

Stretching, An Effective Method of Improving the Elasticity of Muscle at The Aerobic Team From University of Bucharest



literature

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ABSTRACT

As theorized in literature, stretching is the deliberate act of lengthening of muscles, in order to increase muscle flexibility and/or joint range of motion.

Mobility represents the capacity of making ample movements, in a passive or active way and it refers especially to the articulations. Stretching is a new scientific method that enables mobility training simple and effective.

Under aerobic gymnastics, musculoskeletal is requested the most, especially in the joints. Joint mobility, one of the badly needed motric qualities in aerobics, without adequate mobility cannot accede to performance.

The purpose of this research study is the optimization of the joint mobility development strategies, by identifying the most efficient operational structures, and convert them into preparation programs based on the method.

The individualized application of the intervention procedures through stretching, related to the quality and efficiency evaluation tests of the training process, demonstrates an increase in the quality of training for the experimental group.

INTRODUCTION

Being useful in motric activities, mobility has the same interest as the other motric qualities, being one of the most important parameters in obtaining performance. Practicing aerobics demands a great development of flexibility, first of all, for executing correctly the basic technique.

Mobility is the capacity of executing ample movements in one or more articulations under the action of some external forces (Weineck, J., 1992, pg 272).

Mobility represents the capacity of making ample movements, in a passive or active way and it refers especially to the articulations.

There are factors that limit the mobility: the type and structure of the articulations, the muscular capacity. These and other factors make us conclude that mobility is considered a motric skill, situated at the border of coordinative and conditional skills (Manno, R. 1996).

Mobility has to be practiced on a daily basis, in favorable conditions, being known that you can lose it very quickly (Dragnea, A.)

Stretching allows, also, taking advantage of what is called "stretching backwards reflex" which founds its origin in tendons.

Among the plenty of stretching methods only 3 of them have a great utility (Solveborn, 1983):

1. The passive-static stretching or "the resistive stretching" is useful in maintaining the stretch position divided in:
 - easy stretching- extreme stretching 10-30" while it should be a diminution of muscular tension, while the muscle has the time to touch the greatest possibility of extension.
 - intensive stretching- the muscle should be stretched and hold the position for 10-30 seconds. Pain must be avoided.
2. Relaxing-tension or stretching under an unconscious inhibition. The stretching muscle is being maintained in a max. tension for 10-30 sec and then is being relaxed for 2-3 sec before stretching it 10-30(60) sec.
3. Relaxing-tension or stretching under a conscious inhibition.

Conscious inhibition is being used when a muscle is contracted.

If contraction of agonists is high, the higher is the relaxation of the antagonists (Netolinschi, M., 2002).

Stretch Anderson, B. (1990), Frenette, J., (1989) consists of passive stretching of muscles for 30-60s with a partner, other than the periarticular muscles or appliances to support and maintain position passively.

Technology, today method, stretching, used to increase joint mobility, is based on both elastic and contractile properties of muscle and the stretch reflex action mediated reflex time facilitator mediated neuromuscular and trends Golgi receptors.

Proprioceptive neuromuscular facilitation techniques consist of alternating phase pulse with relaxation phase (10 seconds each). However, require proper technique execution and uses only experienced athletes.

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Research Hypotheses

1. If in aerobics lesson with students, we use a high proportion stretching as a method of training, then each student's mobility will increase.

2. Applying individualized intervention procedures stretching method correlated with independent preparation will lead to obviously improving quality and efficiency preparation process.

Research methods used:

- ♦ study bibliographical material;
- ♦ ameliorative experimental methods;
- ♦ testing method; was done "spine mobility testing by trunk flexion"

Sample. Gymnast performs bending the trunk of sitting on the bench gym, elbows and knees are in full extension.

⇒ she remains positive for 5 seconds;

⇒ is marked in centimeters distance between the tip toes and

fingertips.

- statistical method - mathematical, data obtained in the experiment was centralized and analyzed statistically.

Organizing experiment

This research was made between the 15th of October and 15th of April 2014 . The sample subjected to investigation comprised 60 female subjects, students of the University of Bucharest in years I and II.

Both groups were made up of 30 students each. Choosing female students was based on their consent for inclusion in one of the research groups (experimental and control).

Differentiation between experimental and control groups was performed by a different training program, applied: the control group was applied traditional aerobics program and the experimental group have applied this lesson, individualized training program and an independent program preparation, 20 minutes daily. Differences program applied to experimental group consisted of both grading effort and the goals and methods of application exercises.

In the study we used the stretching exercises aerobics on the experimental group. Representative team training had a rigorous character teaching, according to classical principles of training.

In terms of effort, athletes are subjected to higher volumes and intensities, than the body requires.

Individualized daily training program have included stretching exercises for every major muscle group, made after stretching and after training, when we performed breathing exercises also.

Exercise with a partner (active and passive) are extremely effective, partner serving to locate and correct the movement to emphasize to its intervention, riguros routed amplitude of movement. In addition, they have the advantage of allowing a rational working time.

Lished sitting exercises develop their mobility seriously running and, with 10 to 15 reps each set inclusion. It is desirable to increase the amplitude of one series to another. The indication is the fact that, in general, muscles oppose the action of stretching, gradually succumbing only after a greater number of repetitions.

Before performing the exercises with maximum amplitude, it should be performed "still heating of locomotor" to boost circulation, thus preventing any "extensions" or "breaks" the musculature.

Research results

After the experiment we found the following:

- Initial average values relatively equals;
- The values and homogenous groups around the average (S1 – S2);
- The size of a much more accession;
- For both groups, the zero hypothesis is declined because at group A > t = 16, 6& (so > for the registered value in the column of p=0, 01), and at group B; t=4,97; p = 0,01 = 2,756; however the difference between the averages is more important for the group A.

Both groups improve the value of the initial parameters due to the applied trening programs. But, the increasing values realized by the experimentally group are much higher than the witness group. This acknowledgement is argued also by the list of these values which we register as follows.

TABLE – 1

Group	\bar{X}_1	\bar{X}_2	S ₁	S ₂	P	MC%
A	13,667	16,8	6,6	6,28	16,67	22,92
B	12,10	13,33	4,97	6,85	4,97	10,17

The size of the improvements at both groups:

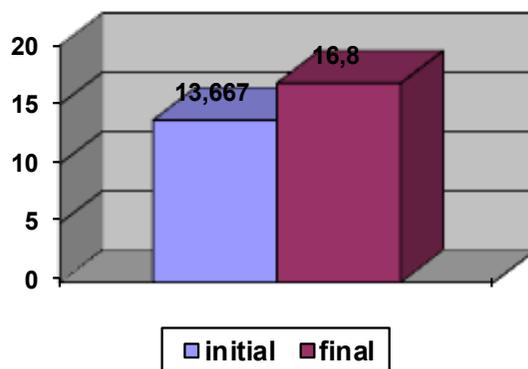
Size growth and "t" dependent experimental group

TABLE – 2

	x2	x1	S2	S1	t dependent	%crest
Mobility	16,8	13,667	6,28	6,2	16,67	22,92

CHART – 1

Mobility-experimental group



increase 22,92 %

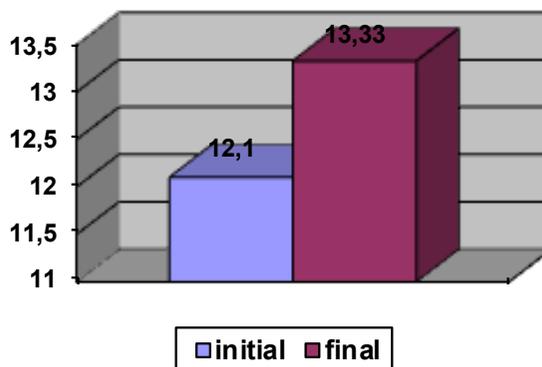
Size growth and "t" dependent control group

TABLE – 3

	x2	x1	S2	S1	t dependent	%crest
Mobility	13,33	12,10	7,27	6,85	4,97	10,17

CHART – 2

Mobility- control group



Increase 10, 17%

Discussion

Mobility is recommended for development and methodical following requirements:

1. Exercises for the development of mobility will be selected according to the requirements of each branch of sport or basic motor skills and applied and the level of training of contractors.
2. Performing special exercises will seek mobility, but also the maximum amplitude technique.
3. Exercises are performed slowly, when taut muscles were well after soaking.
4. Parallel mobility exercises, recommended exercises and use of force.
5. Pre-exercise mobility requires a warm up of the musculo-skeletal system (until sweat), in particular joint will act on which the lesson in question.
6. Mobility exercises are carried out in the first part of the lesson heating or between strength and endurance exercises.
7. Is advisable to avoid working for the development of mobility when the body is tired.
8. Ideal is that flexibility training should be done every day;
9. Begin 5 minutes with heating (jogging);
10. intensity stretching exercises should be increased during working the stretching muscles, respecting that requested muscles should not be stretched too exaggerated;
11. Alternating muscle groups;
12. Stretching extreme position be achieved slowly and without interrupting the movement;

13. Respiration during extent must be deep and slow. Blockage or maintenance respiration should be avoided;
14. Stretching should be performed as often as possible, not only before but also after sporting effort.

Activity program independently uses static extensions with the following methodological indications:

15. each extension is maintained for 15-20 ";
16. movement is repeated three times;
17. extension is 6 -7 times / week;
18. Always try to execute an extension of the whole body.

Conclusions

Following experiments we drew the following conclusions:

- Stretching exercises were seamlessly integrated into the workout, accessible and interesting;
- Place exercises were very well chosen, at the beginning of training exercises and at the end of training;
- The experimental group followed an even stretching leisure;
- Athletes involved in this experiment did not have muscle injuries.

Application individualized intervention procedures related stretching method tests evaluating the quality and efficiency of training demonstrates an increase in the quality of training for the experimental group, which the hypothesis.

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