

# The Four Application Techniques

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## 2.1 Muscle Applications

**Muscle applications** are used for **increased** or **reduced resting muscle tone** (hypertonicity, hypotonicity), as well as for injuries to the musculature, and bring about a normalization of the resting muscle tone, reduction in pain, and improvement in resilience, which facilitate more rapid healing.

Muscle applications are affixed with **10% tape tension**. Because the tape is already pre-stretched by 10% on the roll, this is referred to as an unstretched application. The patient is placed in a **pre-stretched position** and the tape is applied with the 10% pre-stretching to the part of the body to be treated. Depending on the type of application, K-Taping can **effect increased** or **decreased tonus**.

During the **K-Taping training**, students are taught that a **tonus increasing application** is affixed from the muscle of origin to the muscle of insertion and for a **tonus-decreasing effect**, the application is affixed in the opposite direction, from muscle insertion to muscle origin. However, according to muscle movement and function, origin and insertion can change, and in these cases, the muscle applications are carried out contrary to the rules mentioned above. The classic portrayal whereby the muscle origin and insertion are rigidly prescribed does not, however, provide for this »alteration,« which may lead to misunderstandings for some therapists during training and in practice.

The illustration of muscle function using **punctum fixum** (fixed end) and **punctum mobile** (mobile end) is **helpful** since according to the function of the muscle, the fixed and mobile ends change positions.

### ! Tip

**Tonus-increasing applications are affixed from punctum fixum to punctum mobile and tonus-decreasing applications from punctum mobile to punctum fixum.**

This basic rule should be observed for each diagnosis, and the muscle application must be carried out accordingly.

In accordance with the **K-Taping training**, and in the interests of understanding previous publications, the designations **origin** and **insertion** continue to be used in this book. In the illustrations of muscle applications in which punctum fixum and punctum mobile deviate from the origin-insertion designation, this will be explicitly indicated.

As described in ► Chap. 1.7, muscle applications begin by affixing a **tension-free base**. The base is fixed using the hand (pressed onto the body) and displaced with the skin (**skin displacement**). For tonus increasing applications,

this is carried out in the direction of origin (punctum fixum) and for tonus-decreasing applications in the direction of insertion (punctum mobile). Displacement occurs up to the maximum **skin stretch** that does not trigger pain in the patient.

## 2.1.1 Muscle Function

In carrying out movements, the muscle contracts, bringing the muscle insertion closer to the muscle origin, or, as explained in ► Chap. 2.1, the punctum mobile approaches the punctum fixum and the muscle fascia as well as the skin are displaced in the same direction.

## 2.1.2 Mode of Action of the K-Taping

In a **tonus-increasing muscle application**, the elastic stretch tape exerts tension via the restoring force in the direction of origin (punctum fixum) to the fixed base, and thus displaces the skin in the same direction. This brings about **support of the muscle contraction**.

In a **tonus-decreasing muscle application**, the elastic stretch tape exerts tension in the direction of insertion (punctum mobile) to the fixed base and likewise displaces the skin in the same direction. This causes a **reduction in muscle contraction**.

### ! Tip

**In accordance with color theory, tonus-increasing applications are affixed using red tape (red = activating effect). Tonus-decreasing applications are affixed using blue tape (blue = calming effect).**

## 2.1.3 Executing the Application

- Measure the required tape strips on the patient with the muscles in the elongated position (■ Fig. 2.1a).
- If necessary, cut the tape strips into the appropriate form (e.g., Y-tape).
- Cut the corners at the tape ends into a rounded form.
- Place the patient in the resting position.
- Affix the base (■ Fig. 2.1b).
- Place the patient in position for the necessary muscle elongation.
- The therapist affixes the base with one hand and then positions the skin (■ Fig. 2.1c).
- Affix the tape strips with the other hand along the course of the muscle with 10% stretch.
- Rub the affixed tape strips while the muscle is elongated. ■ Fig. 2.1d shows the completed application.



**Fig. 2.1** a Measure the tape with the muscle in the elongated position, b affix the base without muscle tension, c execute the application with elongated muscles; d completed muscle application

**Memo**

- The muscle application is affixed with 10% tape stretch.
- The patient is placed with the muscle in the elongated position.
- I- and Y-tapes are predominantly used.



Blue I-tape



Red Y-tape

## 2.2 Ligament Applications

**Ligament applications** are used for injuries and overloading of ligaments (Lat.: *ligamenta*) and tendons. The same technique can be used to treat **pain points**, **trigger points**, or **spinal segments**. They bring about relief of symptoms, pain attenuation, and improvement in resilience and thus lead to more rapid healing and a reduction in rehabilitation time. The term »ligament application« does not, therefore, adequately describe the various application options, although it has become widely recognized for this application technique.

Ligament applications are affixed with **maximum tape stretch**. As with the muscle applications, the tape ends are applied unstretched for an improved period of wear. For ligament applications, the respective joint is positioned so that it is in a state of tension. For tendon applications, the muscles are maximally elongated, and for the treatment of pain points, the patient is placed in the **elongated muscle position**.

Two application techniques are used, depending upon whether tendons, ligaments, or pain points are to be treated (► Chap. 2.2.1–2.2.3).

Ligament and tendon areas are structures copiously provided with sensors, which form a close functional connection to joints and muscles. Afferents from the skin and subcutis can supplement the **deep sensibility** (proprioception) and attenuate the pain impulses (**nociceptive afferents**). K-Taping therapy uses these properties to influence bodily movement via skin stimulation.

### 2.2.1 Ligament Applications (Ligamenta)

This application technique is used for ligaments which connect two adjacent bones, e.g., the collateral ligaments of the knee. In this case, the tape is affixed **en bloc**.

The backing paper is torn down the middle and detached to the sides so that only a two finger width of tape at each end (the bases) remain attached to the backing paper. The tape is then affixed en bloc with **maximum stretch** over the ligament structure up to the osseous insertion point. During this process, the joint is positioned so that the ligaments are under tension.

Only then is the backing paper removed from the tape ends, which are affixed without stretch.

#### ! Tip

It should be noted that the joint must be placed in a position to achieve **maximum skin stretching beforehand** in order to ensure that there is no force effect on the tape ends during movement. In this way, the respective bases remain tension-free during maximum movement.

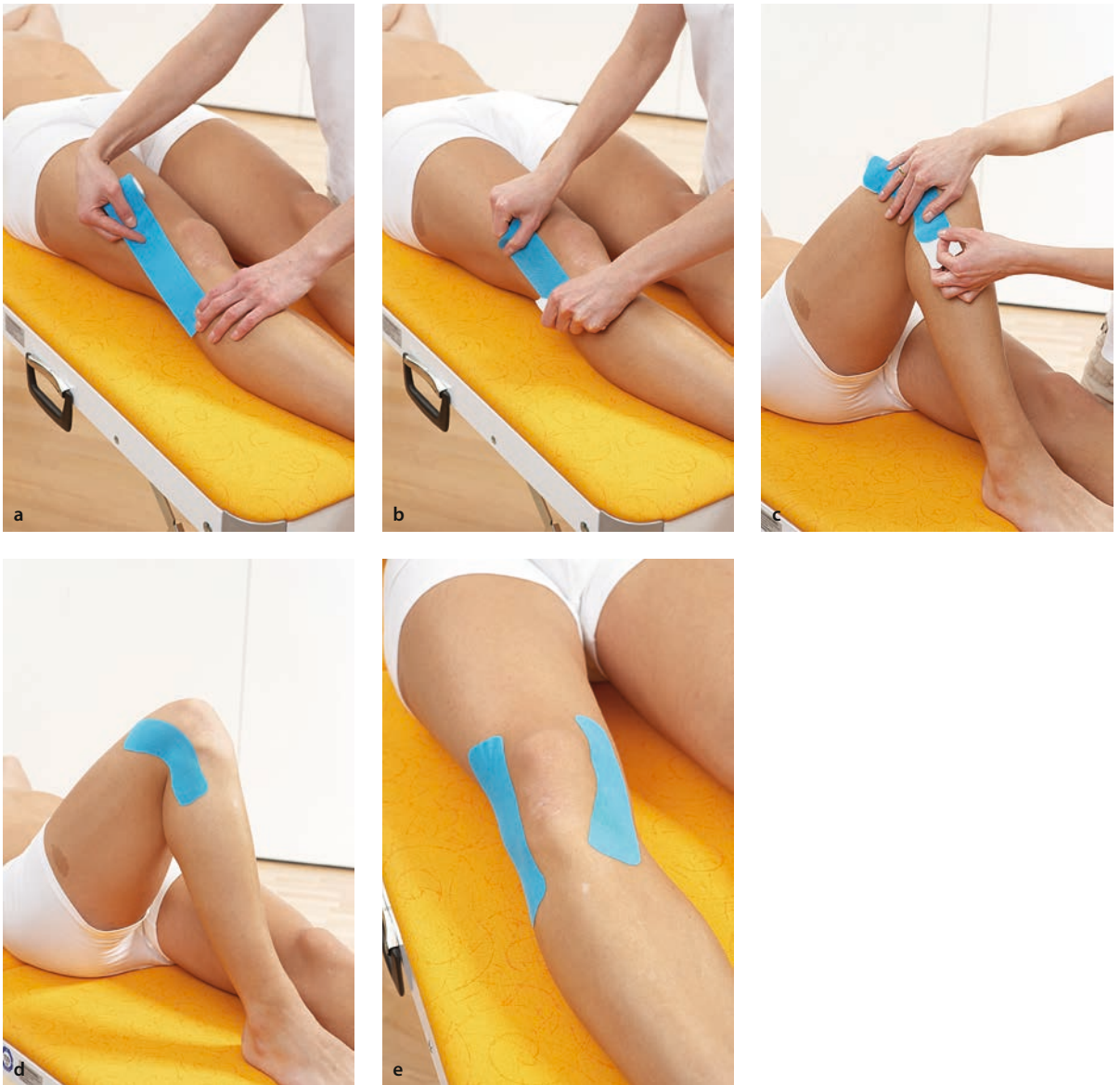
#### ■ Ligament Function

Two adjacent bones are connected by a ligament. According to the position of the joint, the ligaments are either tensed or relaxed and serve to **reinforce and guide the joint**. With the exception of the ligamenta flava between the vertebrae, ligaments are only minimally extendible. They have numerous **nerves** and **mechanoreceptors** and are thus functionally involved in much more than providing mechanical support and direction. They provide **information** about the position, movement, and speed of the joint. In addition, they register extension and pain. There is a functional interrelationship between the capsules, the musculature, and the mechanoreceptors contained in the ligaments in **controlling joint movement**, in which the **capsule tension**, movement, and the **joint pressure** are continuously measured, and signals transmitted via the spinal segment to the respective joint. Through constant adaptation, the musculature can thus react to the current situation.

#### ■ Mode of Action of K-Taping

By first affixing the tape en bloc with maximum tension and only then attaching the bases, the tape is simultaneously anchored to both osseous insertion points.

In this way, the tape pulls the ligaments together towards the middle. Purely mechanically, it supports the ligament in such a way that in joint movement it is brought into the same state of tension as the tape. Moreover, through the concomitant displacement of the skin, which, according to the joint position and movement, is displaced towards the center or the base of the application, it triggers **receptor stimulation**, which, as described in ► Chap. 2.2.1, contributes to the effect on muscle function.



**Fig. 2.2** a Measure the tape, b affix the tape en bloc with maximum tension, c affix the tape bases with the joint maximally stretched; d unilateral ligament application of the collateral ligament; e completed ligament application



### ■ Executing the Application for Ligaments

- Position the joint so that the ligament is in a state of tension.
- Measure the tape from insertion to insertion (■ Fig. 2.2a).
- Cut the tape strips and round the edges.
- Tear the backing paper down the middle and remove up to the width required for the respective bases at the ends of the tape.
- Apply maximum stretch to the tape and affix en bloc over the ligament structure (■ Fig. 2.2b).
- Position the joint so there is maximum skin tautness (■ Fig. 2.2c).
- Remove backing paper and affix the tape ends (■ Fig. 2.2d). Fig. 2.1e shows the completed ligament application.

#### Memo

- The tape application for ligaments (ligament application) is affixed **en bloc with maximum stretch**.
- The joint is positioned so that the ligaments are under tension.
- Exclusively I-tapes are used.



Blue I-tape



**Fig. 2.3** a Measure the tape in the elongated position, b affix the base in the resting position, c affix the tape in the elongated position; d completed tendon application



### 2.2.2 Ligament Applications for Tendons

In this application technique, the tape is affixed over tendons, or tendon structures, from the muscle-tendon junction up to the osseous insertion.

In contrast to the application technique for ligaments, an **unstretched base** is first affixed over the osseous insertion point. The joint to be treated is subsequently placed in the **stretched** position. In this position, the base is affixed with the hand, and then the **skin displacement** occurs in the longitudinal direction of the tendons, in the opposing direction to the tape tension. Finally, the tape is affixed with maximum tension over the tendon structure. The tape end is affixed without tension over the musculature.

Through this tape application, the tape pulls towards the base, displacing the skin in the same direction.

#### ■ Tendon Function

As opposed to ligaments, which are connected to two bones, tendons are attached on one side to a bone and on the other side to the fascia of a muscle. They transmit the **tensile forces** of the muscles to the bones, triggered by contraction and gravity. They also have a proprioceptive sensory receptor organ, the **Golgi tendon organ**, which measures muscle tension and transmits this information to the point of insertion into the bones, thereby providing **overload protection**.

#### ■ Mode of Action of the K-Taping Application

In tendon applications, K-Taping influences the tendons, fascia, and musculature. Mechanical support of the tendon function coupled with receptor stimulation through the skin displacement (afferents from the skin and subcutis) is involved, as is the effect on muscle tonus (see Muscle applications; ► Chap. 2.1), and the displacement of the fascia in the direction of the base.

#### ■ Executing the Application for Tendons

- Muscles and consequently tendons are elongated; if the patient is not able to achieve this position alone, the therapist supports the movement **without causing pain**.
- Measure the tape in the elongated position from insertion to muscle-tendon junction (■ Fig. 2.3a).
- Cut the tape strips and round the corners.
- Bring the muscle into the resting position and affix the tape base at the insertion point (■ Fig. 2.3b).
- Place the muscle in the pre-stretched position.
- The therapist affixes the base with one hand and displaces the skin (■ Fig. 2.3c).
- Affix the tape with maximum tension along the course of the tendon up to the muscle-tendon junction.

- Affix the tape ends without tension over the musculature.
- Rub the application in the elongated muscle position. Fig. 2.1d shows the completed tendon application.

#### Memo

- The ligament application for tendons is affixed with maximum tension from insertion to muscle-tendon junction.
- The patient is in the elongated muscle position.
- Exclusively I-tapes are used.



Red I-tape



**Fig. 2.4** a Affix the first tape strip, b affix the second tape strip at a 90° angle, c affix the tape strips three and four at 45° angles; d completed Spacetape application

### 2.2.3 Spacetape

**Spacetape** describes an application that is affixed over a point in a cross or star shape using tapes of the same length. As with the ligament application, each tape is affixed en bloc with maximum tension. In general, **four strips are used for a star**. After affixing the first tape strip, the second is affixed at an angle of  $90^\circ$  to form a cross. Strips 3 and 4 are applied at  $45^\circ$  angles to the cross.

This application is used for **pain points** and **trigger points**, **spinal segments**, **CTM zones** (connective tissue massage zones), and the iliosacral joint (ISJ). Depending upon the size of the body area to be treated, or when using for children, the lengths of tape can be halved. As a rule, the individual tape strips are 15 cm up to a maximum of 20 cm long (applied to the back) and for smaller parts of the body, e.g., elbows, they are shorter. In special cases, fewer than four strips may be used.

#### ■ Mode of Action of Spacetape

Spacetape provides **selective lifting** of the skin and thus brings about a loosening of adhesions in the layers of tissue. Patients describe the result of this star-shaped application as a kind of **suction effect** with clearly noticeable lifting of the adhered structure. As the name already suggests, the Spacetape provides more space for the damaged structure and leads to **pain reduction**. Spacetapes can also be used for mobilizing connective tissue.

#### ■ Execution of the Spacetape Application

- Bring the body into the elongated muscle position.
- Measure and cut the tape strips (corners rounded).
- Tear the backing paper down the middle and remove up to the required width of the tape ends.
- Affix the tape en bloc with maximum stretch, centered over the point to be treated (■ Fig. 2.4a).
- Affix the second tape strip in the same way at a  $90^\circ$  angle (■ Fig. 2.4b).
- Affix the third and fourth tape strips at  $45^\circ$  angles to the Cross-Tapes (■ Fig. 2.4c, d).
- Rub the application with the patient in the elongated muscle position.

#### Memo

- Spacetape is a space-creating application for pain points and trigger points.
- The application is carried out **with maximum tension**.
- The body is in the elongated muscle position.
- Exclusively I-tapes are used.



Blue I-tape

## K-Taping

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