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# Kinesiology Taping a Therapeutic Tool in the Paediatric Population?

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**Abstract**

Kinesiology taping (KT) is a complementary treatment allowing support and stability to muscles and joints without restricting the body's range of motion. KT should be used in combination with other interventions. The clinical experience is that there are benefits to gain with KT. However there is still a lack of evidence for the effectiveness of KT applications. The purpose of this case presentation is to share experience of the immediate effects of KT in some pediatric cases. And also to inspire other therapists to critical evaluate the KT method for both short- and long-term effects.

**Keywords:** Children, Muscular imbalance, Hyper mobility, Pain, Complementary treatment

**Introduction**

Kinesiology taping (KT) is a therapeutic tool used with increasing frequency within musculoskeletal rehabilitation [1]. The tape is used to treat a variety of orthopedic, neuromuscular, neurological and medical conditions. The tape provides proprioceptive feedback to achieve and maintain preferred body alignment. It is a complementary treatment and is designed to facilitate the body's natural healing process while allowing support and stability to muscles and joints without restricting the body's range of motion. KT should be used in combination with other interventions [2]. The tape has a texture and elasticity very close to living human tissue. KT provides immediate sensorimotor feedback regarding functional abilities [3]. Simsek et al. found that kinesiology taping had positive effect on sitting posture for children with cerebral palsy [4]. Lee et al study suggests that in the clinical field, KT may be applied to subjects with muscle weakness in the upper extremities as a supplementary method [5]. The clinical experience is that there are benefits to gain with kinesiology taping (KT). However there is still a lack of evidence for the effectiveness of KT applications [1,2,4]. Immediate effects should be assessed and compared to short/long-term effects in order to put forth recommendations for use of KT in physical therapy [4].

The purpose of these case presentations is to share experience of the immediate effects of KT in some pediatric cases. And also to inspire other therapists to critical evaluate the KT method for both short- and long-term effects.

**Case A**

A girl at the age of nine years diagnosed with chondromalacia patellae. She was member of a football club and there were training and matches every week. During the last year she had experienced increasing pain and she could no longer play football or do exercises without a lot of pain. Q-ceps were taped with muscle application and direct after application she stood up and felt relieved, spontaneously said "O so sweet". With KT applied the pain decreased and there was no problem when exercising, and also matches were without pain problems. After several months with KT and exercises to strengthen the muscles around the knee she was pain free also without the KT.

**Case B**

A boy at the age of five years was hyper mobility in several joints, hyper mobility according to Beighton score, scored six out of nine possible. During balance training in a motor skill track he had to rest several times, about ten times during ten minutes. He was taped with

muscle facilitation technique for q-ceps and corrective technique on the back of the leg to prevent hyperextension of the knee. After taping he denied any benefit of the tape but did not rest once during the training. This was seen at several occasions always with the same result, when not taped before training he rested as earlier at least ten times.

**Case C**

A girl at the age of six years had hyper mobility in several joints, scored eight out of nine possible. She was unable to perform a straight leg raise; she did three with flexed knee before getting to tired to continue. KT was applied with muscle facilitation technique for q-ceps. After taping she could perform several straight leg raises, five with a straight knee was no problem.

**Case D**

A girl at the age of seven months diagnosed with a left-sided congenital muscular torticollis. She had an obvious imbalance in muscle function in the lateral flexors of the neck. According to Muscle Function Scale (MFS) she scored 4 on the left side and 1 on the right side before KT application. KT was applied with muscle facilitation technique along the m. sternocleidomastoid on the right side and with muscle-relaxing technique crossover m. sternocleidomastoid at the left side. After application the left side had decreased to score 2 and the right side increased to score 2.

**Case E**

A boy at the age of nine months diagnosed with a right-sided congenital muscular torticollis. He had an obvious imbalance in muscle function in the lateral flexors of the neck. According to Muscle Function Scale (MFS) she scored 4 on the right side and 2 on the left side before KT application. KT was applied with some relaxing technique across the m. sternocleidomastoid at the left side. After application the right side had decreased to score 2 and the left side increased to score 3.

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### Case F

A girl at two years of age had hyper mobility in several joints, scored eight out of nine possible points. She was often tired and refused to walk after a while, always refusing to climb stairs. At the physiotherapy department we have a slide with small stair, suitable for very young children. She walked twice up and down with right foot leading, than refused to do walk more. This was according to her mother the ordinary behavior, both with right foot leading and to stop walking very soon. KT was applied with muscle facilitation technique form m. q-ceps and corrective technique for prevention of hyperextension of the knee bilaterally. After KT she walked reciprocally in the stairs ten times and did not stop until she was persuading to stop.

### Case G

A girl at seventeen years of age, with a stiff and painful foot, she was waiting for surgery. Both muscle facilitation technique and corrective technique was used to relax and support the foot. She immediately experienced relief of pain, and was taped some more occasions before surgery was performed.

### Case H

A girl at eight years of age, diagnosed as idiopathic toe walking. Both feet had limited dorsi flexion passive range of motion (ROM) about 0 degree bilaterally at her first visit. She was taped with muscle facilitation technique on the calf of the leg and with corrective technique on the forefoot. The passive ROM increased to 5 respective 8 degrees in dorsi flexion direct after taping. She found it easier to remember to perform plantigrade walking after KT and also it felt more comfortable than before KT. She experienced advantages with KT and stretching but it was still hard to totally stop to toe walk after some moths.

### Discussion

The purpose of describing these cases is to share experience of KT and inspire other therapists to evaluate KT. To recommend or not recommend a therapeutic method we need to evaluate and find best evidence. One problem is to find objective ways to assess if there is any effect. Sometimes alternative ways to assess each individual might be needed, in spite that the diagnosis is the same. Sham taping has

been done for control groups, using the same tape but applied without tension [2]. However also tape without stretch might have a positive effect on the receptors in the skin and it may be more than a placebo effect. KT has also been evaluated on healthy athletes, they probably can feel a difference otherwise it is doubtful why they continue to use the tape. But for somebody who is already strong and healthy it might not be possible to measure eventually effects of KT. If normalization is to be evaluated we need to evaluate in individuals that have pain, weakness and/or instability. In clinical practice we see a lot of effects immediately after KT is applied. If there are also long-term benefits needs to be further evaluated. Yasukawa et al. found immediate effect of KT when applied on children in an acute rehabilitation setting [3]. However the lack of control group raises some questions, does a repeated test give a training effect, the children in their study were tested before and immediate after tape was applied. There was no opportunity for extra training, but can we be sure that the repeat of the test not affected the result the second time. If they also had tested a control group twice with no taping it would have strengthen their study. They also tested the children after three days, without control group it can be questioned to what degree there might also have been a spontaneous improvement. Further research to determine the long-term effects is desirable; KT may be worthwhile to use as a complement in rehabilitation of musculoskeletal condition.

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