

Verification of Expert

Dear expert ,

My name is xxx, and I come from University Putra, Malaysia. My research topic is " Effect of 12-weeks resistance training in water combined with land on starting and turning performance of Chinese adolescent swimmer " You have a wealth of theoretical knowledge and long experience in adolescent swimming training. For now, we want you to validate whether my 12 weeks of resistance training intervention is reasonable? Your suggestion is very important to my research. I can promise, your suggestions only use me to perfect the experiment design and will not be used for any other purpose. All information you give will be kept confidential.

Thank you so much for being so helpful, and best wishes to you.

University Putra Malaysia

Supervisory Committee:

10 August 2021

Title: Effect of 12-Weeks Resistance Training in Water Combined with Land on Starting and Turning Performance of Chinese Adolescent Swimmer

Expert: _____

Specialized field: _____

1. Questionnaire information

This questionnaire adopts a 5-point scale, with 1-5 representing increased support (1= strongly agree, 2= agree, 3= no need, 4= disagree, 5= strongly disagree). Can you grade the training intervention? Please submit your comments in the "Suggestions for improvement" section. If there's anything else. You can add them and indicate the name. After reading, please score the following aspects and tick " ✓ " on the corresponding scoring scale. Finally, as we all know, you are a well-known expert in this field. I hope you can give me some advice. Your opinion is very important to me and will help me improve my intervention plan.

2. Executive Summary

Resistance training has been widely used in various sports and is a common practice aimed at improving competition performance, especially in swimming. Swimming performance is highly dependent on muscle strength, especially short distances. Water or land resistance training can improve the swimming performance, especially the swimming performance of 50 meters and 100 meters. Both type of training has their own strength and weakness. Hence, combining both methods strength may enhance swimmer performance. In addition, competitive swimming consists of different stages, namely start, clean swim, turn and finish. However, there is no literature on the influence of resistance training on starting and turning.

Through experimental design and quantitative research methods. In this experiment, the resistance training method of water combined with land was used to intervene the turning and starting of young people, and the traditional strength training was compared to find out a better training method. The experiment will use 12 weeks of resistance training to improve the swimmer's turn and start intervention. The experiment consisted of four groups, 20 boys and 20 girls in the experimental group and 20 boys and 20 girls in the control group. Compare the differences between the two groups. Divided into discussion groups and general teaching groups.

Two of the most significant differences, this experiment aims to provide a theoretical basis for improving the training methods of swimming, so that young swimmers can get better swimming performance, especially on the start and turn.

To evaluate the effectiveness of a 12-week water combined with land
resistance training intervention

Table 1. Intervention Plan-Same Characteristics

Content	1. Land Combined Water Resistance Exercises Group 2. Traditional Strength Training Group	Improvement suggestions
Athlete Qualification	Similar age groups : 11-12	
	Same training background (Three years of training)	
	No other resistance training was given during the experiment.	
Coach Qualification	From the same club	
	Same experience: Minimum more than 10 years	
	Physical education graduate	





Table 2. Different resistance loads and intervals in strength training (Fleck, 1997)

Loads	>13RM	11-13RM	8-10RM	5-7RM	<5RM
Intervals	<1min	1-2min	2-3min	3-5min	<5min

Table 3. Percentage of 1RM Repetition Scale (Santana, 2015)

Percentage of Repetitions Maximum (%1RM)	100%	95%	90%	85%	80%	75%	70%	65%	60%
Maximal Repetition	1	2	4	6	8	10	12	14	16

Table 4. Arms

Arms	Arm Description	picture	Improvement suggestions
Drag Umbrella ,	In the water, a small umbrella is attached to the athlete to increase resistance.		
Resistance Bands	On land, use a stretch rope to increase resistance.		
Hand Resistance.	In the water, increase resistance by increasing the area of the hand.		
Swiss Ball	On land, inflatable bouncy balls are used to increase strength.		




<p>Medicine Ball,</p>	<p>On land, solid balls are used to increase strength.</p>		
<p>Pulley Pull,</p>	<p>On land, pulleys are used to increase resistance.</p>		
<p>Resistance Suit.</p>	<p>In the water, use swim shorts that increase resistance</p>		

Table 5. Intervention Plan Design – Must make sure you have land and water right?

Group	Experiment Group				Control Group				Improvement Suggestions
Week	1-3	3-6	6-9	9-12	1-3	3-6	6-9	9-12	
Strength training	Hand Resistance	Hand Resistance	Resistance Suit	Resistance Suit	Sit-Up	Sit-Up	Dumbbell	Dumbbell	
	Drag Umbrella	Drag Umbrella	Drag Umbrella	Drag Umbrella	Press-Up	Press-Up	Barbell	Barbell	
	Resistance Bands	Resistance Bands	Pulley Pull	Pulley Pulls	Deep Squat	Deep Squat Lift Heel	Stomach Up	Stomach Up	
	Swiss Ball	Swiss Ball	Medicine Ball	Medicine Ball	Lift Heel		Squat Up	Squat Up	
Swimming	1500m				1500m				
Frequency	3/week				3/week				
Warm Up	10 min				10 min				
Basic Training	50-60% 1RM 3 sets*15	60-70% 1RM 3 sets*15	70-80% 1RM 3 sets*15	80-90% 1RM 3 sets*15	50-60% 1RM 3 sets*15	60-70% 1RM 3 sets*15	70-80% 1RM 3 sets*15	80-90% 1RM 3 sets*15	
Interval	1min	3min	3min	5min	1min	3min	3min	5min	
Stretch	10min	12min	12min	15min	10min	12min	12min	15min	

*Idea: Based on (Fleck, 1997. Santana, 2015)

Table 6. Training Program (Warm Up)

Warm Up (10 min)	Improvement Suggestions
<ul style="list-style-type: none"> ● Jogging (2 min) ● Aerobic Warm-Up (8min) <ol style="list-style-type: none"> 1. Neck Up and Down 2. Around The Shoulder 3. Arm Swings Backwards 4. Turn The Waist 5. Lunges Leg Press 6. Side Leg Press 7. Roll Your Knees 8. Turn The Ankle 9. Turn The Wrist 	

Table 7. Training Program(Stretch)

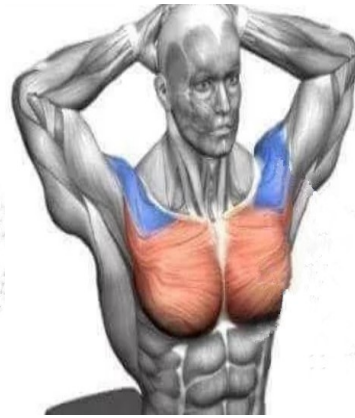
Stretch(10 -12min)	Improvement Suggestions
<ul style="list-style-type: none"> ● Static Stretching <ol style="list-style-type: none"> 1. Arm Stretch <ol style="list-style-type: none"> a) Forearm stretch b) Big arm stretch 2. Trunk <ol style="list-style-type: none"> c) Chest stretch d) Abdomen drawing a) Stretching back 3. Leg <ol style="list-style-type: none"> a) Leg before test b) Calf stretch 	



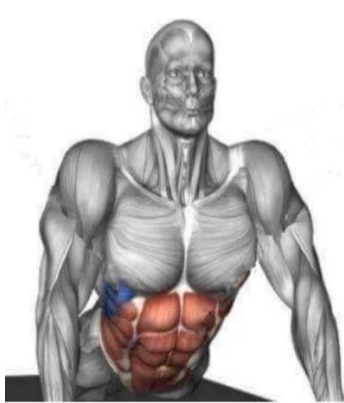
Forearm stretch



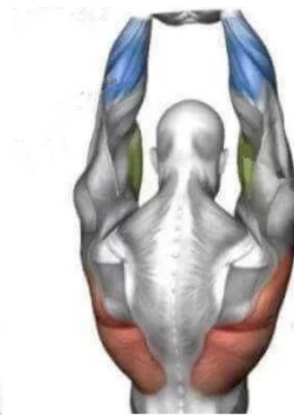
Big arm stretch



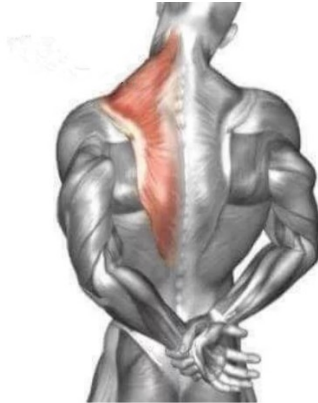
Chest stretch



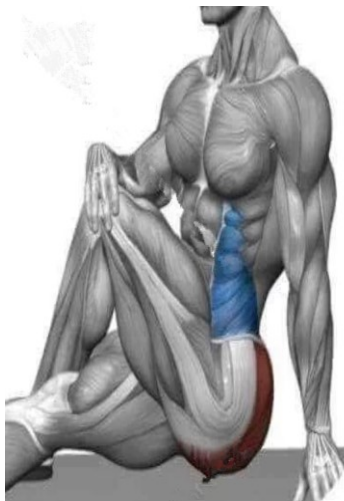
Abdomen stretch



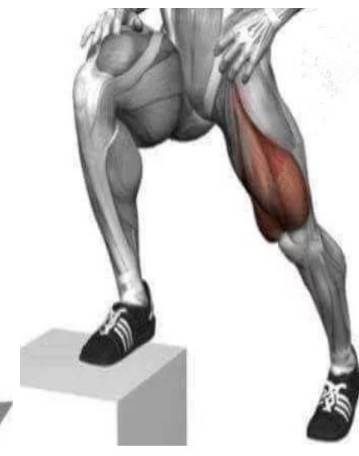
Stretching back



Stretching back



Thigh stretch



Thigh stretch



Calf stretch

