

# Practical application of kinesiotaping in the case of a cesarean section scar

## *Praktyczne zastosowanie kinesiotapingu na przykładzie blizny po zabiegu cesarskiego cięcia*

### INTRODUCTION

A scar is a skin lesion caused by damage to the dermis and replacement of the defect with fibrous connective tissue [1]. It is formed in the skin as a result of the healing process following a mechanical, chemical or thermal injury. It can also occur as a result of inflammation [2]. If the wound affects the outer layer of the skin, it heals spontaneously by epithelialization and if it affects the dermis by rapid growth or granulation – always with scar formation. The wound repair process

triggers complex biochemical anabolic and catabolic reactions that take place within different cell types. There are three phases of wound healing: inflammation, growth and remodeling. Remodeling is an important stage, because it determines the final appearance of the scar. It depends on the activity of collagen fibers and the contraction of the scar during granulation [3]. Scar formation is influenced by many factors including: location of the lesion, pathomechanism of skin trauma, sex, age, race and skin type [2].

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### ABSTRACT

*A scar is a skin change resulting from the healing process following, among others, a mechanical injury. Its reconstruction is an important stage that determines the final appearance of the scar and the functionality of the adjacent tissues.*

*The aim of the study is to present the possibility of kinesiotaping in reducing the undesirable effects of a postoperative scar after a C-section on tissue mobility and disturbance of muscle tone.*

*Kinesiotaping supports the spontaneous healing of the scar by reducing pain sensations, activating the lymphatic system, microcirculation, improving the functioning of the surrounding muscles and joints and normalizing muscle tension. Taping the scars is carried out using various techniques, where the direction of sticking or the extent to which the tape is stretched is important. The following techniques are useful in the treatment of caesarean scars: the Z technique, the step technique or the isolated fascial technique.*

**Keywords:** *kinesiotaping, physiotherapy, scar, C-section*

### STRESZCZENIE

Blizna to zmiana skórna powstająca w wyniku procesu gojenia następującego m.in. po urazie mechanicznym. Jej przebudowa jest ważnym etapem decydującym o końcowym wyglądzie i funkcjonalności tkanek przyległych.

Celem pracy było przedstawienie możliwości kinesiotapingu w redukcji niepożądanego wpływu blizny pooperacyjnej po wykonanym cesarskim cięciu na mobilność tkanek i zaburzenie napięcia mięśniowego.

Kinesiotaping jest wsparciem samoistnego gojenia się blizny poprzez zmniejszenie odczuć bólowych, aktywację układu limfatycznego, mikrokrażenia, poprawienie funkcjonowania okolicznych mięśni i stawów oraz normalizację napięcia mięśni. Plastrowanie blizn jest przeprowadzane za pomocą różnych technik, w których ważny jest kierunek naklejenia czy stopień naciągnięcia plastra. Przydatne w terapii blizn pozostałych po cesarskim cięciu są m.in.: technika Z, technika schodkowa czy izolowana technika powięziowa.

**Słowa kluczowe:** *kinesiotaping, fizjoterapia, blizna, cesarskie cięcie*

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## AIM

The aim of the study is to present the effectiveness of kinesiotope in reducing muscle tension disorder and the adverse effects on the mobility of scar tissue after delivery by caesarean section.

## SCAR TAPING

One of the scar reduction methods is the use of the Kinesiology Taping (or kinesiotope, or dynamic taping) method introduced by the Japanese chiropractor Dr. Kenzo Kase in the 70's. The therapy supports the spontaneous healing of the scar by reducing pain sensations, activating the lymphatic system,



Fig. 1 The Z-technique performed on a scar after a C-section Source: authors' own archive, based on [5]



Fig. 2 The step technique Source: authors' own archive, based on [5]



**Fig. 3** An application that improves the displacement of the skin in the lateral direction **Source:** authors' own archive, based on [6]



**Fig. 4** An application that improves the flexibility of the scar **Source:** authors' own archive, based on [6]

microcirculation, improving the functioning of the surrounding muscles and joints and normalizing muscle tone [4].

Taping scars is carried out using various techniques in which it is important, among other things, to stick the tape with appropriate stretching.

An example where kinesiotaping can be used are scars after a traumatic cut or after arthroplasty or caesarean sections. Depending on the condition of the scar, the Z-technique, the step technique or the isolated fascial technique is used.

The Z-technique applies to older scars (approx. 3 months) and postoperative scars, possibly also in the case of fully healed wounds, when there are pulling pains and aesthetic problems. The strips are glued with a ligamentous technique at an angle of 45° to the scar (Fig. 1) [5].

The stepping technique is recommended for painful scars and scars that cannot tolerate their intense stretching. It can also be used on scars that are already superficially healed, but are painful when mobilizing and moving them. A mesh tape is applied to the wound area without stretching it (Fig. 2). Two consecutive pieces of the tape are placed with the ligament method [5].

The fascial technique is used in old, well-healed scars (over 6 months). It is most often used after limb injuries and after surgical procedures (eg. total hip, knee and shoulder arthroplasty), but it can also be successfully used in the case of a caesarean section scar [5].

The postoperative scar resulting from the procedure may severely limit the mobility of tissues and the range of motion in individual body segments. The use of kinesiotopeping reduces pain resulting from scar stretching in the first two weeks after the surgery. Within a few weeks of removing sutures, excessive scarring can be prevented. In the early postoperative period, the tape is cut in a Y-shape and applied to avoid the taping on the dressing. The patch in its wider part is the base that is placed on the part of the abdominal wall situated laterally from the dressing. Next, the stretched (100%) cut ends on both sides of the dressing are placed on the medially retracted tissue (Fig. 3). The use of such wrapping reduces the pain resulting from the irritation of the fresh postoperative scar during the flexion movement. This is conducive to further rehabilitation, patients have greater freedom of movement. When the sutures from the postoperative wound are removed, appropriate taping can be applied to aid wound healing. As a result, the pain associated with stretching of the skin around the scar is reduced with time. 5 mm wide by 5 cm long tapes are placed directly over the scar to form consecutive X marks (Fig. 4). The center of each tape is the base, and the ends are positioned bringing the skin against the scar. As a result, the scar rises above the fascia, becomes more flexible and reduces pain [6].

#### OTHER DYNAMIC TAPING APPLICATIONS

Dynamic taping is widely used. It can also be used after mastectomy. The resulting scar may limit mobility in the area of the postoperative wound due to increased tension in the fascia and muscles. As a consequence, it may lead to a feeling of pain many years after the procedure, not only in the operated area, but also in distant tissues (the so-called tensegration principle). There is also a risk of muscle weakness on the side which was operated on as activity is reduced. Kinesiotopeping additionally improves the appearance of the scar, which increases the psychological comfort of women operated on. The patches are imperceptible to the patients – their thickness and weight are similar to human skin, they are air permeable and waterproof, which reduces the risk of an allergic reaction [7, 8].

#### SUMMARY

Kinesiotopeping, as a method supporting the process of postoperative wound healing, can be a perfect complement to scar therapy. Thanks to this method, women undergoing cesarean section recover faster and show fewer postoperative complications related to connective and muscle tissue. The variety of techniques gives great therapeutic possibilities, however, kinesiotopeping must be performed by a certified therapist to ensure maximum safety and effect.

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