

STUDY ON THE RECOVERY OF THE ANKLE SPRAINS OF THE ATHLETES

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Keywords: sprain, rehabilitation, athlete.

Abstract: The recovery of the athletes with ankle sprain is essential for physical therapy program to relieve pain, for mechanical protection of the ankle joint, to recover the normal gait and for socio-professional integration of the athlete.

The purpose of this study is to find ways of applying early and systematically the kinesiology methods and procedures by which we can restore as much and faster functional capacity of the leg.

Introduction: Medical rehabilitation is a complex activity which aims to restore functional capacity reduced or lost by someone, development and adaptation compensatory mechanisms that would ensure the future possibility of self, active living, economic and social independence.

Today sequelae of traumatic ankle represent an anatomical and functional complex designed to support the entire weight of the body and at the same time to ensure the gait on any surface. The foot has, therefore, a static role and a dynamic role of almost equal importance being the terminal lever of locomotion.

The recovery of athletes with ankle sprain is essential for physical therapy program to relieve the pain, for mechanical protection of the ankle joint, to restore normal gait and for socio-professional integration of the athlete. Also need further study, theoretically and practically, in terms of treatment by physical therapy to slowdown the development process of the disease.

The purpose of this study is to find ways of applying early and systematically the kinesiology methods and procedures by which we can restore as much and faster functional capacity of the leg.

Due to the fact that the athletes are involved more in cases of sprains of the ankle caused by falls or blows trauma, solved by orthopedic and surgical procedures, resulting after immobilization in stiffness of the tibia-tarsal joint, I thought to approach this theme to athletes.

Clinically speaking, sprains are divided into mild, moderate and severe. In mild sprains, the capsule and ligaments are stretched but not

broken, and the joint is stable, in severe sprains, there is capsular-ligaments ruptures with or without pulling out a piece of bone on which that is inserted.

In terms of anatomy and pathology the sprains are classified into three degrees of severity: the grade-I, grade II and grade-III. Some authors classify and sprains of grade IV, in which the tearing of the ligament at the bone insertion occurs.

Ankle injuries are the most common locations of all musculoskeletal injuries, sprains holding the first place and on second place are the fractures in the respective categories. Their great frequency is explained by the fact that at this level occur multiple movements controlled by the mobility needs of the leg, exposed to different traumatic factors acting in different conditions.

Materials and methods

Research hypotheses:

In carrying out this study we considered to demonstrate the following hypotheses:

- To what extent did the physical therapy treatment causes a decrease of the recurrence of ankle sprains on medium and long term?
- To what extent the specific means of physical therapy may lead to removal of eventual complications that may occur?

The purpose and objectives of the research

This study considers the recovery by movement of the injured ankle; the goals of the recovery are pain relieving, mechanical protection of the ankle joint, to restoring of the normal gait and socio-professional integration of the athlete.

The aim of this study is to verify the hypothesis made and based on the results obtained to contribute to improving recovery. In the treatment of posttraumatic sport injuries, the main goal is represented by gaining the basic quality of the joint and muscle (mobility and muscle strength).

In this study we considered the following objectives:

- Consulting the literature to determine the current level and the level at which the research is in this domain;
- Establishing research hypotheses and the methods by which they will be checked;
- Identification and selection of cases presented that serve to achieve the purpose and objectives;

- The organization of the concrete recovery activities sequencing necessary logics so that this activity should be based on the previous one and to prepare the next one;

- Recording the results and their interpretation to highlight the evolution of subjects;

- Writing a study containing the conducting final results of their research to popularize among specialists in physical therapy;

- Evaluation as objective, of the results and conclusions providing arguments for the continuation and extension of research;

Research methods

Throughout the study we have used a variety of methods to ensure the scientific foundations of theoretical basis and for the collection, recording and processing of data to support activity and normal results.

The scientific documentation method;

The observation method;

The survey method;

The method of measurement and evaluation

The proper organization of the study

The treatment regarding the recovery of ankle sprain is conditioned by two things:

1. Functional local recovering that addresses only the reflected consequences

of the joint and surrounding muscles.

2. Functional rehabilitation for reintegration of the injured segments joining all the possibilities of the sport specific motion.

Actual period consists of three stages:

1. Beginning with the first meeting and ends with removal after obtaining partial sensitivity to pain and joint mobility and after termination inflammatory processes.

2. Mobility recovery continues and ends after the recovered mobility

and strength, was of about 75%.

3. It is characterized by recovery of muscle strength and stability joint.

The three stages are successive overlap and are interdependent, which varies from one stage to another as the means used.

Results and discussions

Table 1 Evaluation of muscle strength, hypertonic evaluation and cardio-vascular

Evaluation		Normal	Initial	Intermediate	Final
Muscle strength		5	-3	+3	4
Cardio-vascular	F C	60-80 b / min.	60 b / min.	65 b / min.	70 b / min.
	TA	120/60 mm Hg	120/50 mm Hg	120/80 mm Hg	120/60 mm Hg

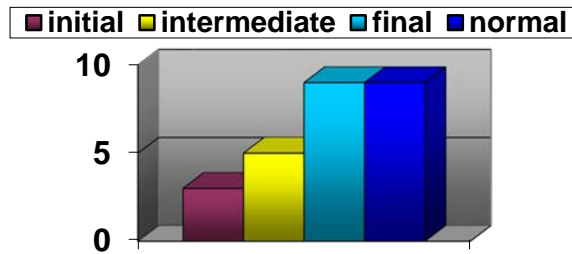


Figure 1 with values obtained in the evaluation of muscle strength

- To obtain values in the graph we denoted $F(-3) = 3$, $F(3) = 5$, $F5 = 5$, $F5 = 5$, where $F(-3)$, $F(+3)$, $F5$, $F5$ is the muscle strength of the patient.

Table 2 Evaluation of the ankle joint balance

Normal values of tibio-tarsal joint				Date of initial assessment 01/11/2011				Date of intermediate evaluation 11/10/2011				Patient evaluation after treatment 17/11/2011			
Passive		Active		Passive		Active		Passive		Active		Passive		Active	
Fl.	Ex.	Fl.	Ex.	Fl.	Ex.	Fl.	Ex.	Fl.	Ex.	Fl.	Ex.	Fl.	Ex.	Fl.	Ex.
20° - 27°	-40° - 47°	20° - 25°	-40° - 45°	18°	35°	14°	33°	23°	37°	17°	35°	26°	39°	20°	38°

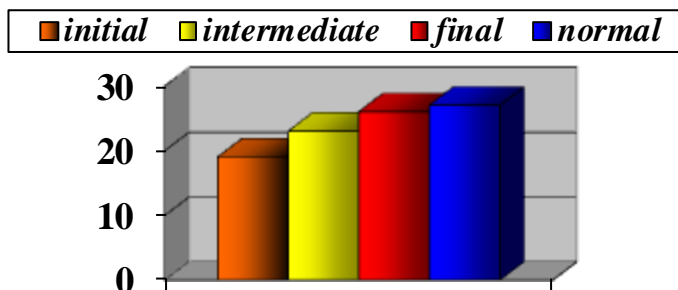


Figure 2 with the values obtained from passive mobilization of ankle flexion

- I represented in orange color the initial value of degrees of flexion of the ankle
- I represented in yellow color the intermediate value of degrees of flexion of the ankle
- I represented in red color the final value of degrees of flexion of the ankle
- With dark blue I represented the normal value of the degrees of flexion of the ankle

Following the recovery program that was established it has been observed a substantial increase in the degrees of flexion of the ankle during the passive mobilization of the joint.

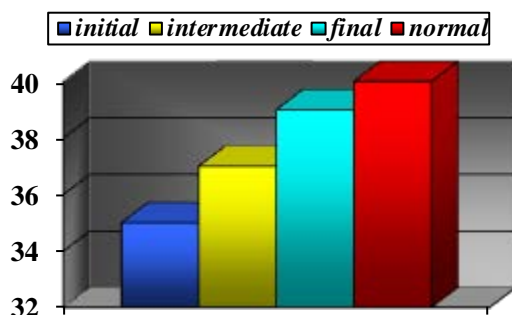


Figure 3 with values obtained during passive mobilization of ankle extension

- The normal level of the ankle joint mobility extension is represented by red.
- The level of mobility in extension of the ankle joint during the initial assessment is colored in blue.

- The level of mobility in extension of the ankle joint during the intermediate evaluation is colored in yellow.
- The level of mobility of the ankle joint in extension during the final assessment is given by the color blue.

Following the course of patient rehabilitation program it was observed a good increase in the joint range of motion.

Conclusions

The results obtained during conduct of research I came to the following conclusions:

- Objectives have been achieved;
- After crossing a therapeutic program effectively the integration of athlete in competition was made much faster;
- The recovery in athletes requires a shorter time and this is preventing the interruption sports training;
- Through applied kinetic treatment I received:
 - Positive results are maintained long-term and average term;
 - Control the inflammatory process;
 - Restore joint mobility;
 - Obtaining joint stability;

Bibliography:

1. Baciuc C. – Aparatul locomotor; Editura Medicală București, 1981.
2. Iroslav K. – Fizio-kinetoterapie și recuperarea medicală în afecțiunile aparatului locomotor, Editura Medicală, București, 2007.
3. Sbenche T. – Kinesiologie profilactică, terapeutică și de recuperare, Ed. Medicală, București, 1987.
4. Voiculescu I. C. – Anatomia și fiziologia omului, Ed. Medicală, București, 1971.

Titlu: Studiu privind recuperarea entorsei de gleznă la sportivii de performanță.

Cuvinte cheie: entorsă, recuperare, sportiv.

Rezumat: În recuperarea sportivilor de performanță cu entorsă de gleznă, este indispensabil programul de kinetoterapie pentru combaterea durerii, pentru protejarea mecanică a articulației gleznei, pentru reluarea normală a mersului și pentru integrarea socio-profesională a sportivului.

Scopul acestei lucrări este găsirea unor modalități de aplicare precoce și sistematică a mijloacelor și procedurilor kinetoterapeutice, prin care să putem restabili cât mai mult și mai rapid capacitatea funcțională a piciorului.

Titre: Etude sur la reconstitution de la cheville entorses des athletes.

Mots-clés: entorse, réadaptation, athlétique.

Résumé: La récupération des athlètes ayant entorse de la cheville est indispensable pour la thérapie physique pour soulager la douleur du programme, pour la protection mécanique de l'articulation de la cheville, pour récupérer la démarche normale et insertion socio-professionnelle de l'athlète.

Le but de cette étude est de trouver les moyens d'application précoce et systématique les méthodes de kinésiologie et des procédures par lesquelles nous pouvons restaurer la capacité autant plus rapide et fonctionnelle de la liaison.