

REVIEW / PRACA POGLADOWA

Anna Ptak, Grzegorz Konieczny

**FLEXIBLE TAPING - AN OVERVIEW OF METHODS  
BASED ON THE IMPACT OF A FLEXIBLE PATCH**

**ELASTYCZNY TAPING – PRZEGLĄD METOD  
BAZUJĄCYCH NA ODDZIAŁYWANIU ELASTYCZNEGO PLAISTRA**

Katedra Fizjoterapii w Dysfunkcjach Narządu, Zakład Fizjoterapii w Ortopedii i Traumatologii pod kierownictwem prof. Zdzisławy Wrzosek, Akademia Wychowania Fizycznego al. I. J. Paderewskiego 35, 51-612 Wrocław

**S u m m a r y**

Methods of physiotherapy based on work with a flexible patch (taping) have become more and more popular in the recent years. Thanks to a wide range of applications and a small number of contraindications, flexible taping quickly found usage in sports and clinical physiotherapy. The most common methods in Poland which are based on work with elastic tapes are: Kinesio Taping, Taping Kinesiology and Medical Taping (medical taping).

The purpose of the study is to present methods based on work with the flexible patch and indication of their interrelationships. Due to the fact that all methods based on the work with a flexible patch derive from Kinesio Taping method, many common elements can be observed. All

Kinesio Taping, Kinesiology Taping and Medical Taping are supporting patch applications on myofascial chains theory and tensegrity theory. However, the therapy is based on a flexible patch which has the parameters similar to parameters of human skin.

Unfortunately, there is still no comprehensive research, supported by clinical studies explaining accurately how the mechanics of effects arose after the treatment works and what its duration is. It is therefore necessary to perform numerous studies using various measuring instruments, which respond to constantly asked questions.

**S t r e s z c z e n i e**

W ostatnich latach metody fizjoterapeutyczne bazujące na wykorzystywaniu elastycznego plastra (tapingu) bardzo zyskały na popularności. Dzięki szerokiemu spektrum zastosowań oraz niewielkiej liczbie przeciwwskazań elastyczny taping szybko znalazł zastosowanie w sporcie i fizjoterapii klinicznej. W Polsce najbardziej powszechne metody bazujące na wykorzystaniu elastycznej taśmy to: Kinesio Taping, Kinesiology Taping i Medical Taping (taping medyczny).

Celem pracy jest przedstawienie powyższych metod bazujących na wykorzystaniu elastycznego plastra oraz wskazanie ich wzajemnych powiązań.

Biorąc pod uwagę fakt, iż wszystkie metody bazujące na pracy z elastycznym plastrzem wywodzą się z metody Kinesio

Taping, można dopatrzeć się w nich wielu elementów wspólnych. Zarówno Kinesio Taping Kinesiology Taping jak i Medical Taping opierają aplikacje plastra o teorie łańcuchów mięśniowo-powięziowych i teorię tensegracji, a podstawą terapii jest elastyczny plaster o parametrach zbliżonych do parametrów ludzkiej skóry. Niestety w dalszym ciągu brak jest kompleksowych opracowań, popartych badaniami klinicznymi, wyjaśniających dokładny mechanizm działania powstałych efektów po terapii oraz ich czas trwania. Niezbędne są zatem liczne badania z zastosowaniem różnego rodzaju aparatury pomiarowej, które odpowiedzą na wciąż stawiane pytania.

**Key words:** physiotherapy, taping, elastic tape

**Słowa kluczowe:** fizjoterapia, taping, elastyczny plaster

## INTRODUCTION

Recently methods of physiotherapy based on work with flexible patch (taping) have become very popular. Elastic adhesive tapes certainly give new therapeutic possibilities and have positive influence on patient-therapist relation [1, 2, 3, 4]. Initially, flexible tapes were found only in professional sports. For the first time, Kinesio Taping found international recognition at the Olympic Games in Seoul in 1988 and has developed rapidly since then. Tape applications were highly visible on the U.S. cycling team Turing Tour de France in 2004 or Beijing Olympic Games athletes in 2008. [3] Thanks to broad applications spectrum, elastic taping quickly found its way into physiotherapy. Using the tapes gives many possibilities in helping patients with pain, swells or impaired joint functions [2, 3, 4, 5, 6, 7, 8].

Elastic patch can be used to ease pain directly by reducing tension in myofascial structures (reducing load) or by supporting overworked and/or weakened muscles. Selecting the appropriate applications, we can also, through proprioception restrain over reactive synergistic muscles, regulate intra-articular coordination, set the joint in the static and dynamic positions and improve the flow of blood and lymph [9, 10]. Currently, over 80% of patch application are typical clinical applications [3]. Methods of using elastic patch are noninvasive and painless, so there is no wonder that they are successfully used in pediatric [11], orthopedics and traumatology [12, 13], neurology [14], pulmonology [15], rheumatology [16], surgery [17] and dentistry [18]. Taping can provide an independent method of therapeutic treatment or be used as so called maintenance of therapeutic effect, e.g. after a massage or manual procedures [1, 19]. This kind of use cases can be found in Mulligan's publications [19].

Currently, there are many courses on the market that present guidelines and methodology of working with elastic patch. The most common methods in Poland based on elastic patch usage are: Kinesio Taping, Kinesiology Taping and Medical Taping.

The aim of this paper is to present these methods based on elastic path usage and show the connections between them.

## HISTORY OF FLEXIBLE TAPING

Every method based on elastic patch usage derives from a method called Kinesio Taping, created in 1973 by a chiropractor Kenzo Kase M.D., Meiji University and National College of Chiropractic in Chicago graduate. Kase wanted to create a method that would affect the patient (24h a day) for several days after a visit at the therapists. After a lack of results from experiments using available patches, he decided to create a new type of patch with properties similar to the ones of human skin. The Kinesio Tex Gold patch is made purely from 100% cotton and covered with glue applied in sinusoidal way (Fig. 1) without any latex additions and dyed purely from natural dyes, what increases hypoallergenic feature of the patch [3, 20]. It is also waterproof and has a stretch factor of 40%-60% of it's initial length (Fig. 2) and thickness and weigh similar to the human skin [1, 3, 4, 7, 20, 22].

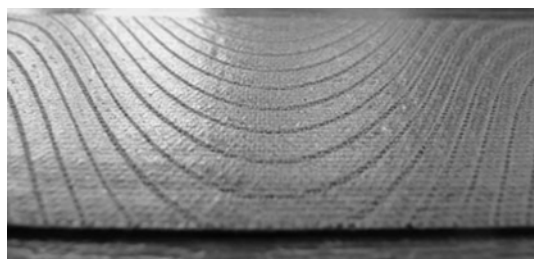


Fig. 1. *Sinusoidal adhesive system of the tape*  
Ryc. 1. *Sinusoidalny układ warstwy klejącej plastra*

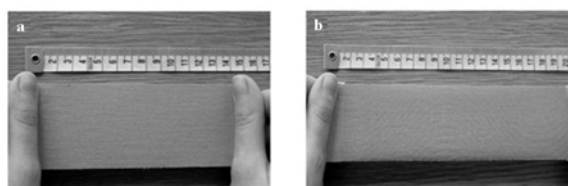


Fig. 2. *Stretch of elastic tape: a) the length of the tape before stretching, b) the length of the tape after a maximal stretching*

Ryc. 2. *Rozciągliwość elastycznego plastra: a) długość przed rozciągnięciem plastra, b) długość po maksymalnym rozciągnięciu plastra*

Initially, the Kinesio Taping method was used mainly in Japan and Korea. The first course in Europe was conducted in 1998. Since then the method has been developing in various directions, mainly in Germany, Italy and Portugal. The first course in Poland was in 2004. Currently, 'Kinesio Taping Association' has its premises located in 21 countries and is distributing patches in 73 countries all over the world. [3, 21].

Since the 90s of the twentieth century, numerous therapies based on research [7] and Kase method have appeared on the market, one of them is medical taping [22]. The initiator of this method was a football player Alfred Nijhuis (playing at clubs such as: MSV Duisburg, Urawa Red Diamonds-Japan, Borussia Dortmund), who, after he had come back from Japan to the Netherlands, noted that the Kinesio Taping method was completely unknown. Together with Gert-Jan Othoff he founded FysioTape BV company that was promoting a method named Medical Taping Concept (MTC) in Europe. MTC trainings can be found in Netherland, Germany, Belgium, and since recently in Poland, Italy and Spain [22].

In May 2007 Kinesio Taping instructors from Germany and Poland decided on founding a new association – ‘K-Active Association’, aimed at promoting this method in these countries. At the same time the name of this method was changed to Kinesiology Taping [23, 24].

Since the introduction of treatment using elastic patch created by Kase new branches of Kinesio Taping were showing up. Alongside the abovementioned we can find K-Taping [25], Elyth S Kinesiotaping [26], or Medi-Taping, which was supplemented with acupuncture massage elements [27].

#### COMMON ELEMENTS AND DIFFERENCES OF TAPING METHODS

As already mentioned, all methods based on elastic patch derive from Kinesio Taping, so many common elements between them can be noticed. Kinesio Taping method completely departed from the eastern medicine and for years the base of elastic patch are kinesiology and musculoskeletal system anatomy [3]. That is why Kinesio Taping, Medical Taping and Kinesiology Taping base the patch application on myofascial chains theory and tensegrity theory [2, 3, 20-23]. They also explain therapy effects with microfolds of the patch and its effects on skin mechanoreceptors such as Golgi-Mazzoni tactile corpuscles (pressure receptors) or Meissner corpuscles (tactile corpuscle) [2, 3]. All aforementioned methods also use patches with parameters close to human skins [2, 3, 20, 21-23]. However, every method uses patches from a different company. Kinesio Taping from the beginning uses Japanese Kinesio Tex Gold patches that are available in four colors: beige, black, blue and pink. Patches are also available in two widths: 5cm (more popular) and

7cm used for lymphatic applications [3, 21]. Kinesiology Taping method uses K-Active Tape made by Japanese firm Nitto Denko. Patches are 5cm wide and are available in the same colors as in the previous method. A novelty in the method of Kinesiology Taping is a special type of patch GENTLE, designed for people with sensitive skin. [2, 23]. The MTC method uses CureTape patches available in widths; 2.5cm, 5cm, 7.5cm in beige, black, blue, pink and orange. Additionally, only this method suggests perforated patches usage [22].

In the presented methods, only Kinesio Taping offers international instructor title in Poland and three levels of training ended with an exam in English [3]. Kinesiology Taping and Elyth S Kinesiotaping offers basic and intermediate level trainings [2, 23, 26], while MTC a single one step training showing the basics of patch usage [22].

Each method using elastic patch is still developing and can provide even better applications. However, the basic rules and techniques are the same. And so, the most popular types of cuts are X, Y and I-type applications and range (Fig. 3) [2-4, 20-24]. There are differences in the nomenclature of various applications and different systematic and knowledge range in trainings, which depends on the training level [2, 3, 21-24].

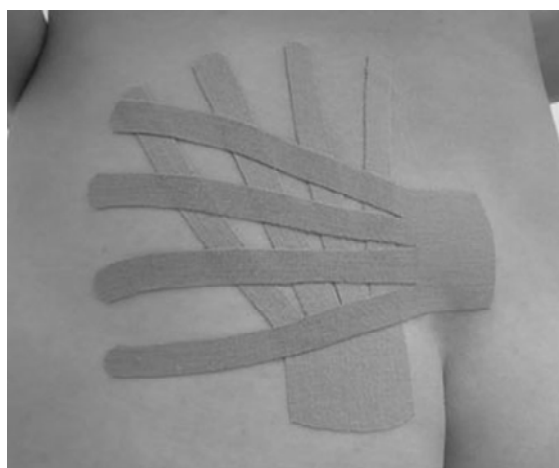


Fig. 3. *The sample application used in the case of sacroiliac joint dysfunction*

Ryc. 3. *Przykładowa aplikacja stosowana w przypadku dysfunkcji stawu krzyżowo-biodrowego.*

#### SUMMARY

Thanks to elastic tapes, therapists have gained a new tool for their work. Only few contradictions, such as: acute conditions after tumor metastases, open

wounds or vascular thrombosis, allow the patch to be applied to patients of all ages and with various diseases [1, 2, 3, 14, 15, 20]. Recently, the amount of research, proving elastic patch treatment to be effective, have increased [8, 9, 10-18, 30]. Unfortunately, comprehensive studies supported by clinical trials explaining the mechanism of the effects and their lasting, are still lacking [28]. Papers that are to confirm the influence of elastic patch on proprioceptors [29] or change of body surface temperature [28] are being written. Reports of Polish researchers regarding bioelectrical muscles activity are also interesting [30]. There are still numerous studies using variety of measuring apparatus that will answer questions and improve this popular method of patient treatment necessary to fully explain the impact and mechanisms of taping.

#### REFERENCES

- Put M: Taping jako metoda postępowania terapeutycznego; *Fizjoterapia* 2007, 15(2): 27 – 34.
- Hałas I. – Kinesiology Taping; K – Active Europe; Training materials from the basic and advanced course, script I i II 2008.
- Kinesio Taping Association International; Training materials from KT1, KT2 course Poznań 2011.
- Śliwiński Z, Senderek T: Kinezjotaping – nowa metoda leczenia?, *Rehab. Prakt.* 2007, 3: 18-20.
- Chang HY, Chou KY, Lin JJ, Lin CF, Wang CH, Immediate effect of forearm Kinesio taping on maximal grip strength and force sense in healthy collegiate athletes. *Phys Ther Sport.* 2010, 11: 122-127
- Zajt-Kwiatkowska J, Rajkowska-Labon E, Skrobot W, Bakula S, Szamotulska J: Application of Kinesio Taping for Treatment of sports Injuries, *Research Yearbook* 2007, 13(1): 130-134.
- Yoshida A, Kahanov L: The effect of Kinesio Taping on lower trunk range of motions, *Res Sports Med.* 2007, 15 103-112.
- Vithoulka I, Beneka A, Malliou P, Aggelousis N, Kratatsolis K, Diamantopoulos K: The effects of Kinesio-Taping on quadriceps strength during isokinetic exercise in healthy non athlete women, *Isokinet Exerc Sci.* 2010, 18: 1-6.
- Lipińska A, Śliwiński Z, Kiebzak W, Senderek T, Kirenko J: Wpływ aplikacji kinezjotapingu na obrzęk limfatyczny kończyny górnej u kobiet po mastektomii, *Fizjoterapia Polska* 2007, 7 (3/4): 258 – 269.
- Senderek T, Breitenbach S, Hałas I: Kinezjotaping – nowe możliwości fizjoterapii kobiet w czasie ciąży, *Fizjoterapia Polska* 2005, 5(2): 266 – 271.
- Yasukawa A, Patel P, Valette C, Sisung Ch: Pilot study: investigating the effects of Kinesio Taping in acute pediatric rehabilitation setting, *Am J Occup Ther.* 2006, 60(1): 104-110.
- Białoszewski D, Woźniak W, Żarek S: Przydatność kliniczna metody Kinesiology Taping w redukcji obrzęków kończyn dolnych u pacjentów leczonych metodą Ilizarowa – doniesienie wstępne, *Ortop Traumatol Rehabil.* 2009; 1(6); vol. 11: 46-54.
- González-Iglesias J, Fernández-de-Las-Peñas C, Cleland JA, Huijbregts P, Del Rosario Gutiérrez-Vega M: Short-term effects of cervical kinesio taping on pain and cervical range of motion in patients with acute whiplash injury: a randomized clinical trial, *J Orthop Sports Phys Ther.* 2009, 39(7): 515-21.
- Jaraczewska E, Long C: Kinesio taping in stroke: improving functional use of the upper extremity in hemiplegia; *Top Stroke Rehabil.* 2006, 13(3): 29-42.
- Szczegieliński J, Łuniewski J, Bunio A, Bogacz K, Śliwiński Z: Zastosowanie Kinesio Taping u pacjentów z zaostrzeniami astmy oskrzelowej, *Med. Sport.* 2007 6(6) vol. 23: 337-341.
- Żuk B, Księżopolska-Orłowska K: Przydatność metody Kinesio Taping w chorobach zapalnych układu ruchu u dzieci, *Reumatologia* 2008, 46(6): 340–347.
- Szczegieliński J, Krajczy M, Bogacz K, Łuniewski J, Śliwiński Z: Kinesiotaping w fizjoterapii po zabiegach chirurgicznych w obrębie jamy brzusznej. *Fizjoterapia Polska* 2007, 3(4) vol. 7: 299-307
- Ey-Chmielewska H, Frączak B, Sobolewska E, Polak-Majcher D, Hamerla Z, Serewa J: Metoda kinezjotapingu i jej zastosowanie w leczeniu zaburzeń narządu żucia – przegląd piśmiennictwa, *Dental Forum* 2009, 37(1): 69-72.
- Mulligan B R: Terapia Manualna techniki NAGS SNAGS MWM itp, *Extrema*, Kraków 2003.
- Kenzo K, Walles J. *Clinical Therapeutic Applications of the Kinesio Taping Method*, 2<sup>nd</sup> edition, Ken Ikai Co Ltd, 2003.
- Official Kinesio Taping Association web site: [www.kinesiotaping.com](http://www.kinesiotaping.com), information was gained on the 5th of december 2011.
- Official Medical Taping Concept web site: [www.curetape.pl](http://www.curetape.pl), information was gained on the 5th of december 2011.
- sgained on the 5th of december 2011.
- Hock B: Flex-Taping Wirkungsweise, Anlagen und Techniken, *Physiotherapeuten* 2008, 60(9): 986-990.
- Official k-taping web site: [www.k-taping.eu/en/therapie.php](http://www.k-taping.eu/en/therapie.php), information was gained on the 5th of december 2011.
- Official Elyth S Kinesiotaping web site: <http://www.elyth.de>, information was gained on the 5th of december 2011.
- Official medi-taping web site: [www.medi-taping.pl/co\\_to\\_jest\\_M-T.htm](http://www.medi-taping.pl/co_to_jest_M-T.htm), information was gained on the 5th of december 2011.
- Racheniuk H, Szczegieliński J, Bogacz K, Zator S, Luniewski J, Skiba G, Śliwiński Z: Ocena efektu cieplnego aplikacji Kinesiology Taping, *Fizjoterapia Polska* 2008, 8: 310-316.
- Halseth T, McChesney J W, DeBeliso M, Vaughn R, Lien J: The effects of Kinesio Taping on

- proprioception at the ankle, J Sports Sci Med. 2004, 3: 1-7.
30. Słupik A, Dwornik M, Białoszewski D, Zych E: Wpływ aplikacji kinesiotapingu na aktywność bioelektryczną mięśnia obszernego przyśrodkowego. Doniesienie wstępne, Ortop Traumatol Rehabil. 2007, 9: 644-651.

Address for correspondence:

Anna Ptak  
Katedra Fizjoterapii  
w Dysfunkcjach Narządu Ruchu  
Zakład Fizjoterapii w Ortopedii i Traumatologii,  
Akademia Wychowania Fizycznego  
we Wrocławiu  
al. Ignacego Jana Paderewskiego 35  
51-612 Wrocław  
tel.: 604228506  
**e-mail: ptak.ania@gmail.com**

Received: 9.05.2012

Accepted for publication: 10.07.2012

