

FUNCTIONAL BANDAGES OR TAPING

AUTHOR: Abel Renovell Blasco.

Physiotherapist

INTRODUCTION

A functional bandage is a type of partial immobilization, which is characterized by the fact that it allows for a certain level of functional mobility in comparison to a complete immobilization. It is used for ligamentous, tendinous and muscular pathologies. A functional bandage has the advantage that it avoids the secondary effects of a total immobilization. These secondary effects range from muscular atrophy to articular rigidity, as well as cutaneous injuries, Sudek's syndrome and even an increase of the thrombotic risk. This is the reason why a complete immobilization should only be applied for the treatment of very severe pathologies that require a complete immobilization for the recovery of the injured tissues.

Most of the ligamentous, tendinous or muscular injuries have a mild or moderate character. They are the kind of injuries in which a functional bandage is indicated in order to stimulate the recovery.

Functional bandages can be used for therapeutical as well as preventive objectives, even though there exist some basic differences between the two of them.

The **therapeutical functional bandage** is characterized by:

- contrary to the total immobilization it does not cause the secondary effects of the other in injuries of a mild or moderate character.
 - In severe pathologies treated with a total immobilization, the functional bandage is used when the total immobilization has been taken away, with a proprioceptive aim and in order to avoid possible traumatisms until the tissues are completely regenerated.
 - The therapeutical functional bandage allows putting the injured tissues in a shortened position, thusly decreasing the pressure on these tissues --- this stimulates the scarring process and avoids possible traumatisms that can hamper this process.
- It serves as a reinforcement of the injured tissues.
- The therapeutic functional bandage must allow a minimum of mobility.

The **preventive bandage** is characterized by:

- its usefulness in chronic or recurring injuries.
- The tissues that are being supported by the bandage, maintain a neutral position, without correcting their natural position!
- The aim of this type of bandages is to avoid extreme positions or movements that may harm the weakened tissues.
- They allow for a maximum of functional mobility
- They assure the stability of the articulation.
- One should not abuse of preventive bandages. It is better to perform strengthening exercises and to condition the weakened tissues, so they can be the ones to give stability to the articulation.

The efficiency of functional bandages depends of:

- The usage of adequate material.
- The strength of the bandages has to be obtained with the smallest number of layers possible
- Correct and precise medical diagnosis.
- Protection of the skin and anatomic surfaces.
- Fixing without excessive pressure.
- Avoid folds and wrinkles; especially on the foot sole.
- The bandage must be efficient and not dangerous. A badly applied bandage can worsen the injury.

INDICATIONS

As we've said before, the functional bandages looks for a resting position that is antalgic and that asks as little as possible of the injured tissues, thusly stimulating the scarring and reducing the articular mobility to the minimum. The functional bandage is also useful to correct deformities or vicious attitudes, positioning the articulations in a correct lining. At the same time it facilitates the control and the reduction of the oedemas.

Some examples of pathologies that benefit from this type of bandages:

- cubital claw
- hollow foot
- External subluxation of the patella
- Tendinitis and tendinosis
- Muscular elongations

We will now see how the functional bandage acts in different pathologies:

In ligamentous injuries the functional bandage gives support to the injured ligaments, enabling the articulation's stability. In this case, the bandage is aimed at avoiding articular looseness. It can be used in a therapeutic or preventive way.

In tendinous pathologies (tendinitis or tenosynovitis) the functional bandage must avoid the movement that generates the inflammation or the degeneration of the tendon.

In muscular injuries, the functional bandages are used to avoid the injured muscles from stretching, even though this is an objective that's very hard to obtain. The stretching is avoided by limiting the movement of the articulations upon which the muscles (bi-articular muscles) act. At the same time the functional bandage exerts pressure upon the haematoma and the consecutive oedema.

CONTRA-INDICATIONS

- The functional bandage should not be used for severe injuries. The latter require a complete immobilization.
- Fractures
- Ligamentous fractures or fractures of the articulator capsules.
- Muscular injuries.
- Varices.
- Tendinous fractures.
- Allergy to the materials.

MATERIALS USED FOR "TAPING"

- White tape of different sizes. The most common one is 2.5 cm wide.
- Elastic tape of different sizes or tensoplast
- Pre-tape
- Adhering material
- Product to easily remove the bandage
- second skin
- lubricant
- Elastic bandages of different sizes
- thick and thin sponge rubber.
- Felt of different thickness.
- Tweezers
- Scissors
- scalpel
- Disinfecting solutions

PREPARING THE BANDAGE

Before applying a functional bandage we must first clean the injured area with water and soap. Epilate the areas where the adhesive tape will be stuck to the skin.

Make sure there is no rash or cutaneous problem in the area where we will apply the bandage. In case there is, cover it with sterile gaze with a disinfecting product. You can also apply some 2nd skin-covers that contain hydrating gel.

When taping an ankle or a knee, it is necessary to protect those areas where most of the friction is produced, in order to avoid abrasions and blebs. We must therefore protect the most superficial tendons: for the ankle this will be the first tibial and the Achilles and for the knee its the hollow of the knee. You can use bits of sponges impregnated with vaseline or anti-friction creme.

Spray adhesive spray on the fixing areas in order to facilitate the adherence.

We will now continue with the " Underwrap" or pre-taping, which will provide us with a perfect protection of the affected cutaneous surface, without endangering the efficiency of the functional bandage.

Once this procedure has been concluded, the patient is ready for the functional bandage.

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