 for human use, has recently garnered attention in veterinary medicine. With the rise of complementary therapies in equine care, Kinesiotape has emerged as a promising method in the animal world. Its versatility allows for the treatment of various clinical conditions in animals, ranging from tendon injuries and neurological disorders to muscle contractures and postural deficiencies (Bassett et al., 2010; Molle, 2015). Additionally, research indicates its positive impact on wound healing, pain management, and edema control in horses (Çağatay et al., 2018).

While various physiological mechanisms underlying the efficacy of Kinesiotape have been proposed, further scientific investigation is warranted to comprehensively understand its true effectiveness. Kinesiotape is believed to influence musculotendinous elements via the fascia (Molle, 2015; Ericson et al., 2020). Its application creates folds, increasing the space between the skin and muscles, which theoretically enhances lymphatic drainage. This improved flow alleviates pressure, reduces swelling, and facilitates the delivery of oxygen and nutrients to injured tissues, thus promoting expedited healing. Recent research has demonstrated positive outcomes in strength, joint proprioception, range of motion (ROM), muscle performance, proprioception, and lymphedema (Çınar Medeni, 2015). Notably, Kinesiotape offers advantages over rigid tapes by allowing unrestricted ROM and the ability to remain on the skin for extended periods.

Taping helps animal rehabilitation, aiming to harness the body's innate healing abilities and restore tissues to homeostasis (Bassett et al., 2010). It can be seamlessly integrated with other modalities or treatments, either before or after sessions, to enhance or complement its effects. Tapes with carefully selected adhesiveness are applicable across various animal species and do not impede movement or bathing in dogs. Particularly in athletic dogs, taping effectively shields sensitive tissue areas, offering continuous protection (Dybczyńska et al., 2022). In summary, Kinesiotaping in animals serves to alleviate pain and inflammation, support weak muscles and joints, prevent cramps and spasms, and enhance muscle tone.

Orthopedic injuries in dogs present as complex and protracted processes, often necessitating rehabilitation due to factors such as cage restriction, pain, and immobilization, which contribute to muscle weakness and gait disturbances in the post-traumatic phase. Lameness emerges as a prominent concern following orthopedic injuries, varying in severity from mild to complete non-weight bearing. This impairment significantly impacts the dog's mobility and daily activities, including standing, walking, urination, and defecation, leading to emotional distress for both the dog and owner.

Early intervention to address gait abnormalities becomes crucial, with physiotherapy and rehabilitation playing pivotal roles in mitigating these challenges. Among emerging physiotherapy methods, Kinesiotape applications have gained popularity, particularly in equine rehabilitation, demonstrating efficacy in addressing similar issues (Molle, 2015, Ericson et al., 2020). Extending this approach to dogs holds promise in supporting their orthopedic recovery; however, controlled studies in this area remain scarce in the literature.

Motivated by this gap, we have undertaken the present study to explore the potential benefits of Kinesiotape applications in dogs undergoing rehabilitation for orthopedic injuries.

We hypothesized that applying Kinesiotape over the hip and stifle joint would enhance gait parameters and muscle activity/awareness in dogs with gait problems. The aim of this study was to assess the effects of Kinesiotape application on gait and weight-bearing in dogs presenting with gait problems or lameness.

MATERIALS AND METHODS

The reporting of this article adheres to CONSORT guidelines for randomized trials of non-pharmacological treatments.

This study adopted a randomized clinical trial format, wherein animals were allocated randomly to their respective experimental groups. Ethical approval for the study was obtained from the Near East University Animal Experiments Local Ethics Committee (dated 26.02.2021, decision number 2021/129). Additionally, consent forms were obtained from the owners of the participating dogs.

Animals

Twenty dogs, aged between 1 and 10 years, presenting with lameness were randomly divided into two groups: a Kinesiotape application group (KT) comprising ten animals that received Kinesiotaping, and a control group (CG) consisting of ten animals treated with rigid tape application. We employed simple randomization using a computer-generated table of random numbers. The CONSORT study protocol is given in Figure 1.

Inclusion criteria comprised dogs referred by a veterinary surgeon, presenting with gait disorders or lameness attributable to orthopedic issues in the hip or stifle joint, and whose owners provided consent. Exclusion criteria included sensory impairments, open wounds or infections in the application area, mobility limitations hindering walking or standing, and obesity.

Assessment Methods

All treatments were administered at a consistent time of day. Prior to treatment, dogs were instructed to consume half a portion of food and defecate at least 2 hours beforehand. Gait function was assessed using a 12-meter walking test, during which dogs were walked in a designated corridor while wearing a pedometer (Voit 216 Pedometer). The number of steps taken and the duration of the gait were recorded (Altinkaya, 2021).

Static weight-bearing was assessed manually using two bathroom scales (Hyytiäinen et al., 2012). The dog's hind legs were placed on the scales, and the amount of weight transferred was recorded in kilograms (kg).

Application of Kinesiotaping

The Kinesiotaping muscle correction technique was applied to the KT group following standard protocol. Prior to application, the hind limbs of the dogs were shaved. Kinesio Canine™ tape (Kinesio Taping Co. Ltd. Japan), 5 cm in width, was utilized for the application.

The region was measured with the tape while the dog was in a side-lying position. The Kinesiotape was cut into a Y-shape, with the anchor placed on the front of the upper thigh. The hind legs were then gently pulled back, and the tape was applied up to the top of the knee joint with 20% tension.

With the knees bent, one end of the outside of the Y-shaped tape was applied with 20% tension, wrapping around the patella. The base of the second Y-shaped tape was positioned on the back of the knee.

One end of the upper side of the second Y-shaped tape was passed through the upper part of the stifle joint and secured inwardly with 20% tension. Similar-

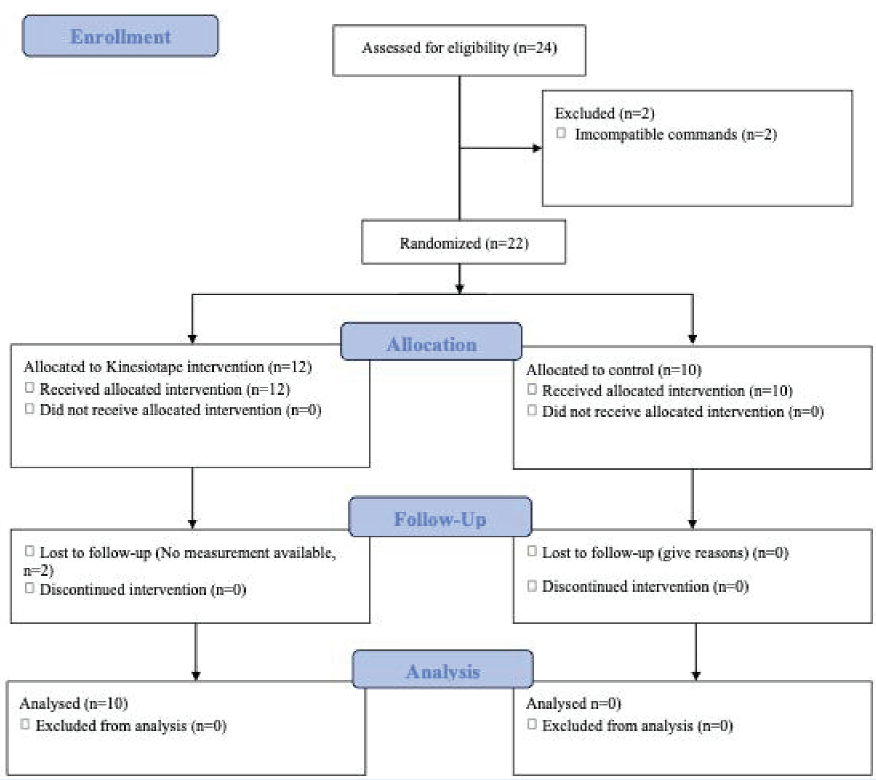


Figure 1 CONSORT study protocol

ly, the other end on the lower side was passed through the lower side of the knee joint and secured inwardly with 20% tension (Ozunlu Pekyavas, 2020). (Figure 2)

The dogs in the CG underwent taping using rigid tape, employing the same technique as the KT group, but without the ability to stretch. (Figure 3)

Following the taping applications, the tape remained on the dogs' extremities for 45 minutes. At the conclusion of this period, the 12-meter walking test and weight transfer evaluation were repeated.

Figure 2 Kinesiotape application

Figure 3 Rigid tape application

Statistical analysis

The achieved power of the study was calculated using G-Power 3.1.7 software, indicating that a sample size of 10 participants per group was required to achieve 80% power with a 5% type 1 error. After random assignment to the groups, all dogs were monitored throughout the study and included in the analysis.

Data analysis was conducted using IBM® SPSS® Statistics 21.0 software. Descriptive statistics were calculated, with continuous data (such as dogs' age, body weight, walking test results, and amount of weight transfer) presented as median values and ranges, and categorical data (such as gender) presented as frequencies for each group.

The Wilcoxon signed-rank test was used to compare gait duration, number of steps, and amount of weight transfer before and after taping within each group. The Mann-Whitney U test was employed to assess the statistical difference between the two groups. A significance level of $p<0.05$ was set for all analyses.

RESULTS

Of the dogs included in the study (n=20; 9 females, 11 males), 6 were diagnosed with osteoarthritis, 9 with fractures, 4 with hip dysplasia, and 1 with anterior cruciate ligament rupture. In the KT group, 40% were females and 50% were males, while in the CG, 50% were females and 50% were males. There was no difference in demographic characteristics between the groups at baseline. Demographic data of the dogs are provided in Table 1.

The pre-post intervention results indicated a significant improvement in the number of steps, gait duration, and weight-bearing in the KT group ($p<0.05$) (Table 2).

In contrast, the CG showed improvement in gait duration; however, the changes in the number of steps and weight-shifting were not statistically significant ($p>0.05$).

Comparing the two groups, the KT group demonstrated superior outcomes in terms of the number of steps and amount of weight transfer, with statistically significant differences ($p<0.05$). However, no significant disparity was observed between the groups regarding gait duration ($p>0.05$).

Furthermore, when analyzing which intervention had a greater effect on gait duration, it was found

Table 1. Distribution of age and body weight of the dogs according to the groups

	KT (n=10) X±SD (min.-max.)	CG (n=10) X±SD (min.-max.)	p
Age	5,6±2,79 (2,0-9,0)	5,8±3,19 (1,0-10,0)	1,000
Weight	27,29±16,62 (1,8-65,8)	21,4±11,36 (3,60-38,40)	0,759
Body condition (0-9)	6,3±0,94 (5,0-8,0)	6,0±0,81 (5,0-7,0)	1,000

Kolmogorov-Smirnov Z test, X: Mean, SD: Standard deviation

Table 2. Pre-post intervention results of groups

	KT (n=10)			CG (n=10)			Mann Whitney U Test
	Pre-test	Post-test	Wilcoxon test	Pre-test	Post-test	Wilcoxon test	
	X±SD	X±SD	p	X±SD	X±SD	p	p
Number of steps	35,50±5,87	30,4±6,73	0,007*	33,6±3,33	32,5±3,86	0,076	0,017*
Gait duration (sec)	11,50±3,39	10,1±3,44	0,007*	12,48±3,03	11,72±3,08	0,005*	0,384
Weight-bearing (kg)	4,42±1,80	5,15±2,24	0,005*	4,70±2,04	4,78±2,26	0,102	0,064*

Wilcoxon test, Mann Whitney U test, X: mean, SD: standard deviation, p<0,05: significance level

that KT was more effective. The effect sizes for the 12-meter gait test and weight-bearing score were 0.38 (KT) and 0.24 (CG), respectively.

DISCUSSION

The aim of this study was to evaluate the effects of Kinesiotape on gait and static weight-bearing in dogs with lameness. Our findings indicate that Kinesiotape application improved gait parameters and the amount of weight transfer in these dogs. The effect size and p-values suggest that Kinesiotape application was superior to rigid taping.

Dr. Kenzo Kase has developed canine taping treatments aimed at optimizing muscle function, increasing ROM, improving circulation, and expediting recovery. While the principles of Kinesiotape remain consistent, it's important to recognize that a dog's skin naturally possesses more hair than human skin. However, Kinesiotaping for dogs remains effective even on fur, utilizing a method that leverages follicular stimuli. In this approach, the tape interacts with the dog's hair follicles to stimulate deeper layers of tissue, facilitating the freer flow of lymphatic fluids. This aids in the healing process and reduces swelling. When applied to canine skin, the tape can impact various layers of soft tissue, as all tissues are interconnected by fascia [9]. Moreover, there is evidence supporting the use of kinesiology tape for enhancing proprioception and body awareness in humans (Yazici et al., 2015; Kaya Kara et al., 2015).

Abnormal gait patterns are known to decrease gait ability and increase the risk of falls, thereby reducing gait confidence. Studies in humans have shown that applying Kinesiotape to the lower extremity can improve gait function and enhance postural control (Sheng et al., 2019). Similarly, in dogs, treatments for abnormal gait and lameness can be combined with Kinesiotape to expedite gait improvement.

Research in humans has demonstrated that Kinesiotape application leads to improvements in gait parameters, including gait speed, cadence, stride length, and step length and time symmetry (Ekiz et al., 2015; Hegazy et al., 2021; Bae and Park, 2022). Furthermore, various methods of Kinesiotape application have been shown to enhance gait performance by facilitating walking technique (Guner et al., 2015). For instance, Horasart et al. (2020) found immediate benefits of Kinesiotape application, employing the functional correction technique for ankle dorsiflexion and eversion, and the inhibition technique for the gastrocnemius muscle, resulting in improved step length and step time symmetry.

Our results corroborate findings from previous studies, indicating that Kinesiotape effectively enhances gait parameters and weight transfer, even within a short duration. This consistency across studies underscores the efficacy of Kinesiotape in improving gait performance.

In our study, we observed a reduction in walking time and number of steps at the end of the 45-minute period. This suggests an increase in stride length and walking speed among the dogs, which aligns with previous reports. Research on athletic taping in horses has demonstrated its ability to limit flexion during the swing phase of the gait and reduce vertical peak force during the stance phase, potentially aiding in the prevention and rehabilitation of tendinous or ligamentous injuries (Robert et al., 2002). This phenomenon may be attributed to the effect of Kinesiotape on fascial tissues, as theorized by Kase.

The expectation and hypothesis of this study were that Kinesiotape would improve gait parameters, as it is known to enhance proprioception by providing continuous cutaneous afferent stimulation through the skin (Kase et al., 2013). Type II mechanoreceptors, located deep in the dermis and exhibiting slow adaptation, are believed to increase muscle function with the cutaneous afferent stimulation provided by Kinesiotape, leading to the firing of more motor units (Halseth et al., 2004).

We believe that the increase in the amount of weight transfer observed with Kinesiotape application is attributable to several factors. Firstly, Kinesiotape is known to alleviate pain, support joints, enhance muscle function, and improve proprioception. By wrapping and supporting the joint like a second skin, Kinesiotape reduces pressure in the area, thereby alleviating tension on pain receptors and promoting joint mobility and ROM. Moreover, Kinesiotape application can promote muscle relaxation or contraction, depending on the method of application, while also increasing blood flow, oxygen supply, and nutrient and mineral activity to the area.

Recent studies have highlighted the abundance of proprioceptors in fascial tissue compared to other tissues such as muscle and tendon. Consequently, Kinesiotape's interaction with fascia can enhance body awareness through mechanoreceptor stimulation, loosening tense and restricted fascia, restoring its original function, and increasing ROM (Huang et al., 2011). The reduction in pain mediated by fascial stimulation can further positively impact muscle function. Additionally, Kinesiotape's corrective effect on joint alignment may improve the dog's sense of joint position.

Karabicak et al. demonstrated that pain and joint alignment improved after 10 days of Kinesiotape application in patients with hallux valgus (Karabicak et al., 2015). Similarly, Shakeri et al. (2013) reported a significant difference in the change in pain intensity during movement between the KT and placebo groups immediately after taping, consistent with our study findings. Conversely, Ho et al. (2017) found that the use of McConnell taping or Kinesiotape as a medial correction technique in the patellofemoral joint did not significantly affect weight bearing and alignment of the patella, although a reduction in pain was observed following Kinesiotape application.

In another study by Simon et al. (2014) improvements were noted after tape application, with increased proprioception observed in both subject groups with and without joint instability. These findings suggest that Kinesiotape application enhances sensory input in the muscles, facilitating the production of the desired amount of force during movement.

Limitations of our study include the timing of tape measurement, which was performed 45 minutes after Kinesiotape application. It is plausible that detecting changes in gait parameters with Kinesiotape applications may necessitate a longer application time. Indeed, previous studies have reported Kinesiotape effects emerging after more extended application periods, ranging from one to two days.

Moreover, while our study represents the first randomized controlled trial (RCT) on Kinesiotape application in dogs, its sample size was relatively small. Future studies with larger sample sizes and a wider range of patients are warranted to further explore the efficacy and optimal application duration of Kinesiotape in veterinary rehabilitation.

CONCLUSIONS

In conclusion, our study demonstrates that Kinesiotape is superior to rigid taping in improving gait and weight transfer in dogs. Kinesiotape, designed to mimic the qualities of the skin, offers versatility in application and may be more beneficial for dogs.

Orthopaedic injuries, neurological conditions, geriatric processes, and sporting activities necessitate physiotherapy and rehabilitation interventions in dogs, mirroring the needs of humans. Various rehabilitation protocols, including those for neurological and orthopaedic injuries, have been shown to support the healing process in dogs (Altinkaya et al., 2020). Given the increasing prevalence of osteoarthritis in geriatric dogs, the incorporation of physiotherapy (Altinkaya, 2022), supported by Kinesiotape, holds promise for improving outcomes for both therapists and animal owners.

Our study represents the first randomized controlled trial on Kinesiotape application in dogs. Nonetheless, there is a need for larger-scale studies encompassing a broader spectrum of patients to further elucidate the potential benefits of Kinesiotape in veterinary rehabilitation.

CONFLICT OF INTEREST

None declared.

REFERENCES

Altinkaya N (2022) Geriatrik Köpeklerde Fizyoterapi Ve Rehabilitasyon: Güncel Bakış. [Physiotherapy and Rehabilitation for Geriatric Dogs: Current View]. Journal of Adnan Menderes University Health Sciences Faculty 9(3):554-561. https://doi.org/10.46237/amusbfd.1102151

Altinkaya N, Cagatay S (2020) Köpeklerde Spinal Yaralanmalar Sonrası Fizyoterapi Uygulamaları: Olgu Sunumları. [Physiotherapy Interventions After Spinal Injuries In Dogs: Case Reports]. Izmir Democracy University Health Sciences Journal 3(3):214-223.

Altinkaya, N (2021) Osteoartritis tanılı köpeklerde fizyoterapi programının etkinliğinin incelenmesi. [Investigation of the effectiveness of physiotherapy programme in dogs with osteoarthritis]. [dissertation]. Turkey: Pamukkale University.

Bae Y, Park D (2022) Immediate Effect of Lower-Leg Kinesio Taping on Ankle Dorsiflexion and Gait Parameters in Chronic Stroke with Foot Drop. J Stroke Cerebrovasc Dis 31(5):106425. https://doi.org/10.1016/j.jstrokecerebrovasdis.2022.106425

Bassett KT, Lingman SA, Ellis R (2010) The use and treatment efficacy of kinaesthetic taping for musculoskeletal conditions: a systematic review. NZ J Physiother 38(2):56-62.

Çağatay S, Özünlü Pekyavaş N, Akpinar E, Baltacı G (2018) Effecets of Equine EDF Taping on Wound Healing and Edema Control After Surgical Castration in Stallions Open. J Vet Med 3(2):1-8.

Çınar Medeni Ç, Baltacı G, Doğan Vayvay G (2015) Acute Effect of Kinesiotape Muscle Technique on Hamstring Flexibility and Pain During Stretching. Turk J Physiother Rehabil 26(2):73-77. https://doi.org/10.21653/tfrd.280066

Dybczyńska M, Goleman M, Garbiec A, Karpiński M (2022) Selected Techniques for Physiotherapy in Dogs. Animals (Basel) 12(14):1760. https://doi.org/10.3390/ani12141760

Ekiz T, Aslan MD, Özgirgin N (2015) Effects of Kinesio Tape application to quadriceps muscles on isokinetic muscle strength, gait, and functional parameters in patients with stroke. J Rehabil Res Dev 52(3):323-331. https://doi.org/10.1682/JRRD.2014.10.0243

Ericson C, Stenfeldt P, Hardeman A, Jacobson I (2020) The Effect of Kinesiotape on Flexion-Extension of the Thoracolumbar Back in Horses at Trot. Animals (Basel) 10(2):301. https://doi.org/10.3390/ani10020301

Guner S, Alsancak S, Koz M (2015) Effect of two different kinesio taping techniques on knee kinematics and kinetics in young females. J Phys Ther Sci 27(10):3093-3096. https://doi.org/10.1589/jpts.27.3093

Halseth T, McChesney JW, Debeliso M, Vaughn R, Lien J (2004) The effects of kinesio™ taping on proprioception at the ankle. J Sports Sci Med 3(1):1-7.

Hegazy RM, Alkhateeb AM, Abdelmonem AF, Mohammed A (2021) Immediate effect of kinesiotape versus ankle foot orthosis on gait parameters in stroke patients. Turk. J. Physiother Rehabil 32(3).

Ho KY, Epstein R, Garcia R, Riley N, Lee SP (2017) Effects of Patellofemoral Taping on Patellofemoral Joint Alignment and Contact Area During Weight Bearing. J Orthop Sports Phys Ther 47(2):115-123. https://doi.org/10.2519/jospt.2017.6936

Horasart A, Klomjai W, Bovonsunthonchai S (2020) Immediate effect of kinesio tape on gait symmetry in patients with stroke: a preliminary study. Human Movement 21(1):73-81. https://doi.org/10.5114/hm.2020.88156

Huang CY, Hsieh TH, Lu SC, Su FC (2011) Effect of the Kinesio tape to muscle activity and vertical jump performance in healthy inactive people. Biomed Eng Online 10:70. https://doi.org/10.1186/1475-925X-10-70

Hyytiäinen HK, Mölsä SH, Junnila JT, Laitinen-Vapaavuori OM, Hielm-Björkman AK (2012) Use of bathroom scales in measuring asymmetry of hindlimb static weight bearing in dogs with osteoarthritis. Vet Comp Orthop Traumatol 25(5):390-396. https://doi.org/10.3415/VCOT-11-09-0135

Karabicak GO, Bek N, Tiftikci U (2015) Short-Term Effects of Kinesiotaping on Pain and Joint Alignment in Conservative Treatment of Hallux Valgus. J Manipulative Physiol Ther 38(8):564-571. https://doi.org/10.1016/j.jmpt.2015.09.001

Kase K, Wallis J, Kase T (2013) Clinical therapeutic application of the Kinesio Taping Method. 3rd edition. Albuquerque

Kaya Kara O, Atasavun Uysal S, Turker D, Karayazgan S, Gunel MK, Baltaci G (2015) The effects of Kinesio Taping on body functions and activity in unilateral spastic cerebral palsy: a single-blind randomized controlled trial. Dev Med Child Neurol 57(1):81-88. https://doi.org/10.1111/dmcn.12583

Molle S (2016) Kinesio Taping Fundamentals for the Equine Athlete. The Veterinary clinics of North America Equine practice 32(1): 103-113. https://doi.org/10.1016/j.cveq.2015.12.007

Ozunlu Pekyavas N (2020) Kinesio Taping for animals. In: Kinesio Taping. 1st ed, Hipoktrat Kitabevi, Ankara: pp 287-290.

Robert C, Valette JP, Pourcelot P, Audigié F, Denoix JM (2002) Effects of trotting speed on muscle activity and kinematics in saddlehorses. Equine Vet J Suppl (34):295-301. https://doi.org/10.1111/j.2042-3306.2002.tb05436.x

Shakeri H, Keshavarz R, Arab AM, Ebrahimi I (2013) Clinical effectiveness of kinesiological taping on pain and pain-free shoulder range of motion in patients with shoulder impingement syndrome: a randomized, double blinded, placebo-controlled trial. Int J Sports Phys Ther 8(6):800-810.

Sheng Y, Kan S, Wen Z, Chen W, Qi Q, Qu Q, Yu B (2019) Effect of Kinesio Taping on the Walking Ability of Patients with Foot Drop after Stroke. Evid Based Complement Alternat Med 2019:2459852. https://doi.org/10.1155/2019/2459852

Simon J, Garcia W, Docherty CL (2014) The effect of kinesio tape on force sense in people with functional ankle instability. Clin J Sport Med 24(4):289-294. https://doi.org/10.1097/JSM.0000000000000030

Yazici G, Guclu-Gunduz A, Bayraktar D, Aksoy S, Nazliel B, Kilinc M, Yildirim SA, Irkec C (2015) Does correcting position and increasing sensorial input of the foot and ankle with Kinesio Taping improve balance in stroke patients?. NeuroRehabilitation 36(3):345-353. https://doi.org/10.3233/NRE-151223