

PROPRIOCEPTIVE TAPING VERSUS KINESIO TAPING DURING REHABILITATION AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: A COMPARATIVE STUDY

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KEYWORDS

anterior cruciate ligament reconstruction; proprioceptive taping; Kinesio taping; proprioception; joint position sense; functional performance; Lysholm score; pain.

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Abstract

Background: While mechanical knee stability is restored by anterior cruciate ligament (ACL) restoration, proprioception, neuromuscular control, functional performance, and patient confidence are not always fully restored. A popular supplement to postoperative therapy is therapeutic taping. Proprioceptive taping uses mechanical correction and prolonged sensory input to improve joint-position awareness, whereas kinesio taping offers elastic support and cutaneous stimulation. Nevertheless, there is little data comparing these two methods following ACL restoration.

Objectives: to evaluate how proprioceptive taping and kinesio taping affect proprioception, pain, functional performance, and subjective knee function in people recovering from ACL repair.

Methods: A comparative study was undertaken among 60 patients aged 18–40 years who were 6–12 weeks post-ACL reconstruction. people were randomly distributed into two groups of 30 people each. Group B was given kinesio taping, whereas Group A was given proprioceptive taping. For 12 weeks, both groups received the same standardized physiotherapy rehabilitation regimen. Baseline, Week 3, and Week 12 results were evaluated. The Joint Position Sense test was used to measure proprioception; the Single-Leg Hop test was used to measure functional performance; the Lysholm Knee Scoring Scale was used to measure subjective knee function; and the Visual Analog Scale was used to measure pain severity. Within-group changes were analysed using repeated-measures analysis of variance, and between-group differences at Week 12 were analysed using the independent-samples t-test.

Results: Both groups showed statistically significant improvement in all outcome measures over 12 weeks ($p < 0.001$). Joint Position Sense error decreased from $5.8 \pm 1.2^\circ$ to $2.3 \pm 0.8^\circ$ in the proprioceptive taping group and from $5.6 \pm 1.1^\circ$ to $3.6 \pm 1.0^\circ$ in the Kinesio taping group. Single-Leg Hop Test performance increased from 72.4 ± 8.5 cm to 112.3 ± 10.4 cm in Group A and from 73.1 ± 7.9 cm to 98.7 ± 9.8 cm in Group B. Lysholm scores increased from 58.2 ± 6.4 to 90.4 ± 5.2 in Group A and from 59.1 ± 7.0 to 82.1 ± 6.8 in Group B. VAS pain scores decreased from 6.4 ± 1.0 to 1.6 ± 0.7 in Group A and from 6.2 ± 1.1 to 2.8 ± 0.8 in Group B. At Week 12, proprioceptive taping was significantly superior to Kinesio taping for all outcomes ($p < 0.001$).

Conclusion

Both taping techniques combined with structured physiotherapy rehabilitation improved proprioception, pain, functional performance, and subjective knee function following ACL reconstruction. However, proprioceptive taping produced significantly greater improvement and may be a useful adjunct to conventional postoperative rehabilitation.

Introduction

One of the most frequent injuries to the knee is an anterior cruciate ligament (ACL), especially in athletes that jump, pivot, accelerate quickly, decelerate quickly, and make abrupt direction changes. The ACL is crucial in regulating the tibia's anterior translation and rotation in relation to the femur. The ligament has mechanoreceptors that aid in proprioception and neuromuscular control in addition to its mechanical function. People with high functional demands, numerous giving-way incidents, or clinical instability often undergo ¹⁻³ACL reconstruction. While mechanical stability can be restored through surgical restoration, postoperative rehabilitation is crucial for restoring normal knee function.

After reconstruction, people may still exhibit deficiencies in proprioception, muscle strength, dynamic balance, neuromuscular coordination, discomfort, and functional confidence. ⁴⁻⁹The capacity to sense joint movement and position is known as proprioception. It depends on afferent data from receptors found in the skin, muscles, tendons, joint capsules, and ligaments. While repair may not fully replicate the sensory function of the native ligament, damage to the ACL may interfere with this sensory system. As a result, following surgery, deficiencies in joint-position awareness may continue. ¹⁰⁻¹⁵

Dynamic knee control, movement quality, functional performance, and the chance of recurrent injury may all be impacted by these deficiencies. Restoring range of motion, muscular strength, balance, proprioception, neuromuscular control, and functional performance are all necessary components of a thorough postoperative rehabilitation strategy. Exercise-based rehabilitation is often supplemented with therapeutic taping. Kinesio taping is an elastic tape technique that allows for relatively unfettered mobility while offering cutaneous stimulation, dynamic support, and symptom regulation. Reduced discomfort, altered sensory input, and stimulation of cutaneous mechanoreceptors are some of the suggested explanations. ^{19,20} Nevertheless, Kinesio taping's impact on

proprioception has been uneven.. ²¹⁻²⁴

The purpose of proprioceptive taping is to deliver a longer-lasting mechanical and sensory input. In addition to improving tactile feedback and joint position awareness, rigid tape may offer external correction. The constant sensory input produced by tape may help with sensorimotor regulation and give the central nervous system more afferent information. ²⁵⁻²⁹ There are few direct comparisons after ACL reconstruction, despite the fact that both taping methods are often employed in clinical practice. The majority of earlier research either looked at taping techniques separately or concentrated on pain and immediate functional results. Therefore, it is yet unknown how well proprioceptive taping and kinesio taping work together to improve joint-position sensation and functional recovery.

The present study was undertaken to compare the effects of proprioceptive taping and Kinesio taping when used alongside a standardized rehabilitation programme following ACL reconstruction. The outcomes assessed were proprioception, functional performance, subjective knee function, and pain intensity.

METHODS

Study Design and Participants

People undertaking therapy after ACL surgery participated in a comparative two-group research. Participants were chosen from Pacific Medical College and Hospital's outpatient division in Udaipur, Rajasthan, India. There were sixty individuals, ages 18 to 40, who were 6 to 12 weeks after ACL replacement. In order to take part in the study, participants had to be willing and medically cleared for physiotherapy rehabilitation. Those who had undergone revision ACL reconstruction, had significant meniscal or ligamentous injuries that affected function, had neurological disorders that affected lower-limb motor control or balance, were allergic to adhesive tape, or had any medical condition that prevented them from participating were all excluded. All subjects provided written informed consent, and the study was carried out

with institutional ethical approval.

Sample Size and Group Allocation

The sample size was determined using G*Power software with an alpha level of 0.05, statistical power of 80%, and an anticipated effect size of 0.80. The calculated sample size was 52 participants. Considering possible participant dropout, 60 participants were included.

Participants were allocated equally into:

- **Group A:** Proprioceptive taping plus standardized rehabilitation (n = 30)
- **Group B:** Kinesio taping plus standardized rehabilitation (n = 30)

Intervention

Proprioceptive Taping

Proprioceptive taping was applied rigidly and without elasticity to participants in Group A. In order to provide sensory feedback and give mechanical correction, the tape was wrapped around the knee. The method was intended to improve felt joint stability during movement, support proper tibial alignment, and increase awareness of knee position. According to the treatment procedure, the tape was left on for around 24 to 48 hours before being reapplied about three times a week.

Kinesio Taping

Participants in Group B received elastic Kinesio taping. The tape was applied over the knee and surrounding musculature according to the therapeutic objective. The technique was intended to provide cutaneous stimulation, dynamic support, and symptom modulation while maintaining mobility. The tape was generally maintained for approximately 3–5 days and replaced according to the protocol.

Standardized Rehabilitation

Both groups received the same structured

physiotherapy rehabilitation programme. The programme included progressive range-of-motion exercises, quadriceps and hamstring strengthening, resistance exercises, balance training, proprioceptive exercises, step activities, stationary cycling, neuromuscular training, and progressive functional exercises. The standardized rehabilitation programme was maintained in both groups to ensure that the primary difference between groups was the taping technique.

Outcome Measures

Assessments were conducted at baseline, Week 3, and Week 12.

Joint Position Sense

Proprioception was assessed using a Joint Position Sense test. Participants were required to reproduce a predetermined knee angle. The difference between the target angle and the reproduced angle was recorded as the proprioceptive error. A lower error indicated better proprioceptive accuracy.

Single-Leg Hop Test

Functional performance was evaluated using the Single-Leg Hop Test. Participants performed a maximal horizontal hop on the operated limb, and the distance achieved was recorded in centimetres. Greater distance indicated better functional performance.

Lysholm Knee Scoring Scale

Subjective knee function was assessed using the Lysholm Knee Scoring Scale. The scale evaluates pain, instability, locking, swelling, stair climbing, squatting, and the need for support. Higher scores indicate better knee function.

Visual Analog Scale

Pain intensity was assessed using a 10-cm Visual Analog Scale. Higher scores represented greater pain intensity.

Statistical Analysis

Data were analysed using appropriate statistical methods. Continuous variables were expressed as mean $\pm$ standard deviation. Changes across the three assessment periods were analysed using repeated-measures analysis of variance. Between-group comparisons at Week 12 were conducted using the independent-samples t-test. Mean differences and 95% confidence intervals were calculated. Cohen's d was used to estimate effect size. Statistical significance was set at $p < 0.05$.

RESULTS

Sixty participants completed the study, with 30 participants in each group. Both groups received the same rehabilitation programme, with the assigned taping technique representing the primary intervention difference.

Proprioception

Joint Position Sense improved significantly in both groups. In Group A, proprioceptive error decreased from $5.8 \pm 1.2^\circ$ at baseline to $4.1 \pm 1.0^\circ$ at Week 3 and $2.3 \pm 0.8^\circ$ at Week 12. In Group B, error decreased from $5.6 \pm 1.1^\circ$ to $4.8 \pm 1.2^\circ$ at Week 3 and $3.6 \pm 1.0^\circ$ at Week 12.

The improvement within both groups was statistically significant ($p < 0.001$). At Week 12, the proprioceptive taping group demonstrated a significantly lower error than the Kinesio taping group. The mean difference was -1.30° (95% CI -1.76 to -0.84 ; $t = -5.62$; $p < 0.001$).

Functional Performance

Single-Leg Hop Test performance improved significantly in both groups. Group A improved from 72.4 ± 8.5 cm at baseline to 88.6 ± 9.2 cm at Week 3 and 112.3 ± 10.4 cm at Week 12. Group B improved from 73.1 ± 7.9 cm to 82.4 ± 8.6 cm at Week 3 and 98.7 ± 9.8 cm at Week 12.

At Week 12, Group A demonstrated significantly greater performance than Group B. The mean difference was 13.60 cm (95% CI 8.48–18.72; $t = 4.91$; $p < 0.001$).

Subjective Knee Function

Lysholm scores increased significantly in both groups. In Group A, scores improved from 58.2 ± 6.4 at baseline to 72.6 ± 7.8 at Week 3 and 90.4 ± 5.2 at Week 12. Group B improved from 59.1 ± 7.0 to 68.3 ± 7.5 and 82.1 ± 6.8 , respectively.

The Week-12 difference between groups was statistically significant. The mean difference was 8.30 points (95% CI 5.24–11.36; $t = 5.37$; $p < 0.001$).

Pain

Pain decreased significantly in both groups. VAS scores in Group A decreased from 6.4 ± 1.0 at baseline to 3.8 ± 0.9 at Week 3 and 1.6 ± 0.7 at Week 12. In Group B, scores decreased from 6.2 ± 1.1 to 4.5 ± 1.0 and 2.8 ± 0.8 , respectively.

At Week 12, the mean difference between groups was -1.20 points (95% CI -1.58 to -0.82 ; $t = -6.01$; $p < 0.001$), favouring proprioceptive taping.

DISCUSSION

The current study showed that proprioception, functional performance, subjective knee function, and pain after ACL repair were all markedly improved when proprioceptive taping and Kinesio taping were used in conjunction with standardized physiotherapy rehabilitation. Proprioceptive taping, on the other hand, produced noticeably better results on all outcome measures. The proprioceptive taping group's higher improvement in joint position sense was the most significant finding. Group A experienced a roughly 3.5° drop in proprioceptive error, while Group B experienced a 2.0° decrease. This implies that proprioceptive taping might offer a more potent stimulus for reestablishing awareness of joint position.

Through mechanoreceptors that offer afferent information about knee position and movement, the ACL aids in proprioception. This sensory feedback system may be interfered with by injury and reconstruction¹⁰⁻¹⁵. By continuously stimulating the skin and periarticular tissues mechanically and

tactilely, rigid taping may partially compensate. Sensorimotor integration and afferent information may be improved by the increased cutaneous input. The findings support the idea that factors other than ligamentous mechanical stability affect proprioceptive recovery after ACL surgery. The skin, muscles, joints, and ligaments are only a few of the sensory organs that provide information to the central nervous system. Therefore, additional information during movement may be provided by external stimulation through tape.²⁵⁻²⁹

The current results indicate that Kinesio taping may have a less noticeable impact on joint-position sensation, despite the fact that it likewise stimulates the skin. Although kinesio taping is elastic and permits movement, it may not provide as much mechanical correction or long-term external sensory input as stiff proprioceptive tape. Kinesio taping and proprioception have been the subject of conflicting study in the past, with some studies revealing only modest improvements in joint-position accuracy.²¹⁻²⁴

The Single-Leg Hop Test showed that both groups' functional performance had greatly improved. The proprioceptive taping group, however, saw a noticeably bigger improvement. Strength, balance, proprioception, coordination, and trust in the operated limb must all be integrated for the Single-Leg Hop Test. Participants may be able to better control knee movement during single-leg loading and landing with increased joint-position awareness. Increased confidence may also be linked to a larger improvement in functional performance. After ACL reconstruction, protective movement patterns and decreased loading of the operated limb may result from fear of movement or reinjury. Improved sensory input could boost self-esteem and promote more successful engagement in progressive rehabilitation exercises.

The Lysholm Knee Score, which measures subjective knee function, also showed a notable improvement. The larger improvement in the proprioceptive taping group suggests that the advantages of improved sensory feedback might go beyond proprioception tests in the lab. When engaging in tasks like walking, stair climbing, and

squatting, increased awareness of knee position may lessen the sense of instability and boost confidence.

Both groups experienced a considerable reduction in pain, however the proprioceptive taping group experienced a higher reduction. By limiting movement, preventing muscle activation, and restricting exercise participation, pain may have an impact on rehabilitation. By providing external support and modulating the senses, taping may lessen discomfort. Additionally, proprioceptive taping may lessen anxiety by enhancing the knee's felt stability.

The rehabilitation program should be taken into consideration while interpreting the current outcomes. Structured exercise-based therapy was provided to both groups, which probably made a significant contribution to the noted improvements. Proprioceptive taping's extra advantage raises the possibility that mechanical and sensory stimulation have a significant complimentary effect. Physiotherapists involved in postoperative ACL rehabilitation can benefit clinically from the findings. During the early to middle stages of rehabilitation, proprioceptive taping may be used as an adjuvant, especially if there are deficiencies in joint-position awareness, dynamic stability, or confidence.

Taping, however, shouldn't take the place of functional therapy, neuromuscular exercises, progressive strengthening, or balance training. There are a number of restrictions on the study. It had a somewhat limited sample size and was carried out in a single clinical setting. The long-term effects of the therapies are not established during the 12-week follow-up phase. Because the interventions were visible, blinding was challenging. Results may also have been impacted by variables like physical activity levels, psychological preparedness, fear of reinjury, and adherence to at-home exercise. Larger multicenter studies, longer follow-up, objective neuromuscular evaluations, and assessments of return-to-sport results should all be part of future research.

CONCLUSION

After ACL reconstruction, proprioceptive taping and Kinesio taping both significantly improved proprioception, discomfort, functional performance, and subjective knee function when paired with systematic physiotherapy rehabilitation. Proprioceptive taping, on the other hand, dramatically improved Joint Position Sense, Single-Leg Hop Test performance, Lysholm Knee Score, and pain reduction. In order to improve sensory feedback, joint-position awareness, dynamic stability, and functional recovery, proprioceptive taping may be regarded as a useful supplement to traditional postoperative therapy.

DECLARATIONS

Ethical approval: The study was conducted following institutional ethical approval.

Informed consent: Written informed consent was obtained from all participants.

Funding: No external funding was reported.

Conflict of interest: The authors declare no conflict of interest.

Data availability: Data are available from the corresponding author upon reasonable request and subject to institutional requirements.

Table 1. Baseline Characteristics of Participants

Variable	Group A: Proprioceptive Taping (n=30)	Group B: Kinesio Taping (n=30)	p-value
Age (years)	Mean $\pm$ SD	Mean $\pm$ SD	>0.05
Postoperative duration (weeks)	Mean $\pm$ SD	Mean $\pm$ SD	>0.05
Sex	n (%)	n (%)	>0.05

Table 2. Within-Group Changes in Outcome Measures

Outcome	Group	Baseline	Week 3	Week 12	p-value
JPS error (°)	A	5.8 $\pm$ 1.2	4.1 $\pm$ 1.0	2.3 $\pm$ 0.8	<0.001
JPS error (°)	B	5.6 $\pm$ 1.1	4.8 $\pm$ 1.2	3.6 $\pm$ 1.0	<0.001
Single-leg hop (cm)	A	72.4 $\pm$ 8.5	88.6 $\pm$ 9.2	112.3 $\pm$ 10.4	<0.001
Single-leg hop (cm)	B	73.1 $\pm$ 7.9	82.4 $\pm$ 8.6	98.7 $\pm$ 9.8	<0.001
Lysholm score	A	58.2 $\pm$ 6.4	72.6 $\pm$ 7.8	90.4 $\pm$ 5.2	<0.001
Lysholm score	B	59.1 $\pm$ 7.0	68.3 $\pm$ 7.5	82.1 $\pm$ 6.8	<0.001
VAS pain	A	6.4 $\pm$ 1.0	3.8 $\pm$ 0.9	1.6 $\pm$ 0.7	<0.001
VAS pain	B	6.2 $\pm$ 1.1	4.5 $\pm$ 1.0	2.8 $\pm$ 0.8	<0.001

Table 3. Between-Group Comparison at Week 12

Outcome	Group A	Group B	Mean Difference	95% CI	t-value	p-value
JPS error (°)	2.3 $\pm$ 0.8	3.6 $\pm$ 1.0	-1.30	-1.76 to -0.84	-5.62	<0.001
Single-leg hop (cm)	112.3 $\pm$ 10.4	98.7 $\pm$ 9.8	13.60	8.48 to 18.72	4.91	<0.001
Lysholm score	90.4 $\pm$ 5.2	82.1 $\pm$ 6.8	8.30	5.24 to 11.36	5.37	<0.001
VAS pain	1.6 $\pm$ 0.7	2.8 $\pm$ 0.8	-1.20	-1.58 to -0.82	-6.01	<0.001

Table 4. Effect-Size Interpretation

Outcome	Direction of Effect	Interpretation
Joint Position Sense	Favours proprioceptive taping	Greater reduction in proprioceptive error
Single-Leg Hop Test	Favours proprioceptive taping	Greater functional performance
Lysholm Score	Favours proprioceptive taping	Better subjective knee function
VAS Pain	Favours proprioceptive taping	Greater pain reduction

REFERENCES

- Barrett DS, Cobb AG, Bentley G. Joint proprioception in normal, osteoarthritic and replaced knees. *J Bone Joint Surg Br.* 1991;73(1):53–6.
- Harter RA, Osternig LR, Singer KM. Instrumented Lachman tests for evaluation of anterior laxity after reconstruction of the anterior cruciate ligament. *J Bone Joint Surg Am.* 1988;70(1):99–107.
- Johansson H, Sjölander P, Sojka P. A sensory role for the cruciate ligaments. *Clin Orthop Relat Res.* 1991;(268):161–78.
- Beynon BD, Johnson RJ, Abate JA, Fleming BC, Nichols CE. Treatment of anterior cruciate ligament injuries. *Am J Sports Med.* 2005;33(10):1579–602.
- Griffin LY, Albohm MJ, Arendt EA, Bahr R, Beynon BD, Demaio M, et al. Understanding and preventing noncontact ACL injuries. *Am J Sports Med.* 2006;34(9):1512–32.
- Boden BP, Dean GS, Feagin JA Jr, Garrett WE Jr. Mechanisms of anterior cruciate ligament injury. *Orthopedics.* 2000;23(6):573–8.
- Lohmander LS, Englund PM, Dahl LL, Roos EM. Long-term consequence of ACL and meniscus injuries. *Am J Sports Med.* 2007;35(10):1756–69.
- Fu FH, Bennett CH, Lattermann C, Ma CB. Current trends in ACL reconstruction. *Am J Sports Med.* 1999;27(6):821–30.
- Shelbourne KD, Gray T. Minimum 10-year results after ACL reconstruction. *Am J Sports Med.* 2009;37(3):471–80.
- Simon J, Docherty CL. Current health-related quality of life and functional outcomes after ACL reconstruction. *J Athl Train.* 2014;49(2):238–48.
- Relph N, Herrington L, Tyson S. Effects of ACL injury on knee proprioception: a meta-analysis. *Physiotherapy.* 2014;100(3):187–91.
- Riemann BL, Lephart SM. The sensorimotor system and functional joint stability. *J Athl Train.* 2002;37(1):71–9.
- Dhillon MS, Bali K, Prabhakar S. Proprioception in ACL-deficient knees. *Indian J Orthop.* 2011;45(4):294–300.
- Lephart SM, Pincivero DM, Rozzi SL. Proprioception of the ankle and knee. *Sports Med.* 1998;25(3):149–55.
- MacDonald R, Owen J. Proprioceptive feedback following ACL reconstruction. *Phys Ther Sport.* 2001;2(2):73–9.
- Hopper DM, Creagh MJ, Formby PA, Goh SC, Boyle JJ, Strauss GR. Functional measurement of knee joint position sense after ACL reconstruction. *Arch Phys Med Rehabil.* 2003;84(6):868–72.
- Risberg MA, Lewek M, Snyder-Mackler L. A systematic review of ACL rehabilitation. *J Orthop Sports Phys Ther.* 2004;34(9):522–38.
- Fitzgerald GK, Axe MJ, Snyder-Mackler L. Return to high-level activity after ACL rupture. *J Orthop Sports Phys Ther.* 2000;30(2):94–105.
- Williams S, Whatman C, Hume PA, Sheerin K. Kinesio taping in treatment and prevention of sports injuries. *Sports Med.* 2012;42(2):153–64.
- Kase K, Wallis J, Kase T. Clinical therapeutic applications of the Kinesio taping method. Tokyo: Ken Ikai Co Ltd; 2003.
- Halseth T, McChesney JW, DeBeliso M, Vaughn R, Lien J. Effects of Kinesio taping on ankle proprioception. *J Sports Sci Med.*

- 2004;3(1):1–7.
22. Herrington L, Simmonds C, Hatcher J. Effect of Kinesio tape on proprioception at the knee. *J Athl Train*. 2005;40(2):S30.
 23. Aytar A, Ozunlu N, Surenkok O, Baltaci G, Oztop P, Karatas M. Initial effects of Kinesio taping in patellofemoral pain syndrome. *Isokinet Exerc Sci*. 2011;19(2):135–42.
 24. Callaghan MJ, Selfe J, Bagley PJ, Oldham JA. Effects of patellar taping on knee joint proprioception. *J Athl Train*. 2002;37(1):19–24.
 25. Sawkins K, Refshauge K, Kilbreath S, Raymond J. Placebo effect of ankle taping in ankle instability. *Med Sci Sports Exerc*. 2007;39(5):781–7.
 26. Chen X, et al. Effects of Kinesio taping after anterior cruciate ligament reconstruction. *J Orthop Surg Res*. 2024;19:112.
 27. Ghai S, et al. Effects of elastic taping on proprioception and balance in musculoskeletal conditions. 2024.
 28. Strong J, et al. Therapeutic taping and proprioceptive outcomes in lower-limb rehabilitation. 2022.
 29. Leptokaridis V, et al. Taping interventions and sensorimotor control in rehabilitation. 2021.