REABILITACIJOS MOKSLAI
Slauga, kineziterapija, ergoterapija
LITHUANIAN SPORTS UNIVERSITY

Reabilitacijos mokslai: slauga, kineziterapija, ergoterapija, *2*(33) 2025, 152–163, eISSN 2538-8673; DOI: https://doi.org/10.33607/rmske.v2i33.1747

Clinical Evaluation of Kinesio Taping Outcomes in Stage II Cellulite: A Pilot Study

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Abstract

Background. Cellulite is a common aesthetic condition linked to alterations in subcutaneous fat and dermal connective tissue, with possible impairment of microcirculation and lymphatic drainage. Kinesio taping (KT) is used in physiotherapy, but evidence for cellulite management is limited.

Aim. To evaluate the effect of KT on stage II cellulite using objective ultrasound measure and clinical parameters.

Methods. Thirty-four women with stage II cellulite were randomised to an experimental KT group (n = 17; 39.5 ± 13.3 years) and a control group (n = 17; 45.3 ± 9.3 years). Fan-shaped KT was applied once weekly for four weeks to the thighs and buttocks. Primary outcomes were subepidermal low-echogenic band (LEB) and dermis density assessed by high-frequency ultrasound (*DermaLab Combo 4*). Secondary outcomes included skin moisture and body composition (*BC-418MA*). Pre–post changes and between-group differences were analysed; effect sizes were expressed as Cohen's *d*.

Results. In the KT group, LEB increased from 0.78 ± 0.06 to 0.85 ± 0.05 ($p = 0.012$, $d = 0.62$) and dermis density from 0.68 ± 0.07 to 0.75 ± 0.06 ($p = 0.008$, $d = 0.71$). Changes in controls were minimal and not significant. Skin moisture showed no meaningful change in the KT group, whereas the control group decreased (15.13 ± 9.38 to 9.83 ± 5.58; $p = 0.006$). BMI remained stable; a modest reduction in body fat percentage was observed in the KT group.

Conclusions. Over four weeks, KT produced moderate improvements in dermal echostructure in women with stage II cellulite, with no systemic effects on body mass. As a pilot study, findings should be confirmed in larger, blinded trials of longer duration.

Keywords: cellulite; kinesio taping; skin structure; dermis density

Clinical Trial Number: NCT07202013

1. INTRODUCTION

Cellulite is an aesthetically disturbing, localised distortion of the skin architecture, accompanied by increased subcutaneous adipose tissue thickness in lower-body fat depots, such as the buttocks and thighs (Vicente-Ruiz, 2023). It is a common skin condition characterised by dimples and depressions that create an uneven surface, affecting approximately 80%–90% of post-pubertal women of all races (Arora et al., 2022; Hoffman et al., 2024). This prevalence typically refers to clinical assessment in

post-pubertal and adult women using standardised scales such as the Nürnberger–Müller grading system. Its complex pathophysiology involves structural changes in subcutaneous fat and connective tissue, leading to a distinctive 'orange peel' appearance and is often exacerbated by lymphatic congestion, collagen remodelling, and hormonal fluctuations (Hoffman et al., 2024). Cellulite, while primarily a cosmetic concern, is commonly described as a common aesthetic condition with potential psychosocial impact and has been associated with broader systemic factors in some reports (Arora et al., 2022). It can occur independent of BMI, including in lean individuals, predominantly in areas of female fat distribution. Emerging evidence also implicates inflammation, hypoxia, and vascular dysfunction in its pathophysiology, suggesting that cellulite may share mechanisms with systemic conditions such as insulin resistance and cardiovascular risk (Arora et al., 2022).

Cellulite severity is commonly graded by the Nürnberger–Müller scale (Grade 0–III); Grade II denotes visible dimpling when standing without skin manipulation, often accompanied by structural dermal–subdermal changes (Mlosek & Malinowska, 2024). This study focuses specifically on Grade/Stage II cellulite.

There is a general consensus in the literature regarding the multifactorial aetiology of cellulite, which includes genetic predisposition, sex-related anatomical and hormonal differences, impaired lymphatic drainage, microvascular insufficiency, and lifestyle factors (Scarano et al., 2021). The development of cellulite may also be linked to inflammation, as suggested by tenderness upon skin pinching. Prolonged low-grade inflammation within the connective septa may contribute to dermal thinning and fibrosis formation (Gabriel et al., 2023).

While painless, cellulite is aesthetically undesirable and is often associated with negative psychosocial consequences, including body dissatisfaction, anxiety, psychosocial distress, and reduced quality of life (Gabriel et al., 2023).

Multiple treatment modalities for cellulite have been explored, ranging from topical agents to energy-based therapies and minimally invasive procedures. Nevertheless, effective treatment remains challenging due to its complex aetiopathogenesis and the often limited and inconsistent outcomes of available therapies (Gabriel et al., 2023).

Kinesio taping (KT), a technique developed by a Japanese chiropractor Dr Kenzo Kase in the 1970s, involves the application of elastic therapeutic tape to the skin. KT is hypothesised to gently lift the epidermis, increase interstitial space, reduce superficial fascial pressure, and facilitate local lymphatic and blood flow (Jaron et al., 2021; Yang & Lee, 2018). However, clinical evidence for these mechanisms in cellulite is limited and partly contradictory, with small randomised or clinical trials reporting mixed results.

Because cellulite may involve interstitial fluid congestion and fibrotic septa, KT has been proposed as an adjunct to promote fluid mobilisation and microcirculatory changes, potentially influencing dermal firmness (Newagy et al., 2019). However, scientific evidence supporting this hypothesis remains scarce and, in some cases, contradictory.

In a study by Wilk et al. (2012), KT resulted in visibly improved skin elasticity, suppleness, and reduced cellulite appearance in a single participant. The treated side demonstrated better blood supply and firmer skin, while the untreated side remained unchanged. Newagy et al. (2019) conducted a clinical trial involving thirty females with femoral adipose tissue cellulite. Significant reductions were reported in subcutaneous tissue thickness as measured by ultrasound (mean decrease of 4.81%), thigh circumference (2.39%), and cellulite severity scale scores. Similarly, Silva et al. (2014) found that after a four-week KT application, the degree of cellulite and related skin quality parameters significantly improved, as assessed through photogrammetry. However, no significant changes were observed in body mass or hip circumference. These findings suggest that KT may serve as an adjunctive tool in the management

of cellulite. Nevertheless, further research is needed to verify its effectiveness and optimise clinical protocols. In line with prior work, the present study evaluates objective skin metrics – dermal echostructure (dermis density, subepidermal low-echogenic band [LEB] thickness/echogenicity by high-frequency ultrasound) and clinical cellulite severity (Nürnberger–Müller scale) – alongside anthropometrics. The purpose of this study was to assess, through clinical evaluation, the therapeutic effect of KT on stage II cellulite.

2. METHODS

Study design and overview

This quantitative experimental study employed a two-group, pre–post design, assessing changes in anthropometric, ultrasound, and skin condition parameters in women with stage II cellulite over a 4-week intervention period.

Control conditions and blinding

This study employed a two-group design with an experimental kinesio taping (KT) intervention and a no-intervention control group. No placebo (sham-taping) condition was used, and neither participants nor assessors were blinded to group allocation. While this design allowed for practical implementation within a pilot framework, it may have introduced expectation and observer bias. Future studies should incorporate placebo taping or sham application and apply single- or double-blinding procedures to strengthen internal validity and minimise potential bias.

Participants

A total of 38 women aged 18–45 years with stage II cellulite and normal BMI were initially enrolled in the study. Exclusion criteria included pregnancy, oedema, obesity, thrombosis, and skin infections. Participants were randomly assigned to the experimental (n = 19) and control (n = 19) groups using a computer-generated randomisation list. The sample size was calculated using G*Power 3.1 software for an independent samples *t*-test with a medium effect size ($d = 0.5$), $\alpha = 0.05$, and power = 0.80, indicating a required minimum of 34 participants. To account for a possible 10% dropout, 38 participants were recruited. All participants provided written informed consent prior to enrolment. Four participants withdrew before post-testing, leaving 34 participants (17 per group) for final analysis.

Eligibility and cellulite assessment

Cellulite severity was assessed by two trained physiotherapists (≥5 years of experience) using the Nürnberger–Müller Scale (Grades 0–III) (Mlosek & Malinowska, 2024). Only participants graded as Stage II (visible dimpling when standing without skin manipulation) were included. The same scale was also used as an outcome measure to monitor any grade changes after the 4-week intervention.

Measurements

Body composition was measured by bioelectrical impedance analysis (BIA) using Tanita BC-418MA (*Japan*). Measurements were performed in the morning (8:00–10:00 a.m.) after an overnight fast and bladder voiding. Participants abstained from caffeine, alcohol, and vigorous exercise for 24 h before testing. Electrodes were placed on both hands and feet per manufacturer's instructions, and each measurement was taken twice; the mean value was recorded.

Thigh circumference was measured at a fixed anatomical point 20 cm below the greater trochanter, with participants standing relaxed and arms away from the body. Each site was measured three times, and the mean used for analysis. The same investigator performed all measurements.

Ultrasound examination of skin structure was conducted with DermaLab Combo 4 (*Cortex Technology, Denmark*) to assess dermis density and low-echogenic band (LEB) thickness and echogenicity (Crisan et al., 2012; Nicolescu et al., 2023; Pequeno & Bagatin, 2024). See Figure 1.

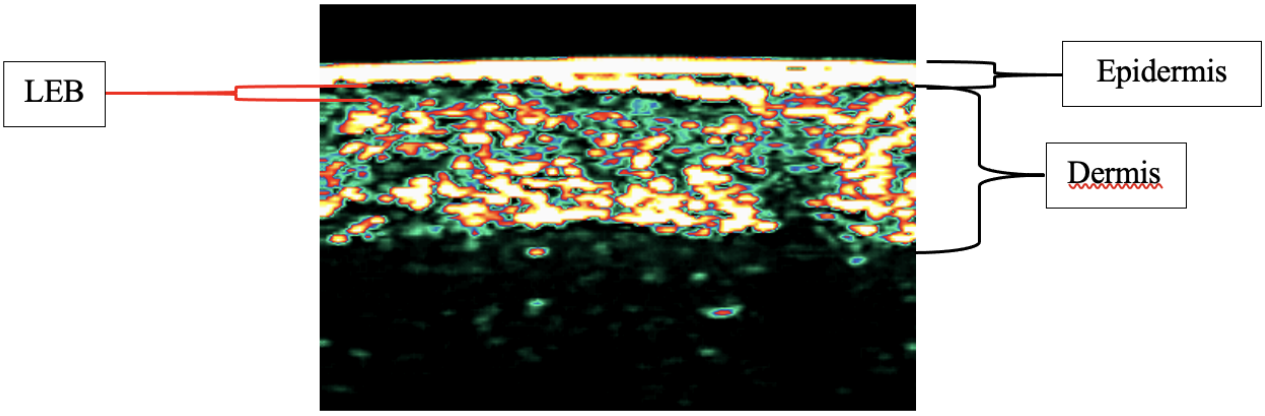


Figure 1. **Skin scan with Cortex DermaLab Combo 4**

Skin temperature and hydration were measured using the Callegari Soft Plus device. All measurements were taken at the same marked anatomical points on the posterior, inner, and outer thighs (40 sites per participant) under controlled environmental conditions (20 ± 1°C, 40–60% humidity) (Kim et al., 2018; Rimkutė & Stungienė, 2023).

Intervention

Participants in the experimental group received fan-shaped kinesio taping (KT) once weekly for four consecutive weeks. The tape used was Sissel®, a 5 cm-wide cotton elastic tape with acrylic adhesive. The application sites included the gluteus maximus (over the sacroiliac region), posterior thigh (gluteal fold), and anterior thigh (above the anterior inferior iliac spine) (Figure 2). The tape was applied with 0–15% of maximal stretch, visually verified using pre-marked reference guides and applied with minimal skin traction. The proximal and distal anchors were placed without tension, and the tape tails were directed along lymphatic drainage lines. Before application, the skin was cleansed with alcohol wipes and kept free of lotions or oils. Each tape remained in place for seven days, and participants were advised to keep the area dry for the first hour after application. All applications were performed by the same licensed physiotherapist to ensure consistency. Participants were instructed not to change their diet, exercise routine, or apply anti-cellulite creams or massages during the study, and compliance was verified through weekly contact. The control group received no intervention and maintained their usual lifestyle.

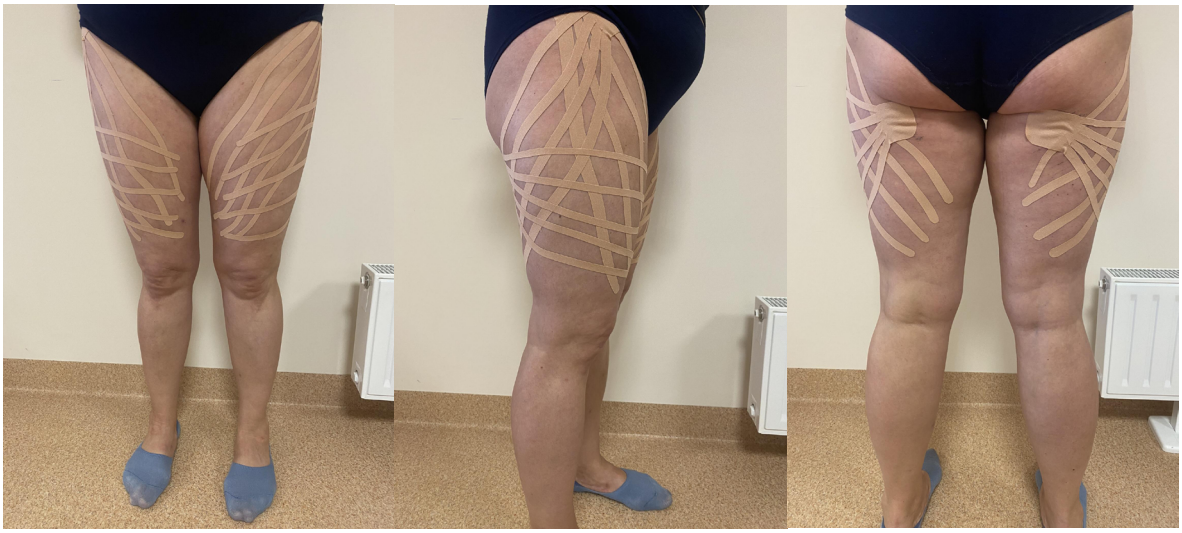


Figure 2. **Fan-tape application technique**

Sample size and power

The primary endpoint for the a priori power analysis was the change in dermis density from baseline to four weeks. Based on pre-study pilot observations in our laboratory, we expected a between-group mean difference in change of 0.25 units with an assumed standard deviation (SD) of 0.50 units, corresponding to a standardised effect size of Cohen's $d = 0.50$. Using G*Power 3.1 for an independent samples *t*-test on change scores (two-tailed) with $\alpha = 0.05$ and power $(1-\beta) = 0.80$, the required sample size was n = 34 (17 per group). Allowing for approximately 10% attrition, we aimed to recruit n = 38 participants. As a sensitivity check using LEB thickness as the endpoint, we assumed an absolute mean difference of 2.5 µm and SD = 5.0 µm (also $d = 0.50$), yielding the same required total sample size.

Statistical analysis

Data were analysed using SPSS Statistics version 25.0 (*IBM, USA*). Descriptive statistics (mean ± SD) were calculated for all variables. The normality of data was checked with the Shapiro–Wilk test, and Levene's test was used to assess variance homogeneity. Paired samples *t*-tests were applied for within-group (pre–post) comparisons, and independent samples *t*-tests were used to compare changes between groups. When normality assumptions were not met, Wilcoxon signed-rank and Mann–Whitney U tests were used instead. Effect sizes were expressed as Cohen's *d* (with Hedges' *g* correction for small samples). Statistical significance was set at $p < 0.05$.

3. RESULTS

Structural skin changes following kinesio taping

This study evaluated the impact of kinesio taping (KT) on skin structure in women diagnosed with stage II cellulite. In the experimental group (n = 17), after four weeks of taping, a statistically significant increase was observed in both the low-echogenic band (LEB) thickness and dermis density. LEB increased from 0.78 ± 0.06 to 0.85 ± 0.05 ($p = 0.012$, $d = 0.62$), and dermis density increased from 0.68 ± 0.07 to 0.75 ± 0.06 ($p = 0.008$, $d = 0.71$). These findings indicate improved dermal structure and connective tissue organisation, consistent with enhanced lymphatic drainage and collagen remodelling. In contrast, the control group (n = 17) showed minimal, non-significant changes: LEB increased slightly from 0.77 ± 0.05 to 0.78 ± 0.06 ($p = 0.457$, $d = 0.12$), and dermis density from 0.69 ± 0.06 to 0.70 ± 0.07 ($p = 0.421$, $d = 0.11$). These variations likely reflect normal physiological fluctuations rather than structural changes. Results are illustrated in Figure 3A and 3B.

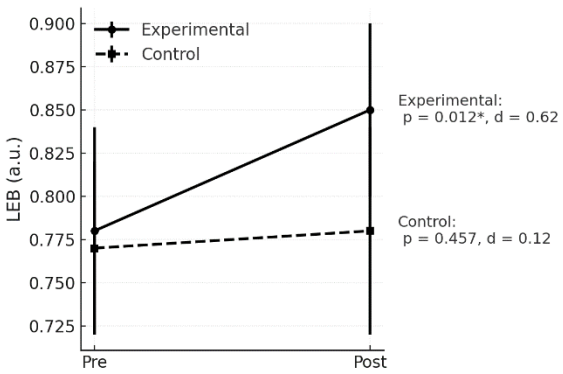


Figure 3a. **Changes in subepidermal low-echogenic band (LEB) thickness before and after KT compared with the control group**

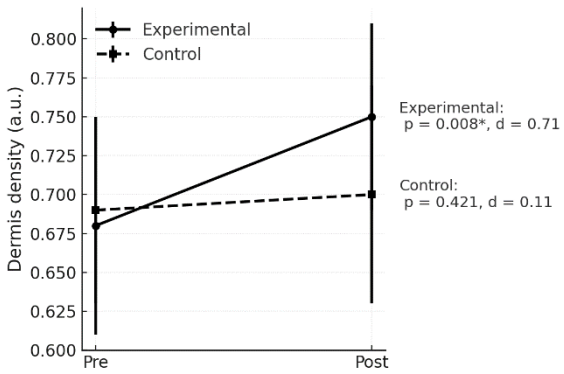


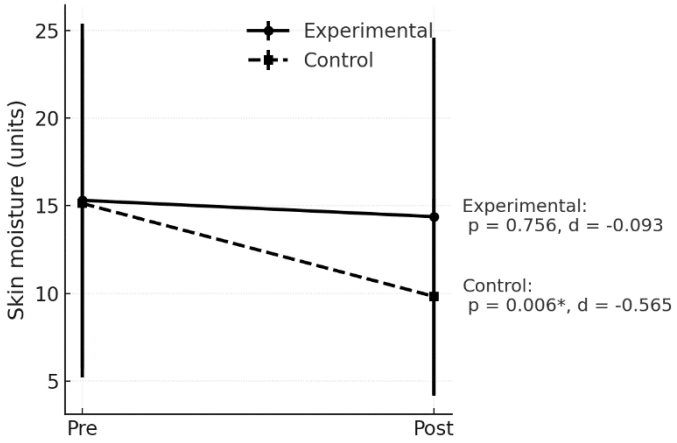
Figure 3b. **Changes in dermis density before and after KT compared with the control group**

Notes: * – statistically significant at $p < 0.05$. Data are presented as mean ± standard deviation (SD). LEB – low-echogenic band; d – Cohen's *d* effect size, representing standardised mean difference (effect magnitude).

Dermis density and moisture parameters

In the experimental group, both LEB and dermis density values demonstrated statistically significant improvements following KT. LEB increased from 2.71 ± 0.41 µm to 2.94 ± 0.43 µm ($p = 0.005$, $d = 0.56$). Dermis density increased from 2.53 ± 0.45 µm to 2.70 ± 0.47 µm ($p = 0.012$, $d = 0.39$), indicating enhanced dermal compactness. In the control group, no statistically significant changes were observed: LEB was 2.77 ± 0.49 µm before and 2.75 ± 0.48 µm after ($p = 0.68$, $d = −0.03$); dermis density was 2.54 ± 0.46 µm before and 2.48 ± 0.45 µm after ($p = 0.18$, $d = −0.13$*).

Regarding skin moisture (Figure 4), in the experimental group, a small, non-significant decrease was observed from 15.31 ± 10.09 units to 14.38 ± 10.20 units ($p = 0.76$, $d = −0.09$). The control group showed a more notable decrease from 15.13 ± 9.38 to 9.83 ± 5.58 ($p = 0.006$, $d = −0.57$). While the reduction was statistically significant, these results should be interpreted cautiously, as environmental and behavioural factors such as hydration, temperature, and daily skincare routines may have influenced moisture readings rather than the absence of KT itself.



Notes: * – Statistically significant at $p < 0.05$. Values are presented as mean ± standard deviation (SD). d – Cohen's *d* effect size (measure of effect magnitude).

Figure 4. **Changes in skin moisture before and after the intervention**

Body composition parameters

Body mass index (BMI) and related parameters were also recorded before and after the 4-week intervention (Table 1). Mean BMI values showed no significant changes in either group (experimental: 21.86 ± 6.64 kg/m² → 21.95 ± 7.02 kg/m², $p = 0.52$; control: 20.42 ± 7.29 kg/m² → 20.47 ± 7.31 kg/m², $p > 0.05$). A statistically significant reduction was observed in body fat percentage (FAT %) in the experimental group (mean change −1.2 ± 0.4%, $p < 0.05$, $d = 0.52$), whereas changes in the control group were not significant ($p = 0.14$). Thigh circumference decreased by an average of 0.9 ± 0.3 cm in the experimental group ($p < 0.05$, $d = 0.57$) and by 0.1 ± 0.2 cm in the control group ($p > 0.05$) (Table 3). These findings indicate that KT produced moderate, localised changes in subcutaneous parameters without affecting overall body mass or BMI.

Table 1. **Changes in BMI and related body composition metrics in experimental and control groups**

Parameter	Experimental group (d)	Interpretation	Control group (d)	Interpretation
Weight (kg)	0.13	Very small effect	0.01	Negligible
BMI	0.14	Very small effect	0.02	Negligible
BMR (kcal)	0.10	Very small effect	0.03	Negligible
FAT %	0.52	Moderate effect	0.10	Very small effect
FAT MASS (kg)	0.46	Small to moderate effect	0.08	Very small effect
FFM (kg)	0.19	Very small effect	0.02	Negligible
TBW (kg)	0.21	Small effect	0.01	Negligible
Circumference (cm)	0.57	Moderate effect	0.07	Very small effect

Notes: BMI – body mass index, BMR – basal metabolic rate, FAT % – body fat percentage, FAT MASS – fat mass in kilograms, FFM – fat-free mass (lean body mass), TBW – total body water, d – Cohen's *d* effect size (measure of effect magnitude). Interpretation – based on standard benchmarks: *negligible* ($d < 0.10$), *very small effect* ($d = 0.10–0.19$), *small effect* ($d = 0.20–0.49$), *moderate effect* ($d = 0.50–0.79$), *large effect* ($d \geq 0.80$).

4. DISCUSSION

Cellulite has been addressed using a broad spectrum of modalities, targeting subcutaneous fat, dermis, and fibrous septa, yet clinical durability remains variable and often transient (Bass & Kaminer, 2020; de Matos Lourenço et al., 2023; Young & DiBernardo, 2021). In the present study, the main outcome – a significant increase in dermal density and subepidermal low-echogenic band (LEB) thickness after four weeks of kinesio taping (KT) – suggests structural improvement within the dermis, consistent with enhanced microcirculation and lymphatic outflow. On high-frequency ultrasound, increased echogenicity and thickness of dermal layers are commonly interpreted as greater tissue compactness (e.g. collagen reorganisation) and/or reduced interstitial fluid; our findings parallel changes reported after mechanical or radiofrequency therapies (Czajkowska et al., 2023; Fritz et al., 2018; Mlosek et al., 2012). These findings support the hypothesis that KT may enhance microcirculation and lymphatic outflow, thereby improving tissue firmness.

The subepidermal low-echogenic band (LEB) is a relatively new ultrasound parameter used in dermatological diagnostics and as a prognostic marker. Variations in its thickness and echogenicity are associated with photoageing, inflammation, and collagen degradation (Czajkowska et al., 2023; Nicolescu et al., 2023). In cellulite, the LEB reflects elastosis, collagen disorganisation, and interstitial fluid accumulation within the papillary dermis (Vergilio et al., 2021). According to the principles of high-frequency ultrasound imaging, increased echogenicity (brighter regions) indicates greater tissue density and collagen content, whereas decreased echogenicity (darker regions) reflects lower density or oedema (Czajkowska et al., 2023). Therefore, the significant LEB and dermal echogenicity increases observed in this study likely indicate improved dermal matrix integrity, collagen realignment, and reduced interstitial fluid stagnation – mechanisms consistent with KT's proposed lifting effect that enhances lymphatic flow (Kafa et al., 2015; Newagy et al., 2019).

Meanwhile, skin hydration analysis revealed differing results between groups. In the experimental group, skin moisture levels did not change significantly, suggesting that the applied method contrib-

uted to the stabilisation of hydration levels. In contrast, the control group showed a reduction in skin moisture, but this likely reflects short-term environmental or behavioural factors (e.g. ambient humidity, hydration level, skincare routines) rather than a biological deterioration of the skin barrier. Given that hydration measurements are highly sensitive to external conditions such as room humidity and participant fluid intake, these results should be interpreted with caution and not as a direct physiological consequence of KT.

When assessing body composition parameters (BMI, weight, BMR), changes in the experimental group were minimal and statistically insignificant, which aligns with findings from other studies suggesting that short-term interventions have little effect on overall weight or metabolism (Silva et al., 2014). The small reductions in fat percentage and thigh circumference may reflect localised circulatory or lymphatic changes rather than true fat loss. These findings support previous KT studies (Newagy et al., 2019; Silva et al., 2014) that demonstrated visible yet temporary skin improvements, likely mediated by microcirculatory effects rather than metabolic shifts.

Beyond its mechanical lifting effect, KT may also exert neurophysiological influences by modulating cutaneous tension and stimulating superficial mechanoreceptors. These effects can enhance proprioceptive feedback and potentially regulate autonomic nervous system activity, leading to local vasodilation and improved microcirculation (Kafa et al., 2015; Yang & Lee, 2018). Such mechanisms could partly explain the observed dermal structural changes in this study.

From a clinical perspective, even modest dermal improvements can translate into visible benefits for patients. Given the psychosocial impact of cellulite (Gabriel et al., 2023), KT may offer a conservative, low-risk option for early-stage management. Compared with device-based or invasive procedures, KT's advantages include low cost, ease of application, and absence of recovery time, which may increase adherence in cosmetic rehabilitation programmes.

Study limitations

The results of this study suggest a potential effectiveness of kinesio taping in addressing stage II cellulite; however, several methodological limitations constrain the generalisability and clinical applicability of the findings. The small sample size (n = 34) and the short intervention period (4 weeks) limit the strength of the conclusions. Structural and connective tissue remodelling typically occur gradually over several weeks or months; therefore, extending the intervention duration to 8–12 weeks could potentially produce more pronounced and sustained improvements in dermal density and LEB parameters.

Another limitation concerns the study design and control conditions. The absence of a placebo (sham-taping) control group and the lack of participant and assessor blinding may have introduced expectation and observer bias. Future studies should incorporate placebo taping and single- or double-blinding procedures to strengthen internal validity. Additionally, skin hydration and temperature measurements may have been influenced by uncontrolled external factors such as ambient humidity, individual hydration status, or the use of cosmetic products. The relatively wide age range of participants (18–45 years) may also have affected skin regeneration capacity and responsiveness to the intervention. Despite these constraints, the present findings provide preliminary evidence supporting the potential of kinesio taping as a non-invasive adjunctive method for improving skin structure in stage II cellulite. Further studies with larger samples, extended intervention periods, and more rigorous control conditions are warranted to confirm these results and explore their long-term sustainability.

Study strengths

This study has several strengths. It was guided by a clear aim and a well-defined hypothesis, addressing a research gap in the evaluation of kinesio taping effects on cellulite. The investigation combined dermatological and physiotherapeutic perspectives, reflecting an interdisciplinary approach to aesthetic rehabilitation. Objective, instrument-based measurements were employed, including high-frequency

ultrasound (*DermaLab Combo 4*) for dermal density and LEB thickness assessment, and bioelectrical impedance analysis (*BC-418MA*) for body composition. This enhances the objectivity and reproducibility of the findings. The statistical analysis included both significance testing and effect size estimation (Cohen's *d*, Hedges' *g*), providing a more comprehensive interpretation of the magnitude of observed effects. The study was conducted with ethical approval and methodological transparency, supporting its credibility as a pilot framework for future research.

5. CONCLUSIONS AND PERSPECTIVES

This pilot study provides preliminary yet credible evidence that kinesio taping (KT) may enhance dermal structure and microcirculation in women with stage II cellulite. After four weeks of KT application, participants in the experimental group demonstrated a statistically significant increase in both dermal density and low-echogenic band (LEB) thickness, while skin hydration and body mass index (BMI) remained stable. A moderate reduction in body fat percentage was also observed, suggesting localised physiological effects rather than systemic changes. Although limited by a small sample size, short intervention duration, and lack of blinding, the study's design, methodological rigor, and objective assessment tools strengthen the credibility of its findings. These results contribute valuable preliminary data supporting KT as a safe, low-cost, and non-invasive adjunctive method for improving skin structure and appearance in early-stage cellulite. Future research with larger samples, extended intervention periods (8–12 weeks), placebo controls, and blinding procedures is warranted to confirm the observed effects and to explore their long-term sustainability.

Author Contributions: Conceptualisation, S.K., M.Š.-V., J.B., L.Ž., G.Š., and V.G.; methodology, S.K., M.Š.-V., J.B., and L.Ž.; software, S.K., M.Š.-V., and J.B.; validation, G.Š. and V.G.; formal analysis, S.K., M.Š.-V., J.B., and L.Ž.; investigation, S.K., M.Š.-V., D.S., J.B., and S.U.; resources, S.K., J.B., and M.Š.-V.; data curation, S.K, M.Š.-V., J.B., and L.Ž.; writing—original draft preparation, S.K., J.B., M.Š.-V., G.Š., and V.G.; writing—review and editing, L.Ž.; visualisation, D.S. and M.Š.-V.; supervision, S.U. and L.Ž.; project administration, S.U. and L.Ž. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Ethical Approval: The study was approved by the institutional Ethics Committee 2024-12-27, Nr. SSV6-114.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

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Klinikinis kinezioteipavimo poveikio II stadijos celiulitui vertinimas: pilotinis tyrimas

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Santrauka

Tyrimo pagrindimas. Celiulitas – dažna estetinė būklė, susijusi su poodinio riebalinio audinio ir dermos jungiamojo audinio pokyčiais bei galimu mikrocirkuliacijos ir limfos drenažo sutrikimu. Kinezioteipavimas (KT) plačiai taikomas kineziterapijoje, tačiau įrodymų dėl jo veiksmingumo gydant celiulitą trūksta.

Tyrimo tikslas. Įvertinti KT poveikį II stadijos celiulitui, taikant objektyvius ultragarsinius ir klinikinius rodiklius.

Tyrimo metodai. Į tyrimą įtrauktos 34 moterys (vidutinis amžius 42,2 ± 11,8 m.), atsitiktinai paskirstytos į KT (n = 17; 39,5 ± 13,3 m.) ir kontrolinę (n = 17; 45,3 ± 9,3 m.) grupes. Vėduoklės formos KT buvo taikomas kartą per savaitę keturias savaites ant šlaunų ir sėdmenų. Pagrindiniai baigtiniai rodikliai – mažo echogeniškumo juosta (LEB) ir dermos tankis, vertinti aukšto dažnio ultragarsu (*DermaLab Combo 4*). Antriniai rodikliai – odos drėgmė ir kūno sudėtis (*BC-418MA*). Analizuoti prieš–po pokyčiai ir tarpgrupiniai skirtumai; efektų dydžiai pateikti kaip Cohen'o *d*.

Rezultatai. KT grupėje LEB padidėjo nuo 0,78 ± 0,06 iki 0,85 ± 0,05 (p = 0,012; *d* = 0,62), dermos tankis – nuo 0,68 ± 0,07 iki 0,75 ± 0,06 (p = 0,008; *d* = 0,71). Kontrolinėje grupėje pokyčiai buvo minimalūs ir statistiškai nereikšmingi. Odos drėgmė KT grupėje reikšmingai nekito, tuo tarpu kontrolinėje – sumažėjo (p = 0,006). KMI nekito; KT grupėje stebėtas nedidelis kūno riebalų procento sumažėjimas.

Išvados. Per keturias savaites KT sukėlė vidutinio dydžio dermos echostruktūros pagerėjimą moterims, turinčioms II stadijos celiulitą, be sisteminio poveikio kūno masei. Kaip pilotinį tyrimą, šiuos rezultatus būtina patvirtinti didesniuose, akluose ir ilgesnės trukmės tyrimuose.

Reikšminiai žodžiai: celiulitas; kinezioteipavimas; odos struktūra; dermos tankis

Klinikinio tyrimo numeris: NCT07202013

Received 2025 10 26
Accepted 2025 11 07