DOI 10.64108/imh.2025.1.1.11
UDC 615.82:796+796.015.8

KINESIOTAPING FOR THE PREVENTION OF SPORTS INJURIES OF THE SHOULDER IN OVERHEAD ATHLETES

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Abstract. Today, we are increasingly seeing an increase in physical activity and intensity of stress during the training and competition period in game sports. Shoulder injuries are the third most common musculoskeletal sports injuries after back and neck injuries. Therefore, the search for injury prevention tools that will help to avoid or minimise injuries while increasing the functional capabilities of the musculoskeletal system remains relevant.

Kinesiotaping is considered to be one of the physical therapy methods aimed at supporting and stabilising the musculoskeletal system without limiting the range of motion, which allows this method to be used in the prevention of sports injuries. There are contradictory data in the scientific literature on the effectiveness of kinesiotaping in the prevention of sports injuries of the shoulder, especially for overhead athletes.

Objective. To analyse the effect of kinesiotaping on the prevention of sports injuries of the shoulder joint in athletes according to scientific sources.

Materials and methods. To review scientific sources on the problem of kinesiotaping in sports, we used a search in the scientometric databases Web of Science and Scopus in the PICO format. The following research question was formulated: «Is kinesiotaping effective in the prevention of sports shoulder injuries in overhead athletes?».

Results and discussion. Kinesiotaping is considered as one of the physical therapy methods aimed at supporting and stabilising the musculoskeletal system without limiting the range of motion. Research results indicate potential positive effects of kinesiotaping.

The works we have selected show that kinesiotaping is used to prevent sports injuries, improve function in individual joints, and improve physical qualities in athletes, etc. However, the conclusions are quite controversial: there is both a positive effect of kinesiotaping and its absence. The debate about the evidence for the use of kinesiotaping continues.

We agree with the conclusions of the systematic reviews we analysed that the contradictory results of the studies require high-quality scientific research on the possibility of kinesiotaping's impact on risk factors for sports shoulder injuries.

Conclusions. Kinesiotaping is considered as one of the means of physical therapy used for the prevention and rehabilitation of shoulder injuries. So far, the effectiveness of kinesiotaping in the prevention of sports injuries of the shoulder among sportsmen of game sports is not sufficiently studied. Along with studies that recommend kinesiotaping, there are opposing conclusions about the lack of effect of kinesiotaping in the prevention of sports injuries.

Keywords: prevention of sports injuries, shoulder joint injuries, physical therapy means, game sports, athletes, range of motion, kinesiology taping, shoulder joint instability.

Introduction. Today, we are increasingly seeing an increase in physical activity and intensity of stress during the training and competition period in game sports. Shoulder injuries are the third most common musculoskeletal sports injuries after back and neck injuries. Therefore, the search for injury prevention tools that will help to avoid or minimise injuries while increasing the functional capabilities of the musculoskeletal system remains relevant.

Over the past few decades, kinesiotaping has gained popularity among physical therapists and doctors and is used by them for various injuries and diseases associated with motor disorders in osteoarthritis [1], stroke [2, 3], hemiparesis in children with cerebral palsy [4], shoulder and elbow injuries [5], pain in muscles and joints [6, 7] etc.

Considerable attention is paid to kinesiotaping as one of the methods that potentially helps to optimise the func-

tioning of joints, in particular the shoulder joint, in overhead athletes. Due to its physiological effects, kinesiotaping is increasingly being used to prevent sports injuries. However, there are contradictory data in the scientific literature on its effectiveness: alongside studies that confirm the positive impact of kinesiotaping, there are also those that have not found statistically significant changes in the studied indicators.

Rationale for the research. Kinesiotaping is considered as one of the physical therapy methods aimed at supporting and stabilising the musculoskeletal system without limiting the range of motion. Research results indicate potential positive effects of kinesiotaping. For example, Kirmizigil B. and co-authors found that this method helps to restore muscle function in pain, improves horizontal jumps and dynamic balance [7]. Similar results were obtained by Mendez-Rebolledo G. and co-authors, who point to the positive effect of kinesiotaping on the performance of athletes during jumps [8]. Regarding the effect of kinesiotaping on joints, Chang H.Y. and co-authors note that the preventive use of this method improves dynamic balance and reduces ankle range of motion limitations in healthy athletes [9]. Some studies have confirmed the positive effect of kinesiotaping on the muscle strength of the internal and external rotators of the shoulder, but its effectiveness in reducing pain remains controversial.

Despite these studies, the effectiveness of kinesiotaping remains a controversial issue. In particular, there are a number of studies that do not confirm its significant impact on key physiological indicators. For example, Sarvestan J. and co-authors found that prolonged use of ankle kinesiotaping can increase the moment of internal rotation of the knee joint, which increases the risk of knee injuries during landing [10]. Similarly, Park J. and Kim T. concluded that there was no significant effect of kinesiotaping on the prevention of pain in ankle sprains [11].

Thus, despite the existence of studies confirming the positive effect of kinesiotaping on the functional state of the musculoskeletal system, its effectiveness as a method of rehabilitation and prevention of sports injuries remains insufficiently proven. The issue of prevention of sports injuries of the shoulder in athletes is insufficiently studied, which requires further research in this area.

Objective. To analyse the influence of kinesiotaping on the prevention of sports injuries of the shoulder joint in athletes according to scientific sources.

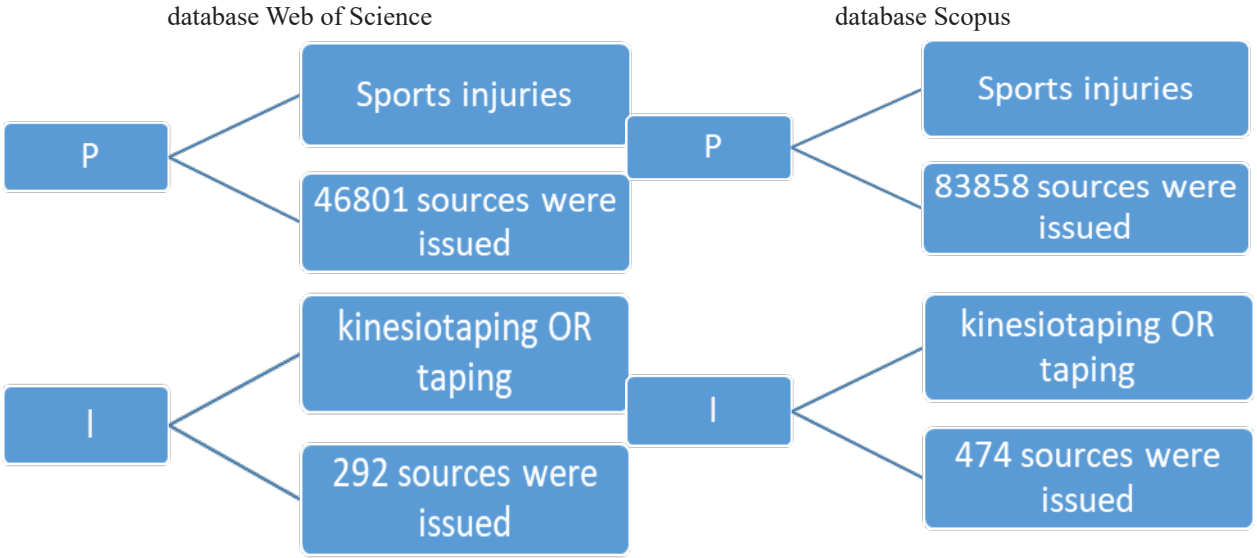
Materials and methods. To review scientific sources on the problem of kinesiotaping in sports, we used a search in the scientometric databases Web of Science and Scopus in the PICO format. The following research question was formulated: «Is kinesiotaping effective in the prevention of sports shoulder injuries in overhead athletes?» (table 1).

Table 1.

Formulation of the research question in the PICO format

P	I	C	O
Athletes of game sports / athletes overhead	Kinesiotaping / Kinesio taping	Sports injuries	Prevention

Figure 1 shows the algorithm for searching for scientific sources on the problem of kinesiotaping in sports in the PICO format in the scientometric databases Web of Science and Scopus.



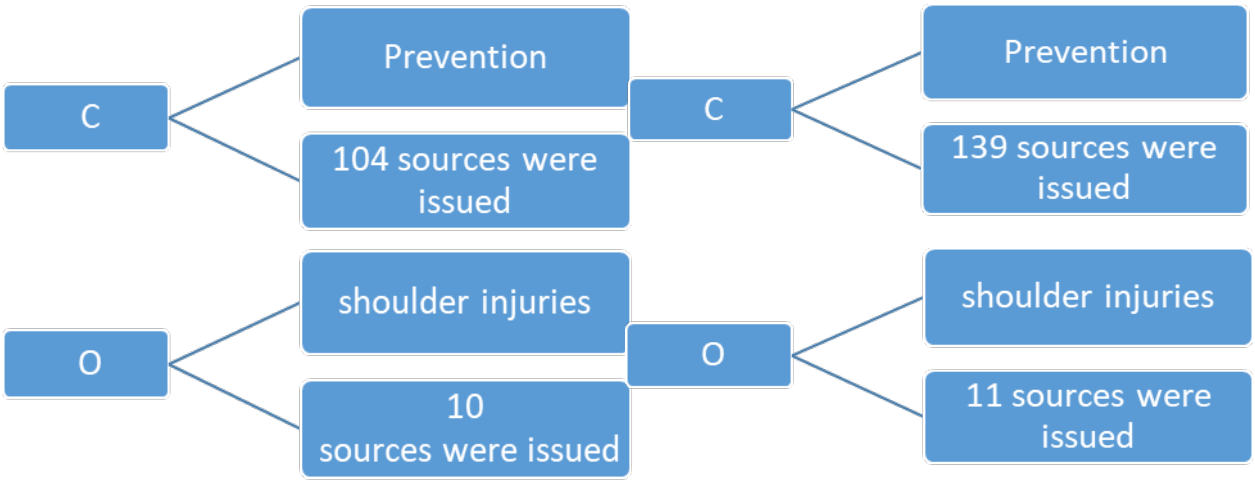


Fig. 1 Diagram of the algorithm for selecting scientific sources from scientometric databases based on the PICO principle (February 2025).

Two groups were identified among the scientific sources: the first – systematic reviews / meta-analysis, the second – pilot and randomised clinical trials. The selection scheme is presented in Fig. 2.

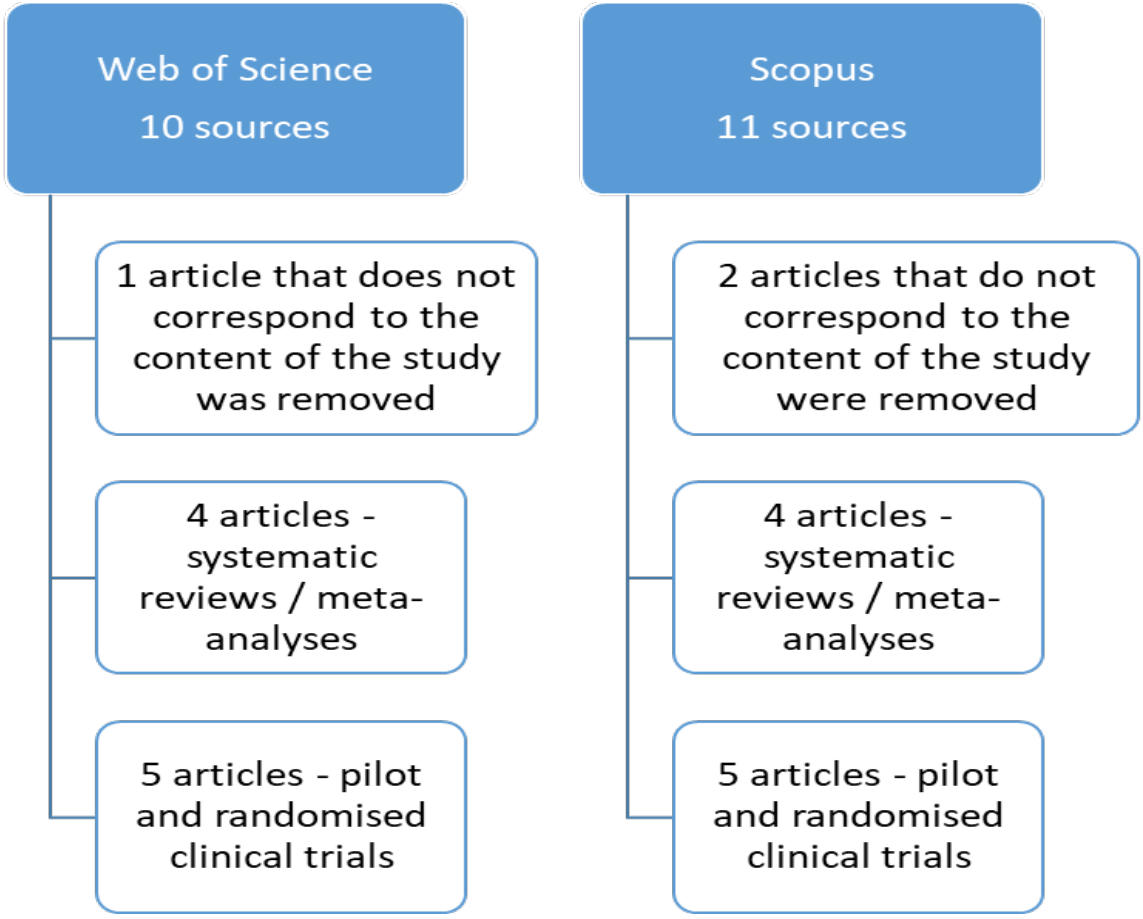


Fig. 2. Division of sources into groups.

Among the scientific articles of the first group, three articles were repeated in these databases, and among the articles of the second group – four. Thus, 6 articles with pilot and randomised study designs [3, 12-16] and 4 systematic reviews were analysed [5, 17-19].

Results and discussion. Among sports injuries of the shoulder among overhead athletes, the most common are shoulder joint instability, dislocations, and frozen shoul-

der, often accompanied by pain. Thus, Fink Barnes L.A. et al. note that anterior shoulder dislocations are common among young athletes [20]. Other researchers have also argued that when a shoulder is dislocated, the athlete is at high risk of recurrent episodes of instability [21]. According to Myklebust G. et al. 36% of handball players with pain missed matches, and 68% to 76% of these athletes reported changes in their game, including a decrease in throwing speed [22].

The studies we have selected show that kinesiotaping is used to prevent sports injuries, improve function in individual joints, and improve physical performance in athletes, etc. For example, Saran M., Pawaria S., and Kalra S. studied the combined effect of kinesiotaping with other means on fast bowlers with mild shoulder instability. It was concluded that a rehabilitation protocol consisting of combined kinesiotaping, plyometrics and a conventional protocol may be useful in improving performance-related measures of physical qualities that affect sport performance in bowlers with mild shoulder instability [16].

There is a similar conclusion in two papers by Alam S. et al., and Williams S. et al. regarding the significant effect of kinesiotaping on muscle strength, in particular, internal and external rotators of the shoulder, but not on shoulder pain [12, 18].

A study by Naderi A. et al. shows that adding kinesiotaping to exercise in swimmers can be beneficial in improving static and dynamic posture, as well as relieving pain in the short term [15].

Unfortunately, the effectiveness of kinesiotaping for the prevention of sports injuries of the shoulder has not yet been fully proven, so this tool is not included in the list of evidence-based rehabilitation methods. Along with studies that recommend kinesiotaping, there are opposing conclusions that state that kinesiotaping does not significantly affect the studied indicators.

Ghozy S. et al. have mixed opinions on kinesiotaping scan findings in shoulder pain. Scientists argue that there is insufficient evidence to support the use of kinesiotaping in clinical practice for the treatment of shoulder pain, but there is also some evidence of its benefit as an adjunctive treatment for shoulder pain syndromes [23]. In their study, Fong SM. et al. showed that the use of kinesiotaping did not provide direct benefits in improving functional activity of the shoulder girdle muscles and sports performance in amateur badminton players with shoulder impingement syndrome [24].

Thus, the debate over the evidence-based use of kinesiotaping continues. We agree with the conclusions of the systematic reviews we analysed that the contradictory results of the studies require high-quality scientific research on the possibility of kinesiotaping's impact on risk factors for sports shoulder injuries.

Conclusions. Kinesiotaping is considered as one of the means of physical therapy used for the prevention and rehabilitation of sports injuries of the shoulder. So far, the effectiveness of kinesiotaping in the prevention of sports injuries of the shoulder has not been sufficiently studied. Along with studies recommending kinesiotaping, there are opposing conclusions about the lack of effect of kinesiotaping in the prevention of sports injuries.

Therefore, the study of the preventive effect of kinesiotaping in shoulder joint instability, frozen shoulder and pain progression requires further research. In our future work, we plan to investigate the effect of kinesiotaping on such a risk factor for sports injuries of the shoulder in sports athletes as shoulder joint instability.

Conflict of interest. The authors declare that they have no conflict of interest in relation to this study, including financial, personal, authorship, or any other conflict that could affect the research and its results presented in this article.

Financing. The study was conducted without financial support.

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УДК 615.82:796+796.015.8

КІНЕЗІОТЕЙПУВАННЯ У ПРОФІЛАКТИЦІ СПОРТИВНИХ ТРАВМ ПЛЕЧА СЕРЕД АТЛЕТІВ ІГРОВИХ ВИДІВ СПОРТУ

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Резюме. Сьогодні ми все частіше спостерігаємо збільшення фізичних навантажень та інтенсивності навантажень у тренувальний та змагальний період в ігрових видах спорту. Травми плеча займають третє місце серед спортивних травм опорно-рухового апарату після травм спини та шиї. Тому залишається актуальним пошук засобів профілактики травм, які допоможуть уникнути або мінімізувати травматизацію при підвищенні функціональних можливостей опорно-рухового апарату, залишається актуальним.

Кінезіотейпування розглядається як один із методів фізичної терапії, спрямований на підтримку та стабілізацію опорно-рухового апарату без обмеження діапазону рухів, що дозволяє застосовувати цей метод у профілактиці спортивних травм. У науковій літературі існують суперечливі дані щодо ефективності кінезіотейпування у профілактиці спортивних травм плеча, особливо для спортсменів ігрових видів спорту, від яких гра вимагає постійної роботи руками над головою.

Мета дослідження. Проаналізувати дослідження впливу кінезіотейпування на профілактику спортивних травм плечового суглобу у спортсменів за даними наукових джерел.

Матеріали і методи. Для огляду наукових джерел застосований пошук у наукометричних базах даних Web of Science і Scopus за форматом PICO.

Результати дослідження та їх обговорення. Кінезіотейпування вважається одним із методів фізіотерапії, спрямованим на підтримку та стабілізацію опорно-рухового апарату без обмеження діапазону рухів. Результати досліджень свідчать про можливі позитивні ефекти кінезіотейпування.

Відібрані нами роботи показують, що кінезіотейпування використовується для профілактики спортивних травм, покращення функції окремих суглобів, підвищення фізичних якостей у спортсменів тощо.

Ми погоджуємося з висновками проаналізованих нами систематичних оглядів про те, що суперечливі результати досліджень вимагають якісного наукового дослідження можливості впливу кінезіотейпування на фактори ризику спортивних травм плеча**.**

Відповідно до наукових досліджень, що обрано нами за алгоритмом пошуку PICO, показано, що кінезіотейпування використовується і для профілактики спортивних травм, і для поліпшення роботи в окремих суглобах, і для покращення фізичних якостей у спортсменів, і для профілактики прогресування болю тощо. Але висновки досить суперечливі: спостерігається як позитивний ефект кінезіотейпування, так і його відсутність. Дискусійність щодо доказовості застосування кінезіотейпування у профілактиці спортивних травм плеча серед спортсменів ігрових видів спорту триває.

Висновки. Кінезіотейпування розглядається як один із засобів фізичної терапії, що використовується для профілактики та реабілітації травм плеча. До сих пір ефективність кінезіотейпування у профілактиці спортивних травм плеча серед спортсменів ігрових видів спорту недостатньо вивчена. Поряд із дослідженнями, що рекомендують кінезіотейпування у профілактиці спортивних травм, існують висновки щодо відсутності його ефекту. Тому дослідження профілактичного впливу кінезіотейпування при нестабільності плечового суглобу, «замороженого» плеча та прогресування болю у спортсменів ігрових видів спорту потребує подальших досліджень.

Ключові слова: профілактика спортивного травматизму, травми плечового суглобу, засоби фізичної терапії, ігрові види спорту, спортсмени, амплітуда рухів, кінезіотейпування, нестабільності плечового суглобу.

Стаття надійшла в редакцію 03.03.2025 р.
Стаття прийнята до видання 02.06.2025 р.