Effects of Kinesio Taping on breast cancer-related lymphedema: A meta-analysis in clinical trials

(Kasawara et al., 2018)

ABSTRACT

Background: Lymphedema is known as a secondary complication of breast cancer treatment, caused by reduction on lymphatic flow and lymph accumulation on interstitial space. The Kinesio Taping (KT) has become an alternative treatment for lymphedema volume reduction. The objective of the study was to evaluate the literature through a systematic review on KT effects on lymphedema related to breast cancer.Methods: Search strategies were performed by the following keywords: ?Kinesio Taping,? ?Athletic Tape,? ?Cancer,? ?Neoplasm,? ?Lymphedema,? and ?Mastectomy? with derivations and different combinations. The following databases were accessed: SCIELO, LILACS, MEDLINE via PubMed, and PEDro, between 2009 and 2016. Studies published in English, Portuguese, and Spanish were considered for inclusion. The studies? methodological quality was assessed by the PEDro scale.Results: Seven studies were identified by the search strategy and eligibility. All of them showed positive effect in reducing lymphedema (perimeter or volume) before versus after treatment. However, with no effects comparing the KT versus control group or others treatments (standardized mean difference = 0.04, confidence interval 95%: ?0.24; 0.33), the average score of the PEDro scale was 4.71 points.Conclusions: KT was effective on postmastectomy lymphedema related to breast cancer; however, it is not more efficient than other treatments.

Comments

The search terms used may have missed some studies as all searches involved the term 'kinesio' in some form and perhaps there should have been some that had 'tape' alone. Otherwise a good summary of current research on taping re volume reduction in BCRL.

A meta-analysis of the effectiveness and safety of kinesiology taping in the management of cancer-related lymphoedema.

(Gatt, Willis, & Leuschner, 2017)

Abstract

Patients with cancer-related lymphoedema (CRL) commonly refuse treatment with bandaging or hosiery because of hot and humid weather conditions. This review aims to determine the effectiveness and safety of kinesiotaping (KT) in the management of CRL compared to compression bandaging or hosiery. A systematic search of the literature was conducted until July 2015. The primary outcomes were reduction in body part volume or circumference and adverse effects of the interventions. The secondary outcomes were subjective experience of the treatment, severity of lymphoedema-related symptoms and patients' quality of life (QoL).

Six randomised controlled trials (RCTs) were included in this review. Five were included in the meta-analysis of the primary outcome limb volume (n = 203, KT n = 91, compression n = 112). It revealed no significant difference between the interventions [WMD ✔205.33 mL CI (✔454.69 to 44.04) P = 0.11]. An increased risk of skin complications with KT was reported in five studies affecting between

10% and 21% of patients. Where lymphoedema-related symptoms were reported KT was found to be superior to compression. Paradoxically, patients receiving bandaging reported a higher QoL.

KT was not found to be more comfortable than bandaging. KT should only be used with great caution where bandaging cannot be used.

Comments

Although 251 articles were identified, the review only included RCTs which meant that only 6 studies were included. Whilst this allowed for meta-analysis on the results of 5 studies, it also means that there will may be many studies, possibly offering good evidence one way or another, that were not included. Of the included studies the largest group size was 25 (range 9 – 25) which means all study groups were too small to give a very strong statistical analysis.

Overall this review found that lymph taping reduced limb volume but not as effectively as compression therapy (either bandaging or garments). Discomfort, QOL, severity of itching etc were not significantly different between the two groups, however it was noted that the tape was worn for longer each day than the bandages.

In contrast to current thinking re what stages benefit most from taping, the studies that included only stage 2 & 3 found the largest reduction using tape. There was also more wound formation reported among taping groups (where this was reported).

Level of evidence and efficacy of medical taping. Systematic Review

(Koss & Munz, 2010)

Abstract

Objective: Medical taping claims to have positive effects on circulation, muscle function, correction, proprioception, and pain. Since there are no published reviews to the authors knowledge so far, the quantity and quality of available literature is unclear. This review of literature, is the first attempt to report current level of the available evidence about medical taping, and secondly, its efficacy. Methods: Computerized bibliographic databases (PubMed, PEDro, Cochrane Library, Medline, Cinahl, Google Scholar, Trip Database, and National Guideline Clearinghouse) were searched up to 28th November 2009. Two reviewers conducted study selection, data extraction, categorization, and methodological quality assessment.

Results: The search revealed 200 possibly interesting articles from which 17 articles were used to make final conclusions. Methodological quality assessment was carried out and articles were distributed over five categories: Circulatory (n = 3) with a grade B recommendation, Muscle Function (n = 9) with a grade A recommendation, Correction (n = 1) with a grade E of recommendation, Pain (n = 5) with grade A recommendation, and Proprioception (n = 2) with a grade D recommendation.

Conclusion: Moderate evidence level suggest medical taping has positive effect for Circulatory disorders; Strong evidence show a tendency for positive change in Muscle Function; too little evidence was found to suggest positive effects on Correction; contradictory evidence was found in the field of Proprioception ; Pain reducing effect is supported by strong evidence.

Comments

This review was on all taping applications and therefore could not offer any meta-analysis. Although 17 studies were included for each outcome there were only a small number of relevant studies foe each outcome.

Lymphtaping for lymphoedema: an overview of the treatment and its uses.

(Bosman, 2014)

Abstract

Lymphtaping is recognised to be a promising method for use in the management of lymphoedema. This article gives an overview of the concept of lymphtaping and the relevant literature. Several methods of action are described about lymphtaping: increasing pressure differences within lymph vessels; lifting the skin (inducing opening of initial lymph vessels); connective tissue becoming more flexible; and the micromassage effect. Medical taping concepts have only become the subject of scientific research in the last decade as the technique is still relatively new. Several misunderstandings around lymphtaping therefore still exist. These are discussed, supported by the available evidence. The article demonstrates that lymphtaping is a promising technique in the treatment of lymphoedema and should be another choice for contraindicating pressure therapy patients and in areas where compression is difficult or impossible to use. However, each patient should be assessed and evaluated thoroughly and individually so that the appropriate treatment and properties can be determined.

See full text PDF

Reports in taping after breast cancer

Lymph taping and seroma formation post breast cancer.

(Bosman J. and Piller N., 2010)

Abstract

Background: The most common complication of breast cancer treatment is seroma formation. Lymph taping has the potential to prevent or reduce seroma formation, but currently its potential benefits have not been fully investigated. Aims: To investigate the potential of lymph taping to combat seroma formation. Methods: Nine women treated for breast cancer were recruited to this randomised clinical trial; four developed seromas requiring aspiration. Bio-impedance spectroscopy of the breast was used to assess intra and extracellular fluid levels in each of the four quadrants of the breast. From day one postoperatively, lymph taping was applied over the watershed between skin territories on the posterior thorax between the spine and axilla on those allocated to the treatment group. Measurements were repeated at five, nine and 16 days. Results: The extracellular fluid value at t16 lymph taping group and 0.1066 ± 0.0227 (4.6 % decrease) in the current best practice group (n=4 in each group). After 16 days of treatment, substantial changes were found in burning sensations, tightness and heaviness in favour of the lymph taping group. In particular, pain perception in the lymph taping group improved. Conclusions: This study has demonstrated that lymph taping has the ability to reduce extracellular fluid accumulation and improve a range of quality of life measures. was 0.1037 ± 0.0324 (15.3 % decrease) over t1

Comments

Although the strength of the study suffers from the small number or participants in each group, the results indicate that lymph taping may be a useful treatment for people with, or at risk of, seroma after LND.

See full text PDF

Effects of Kinesiology Taping on Breast Cancer Related Lymphedema: A randomized single-blind controlled study

(Smykla et al., 2013)

The aim of the study was to assess the efficacy of Kinesiology Taping (KT) for treating breast cancer-related lymphedema. Sixty-five women with unilateral stage II and III lymphedema were randomly grouped into the KT group (K-tapes, n = 20), the Quasi KT group (quasi K-tapes, n = 22), or the MCT group (multilayered compression therapy group, n = 23). Skin care, 45 min pneumatic compression therapy, 1 h manual lymphatic drainage, and application of K-tape/Quasi K-tapes/multilayered short-stretch bandages were given every treatment session, 3 times per week for 1 month. Patient evaluation items included limb size and percentage edema. Comparing the changes in K-tapes with quasi K-tapes changes, there were no significant differences (P > 0.05). The edema reduction of multilayered bandages was much better than in results observed in taping groups. The KT appeared to be ineffective at secondary lymphedema after breast cancer treatment. The single-blind, controlled pilot study results suggest that K-tape could not replace the bandage, and at this moment it must not be an alternative choice for the breast cancer-related lymphedema patient. The trial is registered with ACTRN12613001173785.

Comments

This study compared 3 groups of women with arm lymphoedema who received CDT with multilayer bandaging, kinesiology taping in the previously recommended pattern of applying the bases at lymph node stations and extending the 'fingers' along the lymph pathways, or non-elastic tapes applied in a similar pattern. The bandaged group had the best reduction in limb volume. Although the study found no difference between the kinesiology tape and the 'quasi' tape I wonder what the outcome would be with the more recent styles of taping. There was also a lot of therapy done, an hour of MLD and 45 minutes of pneumatic pump 3 times per week, so maybe not to so easy to tease out the effect of the tape, especially as there was only one outcome measure (volume) which does not provide any depth to understanding or interpreting the results.

Full text available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3860093/

The influence of Kinesiology Taping on the reduction of lymphoedema among women after mastectomy – preliminary study.

(Pop, Karczmarek-Borowska, Tymczak, Hałas, & Banaś, 2014b)

Abstract

Introduction: Kinesiology Taping is a method that assists healing processes and improves the physical efficiency. The aim of the study was to assess the influence of Kinesiology Taping on the lymphoedema reduction among women after mastectomy. Material and methods : The subject of the research included 44 women under-went single mastectomy along with the removal of lymph nodes.

The examination was carried out from the 4th of January to the 4th of February, 2013. The traditional taping method was implemented among 22 women, whereas the own taping method was used among the other 22 women. The therapy took 21 days, during which the tapes were applied three times every 7 days. The measurements were made before every application and at the end of the therapy. In the study, a questionnaire was used and it included questions concerning basic demographic, epidemiological data as well as the evaluation of the therapy effectiveness. The linear measurements of the upper limbs, the measurements of the range of joints' motion in the upper limb were taken as well as grip strength was made. Results : The reduction of the volume of lymphoedema of 55% was reported in the study group, whereas the oedema reduced by 27% in the clinical control one. Conclusions : In the reduction of lym-phoedema, the greater effectiveness of the own taping method in comparison to the traditional one was reported. Kinesiology Taping exerted an influence on the improvement of the upper limb's joints movability and the grip strength.

Comments

Both groups (women with stage 1 & 2 BCRL) were taped with kinesiology tape for 21 days with tape applied three times every 7 days. The experimental group had 20 minutes of elevation before applying the tapes from distal to proximal in a spiral direction over the full arm with 10% stretch. The control group had the same pattern of application but the tapes were applied from proximal to distal and without the preceding elevation. The difference lay in the direction of tape application and the lack of limb elevation in the control group.

Full text available at ***https://www.termedia.pl/The-influence-of-Kinesiology-Taping-on-the-reduction-of-lymphoedema-among-women-after-mastectomy-preliminary-study,3,22266,1,1.html***

Reports on taping scars

Effectiveness of Kinesio Taping on hypertrophic scars, keloids and scar contractures.

(Karwacińska et al., 2012)

Abstract

Introduction. Hypertrophic scars, keloids and scar contractures result from abnormalities in collagen degradation and synthesis, consequently leading to its overproduction. Such scars not only pose an esthetic problem, but also contribute to functional disorders in the organism.

Aim. This work aimed at presenting the effectiveness of Kinesio Tapes applications in managing scars and keloids as evaluated by patients themselves or carers of children who had undergone such treatment.

Materials and methods. Research was conducted at the Provincial Specialist Children's Hospital in Kielce. The study group comprised 54 children, aged 2–18 years old (average age 6.7 years) with hypertrophic scars, keloids and contracture scars. The first stage of the research involved measuring the scars with a digital caliper and applying Kinesio Tape according to the assumed research methodology. In order to assess patients'/carers' subjective evaluations of Kinesio Taping effectiveness a questionnaire form devised by the authors was used.

Results and discussion. In the study group, 37 patients declared that the application of Kinesio Tapes improved the cosmetic outcome and perception of the scar after 3 weeks; 10 patients who had

undergone treatment observed such changes after 6 weeks; 5 patients indicated positive results after 9 weeks, and 2 patients after 12 weeks.

Conclusions. On the basis of the questionnaire results, personal observations and taken measurements, it can be concluded that the application of Kinesio Tapes is effective for hypertrophic scars, keloids and contracture scars.

Photographs available at https://doi.org/10.1016/j.poamed.2012.04.010

Can taping replace a garment?

Could Kinesio tape replace the bandage in decongestive lymphatic therapy for breast-cancer-related lymphedema? A pilot study.

(Tsai, Hung, Yang, Huang, & Tsauo, 2009)

GOALS OF WORK: The purpose of this study is to compare the treatment and retention effects between standard decongestive lymphatic therapy (DLT) combined with pneumatic compression (PC) and modified DLT, in which the use of a short-stretch bandage is replaced with the use of Kinesio tape (K-tape) combined with PC.

MATERIALS AND METHODS: Forty-one patients with unilateral breast-cancer-related lymphedema for at least 3 months were randomly grouped into the DLT group (bandage group, N = 21) or the modified DLT group (K-tape group, N = 20). Skin care, 30-min manual lymphatic drainage, 1-h pneumatic compression therapy, application of a short-stretch bandage or K-tape for each group, and a 20-min physical therapy exercise were given during every treatment session. Patient evaluation items included physical therapy assessment, limb size, water composition of the upper extremity, lymphedema-related symptoms, quality of life, and patients' acceptance to the bandage or tape.

MAIN RESULTS: There was no significant difference between groups in all outcome variables ($P > 0.05$) through the whole study period. Excess limb size (circumference and water displacement) and excess water composition were reduced significantly in the bandage group; excess circumference and excess water composition were reduced significantly in the tape group. The acceptance of K-tape was better than the bandage, and benefits included longer wearing time, less difficulty in usage, and increased comfort and convenience ($P < 0.05$).

CONCLUSIONS: The study results suggest that K-tape could replace the bandage in DLT, and it could be an alternative choice for the breast-cancer-related lymphedema patient with poor short-stretch bandage compliance after 1-month intervention. If the intervention period was prolonged, we might get different conclusion. Moreover, these two treatment protocols are inefficient and cost time in application. More efficient treatment protocol is needed for clinical practice.

What is the effect of treating secondary lymphedema after breast cancer with complete decongestive physiotherapy when the bandage is replaced with Kinesio Textape?–A pilot study

(Melgaard, 2016)

ABSTRACT

Purpose: Secondary lymphedema (SL) following breast cancer is a well-known complication following surgery or radiation. SL may result in loss of functional ability, cosmetic deformities, physical discomfort, recurrent episodes of erysipelas, and psychological distress. There is no evidence as to what is the most effective treatment for SL. Methods: This randomized controlled pilot study included 10 patients treated for SL following breast cancer. The patients were included and screened for SL by a physiotherapist. They were randomized to treatment with CDP with Kinesio Textape or bandage for 4 weeks. Endpoints were quality of life, circumference of the arm, costs, and working environment for the physiotherapist. Results: The two groups were comparable according to baseline data. Outcomes on quality of life, costs, and working environment for the physiotherapist; the treatment with CDP with tape was superior to the CDP with bandage treatment. In regard to reducing the circumference there was no difference. Conclusions: This randomized controlled pilot study shows that CDP with tape can be an alternative to CDP with bandage. The quality of life is higher, the economy and working environment is better, and the effect measured by circumference is comparable. More RCTs are required to increase the evidence for CDP with tape. Implications: Treating lymphedema with CDP with tape after breast cancer is a good alternative to CDP with bandage and makes it possible to treat more patients with less resources.

Case studies

Case Report: Manual Lymphatic Drainage and Kinesio Taping in the Secondary Malignant Breast Cancer-Related Lymphedema in an Arm With Arteriovenous (A-V) Fistula for Hemodialysis.

(Chou, Li, Liao, & Tang, 2013)

Lymphedema is a dreaded complication of breast cancer treatment. The standard care for lymphedema is complex decongestive physiotherapy, which includes manual lymphatic drainage (MLD), short stretch bandaging, exercise, and skin care. The Kinesio Taping could help to improve lymphatic uptake. We reported a patient with unilateral secondary malignant breast cancer-related lymphedema and arteriovenous (A-V) fistula for hemodialysis happened in the same arm, and used kinesio taping, MLD, and exercise to treat this patient because no pressure could be applied to the A-V fistula. The 12-session therapy created an excellent effect. We do not think the kinesio taping could replace short stretch bandaging, but it could be another choice for contraindicating pressure therapy patients, and we should pay attention to wounds induced by kinesio tape. © The Author(s) 2012.

Case Report: Could kinesiology taping help mitigate pain, breathlessness and abdominal-related symptoms in cancer?

(Banerjee, Rose, Briggs, & Johnson, 2017)

SUMMARY

We present the case of a woman who was an amateur athlete diagnosed with primary breast cancer, and 10 years later with terminal metastatic cancer. This case report was prepared posthumously in co-operation with her next of kin (husband). The patient first presented to a sports physiotherapist (AR) for her pain-management and to help maintain physical fitness so that she could continue with sports and an active lifestyle. The patient continued with physiotherapy for several months to enable

her to be active. However, when her health deteriorated significantly due to advancing cancer, the treatment was modified and aimed at improving the patient's general well-being. The physiotherapist applied kinesiology tape over the patient's lower rib cage, diaphragm and abdomen in an attempt to manage pain, breathlessness and abdominal bloating. The patient reported alleviation of pain, breathlessness, abdominal discomfort and nausea, accompanied by improvements in eating, drinking, energy levels and physical function.

Taping for venous insufficiency

A randomized controlled trial of a mixed Kinesio taping–compression technique on venous symptoms, pain, peripheral venous flow, clinical severity and overall health status in postmenopausal women with chronic venous insufficiency.

(Aguilar-Ferrándiz et al., 2014)

Objectives:To investigate the effect of a mixed Kinesio taping treatment in women with chronic venous insufficiency.

Design:A double-blinded randomized clinical trial.

Setting:Clinical setting.

Participants:One hundred and twenty postmenopausal women with mild–moderate chronic venous insufficiency were randomly assigned to an experimental group receiving standardized Kinesio taping treatment for gastrocnemius muscle enhancement and ankle functional correction, or to a placebo control group for simulated Kinesio taping.

Main outcomes variables:Venous symptoms, pain, photoplethysmographic measurements, bioelectrical impedance, temperature, severity and overall health were recorded at baseline and after four weeks of treatment.

*Results:The 2 × 2 mixed model ANCOVA with repeated measurements showed statistically significant group * time interaction for heaviness ($F = 22.99$, $p = 0.002$), claudication ($F = 8.57$, $p = 0.004$), swelling ($F = 22.58$, $p = 0.001$), muscle cramps ($F = 7.14$, $p = 0.008$), venous refill time (right: $F = 9.45$, $p = 0.023$; left: $F = 14.86$, $p = 0.001$), venous pump function (right: $F = 35.55$, $p = 0.004$; left: $F = 17.39$ $p = 0.001$), extracellular water (right: $F = 35.55$, $p = 0.004$; left: $F = 23.84$, $p = 0.001$), severity ($F = 18.47$, $p = 0.001$), physical function ($F = 9.15$, $p = 0.003$) and body pain ($F = 3.36$, $p = 0.043$). Both groups reported significant reduction in pain.*

Conclusion:Mixed Kinesio taping-compression therapy improves symptoms, peripheral venous flow and severity and slightly increases overall health status in females with mild chronic venous insufficiency. Kinesio taping may have a placebo effect on pain.

The influence of Kinesiology Taping on the reduction of lymphoedema among women after mastectomy–preliminary study.

(Pop, Karczmarek-Borowska, Tymczak, Hałas, & Banaś, 2014a)

Abstract

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Results. The reduction of the volume of lymphoedema of 55% was reported in the study group, whereas the oedema reduced by 27% in the clinical control one.

Conclusions. In the reduction of lymphoedema, the greater effectiveness of the own taping method in comparison to the traditional one was reported. Kinesiology Taping exerted an influence on the improvement of the upper limb's joints movability and the grip strength.

Other articles of interest

Shim JY, Lee HR, Lee DC (2003) The use of elastic adhesive tape to promote lymphatic flow in the rabbit hind leg. Yonsei Med J 44(6): 1045–52.

Bialoszewski D, Wozniak W, Zarek S. Clinical efficacy of kinesiology taping in reducing edema of the lower limbs in patients treated with the Ilizarov Method. Ortopedia Traumatologia. 2009: 46-54

Raewyn L, et al. A scoping review of the use of elastic therapeutic tape for neck or upper extremity conditions (2014)

Donec V, Krisciunas A. The effectiveness of Kinesio taping after total knee replacement in early postoperative rehabilitation period. A randomized controlled trial. Eur J Phys Rehabil med 2014

Ristow O, Pautke C, et al. Influence of kineiologic tape on postoperative swelling, pain and trismus after zygomatic-orbital fractures. Journal of Cranio-Maxillo-Fascial surgery 2014

Tozzi U, Santagata M, Sellitto A, Tartaro G.P. Influence of Kinesiologic Tape on Post-operative Swelling After Orthognathic Surgery. J. Maxillofac. Oral Surg. 2015

Taradaj J, Halski T, Rosinczuk J, et al. The influence of Kinesiology Taping on the volume of lymphoedema and manual dexterity of the upper limb in women after breast cancer treatment. European Journal of Cancer Care. 2015

Aguilar-Ferrándiz, M. E., Castro-Sánchez, A. M., Matarán-Peñarrocha, G. A., Guisado-Barrilao, R., García-Ríos, M. C., & Moreno-Lorenzo, C. (2014). A randomized controlled trial of a mixed Kinesio taping–compression technique on venous symptoms, pain, peripheral venous flow, clinical severity and overall health status in postmenopausal women with chronic venous insufficiency. *Clinical Rehabilitation, 28*(1), 69-81. doi:10.1177/0269215512469120

Banerjee, G., Rose, A., Briggs, M., & Johnson, M. I. (2017). Case Report: Could kinesiology taping help mitigate pain, breathlessness and abdominal-related symptoms in cancer? *BMJ Case Reports, 2017*.

Bosman, J. (2014). Lymphtaping for lymphoedema: an overview of the treatment and its uses. *British Journal of Community Nursing, 19*(Sup4), S12-S18. doi:10.12968/bjcn.2014.19.Sup4.S12

Bosman J. and Piller N. (2010). Lymph taping and seroma formation post breast cancer. *Journal of Lymphoedema, 5*(2).

Chou, Y. H., Li, S. H., Liao, S. F., & Tang, H. W. (2013). Case Report: Manual Lymphatic Drainage and Kinesio Taping in the Secondary Malignant Breast Cancer-Related Lymphedema in an Arm With Arteriovenous (A-V) Fistula for Hemodialysis. *American Journal of Hospice and Palliative Medicine, 30*(5), 503-506. doi:10.1177/1049909112457010

Gatt, M., Willis, S., & Leuschner, S. (2017). A meta-analysis of the effectiveness and safety of kinesiology taping in the management of cancer-related lymphoedema. *European Journal of Cancer Care, 26*(5), e12510.

Karwacińska, J., Kiebzak, W., Stepanek-Finda, B., Kowalski, I. M., Protasiewicz-Fałdowska, H., Trybulski, R., & Starczyńska, M. (2012). Effectiveness of Kinesio Taping on hypertrophic scars, keloids and scar contractures. *Polish Annals of Medicine, 19*(1), 50-57.

Kasawara, K. T., Mapa, J. M. R., Ferreira, V., Added, M. A. N., Shiwa, S. R., Carvas Jr, N., & Batista, P. A. (2018). Effects of Kinesio Taping on breast cancer-related lymphedema: A meta-analysis in clinical trials. *Physiotherapy Theory and Practice, 34*(5), 337-345. doi:10.1080/09593985.2017.1419522

Koss, J., & Munz, J. (2010). *Level of evidence and efficacy of medical taping.* Hogeschool van Amsterdam.

Melgaard, D. (2016). What is the effect of treating secondary lymphedema after breast cancer with complete decongestive physiotherapy when the bandage is replaced with Kinesio Textape?–A pilot study. *Physiotherapy Theory and Practice, 32*(6), 446-451.

Pop, T. B., Karczmarek-Borowska, B., Tymczak, M., Hałas, I., & Banaś, J. (2014a). The influence of Kinesiology Taping on the reduction of lymphoedema among women after mastectomy–preliminary study. *Contemporary oncology, 18*(2), 124.

Pop, T. B., Karczmarek-Borowska, B., Tymczak, M., Hałas, I., & Banaś, J. (2014b). The influence of Kinesiology Taping on the reduction of lymphoedema among women after mastectomy – preliminary study. *Contemporary Oncology/Współczesna Onkologia, 18*(2), 124-129. doi:10.5114/wo.2014.40644

Smykla, A., Walewicz, K., Trybulski, R., Halski, T., Kucharzewski, M., Kucio, C., . . . Taradaj, J. (2013). Effect of Kinesiology Taping on breast cancer-related lymphedema: a randomized single-blind controlled pilot study. *BioMed Research International, 2013*, 767106. doi:http://dx.doi.org/10.1155/2013/767106

Tsai, H. J., Hung, H. C., Yang, J. L., Huang, C. S., & Tsauo, J. Y. (2009). Could Kinesio tape replace the bandage in decongestive lymphatic therapy for breast-cancer-related lymphedema? A pilot study. *Supportive Care in Cancer, 17*(11), 1353-1360. doi:http://dx.doi.org/10.1007/s00520-009-0592-8