



RESTORATION OF SPORTS CAPACITY OF FOOTBALL PLAYERS AT THE FINAL STAGE OF REHABILITATION

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ABSTRACT

The article outlines the methodological features of training and rehabilitation exercises for injured football players after arthroscopic intervention on the knee joint.

INTRODUCTION

The final stage of recovery for injured athletes has its own characteristics due to the following circumstances (Valeev N.M. 2009)

1. The results of morphofunctional restoration of the injured part of the musculoskeletal system of football players, achieved during the previous stages of rehabilitation, on average up to 85-90% of the initial level, instills in the athlete confidence and hope for the speedy completion of the entire rehabilitation process and his return to the team.

2. As a result of such a psychological attitude, an athlete may strive to speed up his training, using physical activity that still exceeds the morphofunctional capabilities of his musculoskeletal system during this period - and this is fraught with the occurrence of repeated injuries, and as a result, acceleration may not occur, but a slowdown in the return to full-time activities.

3. This stage, unlike the previous ones, is distinguished by a different structure of training sessions, an increase in both the volume and intensity of the work performed, which places higher demands on the energy supply systems of the body, and the level of their functional capabilities is most often still insufficient. Therefore, the role of warm-up increases, which is designed to increase this level of vegetative functions of the body.

4. Perhaps the most important of the circumstances is that in a number of cases the athlete at this final stage suddenly discovers that he finds himself in free swimming, that is, supervision, and control over his activities suddenly disappears, since the media and teachers stopped doing it, in the team to which he returns, there is no one competent in his subsequent preparation, because the coach is completely busy preparing healthy athletes for matches, and he also has the proper knowledge, even if he has time. No. Perhaps a number of developments carried out by us at this stage will help injured athletes and those who take care of them to determine which direction to move in order to achieve their intended goal - returning to sports.

Final stage tasks.

We identified the following tasks for this stage:



- restoration of combined physical qualities - for football players - these are speed-strength qualities and speed endurance;
- restoration of motor skills and abilities inherent in sports specialization, in this case - football;
- further restoration of general endurance and, on its basis, gaming endurance;
- inclusion of injured athletes in the training process.

We further developed a scheme of training sessions according to the timing and direction of physical activity

(Table 1).

Scheme of training sessions: timing and focus of physical activity

| Direction of training sessions | Total days | Number of training days | Number of training sessions |
|---|-------------------|--------------------------------|------------------------------------|
| Restoration of physical qualities | 20 | 17 | 32 |
| Development of mobility in affected joints | 8 | 7 | 12 |
| Restoration and development of motor coordination | 10 | 8 | 10 |
| Restoration of motor skills and abilities | 18 | 16 | 28 |

METHODOLOGICAL FEATURES OF TRAINING AND RESTORATION CLASSES AT THE FINAL STAGE

Before classes, it is necessary to mobilize soft tissues. First of all, we paid attention to the complete restoration of mobility in the knee joint, in particular, we were engaged in restoring passive flexibility when bending the knee joint; this is necessary, since it is precisely this quality that is manifested when performing such a technique as tackling the ball in a "tackle". A deficiency in passive flexion at the beginning of training carries the risk of serious damage to the structures of the knee joint; to achieve passive flexion of the knee joint, static and dynamic stretching of the quadriceps, mixed hanging squats with a gradual increase in amplitude (to full) are performed. This result is usually achieved no earlier than 4-5 months after surgery. Various lunges and stops were also used. Lunges were carried out in various planes, then moved on to lunges with a rubber shock absorber. Exercises to develop the strength of the muscles surrounding the joint also occupied an important place.

Strength exercises are performed with a gradual increase in amplitude (up to full) and the amount of weight (up to 8¹⁰ RM). Priority is given to training the maximum strength of the "hamstrings". During this period, a rapid increase in thigh muscle mass continues. Therefore, it is necessary, especially for female football and basketball players, plyometric training, during which speed-strength capabilities are restored and players learn landing techniques, as well as fast running.

The most effective was the alternate use of strength and flexibility exercises (strength + flexibility + strength +...) this made it possible to achieve a change in the mobility of the working parts of the musculoskeletal system, speed up the recovery process between approaches, and



also avoid the consolidation of individual movements in the restored parts of the athlete's musculoskeletal system.

Much attention is paid to strengthening and developing weakened muscle groups. To do this, in the warm-up, athletes perform lateral walking with an extended step with straight legs with a rubber band on the hips for 3 to 7 minutes.

Jumping on one leg forward and to the side by 15 cm - with good shock absorption at start and landing - is performed until fatigue.

Restoration and development of speed and strength qualities

A significant place in the activities of sports players is occupied by speed-strength abilities and the degree of their development [1, 4, 7].

There are a number of methodological approaches to developing speed-strength qualities in athletes: the conjugate impact method, the variable method, the impact method. In sports games, the leading place in training should be aimed at developing "explosive strength" and the reactive ability of the neuromuscular system, which is achieved with the help of impact exercises (Matveev L.P., 4).

In this case, the following methodological rules should be taken into account [1, 2]:

- shock training must be preceded by a good warm-up with "working out" all working muscle groups and, more thoroughly, the muscles of the injured limb;

- the magnitude of the shock load is determined by the weight of the load and the height of free fall;

- the depreciation path should be as minimal as possible, but sufficient to create shock tension in the muscles;

- the dosage of the load is selected individually, but should not exceed 5-8 movements in one series.

In our training for the restoration and development of explosive strength in the overcoming mode, we used an exercise with weights of 20-30% of the maximum, in the first period 2-3 repetitions in a series (2 series). As strength increased in periods II and III, the number of repetitions increased to 3-5 per series (3 series in total). According to the recommendations of physiologists, training work to develop speed-strength qualities was planned immediately after rest.

In addition to exercises with weights, other types of exercises were widely used: starts and accelerations, jumping accelerations, running up stairs and uphill. It should be noted that the real expression of speed and strength occurs only in connection with specific motor skills (2).

Restoring and developing endurance

General endurance is necessary in sports games to develop general fitness and maintain its level. To restore and develop it, we used walking, running, work on a bicycle ergometer and a treadmill. The most important and necessary for basketball and football players is speed and jumping endurance.

To restore and develop speed endurance, we selected speed exercises that were performed repeatedly and for a longer period of time compared to exercises aimed only at developing speed.



To restore and develop jumping endurance, jumping exercises from the arsenal of track and field jumps were used, then small weights (belts with weights) were added. In conclusion, we moved on to exercises in which jumping was combined with technical techniques of sports specialization: for basketball - catching the ball while jumping, throwing the ball while jumping, picking up the ball from the backboard while jumping; in football - playing with a jumping head (bouncing and passing the ball to a partner). There is another type of endurance in sports games - gaming endurance. This is the ability of an athlete to play the entire game at a high pace without reducing efficiency.

Restoration of motor skills and abilities

Restoring specific motor skills for an injured athlete, essentially technical readiness, is a very important link in restoring sports performance [1, 5].

It is considered optimal to begin training to restore motor skills and abilities 3-4 weeks after ACL surgery, since the restoration of technique is closely related to the level of restoration of physical qualities. Taking into account the more rapid decline of the most recently acquired motor skills, it is necessary to begin targeted work on their restoration as early as possible.

And in this case, ideomotor exercises turned out to be very useful, followed by imitation exercises, and the most successful effect on this process is the repeated training method, which allows you to simultaneously restore and develop motor skills (abilities) and physical qualities. In this case, special attention should be paid to training coordination of movements and developing dexterity.

In our classes we used simulation and special preparatory exercises: juggling with a ball, first on a flat surface, and then as the skill was consolidated - on a balance platform, as well as throws, passes, dribbling, and jumping exercises.

| Days of the week | Time | Nature of training | Rehabilitation measures | Training time, min. |
|------------------|---------|--|-------------------------|---------------------|
| Monday | classes | Improving special endurance | FT, VM | 50 |
| | Morning | Technical and tactical training | VP, VM | 40 |
| Tuesday | Evening | GPP. Stretching and agility exercises | PRT, VM | 50 |
| | Morning | Improving the special qualities of an athlete | VP, VM | 40 |
| Wednesday | Evening | Individual training including special exercises for the injured limb | FT, VM | 50 |
| | Morning | Participation in a two-way game | PRT, VM | 40 |
| Thursday | Evening | Improving speed and strength qualities | VP, VM | 50 |
| | Morning | Technical and tactical training | VM | 40 |



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|----------|----------------------------------|--|-----------|----|
| Friday | Evening | GPP. Exercises for coordination, flexibility and dexterity | FT, VM | 40 |
| | Morning | Improving general endurance | VP, VM | 50 |
| Saturday | Evening | Pre-gamettraining | PRT, VM | 40 |
| | Morning | Participation in a two-way game | Sauna, VM | 50 |
| Sunday | Leisure. Restorative procedures. | | | |

Table 2

Approximate diagram of a weekly cycle of training sessions at the special preparatory stage

RESEARCH RESULTS

In order to assess the restoration of motor capabilities of the studied athletes, their special preparedness was tested.

A. The tests chosen for injured football players were: 30 m run, sec. Slalom run 20 m, sec., standing long jump, cm, dribbling the ball 10 m, sec.

The data obtained indicate a consistent improvement in test results, in general, characterizing the motor qualities of football players. Comparing with some results of testing of healthy athletes, we can note a confident increase in indicators, so if at the beginning of the stage there was -56.8% of the results of healthy football players, then by the end of the stage it became 82.4% - a visible increase in the recovery of indicators of special preparedness of injured football players.

Table3

Results of motor testing of football players at the third (last) stage of rehabilitation

| Motor tests | Beginning of the stage Completion of the stage | Completion of the stage |
|------------------------------|---|-------------------------|
| 30m run, sec. | 4,5±0,4 | 3,8±0,3 |
| Slalom run 20m, sec. | 4,3±0,2 | 3,6±0,1 |
| Standing long jump, cm | 248±36,2 | 305±48,7 |
| Dribbling the ball 10m, sec. | 10,3±1,4 | 7,6±0,9 |

B. The following tests were chosen for basketball players: running 30 m, sec., vertical jump, cm and dribbling the ball 20 m, sec.

Table4

Results of motor testing in injured basketball players

| Motor tests | Beginning of the stage | Completion of the stage |
|----------------------|------------------------|-------------------------|
| 30m run, sec. | 4,2±0,8 | 3,6±0,7 |
| Vertical jump, sec. | 34,8±7,5 | 48,2±9,4 |
| Dribbling at 20m, cm | 6,8±1,2 | 5,6±1,7 |

The table shows the same consistent increase in positive results, which, just like with injured football players, indicates an improvement in special preparedness indicators.

CONCLUSION



Thus, the final stage of restoring the performance of athletes differs significantly from the previous stages, both in the direction of the influences and in the range of means and methods used in this. The main goal of this stage is the restoration of the special preparedness of injured football players and from a skillful, rational combination of training means and methods typical for the training of football players with therapeutic and rehabilitation methods, and this is a set of special exercises and strict adherence to the dosage of the planned effects.

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