Introduction

This article is a guide to the application of functional adhesive dressings. With the aid of this dressing technique, which in the course of many years has been tried and tested in sport physiotherapy, the regeneration after an injury can be considerably accelerated.

Furthermore, the athlete’s freedom of movement is not limited, and he can continue his training programme.

Immediately after the first appearance of pain a specialist in sport medicine should be consulted for diagnosis. Thereafter the dressings can be applied by the athlete himself since the treatment often takes a few weeks. A sport physiotherapist is not absolutely necessary, and the athlete will soon develop a routine in applying the dressings.

Although the athlete is to a high degree independent of the physician, he must pay attention to the following principles:

The authors deal here with another aspect of regeneration: the correct use of adhesive dressings to accelerate recovery after injuries in runners. This extremely practical article examines in detail the dressings for all the joints, muscle and tendons of the lower limbs.

Translated from the original German by Jürgen Schiffer
1) he should never apply a dressing without the assent of the physician;
2) no dressing should remain on the skin for more than 24 hours;
3) circular loops with unelastic dressings must only be applied if possible circulatory disturbances are particularly taken into account;
4) after taking off the dressing, the function of the injured joint or member should be checked and corrected if necessary.

If these points are followed, a damaging and functional disorder of the affected part of the body is not to be expected. The continuation of training prevents a muscular atrophy and reduces the decrease in performance capacity, which often accompanies injuries.

1. Basal Joint of the Toe

As far as statics is concerned, the basal joint of the toe is a decisive part of the skeleton. If the ligaments are overstretched or the joint capsule is inflamed, the following dressing allows correct movements.

Dressing material: 1 roll of tape
1 piece of foam

For toe and finger dressings the normal tape strip is too wide. It must therefore be cut or torn lengthwise.

**Picture 1**
A narrow strip of tape runs from the medial bottom part of the big toe to the lateral side, so that both ends overlap each other on the basal joint (1). The second strip overlaps the first one by two thirds.

**Picture 2**
From the medial side of the big toe a strip now runs to the tip of the toe (3), which is padded.
The strip goes around the tip of the toe and ends in the middle of the longitudinal arch (3).

The next strip runs from the middle of the longitudinal arch over the bottom, the tip and the top of the toe to the back of the foot (4).

The remaining gap is closed with two further strips (5 and 6).

The big toe is now closed with a strip of normal width; after this, tape is applied around the basal joint and the foot up to the middle of the longitudinal arch (7-9).
2. Splayfoot

The flattening of the transversal arch often results in considerable foot trouble. A wedge of concealed foam beneath the second metatarsal bone, cushions and lifts the foot at the same time. The tape strips give the necessary support.

Dressing material: concealed foam
1 roll of tape

Picture 7
A wedge (1) made of concealed foam is fixed with a tape strip beneath the second metatarsal bone (2). The tape strip slants from the medial border of the foot to the fifth toe.

Picture 8
A further strip starts medial to the lateral border of the foot and runs to the back of the foot (3).
Three further strips (4 - 6) cover up the dressing starting from the sole of the foot and also running to the back of the foot. However, they are not closed.

This picture shows the three strips (7 - 9) with which the dressing is closed on the back of the foot.

3. Flatfoot - Longitudinal Arch

When running, a flatfoot can lead to a number of problems. Arch-supports do not always help. The following dressing, however, can remove the pain.

Dressing material: 1 roll of tape
An anchor strip (1) runs across the transversal arch to the back of the foot where it is not closed. The next strip (2) starts on the medial side of the back of the foot, goes around the heel-bone and runs to the ball of the big toe.

One strip (3) runs from the ball of the fifth toe to the medial border of the foot in front of the heel bone. It loops around the heel-bone and also ends on the back of the foot.

This picture shows the ends of the anchor strips and the transversal strip on the back of the foot.
I tiur transversal strips (4 - 7) close the dressing on the sole of the foot.

One transversal strip (8) finishes the dressing on the back of the foot.

4. Heel-bone

Contusions of the heel are mostly caused by running on unelastic surfaces. They can also be caused by a heel spur.

Dressing material: 1 roll of tape
1 piece of concealed foam

One narrow tape strip runs from below the lateral malleolus to the medial malleolus (1). Another one runs in the middle of the longitudinal arch from the lateral border of the foot across the sole of the foot to the medial border (2).
With approximately ten strips (3-12) the heel is now closed. The strips should be applied alternately at the top and at the bottom.

A piece of concealed foam which is made to measure and has a gap under the heel-bone is fixed onto this dressing with a tape strip.

The dressing is now closed with approximately six strips (14-19).

5. Ankle

Ankle sprains lead to strains of the tendons and ligaments around the ankle and the joint capsule. A tape dressing gives the joint the necessary support during the regeneration phase. The dressing should be worn during training for about one or two months after the injury. A gauze bandage under the dressing protects the skin.

Dressing material: 1 gauze bandage
1 roll of tape
The foot is kept at right angles while the ankle is covered with a gauze bandage. Two anchor strips are applied at the top and the bottom border in such a way that they overlap the bandage by 1 or 2 cm.

One strip (3) runs from the top anchor strip across the lateral malleolus and ends at the top anchor strip on the medial side. The next strip (4) runs from the heel-bone, on the medial and lateral side, to the back of the foot.

Two further strips (5 and 6) overlap the first one by about 2 cm each, as described above.

The dressing is closed from the back and from the bottom by about six to eight strips (7 - 12). The front is still open.
Now the front is also closed with about six to eight strips (13 - 20).

6. Achilles tendon

Irritations of the Achilles tendon develop gradually over a long period of time. They are often caused by changes in the musculature of the lower leg. The following dressing takes the stress off of the Achilles tendon and can lead to a disappearance of symptoms during training.

Dressing material: 1 roll of acrylastic (6 cm wide)
1 roll of tape

Two tape strips are placed on the transversal arch (1) and on the transition between the calf musculature and the Achilles tendon (2).
An acrylastic bandage is applied to the transversal arch and fixed with a tape strip (2). The acrylastic strip is pulled taut (1) and run to the top tape strip where it is fixed with a further tape strip (3).

A further acrylastic strip is fixed on the transversal arch by a tape strip (one circle) (1) and torn down the middle of the length starting from the top border. The tear should be done while pulling the acrylastic strip taut, and it should finish directly above the heel-bone (2). The medial end (3) runs to the lateral part of the top tape anchor while the lateral end runs to the medial border of the tape strip.

Here both ends are fixed with a tape strip (1).
3. Tape strips (1-3) fix the dressing above the heel-bone and are closed at the front.

7. Lower Leg

Overload syndromes occur mostly in the area of the medial and bottom third of the lower leg. It is mainly the m. soleus which is affected. Main causes are running on unelastic surfaces and/or too high training loads.

Dressing material: 1 roll of tape

Picture 29
Three tape strips (1-3) fix the dressing above the heel-bone and are closed at the front.

Picture 30
The longitudinal arch is fixed from below with four tape strips (1-4) and closed from above with three strips.
Starting 3 cm from the medial edge of the tibia, one tape strip runs from the middle of the lower leg over the heelbone and lateral malleolus to the lateral side. A further strip (9) overlaps the first one by about two thirds of the width of the tape.

At the transition from the m. soleus and the m. gastrocnemius to the tendinous part, one tape strip is wrapped around the lower leg (10). In the front, five tape strips give the final support.

In the back of the lower leg two strips (16 and 17) secure the front anchor strips.
8. Patella

The following dressing takes the stress off the patella during training or competition. It can be applied in case of the following troubles: irritations of the patellar tendon or of its sheath, as well as distortions of the patella.

Dressing material: 1 roll of tape
1 roll of acrylastic (10 cm wide)

Picture 34
One tape strip is applied above (1), the second one below (2) the patella in such a way that they encircle the patella.

Picture 35
Three strips are applied on the medial (3 - 5) and also on the lateral side (6 - 8) of the patella. The strips should be run around the patella as close as possible. The longer parts of the strips should be above the patella.
The bottom part of the dressing is now fixed with two strips (9 and 10), the top part with five strips (11-15).

The dressing is finally secured with an acrylastic or gauze bandage and, if necessary, fixed with three or four tape strips.

9. Knee-joint, medial and lateral ligaments

After overstrains, the medial and lateral ligaments of the knee-joint must be supported for some time until they have regained their former elasticity. If the flexibility of the knee-joint is normal, this dressing protects against reinjury.

Dressing material: 1 roll of tape
1 roll of acrylastic (8 - 10 cm wide)
Artiflex pad bandage
Abtaut five strips (6 - 10) are applied above the patella. They only cover the front of the thigh.

The pad material (3) is fixed with two tape strips (1 and 2) in the popliteal space behind the knee. The strips are closed in the front (4 and 5).

About five strips (6 - 10) are applied above the patella. They only cover the front of the thigh.

Three strips (11 - 13) are run from the bottom anchor strip to the top one. At the top they are shifted a bit to the front while at the bottom they are shifted to the back. All strips overlap each other over the medial ligament.
Three further strips (14 - 16) complete the lateral support.

Two lateral strips (17 and 18) on the lower leg and about five strips on the thigh (19 - 23) finish the dressing.

For the lateral ligament only three strips (24 - 26) are necessary.
10. Thigh

This dressing is applied in case of lesions in the area of the thigh musculature (m. quadriceps femoris and hamstrings). The application of the dressing requires a certain amount of practice since the circular loops that are applied can lead to circulatory disturbances if they are not done correctly.

Dressing material: 2 wooden spatulas
1 roll of tape

Picture 44
An acrylastic or gauze bandage covers the whole dressing. If necessary, it can be fixed with some tape strips.

Picture 45
Two wooden spatulas (1) are fixed on the middle of the thigh. A circular loop (2) is run around the thigh while the tape is pulled taut. The beginning and the end of the strip overlap each other on the spatula.
REFERENCES


The four runners of the USA Women’s Relay team, World Champions in 4x100m, wave to their fans
Between eight and ten further strips of tape ascend up the thigh (3-10). They should overlap each other by about 1 or 2 cm. When the dressing is closed, it is cut open with dressing scissors beside the spatulas. The spatulas are then removed.

The now existing gap reduces the tight compression.

Starting from the bottom, the gap is closed with about ten transversal strips (11-20).