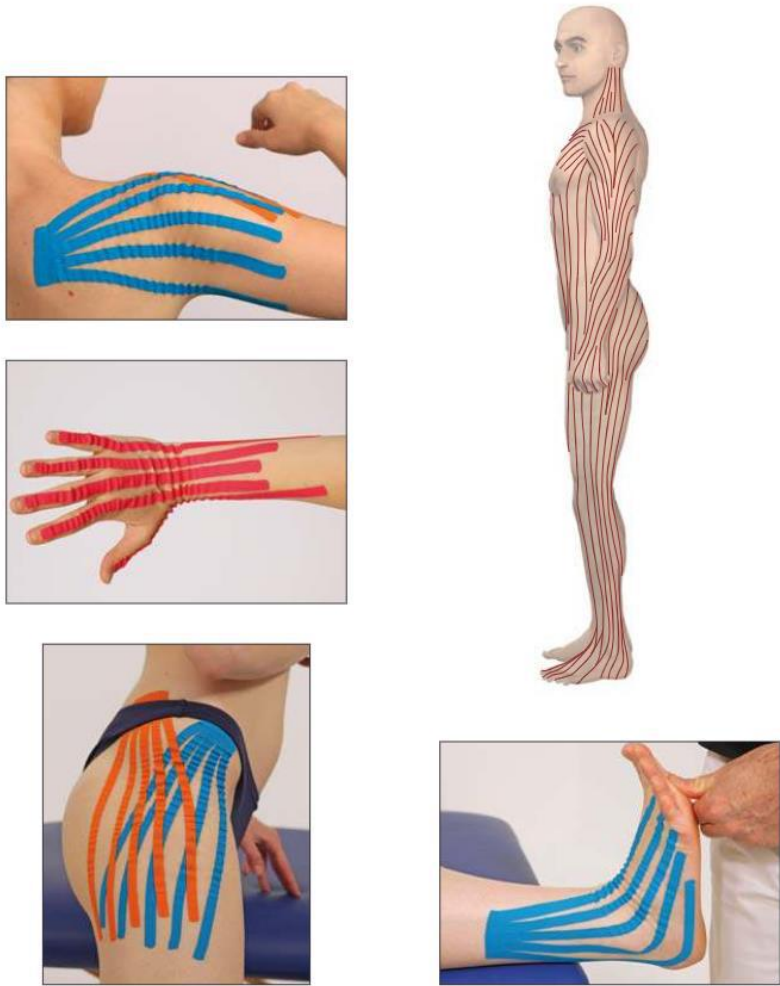


**Figure 1.10** Lymph nodes distribution. Figures on the next page show the lines of application of NeuroMuscular Taping to optimize body drainage, according to David Blow.



**Major Elasticity Lines of the Skin - Lateral View**



Major Elasticity Lines of the skin (MELs) according to David Blow.

**Major Elasticity Lines of the Skin - Lateral View**



Major Elasticity Lines of the skin (MELs) according to David Blow.

## TREATMENT WITH LYMPHATIC NEUROMUSCULAR TAPING

### Decongestive and mobilizing exercises

NeuroMuscular Taping is an important therapeutic measure for treating lymphedema, hematomas and mixed congestion. The therapist should favor mobility and guide the tape forming skin undulations and folds to favor decongestion. This action should only take 2 minutes on each application to ensure starting the biomechanical pumping that will be sustained later by patient's mobility.

In the early stages of treatment or in the acute phase, it is essential to activate the tape with concentric hand movements, moving the skin and the tape toward the center to increase skin folds and achieve a strong dilating action.



The patient's movement favor the tape activation.

Following these active, passive or guided body movements, skin folds will form leading to changes in local pressure, fostering correct and long lasting (24 hours a day) drainage. Without active movement, the folds are created by the therapist's passive movement and/or by placing the body and the limb in a position that increases the undulation of the skin.



Acute phase: the therapist activates the tape with concentric hand movements.

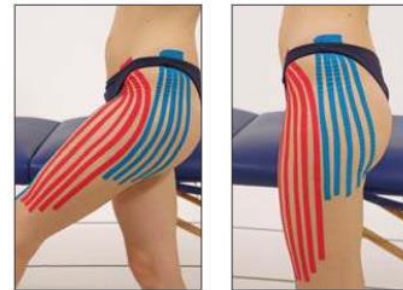
## Treatment with Lymphatic NeuroMuscular Taping

In the following post-acute and functional phase it is essential to activate the tape with concentric hand movements, moving the skin and the tape toward the center to increase skin folds and achieve a strong dilating action.

This action must continue for 2 minutes to

ensure correct and long lasting drainage throughout the 24 hours daily.

It is recommended to show patients a series of exercises that increase folds formation to favor continuous drainage. In any case, a patient with less congestion will feel lighter and more willing to perform the normal daily life movements. The body's normal functional movement causes the vascular and lymphatic system to operate in a homeostatic manner, counteracting congestion and vascular and lymphatic slowdowns.



Body movements favor the formation of skin folds.



Post-acute or functional phase: the therapist activates the tape with concentric hand movements.

## Treatment with Lymphatic NeuroMuscular Taping

- Prognosis from 0 to 20 days. Applications continue until the healing process is consolidated.
  - Start application 5-18 days after the surgical procedure, depending on the degree of invasiveness of the surgery itself.
- Post-acute phase**
- Direct drainage at the site of surgery and at its posterior area (for example, post-operative posterior and anterior drainage to the knee).
  - Indirect monoarticular drainage and proximally to the site of the operation (e.g., inguinal for a knee operation).
  - A distal drainage to the intervention is applied at this stage to increase the blood supply toward the surgical site.
- Functional phase**
- Edema or congestion are not foreseen in this phase of treatment.
  - The functional type application helps to normalize mobility.
  - When start the application: 10-30 days after the surgical procedure, depending on invasiveness of the surgery itself.



Application in the postacute phase eight days after the knee operation.

## Treatment with Lymphatic NeuroMuscular Taping

### Mixed congestions

Often, in traumatic and post-surgical situations, congestions are mixed: edema with hematoma (see Chapter 8). Such congestions may be mild and involve a small area or can cover a considerable surface, reducing the body's ability to react. Extended congestion can increase the

risk of complications such as infection, lack of healing, thrombosis prolonging the hospitalization. Proper ongoing drainage applications in the early stages of congestion allow the vascular and lymphatic system to remove damaged tissues and increase the oxygen flow and the elimination of CO<sub>2</sub>. Such applications facilitate the drainage process, even when other manual therapies have proved unsuitable.

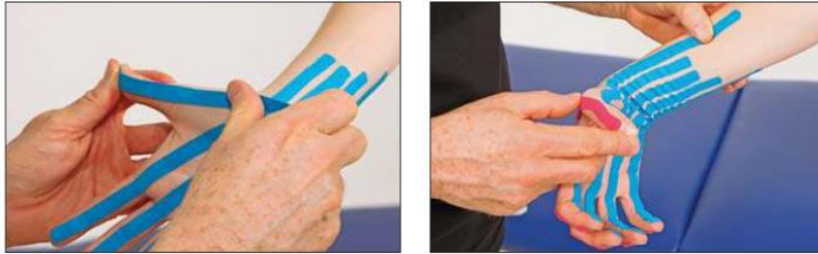


Mixed congestion: edema and hematoma for knee prosthesis.



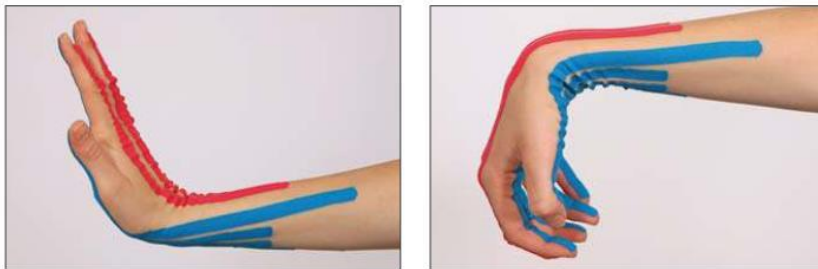
Edema and hematoma for elbow prosthesis.

## Drainage of the Wrist and Palm of the Hand



NOTE: In case of soft and superficial scars, thinner tapes should be used, which work at the most superficial level and form more wrinkles. For example, starting with a tape 2.5 cm in width, two tapes are created if the aim is functional, three tapes for drainage, four tapes if the point is to obtain drainage action at an even more superficial level.

### COMPLETE DRAINAGE ON THE DORSUM AND PALM OF THE HAND



The application on the back of the hand (page 197) can be combined with that on the palm (page 200).

## DRAINAGE OF THE FINGERS

### CLINICAL APPLICATIONS

- Edema of the fingers
- Hematoma of the fingers and hand
- Sequelae from hand surgery
- Sequelae from fracture and immobilization of the hand
- Inflammation and pain of the hand's joint

### Combined applications

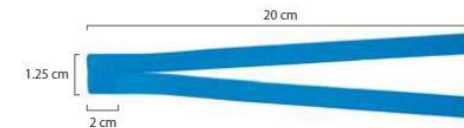
- Anterior drainage of the elbow page 176
- Anterior drainage of the forearm page 184



### TAPE SPECIFICATIONS

#### Dorsal application

- 2 tapes
- Width 1.25 cm
- Length 20 cm
- Anchor 2 cm
- Y-shaped

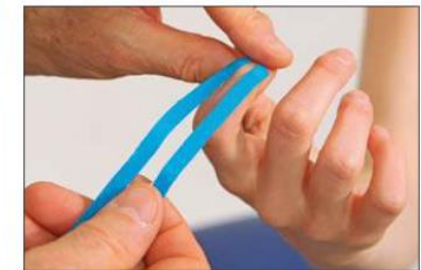


#### Palmar application

- 2 tapes
- Width 0.6 or 0.8 cm
- Length 20 cm
- I-shaped



### Dorsal application



## Plantar Drainage of the Great Toe



1. Make the tape's base adhere to the tip of the great toe, then pushing the toe into extension, make each tapes adhere along the phalanges and the first metatarsal.

### Application No. 2



📏 2 tapes 5 cm, 2 tapes 10 cm, 1 tape 20 cm.

👤 The patient is prone with his knee flexed and his ankle in dorsal flexion, great toe extended.

1. Make the 20 cm tape adhere to the lateral part of the toe's tip and along the lateral border of the phalanges and the first metatarsal.

2. Apply the 5 cm tapes from the toe's tip, parallel to the first, up to the distal border of the metatarsophalangeal joint.

3. Apply the 10 cm tapes to the proximal border of the metatarsophalangeal joint along the first metatarsal.

## CLINICAL CASES

Here are some clinical cases with decompressive NeuroMuscular Taping applications.

### ■ DRAINAGE AND TREATMENT OF SCARS WITH DEEP ADHESION TO THE QUADRICEPS FEMORIS



An anterior fan application is made to the leg above the scar following the skin's major elasticity line, with knee flexed and skin stretched.

### ■ EDEMA AND HEMATOMA AFTER HIP REPLACEMENT SURGERY



Tapes of a width of 1 cm and a fan-shaped with five strips are applied following the skin's major elasticity line of the leg.

### ■ LYMPHEDEMA OF THE LOWER LIMB

Tapes of a width of 1 cm are applied following the skin's major elasticity line of the posterior side of the lower limb and the popliteal fossa.



## Clinical Cases



### ■ SCAR FROM SKIN TRANSPLANT AT THE INNER GROIN AND PROXIMAL PORTION OF THE LEG

Tapes of 1 cm width are applied (covering the scar in a longitudinal direction).



### ■ SCAR DUE TO KNEE PROSTHESIS AT 6 DAYS AFTER SURGERY

A fan is applied proximally to the knee (not covering the scar) and one is applied posterior to the knee.



### ■ SCAR DUE TO KNEE PROSTHESIS, AT 10 DAYS AFTER SURGERY (REMOVAL OF SUTURES)

A fan is applied laterally to the knee (not covering the scar) and one is applied posterior to the knee.

## Clinical Cases

### ■ SCAR DUE TO KNEE PROSTHESIS, AT 14 DAYS AFTER SURGERY

A fan is applied anterior to the knee, laterally to the scar, and one is applied posterior to the knee.



### ■ SCAR DUE TO KNEE PROSTHESIS WITH NO SUTURES

Tapes of 1 cm width are applied (covering laterally, proximally and distally the scar, in a longitudinal direction).



### ■ SCAR FROM DISTAL AMPUTATION AT THE KNEE

A fan with tails of 0.6-0.8 cm width is applied (covering the scar in a longitudinal direction) anterior to the knee with the knee in flexion. A fan with tails 0.6-0.8 cm width is applied posterior to the knee with the leg in extension.



## Treatment of Hematomas with NeuroMuscular Taping

- The planned prognosis is for 6-45 days. The applications continue until the elimination of the hematoma and the achievement of scar healing.
- Twenty days after surgery (the timing depends on the area, the surface operated, and the size, length and depth of the hematoma), it is possible to apply tapes of 1 cm width above and around the hematoma area. The purpose is to help drainage and improve the vascularization of the trauma area, for facilitating the complete healing and tissue regeneration.
- The application always follows the skin's major elasticity lines (MELs) and maintains the elasticity of the connective tissue and the blood vessels.

### Healing

The purpose is to eliminate the congestion in a short time.

A hematoma that remains for several weeks increases the pain in the limb and the area of the operation, and reduces the efficacy of physiotherapy treatments, lengthening treatment times.

If the application is performed correctly, a 20x20 cm hematoma resolves completely within 7 days of starting the treatment. Larger hematomas, such as those covering an entire congested lower limb, can require more time, but generally resolve within 10 days. For greater rapidity of the treatment, the frequent replacement of the tapes is considered a necessary factor.



Treatment of posterior hematoma after surgery on the anterior cruciate ligament with semitendinosus withdrawal with resolution in 7 days.

## Treatment of Hematomas with NeuroMuscular Taping



Treatment of hematoma after surgery for femur fracture in an elderly patient with resolution in 7 days.

NOTE: During long periods of treatment, it is recommended to submit the proximal joint areas (groin, popliteal fossa, axilla and elbow) to decompression fans, to provide a dynamic dilator action on the major vascular and joint areas.

### Mixed congestions

Often, in traumatic and post-surgical situations, congestions are mixed: edemas and hematomas (see Chapter 2).