

The impact of intakes the compound whey protein on some biological variables, and the muscular strength for short-distances swimmers

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The Research Summary

Improve and develop the level of performance can be achieved through the development of physiological capacity, which must be available to swimmers, by placing the suitable means and methods to develop it in a scientific way. In addition, it provides the time and effort, also contribute to the development the level of performance in an economical manner. The researcher noted that some swimming coaches do not have the scientific expertise and know-how the allowed proportions which intakes for dietary supplements. And, if normal levels which generally accepted were exceeded the swimmer may enter the restricted doping area. Therefore, it may cause harm resulting from misuse. Besides the lack of expertise and the most suitable timings, when should the players' intake the supplement. Through what has

seen by the researcher from the previous researches shows that the reasons for the low level of skill performance in the sport of swimming was the reduction of physical and physiological capabilities of some of the juniors. These researches indicated that the improvement of those capabilities will lead to the higher skill-level. Based on the foregoing, the researcher conducting this research to know the impact of taking the compound whey protein on some biological variables, and the muscular strength for short-distances swimmers.

The research purpose is to identify the impact of taking the compound whey protein on some biological variables, and the muscular strength for short-distances swimmers. The researcher used the experimental approach, for the two groups one of them is the experimental and the other is controller. The research sample

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included on the short distance swimmers at the Hamad Aquatics Complex in Qatar, for the training season (2015/2016) and the most important results of effectiveness is the impact of taking the compound whey protein on some biological variables, and the muscular strength for short-distances swimmers.

The introduction and research problem

The most important characteristics of the sport is to be closely linked to the developments and basics of the other natural sciences, each activity of sports activities is characterized by the capabilities and special qualities, it qualifies the individual athlete to practice this type of activity and being able to reach high levels.

The nutrition plays an important role in the lives of human beings in progress, and advancement, and well-being, direct or indirect way. The nutrition as a science must be known by all the people, all the layers, levels and classes, so nutrition is essential for the students and player child. (20:29).

The aim is to achieve sporting achievements and gain the advanced centers at all levels, where no longer increasing in the training loads and dosage do not meet the aspirations of athletes. So witness the sports field in a fierce race to obtain the means of producing the desired development and at the lowest possible side effects. (1: 4) (95:13).

Dietary supplements are the one of these alternatives, which was quite popular for being taken from natural food sources, It works to provide a favorable environment for the growth of muscles of the body besides the food program of the sports activity that was practiced. (5:17).

Pouramir, et al. adds that the steroids are completely different from dietary supplements, the first one applies the forbidden harms which generally accepted internationally. (21: 710)

Sameea Khalil The dietary supplements are derived combination from the natural food ingredients, animal, plant and other like (material falling within the diet), produced as various shapes and sizes (tablets,

capsules, powders fluids), Containing of the food material or the food compound that aims to increase the rate of the body or muscle cells. To get the necessary energy or increase muscle cell area, so effectiveness of specialist in order to get the highest athletic achievement. (12: 1)

With the difficulty of obtaining proper and full nutrition of plain food, the dietary supplements have become the best ways to get full feed elements to provide the body with energy, vitality and activity. (92:30)

Athlete needs to take dietary supplements are quantitative and qualitative differ from ordinary people, The practicing of physical activity accompanied by an increase in the rates of energy consumption, and an increase in losing body salts through sweat.

Keshk, et al adds that the dietary supplements are vary in the quantitative and qualitative among athletes themselves, depending on the nature of sports activity requirements differ physical and physiological elements. And thus differ the type and quantity of doses which the

athlete intake from the dietary supplements. (27: 177)

Hussein Hashmat and Nader Shalabi refer to the proteins play a key role in the construction of living material, as well as the completion of biomechanical processes When there is life, we find that it is related to the presence of protein body, and where we can find the protease body, we will face, without exception the manifestations of life, and this is the fundamental importance of proteins (11:17).

Hussein Hashmat mentions Proteins that include essential amino acids that The body cannot be manufactured, and it estimated at (10) amino acid. Non-essential amino acids that the body can be manufacture are (12) amino acid. And the proteins Decomposes into amino acids in the gastrointestinal tract under the influence of intestinal yeasts, pancreas, and intestines minute, which are absorbed from the minute intestine to the blood then transported to the entire body (10:57).

Layman adds that in spite of the presence of protein in a lot of nutrients such as fish, meat and other, but whey

protein characterized by high biological value, in addition to the speed of digestion and absorption in 45 to 60 minutes, and the ease of intake it. He adds one of the most protein sources that contains the amino acids saturated (**BCAA**) An important source of amino acid that sulfur-rich component, Cysteine has a very important role to the body needs it to build glutathione, it's important to the immune system and also acts as an anti-oxidant too. (28: 133)

Cribb, et al. refers to whey protein that is one of the dietary supplements which are indispensable for a lot of players, it increases the player by about one-third more than his need daily protein, and it has gain the trust for the supplementing of impressive results in getting on the strength of muscle without any fat gain. He adds that the whey-protein consists of (92% water - 6.5% lactose - 0.9% protein - 0.2% vitamins, salts and fats in a glass). (22: 1918)

Foss, & Ketyian said that 85% of Americans intake food supplements and 82% of American athletes intake those with high levels of dietary supplements, whereas feels better in performance and in spite of the conflicting

opinions and the results of scientific studies into the feasibility addressed, what is the allowable percentage for circulation among athletes. But agreed upon the positive effects of these supplements for athletes and non-athletes alike. (23: 198)

Borg & Leminen refer to that 70% of athletes in Finland intake nutritional supplements to improve performance on a daily basis, and that 37% of Finland coaches believe that dietary supplements are not beneficial, 34% point to the importance and need to be addressed (18: 902).

Ahmed Ibrahim asserts that the sport of swimming is one of the most prominent sports that are important to the fore in all international and Olympic competitions in the World. As well as the world's recognition and appreciation for the development of breaking the records day after another. Which scientists, researchers and specialists called on to conduct researches and studies and the preparation of the scientific literature that depend on it. There are people interested to it, all those interested in the sport of swimming. (19: 3)

The main objective of the training shows in the sport of competitive swimming as a sport, specifically in the short distances is breaking records whereas clocking as quickly as possible and in the least time possible. So it must be to develop the training process of the sport of swimming in order to get on the target to be achieved which is to reach the highest levels of international sports. (2: 11)

Modern sports training methods are considered the backbone of the training process, with all its determined training loads. Selection of fitness elements that should be developed by the coach, through these methods, the trainer can determine the physical element that must focus on it depending on the type and importance of kinetic skills used in the activity of specialization athletic. (11: 5)

Due to the evolution of science associated with the field of sports training, trainers were interested in ways and modern methods in the preparation of swimmers training, which has helped to raise the level of swimmers physically, technically and made them to reach the highest

levels of competition. This achievement was crystallized in the level of numbers that achieved by the swimmers, during the previous World Championships and Olympics. (7: 11).

The importance of muscle power in swimming at the performance of a swimmer the Start diving. As well as when the rotation performance in push movement, and also shows the impact on the speed of the swimmer, when performing the short distances, but the low influence occurs, if the race distance is longer. (6: 245)

Hazem Ismail adds that to the importance of muscle power development for swimmers because of its positive impact on the progress of digital level of swimmers. The importance of muscle power in the muscle activities that has continuous nature and rapid iteration, which is characterized by the force with the speed as in the sport of swimming, so the swimmer must be characterized by a high ability of muscle, so that he can output a high degree of driving force of the feet. As well as a high level of speed at the skill required for performance. (9:20)

The idea to reap medals and achieve advanced positions has changed in recent, and appeared with Future vision, achievement athlete to become this achievement in scientific research, which the scientists rely on it, whether specialists in the sports field or in the various sciences to summarize expertise and experience in the preparation of standardized doses that provide to athletes. So the focus of this vision has moved from the athlete's own capacity to deliberate attempts to understand, analyze and employ these capabilities using all that is modern in the sports field. To improve the numbers of swimmers during training and competition process.

The researcher noted that some swimming coaches do not have the scientific expertise and know-how in the allowed proportions intakes for dietary supplements, which if exceeded the known normal levels, may make the swimmer in the banned stimulant area. Then may cause him harm resulting from this misuse, in addition to the lack of knowledge of the most appropriate timings, which should intakes the swimmers dietary supplement, It was

found that, the player achieve the high levels is linked to reducing significantly the level of capabilities and the information provided by the coach, in the type of activity who specializes in it. Based on the foregoing, the researcher conducting this research, to identify the impact of intakes the compound whey protein on some biological variables, and the muscular strength for short-distances swimmers

The research aim

Identifying the impact of intakes, the compound whey protein on some biological variables, and the muscular strength for short-distances swimmers.

Research hypotheses

1. There are statistically significant differences between the average of the pre and post measurements at the level of some biological variables, and the muscular power for short-distance swimmers in a favor of the experimental group.
2. There are statistically significant differences between the average of the pre and post measurements at the level of some biological variables, and the muscular power for short-distance swimmers in a favor of the controller group.

3. There are statistically significant differences between the average of the pre and post measurements for the two research groups, at the level of some biological variables, and the muscular power for short-distance swimmers in a favor of the experimental group.

Some of the terms contained in the research:

*** Food Supplement:**

Is extracted from the combination of natural food components (animal - plants) and within meals. (62:23).

***Whey-protein compound**

Is so-called whey protein and is made from the milk, which consists of (92% water - Lactose 6.5 - 0.9 -0.2 vitamins, protein and fats, salts in a glass) and produces the conversion process the milk to the cheese. (5:15).

Research procedures

The method

The researcher used the experimental method, the experimental design of the two groups experimental and the controller, for suitability to the nature of the research

The research sample

The research sample was chosen the way of compulsory from short-distances swimmers at Hamad Aquatics congregation in Qatar, the sample contains of (24) swimmers ranging from (15-17) age, were divided into two groups, each group (8) swimmers as well (8) swimmers to Perform an exploratory research the researcher conducting homogeneity between the sample in table (1).

**Table (1)
The research sample characteristics**

Parameter	Measuring Unit	Average	Standard deviation	Mediator	Torsion modulus
Length	Cm	159.15	2.52	159.00	0.04
Weight	Kg	60.71	1.98	60.00	0.31
Chronological age	age	15.14	0.62	15.00	0.49
Training age	age	4.01	0.21	4.00	0.80
Stretch heaviness legs	Kg	33.2	0.58	33.00	0.65

**Follow Table (1)
The research sample characteristics**

Parameter	Measuring Unit	Average	Standard deviation	Mediator	Torsion modulus
Lift the weight off the chest	Kg	55.3	0.32	55.00	0.41
Arms extended fore ballasted	Kg	52.6	0.41	52.50	0.33
Dynamometer to measure leg muscles strength	Kg	61.4	0.54	61.00	0.58
Dynamometer to measure back muscles strength	Kg	56.2	0.63	56.00	0.52
Total protein	G / dL	6.44	0.22	6.20	0.32
Albumin	G / dL	3.31	0.47	3.30	0.11
Urea	G / dL	22.5	0.59	22.00	0.85
Creatinine	Mg / 100 Mm	0.74	0.021	0.70	0.32
Swimming (50) meters freestyle.	Sec	27.45	0.06	27.40	0.40
Swimming (100) meters freestyle.	Sec	61.10	0.08	61.00	0.28

N = (24)

Table (1) shows that the coefficients sprains of the variables is limited to the (± 3), which indicates that the moderate distribution of elements refers to homogeneity of the sample.

Homogeneity of the sample

The researcher conducted valence measurements for the two groups the experimental and controller group in the anthropometric variables and some biological variables and measurements of muscle strength in table (2).

Table (2)
There are significant differences between the experimental and controller group, at the level of biological variables, and the digital level for short-distance swimmers.

Parameter	Measuring Unit	The Experimental group(N1=10)		The Control group(N2=10)		T Value	Statistically significant
		SMA	s.d	SMA	s.d		
Length	Cm	158.32	1.052	158.18	1.521	0.32	No Signify
Weight	Kg	59.52	0.98	59.22	0.96	0.18	No Signify
Chronological age	age	15.11	0.21	15.15	0.62	0.32	No Signify
Training age	age	4.012	0.14	4.018	0.21	0.21	No Signify
Stretch heaviness legs	Kg	33.10	0.32	33.15	0.53	0.38	No Signify
Lift the weight off the chest	Kg	55.14	0.52	55.17	0.41	0.11	No Signify
Arms extended fore ballasted	Kg	52.50	0.68	52.41	0.32	1.01	No Signify
Dynamometer to measure leg muscles strength	Kg	61.22	0.47	61.51	0.52	0.98	No Signify
Dynamometer to measure back muscles strength	Kg	56.11	0.62	56.18	0.14	0.33	No Signify
Total protein	G / dL	6.18	0.42	6.22	0.32	0.002	No Signify
Albumin	G / dL	3.19	0.21	3.21	0.85	0.03	No Signify
Urea	G / dL	22.11	0.65	22.18	0.32	0.45	No Signify
Creatinine	Mg / 100 Mm	0.73	0.025	0.71	0.021	0.04	No Signify
Swimming (50) meters freestyle.	Sec	27.51	0.41	27.22	0.56	0.28	No Signify
Swimming (100) meters freestyle.	Sec	61.18	0.21	61.52	0.41	0.44	No Signify

(N 1 = N 2 = 8) The (T) tabulated value at the level 0.05 = 1.725

Table (2) shows that there are no statistically significant differences between the two groups, the experimental and controller group at in the anthropometric variables, the level of some biological variables, and the muscular power for short-distance swimmers whereas the value of counted (T) less than the tabulated (T) values, which refers to the equalization the two groups in these variables.

Data collection tools

The researcher used the following tools and devices:

- The balance of medical standards - for the measurement of body weight.
- Alrstamitr device for measuring the body high off the ground.
- Sterile syringes
- Plastic tubes to put the samples inside it
- Centrifuges
- Coleman with snow for keeping samples
- Medical Cotton
- Dynamometer device to measure the strength of the grip
- Dynamometer device with metal chains to measure the strength of the muscles of the back and legs

- Registration data form and measurements of the sample
- Stop Watch
- Training program.

Steps to implement research

First the pre measurements:

1. Conducting personal interviews with members of the research sample to familiarize them with the general aim of the research, warning them that they should not change the system of food during the probationary period. No vitamins and other substances without the knowledge of the researcher, with alarm them full fasting for (12) hours prior to sampling.
2. The pre measurements were conducted in the period from Sunday, 1/30/2016, in the following order:
3. Measure the digital level of the free swimming (50 m / 100 m) using digital clock to stop and rounding (0.01) of a second.
4. Measure the muscle strength of the legs by dynamometer device with metal chains, and wooden base, and adjusts each swimmer chain length depending on the length of his body. Swimmer clutching the handle of the chain stands and legs in a curvature, the arms and back to

full integrity, then extend the swimmer's legs and take the reading on the number of the connected to the chain, it gives each swimmer three attempts and recorded his best.

Attachment (2)

5. Researcher used dynamometer device with metal chains and wooden base to measure the strength of the lower back muscles. With a different body position and grip, Keeps the swimmer holding a bar and inversely legs and arms at full striate and torso slightly curved forward, the swimmer extended torso aloft until it reaches the moderation and back straight, given the emerging three attempts and recorded the best.

Attachment (2)

6. Withdrawal of blood samples (3) cm from the vein to measure biological variables (also protein) by electrophoresis for protein.

Attachment (3).

Whey Protein

Whey protein is a so-called protein and features free protein is easily taken for taste and granulated for adults and children and is absorbed and digested than 45 to 60 minutes as well as it contains an excellent ratio of vitamins and amino acids, and calcium.

How to use it:

It is used Whey protein after exercise directly, due to the process of disintegration of

muscle tissue, after training the body to build muscle again, and Whey protein intakes during the recovery phase directly, lead to good muscular growth of juniors.

The dose

Whey protein Intakes at a dose of 30 grams after training. (28)

The proposed program to train short-distances swimmers

The program duration:-

The program applied included to the experimental and controller groups for 8 weeks, in the competition's preparation period, a period in which the intensity up a cap-and-up where the swimmers to the best level then the application period for two weeks to calm down (at least in size in the first week, 30% - and then at least 30% in the second week) In order to rest the muscles compensate for lost energy and the ability of the swimmers performance at full speed in the races without any stress.

The aim of the program: -

Improving the digital level of swimmers using performance plans for the race and the rate of frequency wrenches and linked to achieving the best possible time and improves the performance of the swimming and the level of start-up and rotation.

There are some basics that must be observed: -

- A very good warming up before the performance capability to train a group of high intensity.

- Very attention the process healing after the performance of high-intensity training group.

- The ranges of the size of competitive exercise between 300 and 600 meters.

Model unit training in the competitions

Unit Sections		Exercises	Intensity	Repetitions	Total time average
The preparing		- Light swimming around the pool - flexing exercises for all the body's muscles - watery warming up	50 – 60 %	10 turns – 10 repeats	15 min
The main	First	(20) m swimming at full speed then returns 20 m light swimming and so on	70% 75% 70%	9 repeats * 40 m	4 min
	Second	(40) m swimming at full speed then completes 10 m light swimming and so on	70% 75% 70%	8 repeats * 50 m	6 min
	Third	(60) m swimming at full speed then returns 10 m light swimming and so on	70% 75% 70%	7 repeats * 70 m	8 min
	Forth	(80) m swimming at full speed then completes 20 m light swimming and so on	70% 75% 70%	6 repeats * 100 m	10 min
	Fifth	(90) m swimming at full speed then completes 10 m light swimming and so on	70% 75% 70%	5repeats * 100 m	12 min
The break between two repeats is the pulse returning 120-130 p/min					
The break between two groups takes 3 min					
The final		Light swimming exercise with relaxing and breathing exercises			5 min

Executive steps to search The pre measurements

The researcher conducting the pre measurements for the research variables as follows:

- Variables measuring (height - weight) and biological variables among short-distances swimmers at Hamad Aquatics congregation in Qatar, Blood samples were taken after the approval of parents through a doctor who specializes in the analysis of the day Saturday, 01/30/2016.

Implementation of experience:

Application program starts Saturday, 06/02/2016 to Thursday, 05/21/2016 for 12 weeks where (4) weeks in preparation and (8) weeks of special preparation and competition, It is time to give Whey-protein doses for three days a week (Sunday, Tuesday and Thursday) gives (60) grams of isolated Whey-protein after the training

module experimental group and the controller group perform the same program without taking the compound Whey protein and then follows the preparations of competition period (2) calm.

The post Measurements:

It Has been conducting all the post measurements of the research variables and has been applied in the pre measurements were recorded all the measurements and then on Saturday 23/5/2016.

The statistical treatment:

The researcher used the statistical group package for social sciences (arithmetic average, standard deviation, mediator and the coefficient of sprains) in addition to Pearson correlation coefficient, test and (T), and the percentage differences.

The results

Table (3)

There are significant differences between the pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the experimental group. N = 8

	Parameter	Measuring Unit	Pre-measurement		Post measurement		The difference between	The improvement percentage	T Value	Significance level
			SMA	s.d	SMA	s.d				
1	Stretch heaviness legs	Kg	33.10	0.32	39.54	0.52	6.44	19.45%	4.60*	Signify
2	Lift the weight off the chest	Kg	55.14	0.52	61.56	0.36	6.42	11.64%	4.10*	Signify
3	Arms extended fore ballasted	Kg	52.50	0.68	58.96	0.25	6.46	12.30%	2.90*	Signify

Table (3)

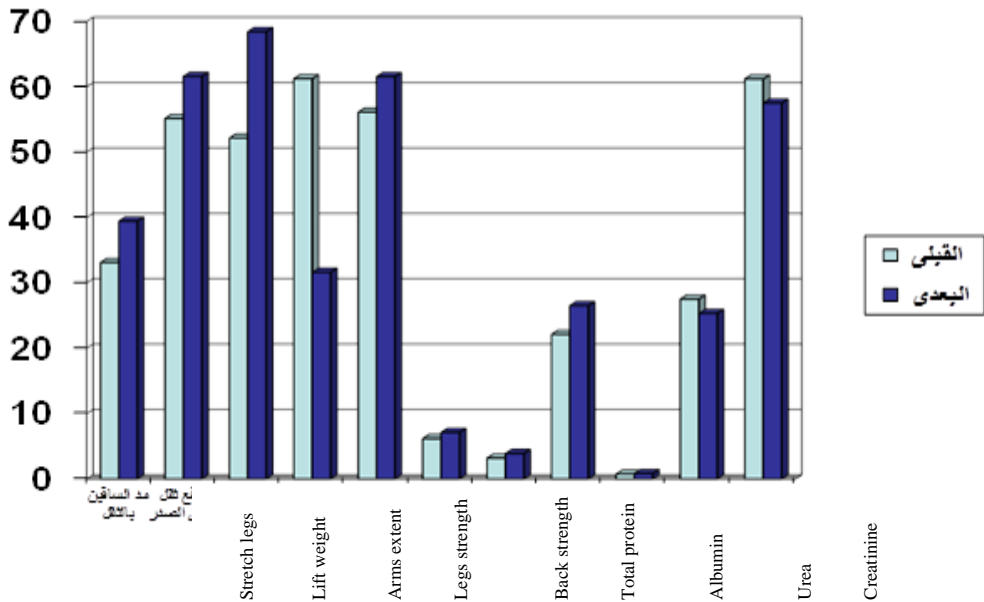
There are significant differences between the pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the experimental group. N = 8

	Parameter	Measuring Unit	Pre-measurement		Post measurement		The difference between	The improvement percentage	T Value	Significance level
			SMA	s.d	SMA	s.d				
4	Dynamometer to measure leg muscles strength	Kg	61.22	0.47	68.41	0.32	7.19	11.74%	2.10*	Signify
5	Dynamometer to measure back muscles strength	Kg	56.11	0.62	61.54	0.56	5.43	9.67%	4.05*	Signify
6	Total protein	G / dL	6.18	0.42	7.12	0.52	0.94	15.21%	3.44*	Signify
7	Albumin	G / dL	3.19	0.21	3.89	0.21	0.70	21.94%	3.70*	Signify
8	Urea	G / dL	22.11	0.65	26.51	0.14	4.40	19.90%	4.15*	Signify
9	Creatinine	Mg / 100 Mm	0.73	0.025	0.81	0.063	0.08	10.95%	2.33*	Signify
10	Swimming (50) meters freestyle.	Sec	27.51	0.41	25.31	0.95	2.20	8.1%	3.13*	Signify
11	Swimming (100) meters freestyle.	Sec	61.18	0.21	57.51	0.55	4.17	7.05%	3.10*	Signify

*The (T) tabulated value at the level of significant $0.05 = 1.94$

Table (3) and diagram (1) show that there are statically significant differences between the averages of pre and post measurements, at the level of biological variables, and the

digital level for short-distance swimmers in favor of the experimental group. And the (T) counted is more than tabulated (t) at the level of significant (0.05).



Form (1)

There are statically significant differences between the averages of pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the experimental group.

Table (4)

There are significant differences between the averages of pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the controller group. N = 8

	Parameter	Measuring Unit	Pre-measurement		Post measurement		The difference between	The improvement percentage	T Value
			SMA	s.d	SMA	s.d			
1	Stretch heaviness legs	Kg	33.15	0.53	35.21	0.63	3.06	9.23%	2.40*
2	Lift the weight off the chest	Kg	55.17	0.41	57.95	0.41	2.78	5.03%	2.10*
3	Arms extended fore ballasted	Kg	52.41	0.32	54.61	0.63	2.20	4.19%	2.01*

Follow Table (4)

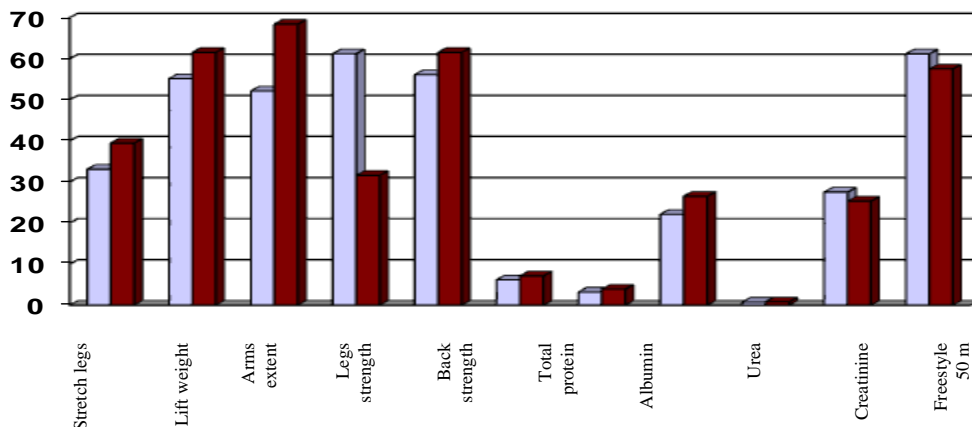
There are significant differences between the averages of pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the controller group. N = 8

	Parameter	Measuring Unit	Pre-measurement		Post measurement		The difference between	The improvement percentage	T Value
			SMA	s.d	SMA	s.d			
4	Dynamometer to measure leg muscles strength	Kg	61.51	0.52	63.54	0.21	2.03	3.300%	2.02*
5	Dynamometer to measure back muscles strength	Kg	56.18	0.14	58.41	0.32	2.23	3.96%	2.80*
6	Total protein	G / dL	6.22	0.32	6.33	0.58	0.08	1.28%	1.70*
7	Albumin	G / dL	3.21	0.85	3.55	0.41	0.34	10.59%	1.02*
8	Urea	G / dL	22.18	0.32	23.84	0.63	1.66	7.48%	1.15*
9	Creatinine	Mg / 100 Mm	0.71	0.021	0.77	0.028	0.06	8.45%	1.30*
10	Swimming (50) meters freestyle.	Sec	27.22	0.56	26.00	0.11	1.20	4.29%	2.50*
11	Swimming (100) meters freestyle.	Sec	61.52	0.41	58.90	0.36	2.05	4.30%	2.40*

*The (T) tabulated value at the level of significant $0.05 = 1.94$

Table (4) shows that there are statically significant differences between the averages of pre and post measurements, at the level of biological variables, and the

digital level for short-distance swimmers. And the (T) counted is more than tabulated (t) at the level of significant (0.05).



Form (2)

There are statically significant differences between the averages of pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the controller group.

Table (5)

There are significant differences between the experimental and controller group, at the level of biological variables, and the digital level for short-distance swimmers. N 1 = N 2 = 8

	Parameter	Measuring Unit	The Experimental group(N1=10)		The Control group(N2=10)		T Value	Significance level
			SMA	s.d	SMA	s.d		
1	Stretch heaviness legs	Kg	39.54	0.52	35.21	0.63	3.10*	Signify
2	Lift the weight off the chest	Kg	61.56	0.36	57.95	0.41	2.85*	Signify
3	Arms extended fore ballasted	Kg	58.96	0.25	54.61	0.63	3.87*	Signify
4	Dynamometer to measure leg muscles strength	Kg	68.41	0.32	63.54	0.21	3.41*	Signify
5	Dynamometer to measure back muscles strength	Kg	61.54	0.56	58.41	0.32	3.60*	Signify

Follow Table (5)

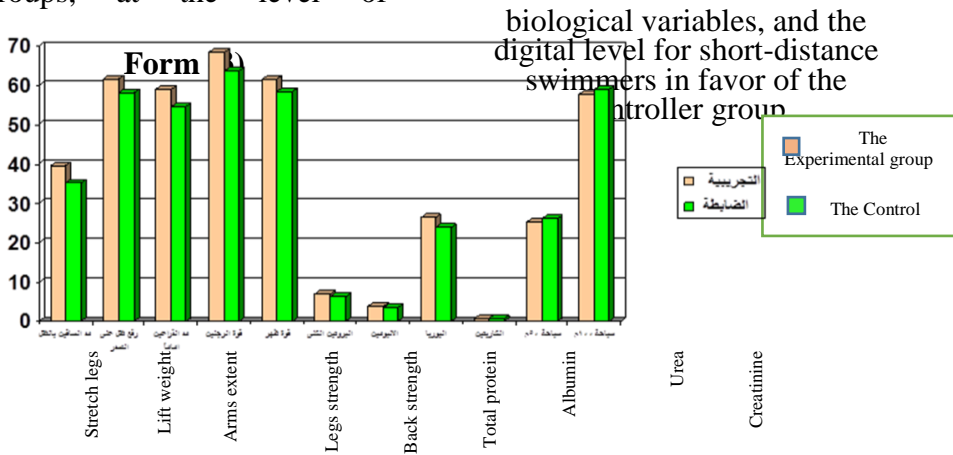
There are significant differences between the experimental and controller group, at the level of biological variables, and the digital level for short-distance swimmers. N 1 = N 2 = 8

	Parameter	Measuring Unit	The Experimental group(N1=10)		The Control group(N2=10)		T Value	Significance level
			SMA	s.d	SMA	s.d		
6	Total protein	G / dL	7.12	0.52	6.33	0.58	3.41*	Signify
7	Albumin	G / dL	3.89	0.21	3.55	0.41	3.98*	Signify
8	Urea	G / dL	26.51	0.14	23.84	0.63	3.41*	Signify
9	Creatinine	Mg / 100 Mm	0.81	0.063	0.77	0.028	3.62*	Signify
10	Swimming (50) meters freestyle.	Sec	25.31	0.95	26.00	0.11	3.98*	Signify
11	Swimming (100) meters freestyle.	Sec	57.51	0.55	58.90	0.36	3.73*	Signify

*The (T) tabulated value at the level of significant 0.05 = 2.12

Table (5) shows that there are statically significant differences between the averages of pre and post measurements for the experimental and controller groups, at the level of

biological variables, and the digital level for short-distance swimmers. And the (T) counted is more than tabulated (t) at the level of significant (0.05).



There are significant differences between the averages of pre and post measurements for the experimental and controller groups, at the level of

Discussion

Table (3) and diagram (1) show that there are statically significant differences between the averages of pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the experimental group. And the (T) counted is more than tabulated (t) at the level of significant (0.05).

The researcher attributes the improvement to the Whey protein compound intakes. And attributes the researcher to the effects of taking the Whey-protein supplement, Athletic training is working on muscle glycogen consumption to produce the necessary energy for performance, , The body begins to resort to amino acids to turn it into glucose, and here comes the role of Whey protein to renew and speed is muscle glycogen.

Keshk, et al asserts that (27) that the Whey protein is one of the best nutritional supplements that reduce the accelerated demolition operations within the muscle tissue, so as to contain beta - for Aktocalobolin rate ranging from 50-55%, which is considered a major source of

supply of the muscles during training essential amino acids and glycogen.

Layman adds that whey protein that is characterized by high biological value in addition to the speed of digestion and absorption, as it contains Hydro whey purified Hydro is the best way in the world to be lighter molecules for whey protein, making it the fastest absorption in muscle.

And that the results depend on the ability of the swimmer to show these qualities in a compound and not solely because the swimmer's movement characterized feature harmony with each other and get to the kinetic flow of the swimming must be exist swimmer high physical fitness to be able to complete the race until the end. (6:19).

Thus, the first hypothesis has been achieved which is there are significant differences between the pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the experimental group.

Table (4) shows that there are statically significant differences between the

averages of pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers. And the (T) counted is more than tabulated (t) at the level of significant (0.05). the researcher attributed that improvement to the use of the proposed program to the control group and attendance at training continuously improved the biological variables and the level of muscular strength and digital level of the swimming (50 m / 100 m).

So, the second hypothesis has been achieved which is there are significant differences between the pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the controller group.

Table (5) shows that there are statically significant differences between the averages of pre and post measurements for the experimental and controller groups, at the level of biological variables, and the digital level for short-distance swimmers. And the (T) counted is more than tabulated (t) at the level of significant (0.05).

The researcher attributes the improvements to the food supplement Whey protein and this was confirmed by **Sung-Smith**, That physical effort with taking supplements is working to renew and consumption of complete protein in the body.

Hussein Hashmat and Nader Shalabi refer to high quantum of protein in the body the sports training depending on the research leads to an increase in private hormones structural ones like testosterone, a male hormone and estrogen, a female hormone next to each of the growth hormone **GH** and **IGF1** insulin-like hormones and all this growth factor leads to protein production. That growth hormone is doing its job by raising hormone **IFG1** of the liver, which acts directly on the cell protein production and that there are important hormones involved growth hormones to increase during the training, including the hormone **ACTH** Interestingly, cortical hormone, as well as endorphin hormones which is inhibitory for blood.

Layman, et al. adds that **the** reason for the increased albumin after the performance

of the proposed exercises due to the physical effort coupled with a lack of size and increase the blood concentration resulting from evaporation and sweat associated with physical effort, thus contributing to the occurrence of the training adaptation.

Roberts & Roberts indicate the Where he explained that albumin is working on the stability of the water in the blood through the osmotic pressure and when performing physical exertion increases with an increase in blood sweat and dehydration as a result of the use or the amount of albumin by injection.

Smith explains that improved albumin linked to protein and kidney That albumin constitutes 50-60% of the total protein, and is used by cells complete protein.

Hussein Hashmat adds the metabolism of proteins in muscle and is a product of decomposition is water, carbon dioxide, ammonia and urea and it can be inferred liver function, kidney and heart through metabolism and protein enzymes,

So, the third hypothesis has been achieved which is

there are significant differences between the pre and post measurements, at the level of biological variables, and the digital level for short-distance swimmers in favor of the experimental group.

Conclusions

- Whey-protein intake led to an improvement in muscle strength to the short distances swimmers.
- Whey-protein intake led to an improvement of biological variables to the short distances swimmers.
- Whey-protein intake led to an improvement of (50 m / 100 m) swimming digital-level to the short distances swimmers.

Recommendations

1- Attention to The need for to nutritional supplements (General) and Whey-protein (especially) for the swimmers.

2- Swim coaches have to benefit from the results of this research, and do such studies which raise the player's technique and physical and physiological efficiency.

3- The availability of feed's professional at the sports clubs as they have a paramount importance in the player's technique and physical and physiological conditions.

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