UDC: 796.89 **DOI: 10.14526/2070-4798-2022-17-3-59-63**

The influence of physical culture on spine recovery after injuries in strength sports

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Abstract: Weight-lifting is an Olympic kind of sport. During the last decades its popularity in the world and the level of athletes' professionalism achieved significant results. There is a considerable amount of research works in the sphere of athletes' physical conditions development. Most part of these works are connected with strength endurance development, other physical characteristics are not paid much attention to, including recovery after spine injuries. At the same time in all kinds of sport the problems of traumatism and physical culture influence on recovery after injuries and physical loads dosage are very important during exercises fulfillment. ***Scientific novelty*** of the research includes studying the influence of physical culture on recovery after spine injuries. ***Practical relevance*** is in substantiation of therapeutic physical training introduction into recovery process after spine injury. ***Materials.*** The article presents the results of the authors' research works concerning the influence of physical culture on recovery after spine injuries in strength sports, including weightlifting. ***Research methods***. Information sources analysis and summarizing, questioning among the respondents. ***Results.*** The authors considered the main reasons for spine injuries, therapeutic physical training (massage) use at the stage of recovery after a spine injury. It was stated that during spine injury it is necessary to use therapeutic physical training for quick rehabilitation and quick return to the future qualitative training for competitive activity. For this purpose realization it is reasonable to prescribe massage and self-massage. They have a positive influence on intensive recovery after a spine injury. ***Conclusion***. It was revealed that during therapeutic physical training use blood flow to massaged part of the body improves and healing process is accelerated.
Keywords: strength sports, physical load dosing, injury, recovery, training, therapeutic physical training, spine, massage.

For citation: Evgeniy V. Melnikov*, Roman V. Edigarev, Aleksey S. Galunin, Vladimir M. Petrov. The influence of physical culture on spine recovery after injuries in strength sports. Russian Journal of Physical Education and Sport. 2022; 17(3): 49-52. DOI: 10.14526/2070-4798-2022-17-3-59-63.

Introduction

Nowadays a great amount of scientific research works are carried out in the sphere of sport. Scientists created great scientific base. It provides high achievements sport with knowledge, necessary for more effective training methodologies formation in order to get ready for the competitions. Nowadays there are no sports disciplines, which are not studied [Pronin, 2022, p. 312-315].

Weight lifting is not an exception. During the last decades its popularity in the world and the level of athletes' professionalism achieved significant results. It should be noted that weightlifting is an Olympic kind of sport. There is a considerable amount of research works in the sphere of athletes' physical conditions development. Most part of these works are connected with strength endurance development, other physical characteristics are not paid much attention to, including recovery after spine injuries. In the present research work we would pay attention to the reasons for spine injuries, the influence of physical culture on rehabilitation after spine injury [Pronin, 2022, p. 54-58]. In all kinds of sport the problems of traumatism and physical culture influence on recovery after injuries and physical loads dosage are very important during exercises fulfillment. Among the qualified athletes very often we see traumatic radiculitis. It happens because of physical loads dosage violation.

Materials and methods

During scientific sources analysis, questioning among the respondents (the leading coaches of sports school for children and teen-agers of the Olympic reserve named after V.F. Kraevskiy), we didn't solve set in our research work problem completely. It means that the rehabilitation after spine injuries demands therapeutic physical training use [Pronin, 2022, p. 344-346].

We studied the main factors. They can cause spine injuries, rehabilitation of an athlete after spine injuries with the help of massage and self-massage and also the questions of physical loads dosage.

Results and discussion

Technical and functional unpreparedness of an athlete is the reason for different injuries, especially in strength sports [Pronin, 2022, p. 331-335].

In strength sports physical loads dosing plays an important role. There are different volumes of trainings. They can be great, average and small.

Great volume includes the following:

- training loads, which include from 7 till 14 and more tons. An athletic implement of the average weight is an effective index for these kinds of loads: the more the average weight is, the higher is the load;

- pre-start (pre-competitive) training with the weight from 80% and better achievements. The load has a high character if it includes more maximal weight lifts – the training. It combines all mentioned above components, has the greatest influence on an athlete's physical abilities and organism;

- such kind of influence on an organism have consequent trainings. They are close to mentioned above loads in volume and intensity. 25-45% decreased training loads are the average and small ones. Maximal loads increase functional abilities of an athlete. However, it should be mentioned that after pre-competitive trainings an organism needs more time for rehabilitation. It decreases the risk of getting an injury.

Only the athletes, who have great experience, competitive practice of All-Russian and International degrees, can use great loads in their trainings. During the first years of trainings such loads are forbidden.

The range of the initial and main training weight is very important.

Let's consider typical injuries. They are common among the athletes in strength sports.

The most typical injury in strength sports is a spine injury. The main reason for the mentioned above injury is a strong bending during weight lifting. In this case there is pressure on intervertebral disks, vertebras change and nerve roots inflammation.

At the same time, high result is important for all athletes, in terms of modern technique and tactical training it is impossible to avoid excessive bending [Pronin, 2022, p. 231-235].

The research works showed that pain in the waist happen as a result of frequently fulfilled bending forward, especially after pre-competitive trainings (control trial). There an athlete fulfills exercises with 90-95% of physical activity. Questioning among the respondents showed that an athlete, who was involved into strength sports more than 4 years, as a rule, got a spine injury [Pronin, 2022, p. 26-30]. An athlete should know own organism, how different exercises influence it, including additional exercises, in order to avoid serious injuries of a spine or decrease their amount [Pronin, 2022, p. 88-94].

Many athletes after the trainings with maximal loads make forward bends and relax the waist. This exercise professional athletes fulfill with the kettle balls (24-32 kg). It was also stated that each training should end with a long hang using several attempts at a gymnastic bar with an additional weight (in this case waist muscles stretch) [Pronin, 2021, p. 357-360].

In case of spine injuries it is necessary to use therapeutic physical training for quicker rehabilitation and future qualitative training for competitive activity. For this purpose it is reasonable to prescribe massage and self-massage [Pronin, 2022, p. 284-288].

During therapeutic physical training use in a form of massage blood flow in the injured part of the body improves. Good blood flow in the injured part of the body is very important for the process of recovery intensification and a quick rehabilitation. [Pronin, 2022, p. 245-251].

Most coaches, in particular coaches of sports school for children and teen-agers of the Olympic reserve named after V.F. Kraevski, use local massage on waist before important trainings and directly before the start. In the opinion of professional athletes, massage can replace strength oriented training, especially if an athlete got micro trauma.

The typology of massages is diverse. For the first time the typology of massages for athletes was offered by a Soviet scientist, Doctor of medical sciences I.M. Sarkizov-Serazini. He introduced into sports practice such kinds of massage, as hygienic, training, preliminary, reconstructive, therapeutic.

Hygienic massage is necessary to use in the morning after sleep. Training massage is important after the training. Reconstructive massage is considered quick and is used during the training, after a strong waist bending. Preliminary massage is necessary to use directly before the competitions. It has a positive influence on nervous system of an athlete.

Massage can be general and local. The leading coaches use general massage during the trainings and for general rehabilitation in all other cases they

use local massage.

Massage techniques are divided in the following way: stroking massage, chaotic movements, circular rubbing, injured zone foulage, pressing, chopping, jolting. In case of general massage it is reasonable to use mentioned above techniques. During the competitions before the start it is necessary to use chopping, circular rubbing, stroking massage, in massage therapy - stroking massage and rubbing with special massage oil.

Such factor as hygiene is very important. An athlete's skin integument should be clean.

Among the leading athletes such trauma as traumatic radiculitis is very common. It is reasonable to realize lumbar zone massaging using stroking massage without strong pressure.

Correct massage procedures lead to athlete's physiological state improvement, nervous system, blood flow normalization and the injured part of the spine recovery.

Information sources analysis, survey among the respondents and the leading athletes showed that athletes should use self-massage. Each athlete should study the basis of self-massage and use it during the trainings, competitions. Nowadays more often massage with different tools is used, for example with a massage log [Pronin, 2021, p. 228-231].

Conclusion

It was revealed that in case of spine injury it is necessary to use therapeutic physical training for quick rehabilitation and qualitative training for competitive activity. In case of spine injury it is reasonable to prescribe massage and self-massage. It was also stated that massage has a positive influence on rehabilitation acceleration after as pine injury. During therapeutic physical training use, in a form of a massage, blood flow to massaged part of the body improves and healing process is accelerated.

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Submitted: 20.08.2022

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