

## **BASIC POINTS OF VIEW ABOUT THE PREPARATION FOR 50M, 100M, 200M BREAST-STROKE OF THE STUDENTS FROM THE "BABES-BOLYAI" UNIVERSITY**

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**ABSTRACT.** This scientific article presents the preparation for 50 m, 100 m, 200 m breast-stroke event of the students from the "Babes-Bolyai" University. This research started in January 2011 with a group of 20 people. The purpose of it was to improve the interim conclusion. This is the reason why we used a specific training method, in which we wanted to improve the extant swimming techniques with dry-land and aquatic power exercises. The purpose of the power exercises to intensify the speed, power and endurance. The main objective would help the swimmers results with this unique training program. This is the reason why our objective is about the correction, development and improvement of breast-stroke swimming techniques of those students who had learnt this swimming style. As you all know the desired results can be achieved if the swimmer has the appropriate breast-swimming techniques. The deduction is the following: through the correction of dry-land and aquatic breast-swimming techniques, the swimmer's capacity can be improved (in time)! This means that the used training program has a positive impact on the swimmers' results at 50, 100 and 200m distance.

**Keywords:** breast-stroke; The methods, principles and particularity/nature of training; The types of training program; Dry-land power exercises; Aquatic exercises

**REZUMAT.** Studiu cu privire la pregătirea fizică a studenților de la Universitatea "Babeș-Bolyai" la probele de 50m, 100m, 200m bras. Articol științific prezintă pregătirea pentru 50m, 100m, 200m bras a studenților de la Universitatea "Babeș-Bolyai". Aceasta cercetare a început în ianuarie 2011 cu un grup de 20 de persoane. Scopul a fost de a îmbunătăți concluzie intermediară. Acesta este motivul pentru care am folosit o metodă de formare specifică, în care ne-am dorit să se îmbunătățească tehnicile de înot existente cu exerciții de forța sec-terestre și acvatice. Scopul: efectuarea exercițiilor pentru a intensifica viteza, puterea și rezistența. Principalul obiectiv ar ajuta rezultatele înotători

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cu acest program de formare unic. Acesta este motivul pentru care obiectivul nostru este despre corectarea, dezvoltarea și perfecționarea tehnicilor de înot la studenți care au învățat acest stil de înot. După cum știți rezultatele dorite pot fi atinse în cazul în care înotătorul are tehnici de bras adecvate. Deducerea este următoarea: prin corectarea tehnicilor de bras cu exerciții uscat-terestre și acvatică, capacitatea înotătorului poate fi îmbunătățită (în timp)! Acest lucru înseamnă că programul de formare folosit are un impact pozitiv asupra rezultatelor de înotători "la 50, 100 și 200 m distanță.

**Cuvinte cheie:** accident vascular cerebral, metodele, principiile și particularitate/natura formării, tipul de programe de formare; Antrenament de forță pe uscat; exerciții acvatice

## Introduction

If a person trains (or passes effort), can get in "good condition". The training exercises have certain stress impact on the body which by changing oneself can get used to this influence/impact for fighting this unique stress. This stress is not the match for strictly speaking stress. In this case the stress factor is a long-run or a multiple training method. These are physiological changes that can make the human organism capable for a more efficient work. If somebody swims at long-runs the effectiveness of heart function takes up and can pump more blood into the muscles. This blood transports oxygen and glycogen to the muscles and removes fatigue and during the process can ameliorate the stamina. The stress impact result or adapting to the heart-function efficiency and the impact on the persons performance is the following: the endurance raises. The fact that the body responds to special training programs with special adapting or changes it is called training features. This is an important fact and it should be clear while training program is planned. If somebody wants to sprint good (50 meters competitions) or wants to be a good middle-distance swimmer (200 or 400 meters competitions) and wants to be a distance swimmer as well (over 400 meters) should apply the three above mention training method. Even though the training impact can be transported from one training method to another, the measure of transport depends on similar training methods. For example the swimmer, who practices multiple training, it may be possible that he/she would be capable for a faster sprint, but he/she won't be as fast as those people who trained with sprint training or certain middle-distance training methods. It is obvious that a distance-swimmer should put energy into different methods as a sprinter.

Actually the swimmers (especially those who belong to one age group) can start in several competitions, with a distance of 50 or 200 meters. For the age group members the programs should have little differences. Both need middle-distance training as well because this secures better resistance for sprinter swimmers, who shall swim faster 100 meters distance, respectively speed for distance swimmer to be faster at a 400 meters distance.

By planning the training program we should answer the following questions:

1. How much do we swim a day 4500, 9000, 12000 or 18000 meters?
2. How often do we train a day? Once, twice or more?
3. How strong do we swim? Are we swimming with power all the time or do we add easy swimming too?
4. How many months should be spent with training? Three months? Ten months? The whole year?
5. Which training method should be emphasized? Sprint training, tempo training, middle distance training

There is no specific answer. The answers depend on factors like how much time do we have in a swimming-bath, how good swimmer wants the person to be, how much time and energy can he/she spent on swimming.

Types of training program:

- a) **Tempo training training method:** the tempo training training means the uninterrupted swimming of longer distances (400 meters, 1500 meters etc.). 70-09% from this method is aerob work and the other 30-5% is anaerob. The advantage of this method is important because the heart should give a lot of oxygen for the organism.
- b) **Staged training method:** in this method the body is forced by regular submaximal exercises training set in which there are introduced several relaxing periods. The relaxing periods are usually short that make a partial relaxing possible. This doesn't allow the body to have a full break after it got exhausted. A well-known staged training method is for example: 15x100 meters with 10 s relaxing after 100 meters.
- c) **Repeated training method:** in this training method the body is forced to use its strength maximally or almost maximally effort. This is mixed with overseen relaxing periods. During this training method the body can relax after a series of exercises.
- d) **Fartlek training method:** this training method is very close to the staged one. In this method the swimmer should swim without any interruption, from slow changes his/her speed to fast etc. A specific training that is often called pyramid-training, can be the following: 1 **distance/pool soft (100 m soft)**, 100 m hard. There is another method within this one: 2 distance soft, 1 hard distance repeated until the person reaches 1000 meters.

- e) **Sprint training method:** this training method is for 50 meters, in which the swimmer sprints short distances in full fling. The sprint method means a stress fact, in which the stress is short, but much more intensive than long distanced-swimming. During this method the muscles can become stronger. Aerob/anaerob work: 15% aerob, 85% anaerob.
- f) **Hypoxical training method:** during this method the swimmer counts the speed of his/her breathing and breaths less than usually. This helps create more oxygen by low work. With overseen respiration the oxygen transmitted to the cells is decreased. In case we swim permanently within hypoxical circumstances, the oxygen score and blood lactate, and the level of concentration of lactic acid in the muscles is higher than in any other training method with normal respiration. ( James E. Counsilman., 1982)

### Research methods

From the swimming method the breast-stroke swimming is the hardest to learn. The arm- and foot-work is performed sideward, not in fore and aft style. The coordination of arm- and foot-work intensifies the difficulty because of proper overlap of arm- and foot-work. This is the reason why we start the teaching with freestyle, back-stroke and after that comes the breast-stroke. However the breast-stroke style is prevailing. This justifies the fact that the correct leg movement causes difficulties, but the arm-movement and breathing is remarkably easy. Half of the head is under the water, so the swimmer can have a great sense of locality. In case of good sense of locality the safety of the swimmer increases in the water. By the execution of breast-stroke style if the movements are not correct the person can swim with less use of energy. A lifeguard who supervises the safety and rescue of swimmers uses the breast-stroke swim style. Because of this positive feature those who want to learn just one swim style they will definitely learn this one. But what happens in the case when somebody already knows how to swim and has his/her own swimming technique? Is this technique correct? What if this cannot be improved? What kind of method is sufficient and how much time do we need? These were question that made me curious during my research paper.

In my work I made a research on a group of 20 persons for 6 months, students from the "Babes-Bolyai" University, 12 boys and 6 girls. The swimmers were between the ages 20-22. Each person the group had training twice a week, all persons had the same training method. The main purpose was the improvement of part-time with dry-land and aquatic power exercises. The trainings were held in the swimming-pool and fitness studio. We started the training after the winter holiday in January. The measured times are presented in the following table:

**Table1.**

**Shows the results from January 2011**

<b>Number</b>	<b>Name</b>	<b>Time (min:s:hundred second)</b>		
<b>Girls</b>	<b>200 M</b>	<b>100 m</b>	<b>50 M</b>	
1	B. B.	5:01:00	2:25:07	1:01:00
2	B. H.	3:57:00	1:57:00	0:51:02
3	C. A.	4:25:00	2:08:00	1:00:10
4	D. CS.	4:56:26	2:24:00	0:59:03
5	G. P.	4:29:52	2:14:00	0:59:11
6	O. M.	4:08:11	2:27:22	1:00:10
7	SZ. E.	4:17:30	1:59:30	0:58:43
8	SZ. M.	4:25:38	2:09:10	0:57:30
<b>Average:</b>		<b>4:27:35</b>	<b>2:13:01</b>	<b>0:58:21</b>
<b>Boys</b>	<b>200 M</b>	<b>100 m</b>	<b>50 M</b>	
9	B. L.	4:37:50	2:00:23	0:54:01
10	C. C.	3:45:00	1:47:00	0:44:08
11	F. A.	4:51:08	2:17:00	0:59:40
12	H. A.	4:58:00	2:25:00	1:06:07
13	K. K.	3:51:42	1:52:00	0:49:30
14	K. T.	4:38:00	2:12:00	0:59:20
15	M. A.	3:55:11	1:49:00	0:44:32
16	M. L.	4:13:00	1:58:30	0:50:18
17	N. L.	3:49:00	1:57:00	0:56:00
18	SZ. H.	4:08:28	1:54:29	0:51:59
19	T. Z.	3:51:14	1:49:55	0:44:53
20	T. ZS.	4:15:00	2:01:00	0:54:03
<b>Average:</b>		<b>4:14:28</b>	<b>2:00:16</b>	<b>0:52:53</b>
<b>Total average:</b>		<b>4:19:43</b>	<b>2:05:22</b>	<b>0:55:04</b>

It is obvious that the boys had better results than the girls.

The question: with which member should we start the teaching of breast-stroke swimming is nowadays still discussed. The execution of the foot-work is hard so its learning and improvement takes up a lot of time. The priority of arm work is the ease of learning, and even if this is not used correctly can lead to improvement where as this by foot-work is not possible. Substantially the order is not as important as by the other three swim styles. After learning the gliding the swimming movements should be in the following line: arm-work, foot-work, phasing arm- and footwork and breathing. Within every method there are dry-land and aquatic exercises.

In the following two sub-chapters I will present dry-land and aquatic power exercises I used during my training.

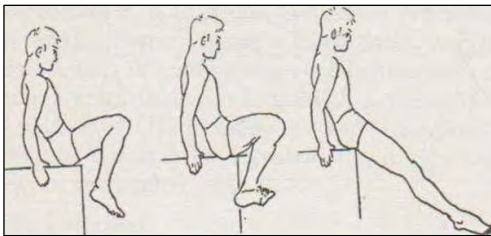
*a. Dry-land exercises*

1. In this chapter different power exercises will be presented in order to understand better the method which helps to improve the swimmers performance.

These exercises are accomplished on dry-land by the individuals. The purpose of the power exercises is to improve speed, strength and resistance. It is very important to plan the exercises carefully. Within the dry-land power exercises there are arm-generating exercises that include triceps muscles, and arm rotators muscles.

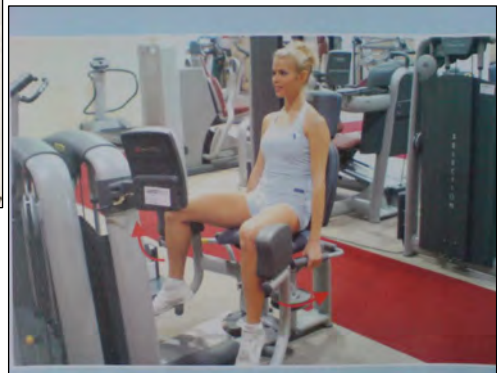


1. Exercises for shoulder girdle



2. Illustration: Foot-work in L seat

Strengthening of the adductor -longus, -magnus and -brevis muscles, bender exercises for knee joint muscles, stretching exercises for knee joint muscles, expressing with legs.



3. Illustration: Strengthening of limb muscles



4. Illustration: Expressing with legs



5. Illustration: Leg flexing with dumbbell

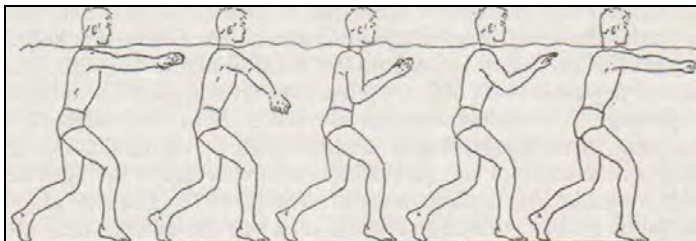
### Aquatic exercises

In this chapter I present different aquatic power exercises. Speed, power, performance and the improvement of resistance are the purpose of the aquatic exercises. By these exercises the students are faced with the resistance of the water. This is the reason why we used not weights but only few tools: kickboard, ball, elastic band. I divided the aquatic exercises into three: arm-improved, foot improved exercises, start and round improver exercises. Just because the foot- and arm-work is executed under the water the coach, helper aid must be attentive not to mess up but to improve the technique.

a) Arm-developer exercises: in the breast-stroke swimming

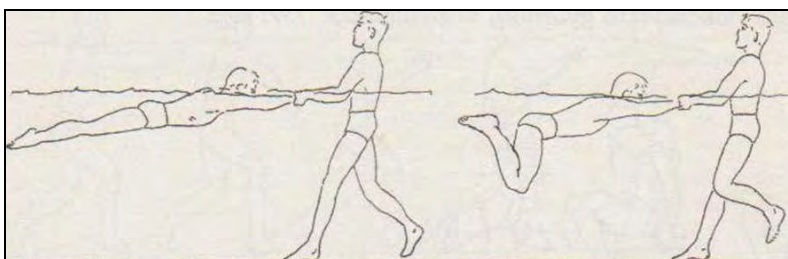
The arm-work fully is executed under the water it is shorter because the pushing phase is missing. The exercises are built up on these levels:

1. Arm-work exercises while standing



6. Illustration: arm-work in the water

2. Slow walking arm-work
  3. Arm – work during gliding
  4. Lying in deep water, feet in the “wave catcher”, breast-stroke arm work
  5. Getting away from the wall, with bouy/ kickboard between the legs, during the gliding arm-work should be exercised
  6. Lying on the stomach on a tool (foot-stool), so that the point of support is by the sciatic, arm-work should imitate breast-stroke style.
  7. Getting away from the wall with drawling legs: 4-5 doing arm-work without breathing. The flexure of the elbow should be correct the pulling phase should not pass the line of the shoulders.
- b) Foot-work exercises: the whole foot-work is under the water. It has two important movements: the priming and astern kicking motion
1. Foot-work by the rim of the swimming-pool
  2. Foot-work by gliding



7. Illustration: foot-work by gliding

3. Getting away From the wall with kick board breast-stroke foot-work exercise
4. Lying on the stomach, parallel with the rim of the pool, doing arm-work on one side.
5. Exercising the foot-work with kick board: the swimmer’s drawling elbow should lean upon the kick board, after each movement a short period comes with closed legs until the exhaling.
6. Breast-stroke foot-work on back: the arms are beneath the body by the first exercise, in the next in high keeping.

## Results

According to the above mentioned exercises, I measured the students again in June. The following table presents the results and the differences between the two measuring.



**Table 2.****Results from June 2011**

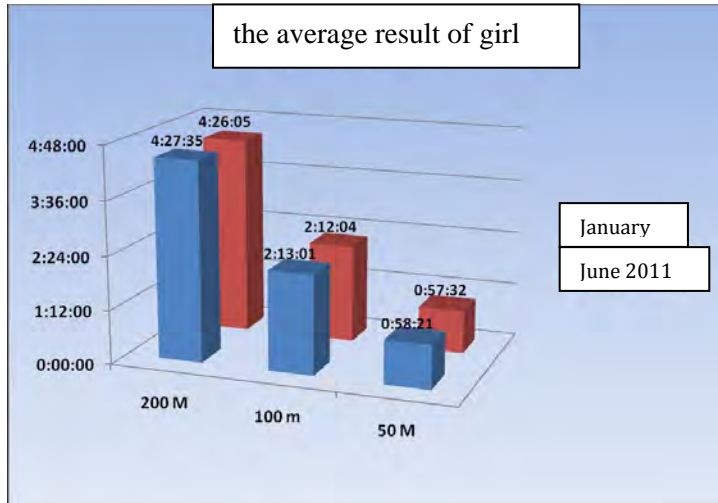
<b>Number</b>	<b>Name</b>	<b>Time (min:s:hundred second)</b>					
<b>Girls</b>		<b>200 M</b>		<b>100 m</b>		<b>50 M</b>	
1	B. B.	4:57:30	0:03:30	2:23:00	0:02:07	1:00:22	0:00:38
2	B. H.	3:56:19	0:00:41	1:56:43	0:00:17	0:50:13	0:00:49
3	C. A.	4:23:52	0:01:08	2:07:27	0:00:33	0:59:49	0:00:21
4	D. CS.	4:55:00	0:01:26	2:23:55	0:00:05	0:58:22	0:00:41
5	G. P.	4:26:34	0:03:18	2:13:05	0:00:55	0:57:32	0:01:39
6	O. M.	4:08:11	0:00:00	2:27:00	0:00:22	0:59:10	0:01:00
7	SZ. E.	4:16:34	0:00:56	1:57:00	0:02:30	0:58:00	0:00:43
8	SZ. M.	4:24:42	0:00:56	2:08:20	0:00:50	0:56:49	0:00:41
<b>Average:</b>		<b>4:26:05</b>	<b>0:01:29</b>	<b>2:12:04</b>	<b>0:00:57</b>	<b>0:57:32</b>	<b>0:00:49</b>
<b>Boys</b>		<b>200 M</b>		<b>100 m</b>		<b>50 M</b>	
9	B. L.	4:35:20	0:02:30	1:59:22	0:01:01	0:52:38	0:01:23
10	C. C.	3:43:17	0:01:43	1:46:14	0:00:46	0:43:28	0:00:40
11	F. A.	4:48:23	0:02:45	2:16:05	0:00:55	0:59:20	0:00:20
12	H. A.	4:55:31	0:02:29	2:25:00	0:00:00	1:05:00	0:01:07
13	K. K.	3:47:20	0:04:22	1:50:11	0:01:49	0:48:50	0:00:40
14	K. T.	4:37:13	0:00:47	2:10:05	0:01:55	0:59:20	0:00:00
15	M. A.	3:54:06	0:01:05	1:48:17	0:00:43	0:44:05	0:00:27
16	M. L.	4:10:56	0:02:04	1:56:22	0:02:08	0:48:20	0:01:58
17	N. L.	3:47:17	0:01:43	1:56:07	0:00:53	0:55:10	0:00:50
18	SZ. H.	4:06:08	0:02:20	1:52:11	0:02:18	0:50:03	0:01:56
19	T. Z.	3:48:52	0:02:22	1:48:20	0:01:35	0:44:14	0:00:39
20	T. ZS.	4:13:20	0:01:40	2:00:01	0:00:59	0:53:32	0:00:31
<b>Average:</b>		<b>4:12:19</b>	<b>0:02:09</b>	<b>1:59:01</b>	<b>0:01:15</b>	<b>0:52:00</b>	<b>0:00:53</b>
<b>Total average:</b>		<b>4:17:49</b>	<b>0:01:53</b>	<b>2:04:14</b>	<b>0:01:08</b>	<b>0:54:13</b>	<b>0:00:51</b>

After 6 months the results show that the boys and girls have improved. (Major L., 2011)

### Discussions and conclusions

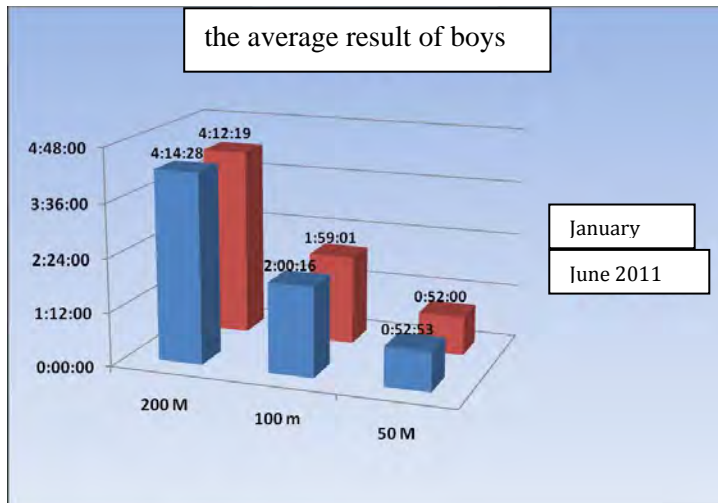
The aim was that with the help of the training program we should ameliorate the swimmers results/interim conclusions. The deduction is the following: through the correction of dry-land and aquatic breast-swimming techniques, the swimmer's capacity can be improved (in time)! This means that the used training program has a positive impact on the swimmers' results at 50, 100 and 200m distance. The before mentioned results confirm the assumption and prove the hypothesis.

This diagram presents the average result of girl from January to June.



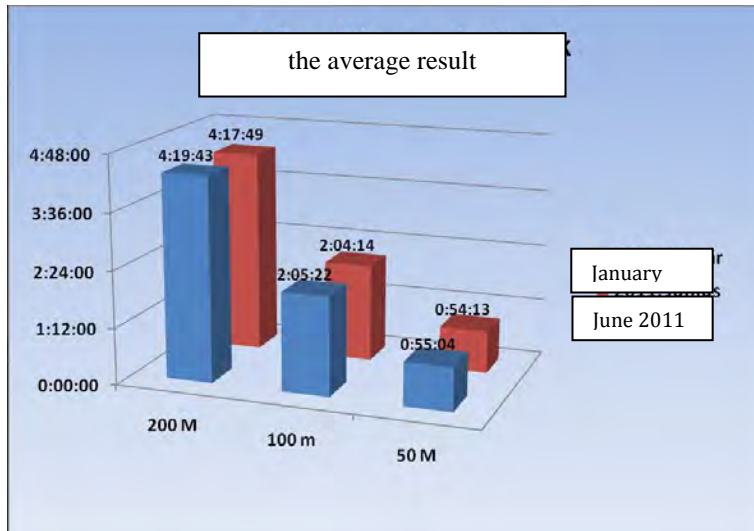
**Graph 1.** The girls average results

Following diagram presents the averaging conclusion of the boys



**Graph 2.** The boys average results

The following diagram shows the changes of the average results



**Graph 3.** Total average

The graphics support the assumption that the use of the training program the time at 50, 100 and 200 meters distance can be improved by breast-stroke swimmers. The exercises develop the swimming techniques. With the help of swimming techniques we ameliorated the results. The hypothesis was correct there have been several outstanding time changes thanks to a half-year training program. (Major L., 2011)

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