

## THE EFFECT OF DRILL CONTROLLED ONE ARM AND DRILL CATCH UP FREESTYLE SWIMMING TRAINING ON MEN SWIMMING ATHLETES

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### Abstract

*This study aims to determine the differences in the effect of Drill Controlled One Arm and Drill Catch Up Exercises on Swimming Speed for Freestyle in Men's Swimming Athletes at Pontianak Swimming Club. The method used in this research is the experimental method. The sample used in this study were 16 athletes from swimming clubs. Based on the results of the research, the Drill Controlled One Arm and Drill Controlled One Arm exercises both have an influence on speed in the free swimming style of men's swimming athletes at the Pontianak Swimming Club. Based on the results of the study showed that the results of the Drill Catch Up exercise were better than the Controlled One Arm Exercise for freestyle swimming in male swimming athletes at the Pontianak Swimming Club*

**Keywords:** *Swimming; Controled One; Catch Up.*

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### INTRODUCTION

Achievement is a goal in a training program so it requires practice (Premana et al., 2020). Swimming is one of the water sports that makes the body healthy and fun. This sport is liked by children to adults and even babies who are a few months old can also be taught to swim like floating in water. Learning to swim is a very fun activity (Arhesa et al., 2020). Swimming is a sport that is well known to all levels of society, from children to the elderly (Yosucipto & Mardela, 2019). Swimming is a physical activity that can improve the coordination and balance of a child's body and is also the sport that children like the most (Sin & Hudayani, 2020).

Swimming is increasingly popular and the difference in champion positions can be determined by smaller time limits (Weimar et al., 2019).

Swimming does not determine a pattern of hand or foot movements that must be performed, but swimming can use hand or foot movements at will so that it can float and move from one place to another (Nursalam & Aziz, 2020). This sport is very complex but can be measured, the ability to swim can be done based on the speed of travel time in carrying out the appropriate technique and one of the techniques that affects speed is glide in swimming (Ramadhan et al., 2021; Siregar & Syahara, 2019).

Basically, swimming has many benefits and goals, including recreational sports, health sports and sports achievements. In the sport of swimming achievements are usually contested at regional, national and international levels. The championships that are routinely held are such as National Championships, National Student Sports Week (POPNAS), ASIAN Games, Olympics and many other competitions between clubs.

Freestyle swimming is swimming with the fastest movements compared to breaststroke and backstroke. Foot movements are carried out by hitting the feet up and down alternately into the water with regular movements while the hands paddling alternately with coordination entering, stretching, catching, pulling, pushing and recovering, and taking breath when the pushing hand moves.

Training is a process in which there are physical activities that are arranged in a training program with the aim of developing skills, improving physical fitness and health aspects which are carried out continuously and directed. The need for regular practice in swimming training allows success in achieving a goal because the goal of learning to swim is not only aimed at being able to swim alone, but is also aimed at children achieving achievements in swimming. To achieve maximum performance, the coach is the person who is responsible for the success of the athlete. There are four aspects of training that must be considered, namely physical training, technical training, tactical training, psychological training. These aspects are interconnected with each other and affect the achievement of a goal in the training process. Exercises that are done

properly will cause changes in the network system, the changes that will occur are related to the development of abilities in sports activities (Budiwanto, 2012). Exercise according to Suhairi et al is effort and effort in order to increase the ability of the body both in whole and in part with measurable and systematic movements that are repeated with increasing intensity and training load. (Suhairi, M., Tangkudung, J., & Asmawi, 2020).

Speed is the athlete's ability to respond to stimuli in the form of movement in the fastest time (Sukadiyanto, 2011: 116). In swimming, speed is something that cannot be separated. In competition swimming speed becomes very important. Many things are factors that affect speed in swimming, including swimming style. In every swimming style competition that is usually used is freestyle. This is because freestyle is the fastest swimming style. Swimming speed is measured using a stopwatch. Results are seen when swimmers have reached the finish point.

(Sukadiyanto & Muluk, 2011) stated that in principle training is a process of change in a better direction, namely to improve: physical quality, functional abilities of body equipment, and psychological quality of trainees. In achievement sports, this process will be successful if there is cooperation between experienced and knowledgeable trainers and sports scientists who are really engaged in the field of training. For this reason, ideally a coach is required to have experience and knowledge in the sport he is involved in. In addition, they are also required to have an educational background that makes them a scientist in the field of sports.

(Sukadiyanto & Muluk, 2011) the term exercise comes from English words which can contain several meanings such as: practice, exercise, and training. The definition of exercise that comes from the word practice is an activity to improve sports skills (skills) by using various equipment in accordance with the goals and needs of the sport. The definition of exercise that comes from the word exercises is the main tool in the process of daily training to improve the quality of the functioning of the human body's organ systems, making it easier for

athletes to perfect their movements. Exercises are training material designed and arranged by the trainer for one training session or one face-to-face practice.

The definition of exercise that comes from the word training is the application of a plan to improve the ability to exercise which contains theoretical and practical material, methods, and implementation rules in accordance with the goals and objectives to be achieved. Because of the need for a training load during the training process so that the training results can affect the improvement of the physical, psychological, attitudinal and social qualities of athletes, so that peak performance can be achieved in a short time and can last relatively longer.

(Wiarso, 2013) practice is an activity to improve sports skills (skills) by using various equipment according to the needs of the sport. According to (Robinson, 2010), practice is essential if learning is to take place, and deciding on which type of practice to deliver the session with will depend on how and what the coach requires his or her performers to learn. This means practice is essential if learning is to take place, and deciding what type of practice to provide for this session depends on how and what the trainer needs to learn. (Bompa, 2015) expressed his opinion that as follows: training is the process of executing repetitive, progressive exercises or work that improves the potential to achieve optimum performance. From these various opinions it can be concluded that training is a process of activity that is carried out repeatedly according to the objectives planned in a systematic and increasing manner which is composed of warm-up, core exercises, to cool-down.

The drill method is a technique for practicing certain skills with exercises that have been studied continuously, so that students have abilities in the desired field (Puspita, 2017). (Roestiyah, 2012), the drill method is "a technique in which students do repeated exercises, for students to get better dexterity or skills than they should have learned".

Drill training is a method that is interpreted as a way of teaching in which students do exercises so that students have better skills or abilities than those

previously learned, practical, regular and easy movements to do in doing so, fostering children to improve skills more perfectly (Agung Rizkiyansyah, 2019) It can be concluded that drill exercises can improve or train skills so that children have better skills and abilities than what children have learned before.

This exercise suppresses the element of balance and helps to dive into the water more easily, and it also helps us to inhale each breath in this motion (Cookie, 2011). You will be swimming freestyle and breathing away from your arms. Keep the other arm down the side of your body with fingers clasped together. Use your hips for a 45-degree rotation to either side, being careful not to shift them while breathing. It is important to start your catch from getting too deep. When caught, your elbow rotates slightly up and higher than your hand. Do one arm rotation, and then rotate to the other arm. For the second round.

Speed isn't the goal, it's technique, so don't push hard, push smart in this move. This movement requires you to use core simultaneously to keep your body rotating for the breath. Remember, you are still trying to keep one glass up one glasses down parallel to the water and you will not take a quick breath and return face down, eyes pointing down polling position (hand pull/push) as quickly as possible.

## **METHOD**

Method for this study, the experimental method was used. Experimental research is a research method to find the effect of certain treatments in (Sugiyono, 2018). The research form used in this research is the Two Group Pretest-Posttest Design. Research design is a design on how to analyze data so that it can be carried out economically and in accordance with research objectives. In this study the design used was a two group pretest-posttest design. This design involves two groups of subjects being studied, namely by giving an initial test (pretest) to the research sample after which it is given treatment and evaluated by giving a final test (posttest). Before carrying out the treatment, the samples were selected using the purposive sampling technique first, to fill in each group. How to divide the

experimental group in the pretest using After the initial test results are ranked, then subjects with equivalent abilities are assigned to group A and group B. In this way the two groups before being given treatment are balanced groups. If in the end there is a difference, then this is due to the influence of the treatment given.

Population, (Sugiyono, 2014) states that "population is a generalization area consisting of: objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn." Population From this study, all male athletes at Pontianak Swimming Club a total of 16 athletes, samples, techniques for using samples in the research used were total sampling. Total sampling is a way of determining the number of samples if all members of the population are used as samples (Sugiyono: 2018). The total sample in this study was 16 male athletes. By dividing into two groups using the Ordinal Pairing A and B technique. Then the number of each group is: A = 8 male athletes B = 8 male athletes.

## RESULTS AND DISCUSSION

The Description Of The Analysis Of The Results Of The Freestyle Swimming Speed Measurement Data Carried Out According To The Groups Being Compared Is Presented As Follows:

**Table 1.** Descriptive Data of 50 Meter Freestyle Swimming Speed Measurement Results

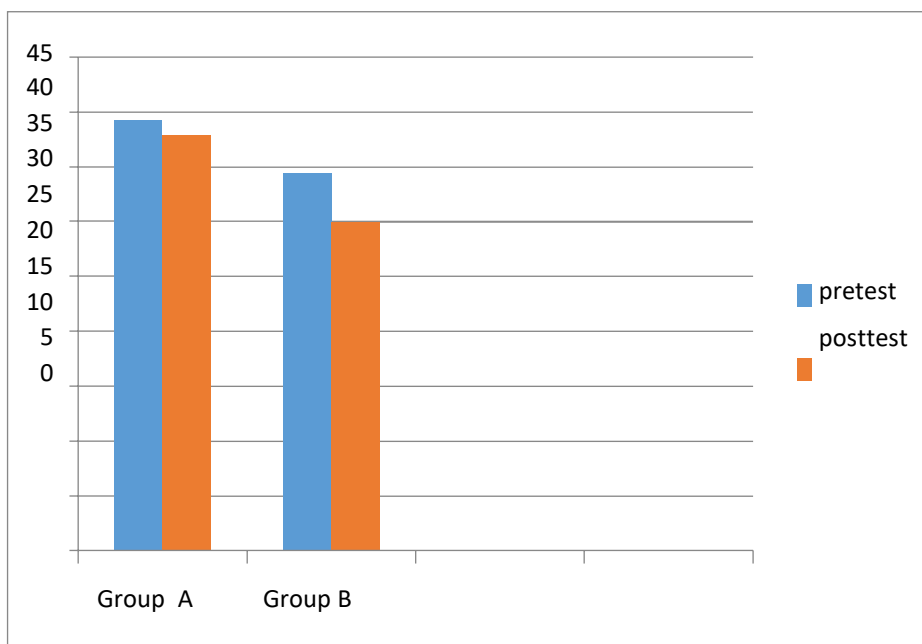
Treatment	Statistik	Pretest	Posttest
Drill Controled One Arm	Mean	39,2700 detik	37,9625 detik
	Sd	9,26684	9,22793
Drill Catch Up	Mean	34,4400 detik	29,9212 detik
	Sd	3,04691	3,00828

Some things to pay attention to the values contained in the table above are as follows:

In the control one arm drill training group, the average 50 meter freestyle swimming speed before the controlled one arm drill exercise was 39.2700 seconds and the 50 meter freestyle swimming speed average after the controlled one arm drill exercise was 37.9625 seconds. 2. In the treatment group, the drill catch-up

exercise had an average swimming speed of 50 meters freestyle before the drill catch-up exercise was 34.4400 seconds and the average swimming speed of the 50- meter freestyle after the drill catch-up exercise was 29.9212 seconds.3. If the two treatments are compared, the average speed of 50 meter freestyle swimming with the drill catch up treatment is better than the one arm controlled drill exercise.

In order to obtain a fairly complete picture of the average value of the 50 meter freestyle swimming speed, comparisons were made to the main factors of the study. The average speed value of swimming in the 50 meter freestyle achieved for each group in the form of a histogram is presented. Then a histogram can be made to compare the values:



**Figure 1.** Histogram of the average value of 50 meter freestyle swimming speed

Information :

Group A: one arm controlled drill group

Group B: drill catch up training group

**Table 2.** Summary of Analysis Results Freestyle swimming for 50 meters (Drill Controlled One Arm Exercise)

Paired Samples Test						
	Paired Differences				t	Sig. (2-tailed)
	Mean	Std. Deviation	95% Confidence Interval of the Difference Lower	Upper		
Pair pretest drill controlled one arm - posttest drill controlled one arm	1,307500	,32407	1,03657	1,57843	11,4127	0,000

Based on table number 2, it shows the results of the study that drill controlled one arm exercises can have an effect on the speed of 50 meter freestyle swimming. This is evidenced by the value of Sig = 0.000 <0.05. Thus the null hypothesis (Ho) is rejected. Which means there is a significant effect of drill controlled one arm training on the speed of 50 meter freestyle swimming.

**Table 3.** Summary of Results Freestyle analysis for 50 meters ( Drill catch up exercise)

Paired Samples Test						
	Paired Differences				t	Sig. (2-tailed)
	Mean	Std. Deviation	95% Confidence Interval of the Difference Lower	Upper		
Pair pretest drill catch up - posttest catch up	4,518750	,63959	3,98404	5,05346	19,9837	0,000

Based on table number 3, it shows the results of the study that the drill catch up exercise has an influence on the speed of the 50 meter freestyle swimming. This is evidenced by the value of Sig = 0.000 <0.05. Thus the null hypothesis (Ho) is rejected. Which means there is a significant effect on the drill catch up exercise on the 50 meter freestyle swimming speed.



**Table 4.** Summary of Results Analysis of Freestyle 50 meter swimming speed Difference Influence Between (One Arm Controlled Drill Exercise With Catch Up Drill Exercise)  
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Posttest drill controlled one arm & catch up	Equal variances assumed	14,050	0,002	2,343	14	0,034
	Equal variances not assumed			2,343	8,471	0,045

Based on table number 4, it shows the results of the study that the one-arm controlled drill exercise and the catch-up drill exercise had a significant difference in effect on the 50-meter freestyle swimming speed. This is evidenced by the value of Sig = 0.045 <0.05. Thus the null hypothesis (Ho) is rejected. Which means there is a significant difference in the effect of the controlled one arm drill exercise and the catch up drill exercise on the 50 meter freestyle swimming speed. From further analysis, it was found that the effect of the drill catch up training treatment was that the 50 meter freestyle swimming speed was faster than the one arm controlled drill training treatment. In the following, the speed time before the drill catch-up exercise treatment group had an average 50-meter freestyle swimming speed before the catch-up drill exercise was 34.4400 seconds and the average 50-meter freestyle swimming speed time after the catch-up drill exercise was 29.9212 seconds. Compared to before the treatment group the controlled one arm drill exercise was 39.2700 seconds and the average 50 meter freestyle swimming speed after the controlled one arm drill exercise was 37.9625 seconds. In addition to swimming speed time, for the percentage exposure from the above comparison, it was found that the 50-meter freestyle catch-up drill exercise treatment had a greater effect than the one-arm controlled drill exercise

treatment. Drill catch up exercise has an effect of 13.12% on the average change in swimming speed time. While drill controlled one arm only had an effect of 3.33% on the average change in swimming speed time. The percentage of catch-up drills is much greater, 9.79%, than the one-arm drill.

### Discussion

Swimming is movement while moving in water, and usually without artificial equipment. This activity can be used for recreation and sport. Swimming is one sport that is not easy to do, apart from good mastery of basic techniques, physical condition is very decisive. Speed is important as the driving principle in reaching the finish line. Forward velocity in swimming is the result of two forces: the forces that tend to resist it (resistance and drag) and the forward-pushing forces caused by the movement of the arms and legs.

Speed is a determining factor in sports, speed is something that is very much needed in a match. In swimming, speed is something that is absolutely necessary, especially in doing swimming strokes, speed in coaching theory means the ability to move the limbs, legs or arms or the static parts of the body and even the whole body with the greatest speed that can be done.

Based on the results of this study, it shows that the Drill Controlled One Arm and Drill Catch Up exercises have an influence on the swimming speed of the 50 meter freestyle in male swimming athletes at the Pontianak Swimming Club. Drill Controlled One Arm is a form of drill training that is taught in freestyle swimming. The Controlled One Arm Drill is a drill that is very easy to learn and do, with one hand stroke and flutter kick. The Controlled One Arm movement starts with the arms extended in front and pulls one hand backwards and is rotated forward then the feet alternately hit the water down and up then breathing is done with the head facing to the right or left side. The one arm drill helps the freestyle stroke because it is easier and less tiring as the full stroke, so you can do it for a longer time. To practice this exercise, just do the freestyle technique using one arm. The other arm is kept at the side or extended overhead.

For example, do a 50 meter drill using your left arm and then 50 meters using your right arm.

The Drill Catch Up exercise also influences the swimming speed of the 50 meter freestyle in male swimming athletes at the Pontianak Swimming Club. Drill Catch Up is a drill exercise that is very easy to learn and do, by swinging both hands alternately with the position of the body, hands and feet like the number 11, which means the position of the shoulders is parallel (shoulders do not rise towards the front side). The Drill Catch Up movement begins with both arms extended in front and pulling one hand backward and rotated forward then the feet alternately hitting the water down and up then breathing is done with the head facing to the right or left side. And this drill exercise with full strokes. From further analysis, it was found that the effect of the drill catch up treatment was 34.4400 seconds and the average freestyle swimming speed of 50 meters after the drill catch up exercise was 29.9212 seconds. Compared to before the treatment group the controlled one arm drill exercise was 39.2700 seconds and the average 50 meter freestyle swimming speed after the controlled one arm drill exercise was 37.9625 seconds.

With the process of practicing continuously the arms are trained 3 strokes or 4 strokes in freestyle swimming by reducing the breath taking in each stroke, in freestyle swimming the less you take a breath, the faster you swim, so that it will increase your body's speed in swimming. swim. That principle makes freestyle swimming speed increase by using the Catch Up exercise. Training is a process that is carried out consciously, systematically, and has a specific purpose. The principle of training is a conceptual basis as a reference for designing, implementing, and controlling a training process. Therefore, so that the results of the exercise can be maximized, it must be carried out continuously and properly programmed continuously

## Conclusion

Based on the results of previous research and discussion, the following conclusions can be obtained:

Based on data analysis of the speed of the 50 meter freestyle Drill Controled One Arm exercise, it is concluded that there is an effect of the Drill Controled One Arm exercise on the speed of the 50 meter freestyle swimming in male swimming athletes at the Pontianak Swimming Club.

Based on data analysis of the speed of the 50-meter freestyle Drill Catch Up exercise, it can be concluded that there is an effect of the Drill Catch Up exercise on the swimming speed of the 50 meter freestyle in male swimming athletes at the Pontianak Swimming Club

Based on the calculation results show that the results of the Drill Catch Up exercise are better than the Drill Controled One Arm exercise for the 50 meter freestyle swimming speed in male swimming athletes at Pontianak Swimming Club

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