



ISSN: 2456-0057  
IJPNPE 2022; 7(2): 08-10  
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[www.journalofsports.com](http://www.journalofsports.com)  
Received: 08-04-2022  
Accepted: 13-05-2022

Safieya Ihsan Kamil  
Assistant Lecturer,  
Department of Student  
Activities, University of  
Baghdad, Iraq

## The effect of physical training according to the anaerobic capacity (Lactic) in the development of rapid strength and the achievement of swimming 50 m butterfly youth

Safieya Ihsan Kamil

### Abstract

The development of achievement levels and breaking world records can only be achieved by adopting the correct prior planning of the training program vocabulary according to the correct scientific foundations for the purpose of achieving good results in the sports competition that works to raise the performance of swimmers or increase the load on the swimmer without relying on water resistance only. This is through ground exercises using quick strength exercises for the arms and legs that work to raise the level of the swimmer from a physical point of view. Implementation of the training program vocabulary, and the aim of the research is physical training according to the anaerobic ability (lactic) in the development of rapid strength and the achievement of swimming 50 m butterfly youth, and the research community was identified, the Musayyib Sports Club swimmers for the 2021 season, which numbered (14) swimmers, and the sample was divided into two experimental groups and a control group. And by (7) swimmers for each group, exercises were applied according to the most important anaerobic (lactic) ability. Conclusions: Increasing interest in exercises according to anaerobic (lactic) ability and giving them sufficient time in the training program for their role in developing physical abilities.

**Keywords:** Anaerobic (lactic) ability, fast strength, and completion of the 50m butterfly swim

### Introduction

Swimming is one of the activities that are characterized by the spirit of competition between swimmers. The swimmer must be well prepared and integrated in all respects (physical, skill, tactical, psychological), before entering the midst of local and international competitions and championships. The development of levels of achievement and breaking world records It can only be achieved by adopting prior and correct planning for the vocabulary of the training program according to the correct scientific foundations for the purpose of achieving good results in the sports competition that works to raise the performance of swimmers or increase the load on the swimmer without relying on water resistance only, and this is done through ground exercises using strength training The quick arms and legs that work to raise the level of the swimmer in physical terms, and the importance of research is reflected in the use of physical exercises according to the anaerobic capacity (lactic) in the development of rapid strength according to a prepared approach in order to raise the level of swimming (50) m butterfly.

### Research problem

As the goal of workers in the sports field has become to search for everything new in sports training in various ways to something useful in the service of the sports field. Make it more useful and objective, as well as the lack of diversity in the training methods that swimmers are subject to when implementing the vocabulary of the training program, where the researcher decided to prepare standardized exercises according to anaerobic capacity (lactic) and helps to develop rapid strength in swimming (50) m butterfly to raise the level of swimming, including Keeping pace with scientific progress with the best achievement.

**Corresponding Author:**  
Safieya Ihsan Kamil  
Assistant Lecturer,  
Department of Student  
Activities, University of  
Baghdad, Iraq

**Research objective**

- Preparing physical exercises according to the anaerobic ability (lactic) in developing fast strength and completing the 50m youth butterfly swim
- Getting to know physical exercises according to the anaerobic ability (lactic) in the development of rapid strength and the completion of the 50-meter swim of a youth butterfly.

**Research hypotheses**

There is a positive effect of physical training according to the anaerobic capacity (lactic) in the development of rapid strength and the achievement of the 50m youth butterfly swim.

**Research fields**

- **Human field:** Swimmer 50m butterfly of the Musayyib

Sports Club for the season 2021.

- **Time domain:** (14/9/2021) to (19/11/2021).
- **Spatial domain:** Spanish indoor swimming pool / Babylon Governorate.

**Research Methodology**

The researcher used the experimental method with the pre and post test for the experimental group and the control group.

**Community and sample research**

The swimmers of the Musayyib Sports Club for Youth for the event of the 50m youth butterfly swimming event for the 2021 season are (14) swimmers, and the sample was divided into two groups, the experimental group and the control group, with (7) swimmers for each group.

**Table 1:** shows homogeneity

Variables	Measuring unit	Mean	Median	Std. Deviations	Skew ness
Length	Cm	176.56	176	5.786	0.863
Mass	Kg	75.29	75	8.567	0.543
Age	Year	17.87	17	9.651	0.665

The value of the Skew ness coefficient is between  $\pm 3$ , indicating a moderate distribution.

**Table 2:** Equivalency tests:

Variables	Experimental group		Control group		T value	Level sig	Type sig
	Mean	Standard deviation	Mean	Standard deviation			
Fast arm strength	9.875	0.765	8.321	0.642	1.778	0.764	Non sig
Fast leg strength	2.445	0.883	2.298	0.711	1.612	0.992	Non sig
Achievement 50m butterfly swim	32.763	0.921	32.345	0.439	0.912	0.768	Non sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 12

**Means used**

Indoor Spanish swimming pool, (6) stopwatches, (6) whistle, and (1) hand-held electronic calculator.

Ali Al-Baik) (3).

**Tests used**

- Fast arm strength (Ali Ahmed Hadi) <sup>(1)</sup>
- Fast leg strength (Mustafa Kazem Muhammad) (2).
- Achievement 50m butterfly swim (Mahmoud Hassan and

**Pre-tests:** Tribal tests in the Spanish indoor swimming pool / Babil Governorate on 14/9/2021.

**The exercises used in the research**

Implementation of the training program on 17/9/2021 until 16/11/2021.

**Table 3:** Shows the exercises used in the research

Training unit	Exercise Vocabulary	Intensity %	Repetition	Repetition (min)
1	Meters x 6 x 4 30 Stability jumping exercises	85%	12	2 minutes
2	60meters x 4 x 4 throwing a medicine ball	85%	12	2 minutes
3	75 meters x 3 x 2 Stability jumping exercises throwing a medicine ball	85%	12	2 minutes

**Post-tests**

The research tests were conducted on 19/11/ 2021

**Statistical methods:** Statistical bag (SPSS).

**Presentation, analysis and discussion of the results****Table 4:** The results of the pre and post tests of the experimental group

Variables	Pre-test		Post-tests		difference of Standard deviation	T value	Level sig	Type sig
	Mean	Standard deviation	Mean	Standard deviation				
Fast arm strength	9.875	0.765	10.675	0.775	0.895	7.542	0.000	Sig
Fast leg strength	2.445	0.983	2.543	0.568	0.778	5.664	0.000	Sig
Achievement 50m butterfly swim	32.763	0.562	31.643	0.621	0.988	6.7791	0.000	Sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 8

**Table 5:** The results of the pre and post tests of the control group

Variables	Pre-test		Post-tests		difference of Standard deviation	T value	Level sig	Type sig
	Mean	Standard deviation	Mean	Standard deviation				
Fast arm strength	8.321	0.677	9.783	0.665	0.675	8.622	0.003	Sig
Fast leg strength	2.298	0.541	2.397	0.733	0.823	4.512	0.001	Sig
Achievement 50m butterfly swim	33.345	0.794	32.435	0.911	7.975	7.988	0.000	Sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 8

**Table 6:** The results of the post-tests, the experimental group and the control group.

Variables	Experimental group		Control group		T value	Level sig	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Fast arm strength	11.568	0.963	10.445	0.654	5.886	0.000	Sig
Fast leg strength	2.784	0.723	2.567	0.983	8.834	0.001	Sig
Achievement 50m butterfly swim	30.889	0.682	31.852	0.834	6.967	0.001	Sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 16

### Discussing the results

The researcher attributes that training according to the anaerobic capacity (lactic) in developing the rapid strength of the arms and legs, the achievement of the effectiveness of the 50-meter butterfly, this development in the rapid strength at speed of the arms as one of the basic capabilities of the components of physical preparation because of the important role it plays in sports activities (Adel Abdel Basir) <sup>[4]</sup>. That is, the more the strength develops, the less time it takes to perform, and thus an indication of the development of the strength characterized by speed, the speed increases with the increase of muscular strength, because any sports movement requires an amount of thrust that is the connection of speed with strength, so it is necessary to develop strength in order to the speed increases (Saeed Ahmed Saeed) <sup>[5]</sup>. that the force increases the shorter the period of muscle contraction and vice versa, that is, the longer the period of muscle contraction, the more the amount of force changes. The degree of skill performance, the level of compatibility between fibers and muscles, and the improvement of the temporal and dynamic distribution of motor performance, and this is what the training device provided to develop the speed-specific strength of the arms and Swimming achievement of 50 m butterfly, as the focus on exercises in which the same muscle groups are used in the performance is more effective and beneficial (Sadiq Faraj Diab) <sup>[6]</sup>, so the athlete and coach always seeks to develop muscular strength to improve the level of motor performance in accordance with the law and technique of the game Through exercises to reach the largest possible amount of kinetic production, and muscular strength is the most important physical ability through which an athlete can step forward towards sports achievement (Bastoussi Ahmed) <sup>[7]</sup>, and that muscular strength is important in the field of swimming, because water resistance is greater than Air resistance, so the swimmer needs more muscle strength in order to move in the water (Essam Helmy and Mohamed Jaber) <sup>[8]</sup>, The researcher believes that the development of rapid force has an effect in swimming (50) m butterfly that the greater the strength of the arms and legs during the training unit during Training can increase the speed of the swimmer and can counteract the force of water resistance.

### Conclusions

- Training according to the anaerobic capacity (lactic) contributed to the development of the rapid strength of the arms and legs of the experimental group and in favor

of the dimensional measurement.

- Contributed according to the anaerobic capacity (lactic) in the development of the achievement of the effectiveness of the 50-meter butterfly for the experimental group and in favor of the dimensional measurement.

### Recommendations

- Directing researchers to physical exercises according to the anaerobic (lactic) ability that develops the kinetic path of swimming activities.
- Conducting similar studies on other swimming activities and methods.

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