

Goran Grahovac, Saša Jovanović

Faculty of physical education and sport University – Banja Luka

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AEROBIC CYCLING AS AN ADDITIONAL CONTENT IN THE CONDITIONAL PREPARATION OF PROFESSIONAL SWIMMERS

INTRODUCTION

Development of sport and increasing people's awareness of healthy living and the need for physical exercise in the world, have lead to developing fitness centers, wellness centers, aerobic centers. They were developed by different applications. In that way the need for the program, where cyclists and other athletes can do their training, and keep fit during the winter season, or even work on developing other skills over a period of training, has been borne and developed as aerobic cycling. Nowadays, the tendency of trainers (and not just those in swimming world) is to provide athletes an additional new content in the training that it can be used to develop certain skills. A new content is to break the monotony of training to become more interesting. Since aerobic cycling ensures full and complete sports training his rightful place is in the conditional preparation of swimmers.

DEVELOPMENT OF AEROBIC CYCLING

Spinning means to spin, turn and determine the activity that is designed in California 1986. by **Johnny Goldberg (Johnny G)**, the American cyclist preparing for the race in America. Spinning is a cycling program indoors. In 1996, spinning the world is expanding and getting very popular in Italy, Germany and other countries. Evolution of the spinning has developed another way of training defined as aerobic spinbike (SBA). The creator of this program is **Nazzareno Margon**. The new program, spinbike aerobics, involves different disciplines (cycling, aerobics, martial arts, strength training, etc..). Thus, aerobic cycling can be divided into spinning and spinbike aerobics. Today there are different schools for instructors and a lot of spinning and aerobics spinbike, and Nazzareno Margon designed 32 different programs.

THE DIVISION OF AEROBIC CYCLING

1. Spinning

Spinning is a unique group activity on a specially designed stationary bikes in enclosed spaces such as aerobic halls and etc., with no load on the joints. Spinning program brings elements of sports training for people of all ages and fitness levels. It is an effective, high-energy program that includes music, working with the instructor, complete visualization of the mind & body workout. Spinning training takes about 40 minutes or more depending on the type of training, to training and quality level of the group. Spinning training can be: speed training, endurance, distance, fat-burning, hill training, interval training. Spinning program can influence the development of the cardiorespiratory system, decrease body fat, increase endurance, speed and lower body strength. The beauty of spinning is that what trainees, depending on their capabilities, determine their own workload. The spinning training needs a heart monitor so that more training is individualized, so that each trainee can be seen in the area where work is thus easier to monitor training and exercise training objectives.

2. Spinbike aerobics (SBA)

SBA is not just a sedentary static cycling, but a real fitness program that brings together different disciplines, such as cycling, aerobics, martial arts, strength training and exercises with loads of free exercise and body sculpting. The main characteristic of this discipline is the training and fun at the same time. The duration of training varies from 45-60 min., depending on the type of training, level of training and well trained group. SBA training goals are: improving or maintaining high level of cardiovascular system, improving stamina, speed, flexibility, coordination and body shaping. SBA offers the advantage of using not only the lower body, but the upper part also. The work done by the body during typical hours includes all muscle groups. The muscles that allow pedaling: leaves, the muscles of the front and back of the thighs, gluteus muscles, muscles that allow exercisers to maintain an upright position in the phase of choreography: the abdominal muscles and lower back. And through a variety of choreography and use of tools such as weights, rubber bands, etc., strengthening muscles: shoulders, chest, back and arms. In the hour of SBA is useful to have a heart monitor for better monitoring of training.

THE ADVENTAGES OF PROGRAM

The advantage of aerobic cyclinga

- Do not burdens your joints
- The possibility of injury is minimized
- Participant dosing load of his choice
- Motivating music
- Group work
- Improving aerobic capacity
- Reduction of heart rate at rest
- Rapid consumption of subcutaneous adipose tissue

The advantage of sppining

- The participant do not need to learn the demanding choreographies that require a certain level of concentration and coordination, and can fully concentrate to do the task better.

The advantage spinbike aerobics program

- The advantage of SBA programs is gradually mastering the choreography or exercises for the upper body with and without requisites, resulting in a greater involvement of the whole body muscle.

METOD

AEROBIC CYCLING AS AN ADDITIONAL CONTENT IN THE CONDITIONAL PREPARATION OF PROFESSIONALSWIMMERS

Aerobic cycling is carried out by all the principles of sports training and therefore it can be used in all stages of preparing swimmers for the development of certain functional and motor abilities. Of course this is not the primary program for the development of certain skills, but an additional program, because we must take into account the specificity of the swimming sport.

Favor of spinning

Spinning can be used for development of aerobic and anaerobic capacity, to reduce the PMT (in spinning and SBA (40-45min) hourly can be spent, and 500-600 calories depending on the type of training and duration of training), strengthening the muscles of the leg (round pedaling), rehabilitation of the injured knee warming up before the main workout on land.

Types of training in spinning

Speed

- When training speed participate fast muscle fibers at max.effort to quickly run out of energy stocks (max 2 min) but, on the other hand, the energy supplies quickly and fill up a muscles ready for the new effort.
- Speed training has brief duration and very high intensity, it is in all three parts of the fifth zone and it is necessary to emphasize that this is the only training that can not be traced because the heart rate monitor heart muscle reacts much more slowly. It is therefore important to track no. rpm, which moves more than 180 r /min.

- It is a pure anaerobic training and his interval of values in the range of 5-60 seconds.
- Rest between intervals is 3x higher than the operating time.

Endurance

- Durability is the ability of muscles to sustain the effort over a long period of time.
- It is one of the most important training in spinning hour increases as the size and number of mitochondria in muscle cells and increases the number of capillaries and improves aerobic enzymes for metabolism of fats and carbohydrates.
- Trainees prefer to work in this mode because there is no production of lactic acid and thus do not sense pain in the muscle, and training intensity is a little stronger.
- Conducted in the third and early fourth zone so it is time to clean aerobic training.
- Endurance training can be done in two ways:
 1. constant over 5 min easy-paced, 3 zones and over 120 o/ m
 2. interval of 1-5 min with a break of 5-60 s - that is, a stronger intensity, the transition from third to fourth zone, and with over 150 r / m.

Race

- The instructor leads participants through the cycling race.
- The clock is max. 45 min with very strong intensity, and its structure depends on the instructor's imagination.
- The goal of this type of training is to break the monotony after months of repetition of similar exercises.
- One of the advantages of this type of spinning clock is that there is a max. energy consumption.

Distance-fat burning workout

- This training is low intensity and high volume, duration between 30 minutes and several hours of work konsantnog depending on the possibilities of trainees.
- This is basic training for all other hours and can also serve as heat.
- Preparing the body for the exercise of higher intensity and therefore began to use from the first hour of exercise and the last but in a smaller volume.
- Pay attention to the intensity, which should not exceed the limits of zone 2, so we recommend the use of heart rate monitor.
- It is good to be in such training gradually increases the volume as this will increase stamina, confidence and mental strength trainees.
- This type of training because of its length can be very monotonous and suggests inserting the various sprints and jumps shorter duration if the whole hour of that type.
- The number of revolutions per minute varies between 100 and 120
- Average power consumption is expressed in kcal per kg body weight per hour for this training is 7-8.

Hill

- Hill training can be implemented in several ways:
 1. interval, where the duration of work is between 1-5 min, and recovery is between interval of 1-3 min
 2. constant work over 5 min.
- Both the training can be done sitting or standing on all the aforementioned ways.
- All exercises are performed by hill in the third and fourth heart rate zone,

depending on length.

- Load is very high and the very low revs, a move in the range of 60 to 80 per minute.
- Depending on the area of this training can spend from 13-17 Kcal per kg of body weight per hour of work.

Interval Training

- The name describes the whole exercise. So, it exercises a very small volume but high intensity work.
- Training can be divided into three groups:
 1. running time of 1-3 min, 100% of is rest interval
 2. duration of 3-5 min, where is rest 75% interval
 3. length intervals over 5 min, where the rest is 50% of interval.
- All three types of training are made in zone 4 and therefore are very strenuous and difficult because they are completely anaerobic, which means the production of lactic acid and thus a feeling of pain in the muscles.
- There are many benefits of such kind of training but for us is most important to increase the blood volume, increase storage of glycogen in the muscle cell, increasing the levels of enzymes for the oxidation of carbohydrates and the last, most important, is move the anaerobic zone, increase in lactate threshold and thus the use of fats in increasing heart rate.

Favor of the SBA

Spinbike aerobics can be used for: the same as in spinning (spinning as the basis SBA) for the development of aerobic and anaerobic capacity, to reduce the PMT, the strengthening of leg muscles (circular pedaling), rehabilitation of the injured knee warming up before the main training on land. However, most are used in the preparation period and to the anatomical adaptation phase, we work to improve aerobic capacity and prepare the muscles for weight training.

Types of training for the SBA

- The SBA hour can be used the same kind of training and as the spinning zone depending on the purpose and objectives of training, with the SBA, the main work hours, throwing the whole body exercise with and without aids.
- Periodization or cycling aerobic type training (spinning or SBA), extensity (number and duration of training sessions) and the intensity depends on the very periodization, swimming, swimmer's abilities and goals and objectives of the curriculum.

Ergometry test

Before the start of training on aerobic cycling in it would be desirable to make a maximal ergometry test on a bicycle ergometer for better planning of training and define their own zone, and using a heart monitor (heart rate monitor) to the best training we can monitor the implementation of the training itself.

REZULTATI

Periodisation of swimming training

Plan and program of training is planned according to the calendar contest, in relation to specific maintenance.

Depending on whether it is Olympic Games, World Championships, continent, country or republic in which the athlete to participate, based on the calendar of events planned and I am training. Apart from these competitions may be held at certain meetings, etc.

Most often the curriculum process for one year, and he is then fit the two-year or four-year cycle. If the state championship is held every year, then it is monociklusu, if related to summer or winter event, and then it's two-cycle system.

Swimming season is divided into 4 phases:

- First adjustment phase (2 - 4 weeks)
- Second phase of endurance and preparation phase (8 - 12 weeks)
- Third competition phase (4 - 6 weeks)
- 4th relaxation phase or transitional phase (1 - 3 weeks)

As for winter swimming period starts from September to April, a summer series from late April to mid-August. Within the cycle, particularly prominent in the preparation period, the load can be increased both in volume and intensity.

The preparatory period or phase of endurance

The preparation period can be divided into two phases. In the first part, we can raise the general physical condition, and the second part is related to a specific or special preparation.

When looking at the one-year curriculum cycle of period, it may be noted that the preparatory period lasts the longest.

Athletes, swimmers in this case, you should prepare your body for even greater future burden, which follow thereafter. Insufficient use of or total disregard of that period can lead to many unintended consequences, not only in terms of poor performance, but also adverse effects on the healthy body of an athlete.

Without the rational use of that period can not be imaginable excellence. The importance of the preparatory period and how much he needed in terms of professional sportsmen, but also demonstrates the fact that the division of the annual cycle of training most of the time takes this very period. Almost all sports fields, regardless of whether the year was training in one or two cycles, the preparatory period lasting at least 6 to 8 months, though there are other divisions. As for the length of the preparatory period in swimming organizations, it will be different depending on the conditions under which these organizations operate.

The preparation phase is extremely important for whole year of training. During the preparatory period, swimmers develop general physical, technical, tactical and psychological preparation for the competition phase. In adequate training during this phase will have a visible impact in the competitive phase. Throughout this phase, especially during

the initial part of the body for proper adaptation to the specific training is a key high-volume training.

At this stage, emphasis should be on the following:

- a) improve the technique of styles, starts and turns. It is recommended to be performed at this stage because the competitors are not concentrating on results
- b) to increase muscle strength, muscle endurance and flexibility of the joints, mostly in the water and partly on land
- c) improve the anaerobic threshold and maximal oxygen consumption VO₂max, where swimmers for this purpose have much of their style of swim training
- d) set goals for the season, which serve as a motivation and provide direction to the season
- e) improve the speed, which is usually transmitted at a later stage, and no obligation. Training speed is not too strenuous, and therefore should not be afraid of overtraining, or premature peak form.

Table 1. Week of endurance training on a dry

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
PM	Active rest	Hill training	Distance – fat burning training	Interval training	Distance – fat burning training	Race	Distance – fat burning training
	Stretching	I week 2x5 min P5' II week 3x5 min P5' III week 4x5 min P5' IV week 5x5 min P5'	30-40' Low intensity training	I week 2x5' P5' II week 2x5' P5' III week 2x8' P5' IV week 3x8' P5'	30-40' Low intensity training	I week 20' II week 25' III week 30 IV week 35	I week 50 min II week 55 min III week 60 min IV week 65 min

Table 2. Week of endurance training in water

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
AM	A1 – A2 Crawl / Back Double sets of shares Crawl set with a small paddle speed High-quality legs Twists, HVO (10)	A2-A3 Kraul series in a long swim A1-A2 in the first technique 50 m acceleration set up to race pace Exercises with fins	A3 - AT crawl at 100 and 200 m double shares Endurance in the legs long section Practice skills and paddle strokes with small fins	Free	A1 - A2 and Mixed Crawl, double shares Crawl set with a small paddles with a short break Set 50 m acceleration to race pace	Starts, HVO (8) A2-A3 long section Crawl High- quality legs Exercises with fins	Free
PM	AT Crawl set at 400 m Durability of legs in sets Exercise First techniques Startovi, HVO (8)	A1-A2 warming by choice Delfin set with repeats at 50 and 100 m Exercise the speed with rubber fins Hands: Rubber paddles a long swim	A1-A2 warm mixed Delfin exercise Swimming at 50 m backstroak from the shoulder blade Backstroak 25 m and 25 m max stroke length	Aerobics, Crawl: long swim 15 m or 25 m max, HVO (8) Practice Swing High- quality legs Set of 50 m max with rubber	Starts, HVO (8) AT Crawl at 300 m and 100 m Legs: long swim Exercises with fins	Free	Free

CONCLUSION

Aerobic cycling arose from the needs of cyclists to maintain form during the winter months, and that the training becomes more interesting. For the present we see that part of the aerobic cycling involves a complete physical training for the development of functional and motor abilities, with a maximal ergometry test and a heart monitor and allows easy planning, programming and monitoring of the training itself. Central to the swimmers aerobic cycling activity on your joints. Aerobic cycling can be most useful in the preparation period, although it can be used in other stages taking into account the specificity of swim training. He neither case can not replace training in water but can serve as additional training to develop certain skills. Definitely can be used to break up the monotony of training, especially long aerobic workouts. Swimmers and seniors who need something new to add further motivations can do a very good training and willingness to treningaom will be higher. There are only two problems in the use of aerobic cycling, as well as additional content in the conditional preparation of swimmers, the first is that some coaches hard to digest a new method to fear or ignorance, and the second is that there is no spin bike everywhere. All in all aerobic cycling in belonging to a deserved place in the conditional preparation of swimmers.

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