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## IMPACT OF WAVE BOARD KID ON FLEXIBILITY OF THE LOWER LIMB JOINTS AND RECORD IN BREAST AND MONO SWIMMERS

ALIAA HELMY<sup>1</sup>, SAMAH MOHAMED<sup>1</sup>

### Abstract

*Purpose.* Through the notes one of the researchers developed the level of her son (one of the youngest swimmers from the 6<sup>th</sup> October Club ) following the use of wave board kid , which was practiced to play with in his spare time, and observing a group of movements performed during the use of wave board The impact of these movements on the joints of the lower limb and may use researchers in the scientific method of experimental check , Hence, This study aimed to identify the impact of the training program using wave board kid on flexible joints of the lower limb and record for Breast and Mono swimmers.

*Methods.* The sample contains sample (30) swimmers divided into three groups were two experimental groups and one control group, (10) swimmers for each group (age: 13± 5 years), height 165 ±8 cm, body mass 47±11.3 kg, was used tests flexibility of the spine (bending - the tide), and the flexibility of the knees (bending), and the flexibility of the feet (bending - tide) as tools for data collection

*Results.* Training using your wave board has a positive impact on the development of flexible joints of the lower limb and record level swimmers breast and mono. The existence of significant differences between pre and posttest measurement between the experimental group and control group in the post test measurement for the two experimental groups .Also became clear that the highest percentage of improvement for the 50 m , in breast swims when we use the wave board ( the pre 44.25 , the post 42.02 ) and the improvement percentage (4.98 % ) . There is an improvement in the record level in the mono (the pre 29.10, the post 27.54) the improvement percentage (5.35 %).

*Conclusions.* The use of training using your wave board for the development of flexible joints of the lower limb and digital level swimmers breast and mono. Concern for the development element of flexibility within the aqueous medium to influence the level of achievement for young swimmers.

*Key Words:* Wave Board, Lower Limb Joint, Mono Swimmers.

### Introduction

The world of extreme sports is constantly evolving. A current trend that has been attracting young adults is street surfing, which described as the combination of surfing, snowboarding and skateboarding. Two brands in particular, the Wave board and the Ripstik, are attracting riders.

The Wave board is manufactured by a company called Street Surfing, and was first introduced in 2004. The Razor Co. introduced its own caster board variation, the Ripstik, in 2006. Both brands come in several styles and new models are being developed that offer attractive and innovative features.

Wave boarding is one of the most exciting sports around; it is growing in popularity at a phenomenal rate around the world.

The Wave is a new, very unique riding system. It's easier; the board rides on two wheels, each on a pivot so that the board can turn freely. Each wheel is below a foot pad, and the pads are linked with a pivot that turns, rather than hinging like a snake board. This whole setup, the Wave, is fun to use and feels very natural once you get the hang of it. That might take a little bit,

but it's a great new experience

Through the notes one of the researchers developed the level of her son (one of the youngest swimmers from the 6<sup>th</sup> October Club ) following the use of wave board kid , which was practiced to play with in his spare time, and observing a group of movements performed during the use of wave board The impact of these movements on the joints of the lower limb and may use researchers in the scientific method of experimental check , Hence, This study aimed to identify the impact of the training program using wave board kid on flexible joints of the lower limb and record for Breast and Mono swimmers., through identify the following sub-aims:

Differences between pre and post measurement for each group separately.

Differences between the posterior measurements for the three groups (two experimental and control group).

Differences in improvement between the three groups.

### Methods

The sample contains sample (30) swimmers divided into three groups were two experimental groups and one control group, (10) swimmers for each group



(age:  $13 \pm 5$  years), height  $165 \pm 8$  cm, body mass  $47 \pm 11.3$  kg, was used tests flexibility of the spine (bending - the tide), and the flexibility of the knees (bending), and the flexibility of the feet (bending - tide) as tools for data collection.

**Data collection tools**

6 Measurements were used, age and height and weight was also used tests include the flexibility and elasticity of the spine (bending - tide) and the flexibility of the knees (bending), flexibility of the feet (bending - tide) were also measured 50-meter pool for each group as tools for data collection.

**Procedures**

Use of children and adults Panel skiing in their various forms in order to play and recreation sports without knowing the effects of health and physical, which returns their fitness and flexibility of their joints and agility movements, and There are many names and forms boards including those used in this study is called a wave board kid and is described as a small board made of fibreglass, metal or plastic or wood in the form of slides more smoothly and durability, mounted on wheels of reinforced plastic, called polyurethane, used mainly in the sport of skiing. And performed them from movements such as the revolving motion back and front, the movement of the heart skateboard, movement and 8) reverse the wave board, movements, the rise in the air, the movement of skiing on two-wheeler background, movement down the stairs of vertical and horizontal movement of the coup 360 degrees, and the movement of standing on the surface of the board hand, movement and touch the bottom of the wave board. Movement skiing cylinder, and which have been utilized in the development of the exercises used in the search experience. It was a harmony between the research basic sample and a number (30) swimmer in the variables age, height, weight and flexibility of the spine (bending - tide) and the flexibility of the knees (bending), flexibility of the

feet (bending - tide), and it became clear that basic sample is located below the curve equinoctial  $\pm 3$  which shows harmonization the sample.

**Training Protocol**

Subjects underwent (8) weeks - three weekly total training (24) each time training and training (90) minutes and a time of flexibility within the training module (20) minutes total (480) minutes. And the first experimental group (swimmers released) has been trained on Sunday, Tuesday and Thursday, while the second experimental group (swimmers mono) trained on Sunday, Monday and Wednesday, as the control group were trained and the training followed to be followed on Mondays, Wednesday and Thursday.

**Equivalency**

Tribal measurements for the three groups (two experimental and control group) have been implemented and compare them using the Friedman test barometer and found out no statistically significant differences among them in the tests under discussion which shows the equivalence between them.

**Measurements**

Measurements of the tribal groups in the three 18.6.2011 have been implemented as dimensional measurements were performed after (8) weeks of measurement in the tribal 08.18.2011 subject to the same conditions which it has been tribal measurement.

**Statistical Analysis**

All statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two measurements were reported as mean difference  $\pm 95\%$  confidence intervals (mean diff  $\pm 95\%$  CI). Z-test and Chi-square was used to determine the differences in fitness parameters between the measurements. The  $P < 0.05$  was considered as statistically significant.

**Results**

**Table 1** the mean scores in Spine flexibility, Knees flexibility, Feet flexibility, and 50. M breast for the first experimental group

Statistical variables	Record	No. of ranks		Average ranks		Total ranks		Value Z	Statistical significance
		Negative	Positive	Negative	Positive	Negative	Positive		
Spine flexibility	Tend	1	9	2.00	2.00	2.00	18.00	2,87-*	0.002
	Tide	2	8	1.00	1.50	2.00	12.00	2,69-*	0.001
Knees flexibility	Tend	1	9	2.00	2.50	2.00	22.50	2.88-*	0.003
	Tend	1	9	4.50	3.00	4.50	27.00	2.49-*	0.001
Feet flexibility	Tide	1	9	2.50	3.00	2.50	27.00	2.76-*	0.040
	50. M breast	1	9	2.00	3.00	2,00	27.00	2.94-*	0.003



The Z-test showed significant differences between pre- and post-training scores for all variables ( $P \leq 0.05$ ) for the post-training.

**Table 2** the mean scores in Spine flexibility, Knees flexibility, Feet flexibility, and 50. M Mono for the second experimental group.

Statistical variables	Record	No. of ranks		Average ranks		Total ranks		Value z	Statistical significance
		Negative	Positive	Negative	Positive	Negative	Positive		
Spine flexibility	Tend	2	8	1.50	2.00	3.00	16.00	-2.61*	0.010
	Tide	2	8	2.50	3.50	5.00	28.00	-2.82*	0.011
Knees flexibility	Tend	2	8	2.00	2.00	4.00	16.00	-2.49*	0.020
Feet flexibility	Tend	2	8	1.50	3.50	3.00	28.00	-2.67*	0.001
	Tide	2	8	2.50	2.50	5.00	20.00	-2.91*	0.005
50. M Mono		2	8	2.00	2.50	4.00	20.00	-2.86*	0.004

The Z-test showed significant differences between pre- and post-training scores for all variables ( $P \leq 0.05$ ) for the post-training.

**Table 3** The mean scores in Spine flexibility, Knees flexibility, Feet flexibility, and 50. M swims for the control group

Statistical variables	Record	No. of ranks		Average ranks		Total ranks		Value Z	Statistical significance
		Negative	Positive	Negative	Positive	Negative	Positive		
Spine flexibility	Tend	3	7	1.50	2.50	4.50	17.50	-2.34*	0.042
	Tide	4	6	1.00	3.00	4.00	18.00	-2.48*	0.031
Knees flexibility	Tend	4	6	1.00	2.00	4.00	12.00	-2.66*	0.029
Feet flexibility	Tend	3	7	1.50	2.50	4.50	17.50	-2.44*	0.041
	Tide	4	6	1.00	3.00	4.00	18.00	-2.68*	0.002
50. M swims		4	6	1.50	3.50	6.00	21.00	-2.57*	0.003

The Z-test showed significant differences between pre- and post-training scores for all variables ( $P \leq 0.05$ ) for the post-training.

**Table 4.** Friedman analysis of variance for the sign of the differences between the posteriori measurements of the three sets Flexibility in the tests in question

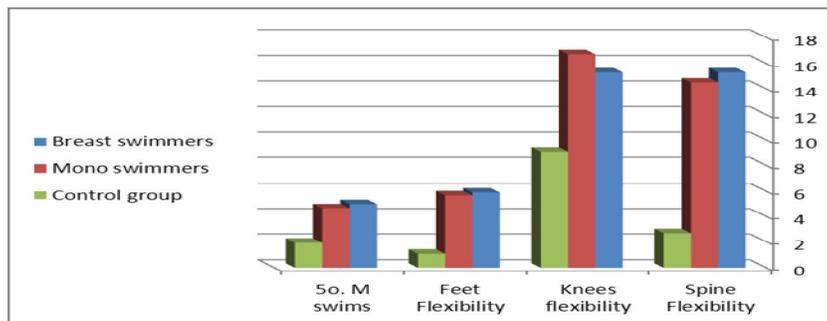
Tests	Statistical variables	Groups		
		Breast swimmers	Mono swimmers	Control
Spine flexibility	No. of groups		3	
	Average ranks	5.23		4.25
	Degrees of freedom		2	
	Chi-square		16.58	
	The critical value		0.00	
	No. of groups		3	
Tide	Average ranks	6.18		5.82
	Degrees of freedom		2	
				3.84

Tests	Statistical variables	Groups			
		Breast swimmers	Mono swimmers	Control	
Knees flexibility	Tend	Chi-square	24.48		
		The critical value	0.001		
		No. of groups	3		
		Average ranks	3.97	3.14	2.79
		Degrees of freedom	2		
	Tend	Chi-square	17.55		
		The critical value	0.00		
		No. of groups	3		
		Average ranks	6.61	5.28	4.10
		Degrees of freedom	2		
Feet flexibility	Tide	Chi-square	12.36		
		The critical value	0.002		
		No. of groups	3		
		Average ranks	4.51	4.02	3.15
		Degrees of freedom	2		
	Tide	Chi-square	42.38		
		The critical value	0.001		
		No. of groups	3		
		Average ranks	5.42	5.12	3.20
		Degrees of freedom	2		
50.m swim	Chi-square	23.15			
	The critical value	0.001			
	Degrees of freedom	2			

• The value of (Ca 2) when tabular degrees of freedom  $2 = 5.99$  Alpha

**Table 5** Differences in rates of improvement among the three groups in the tests in question

Tests	Groups	Breast swimmers			Mono swimmers			Control group		
		Pre	Post	Change %	Pre	Post	Change %	Pre	Post	Change %
Spine Flexibility	Tend	7.50	6.35	15.3	7.60	6.50	14.5	7.50	7.70	2.67
	Tide	23.1	26.3	14.0	23.2	26.4	13.8	23.2	23.6	1.72
Knees flexibility	Tend	11.3	9.23	15.3	11.4	9.5	16.7	11.3	11.0	9.09
Feet Flexibility	Tend	28.4	30.1	5.9	28.2	29.8	5.67	28.3	28.6	1.06
	Tide	34.6	37.5	8.38	34.5	37.4	8.41	34.5	34.9	1.16
50. M swims		44.2	42.1	4.98	28.7	26.9	4.65	47.1	46.2	1.91



**Fig 1.** Show the Differences in rates of improvement among the three groups in the tests in question



## Discussion

Shows a table (1.2) there are significant differences between the measurements pre and post experimental group first by using board skiing for swimmers breaststroke and mono in the tests of flexibility and 50 m was under consideration for the measurement posttest, and returns the researching of these results to the positive effect of using the board skiing on the development of an element of flexibility to the joints of the lower breaststroke and mono swimmers. As shown in a tables (4.5) there are significant differences between the measurements a posteriori tests flexibility under discussion for the three groups for the measurement posttest for swimmers breaststroke, followed by swimmers mono, where it became clear the existence of differences in rates of improvement among the three groups ranged between (4.98% to 18.3%) for the experimental group I (swimmers chest), and ranged between (4.65% to 16.70%) for the experimental group II (swimmers mono), while ranging between (1.06% to 9.09%) for the control group, which shows the improvement trend in favor of measurement posttest for swimmers chest followed by swimmers mono.

The researchers return these differences to influence the positive board to the use of skating on the development of an element of flexibility to the joints of the lower end of the swimmers breast and mono.

- The movements that performed by swimmers using your skiing exercises are difficult to design for its development where the bend the knee, and ankle flex and bend in the timing of the trunk during one movement where the exercises are difficult to apply to these combined.

- That all the performed by board characterized by the balance and continuation at the same time leads to the work of muscles difficult to design exercises work them.

- The movements of the board used contraction both still and moving at the same time.

And agree all with (D.K. Mathews, 1978; F. Verducci 1980; A. Muhammad, and M. Ahmed. 2010) provides that flexibility is the range of motion around the joint and it is measured in degrees and it depends on factors physiology associated with muscles and joints that have an impact on fitness physical and performance skills.

Agree with (K. Mustafa, et al. 2010) on the flexible joints shoulders and feet to have an impact on the results of swimming and the rest of the flexible joints.

These results also agree with the results of studies of both (S. Amal, 1999), Z. Adel, 2002) T. victor, 2002)

## Conclusions

The use of training using your wave board for the development of flexible joints of the lower limb and digital level swimmers breast and mono. Concern for the development element of flexibility within the aqueous medium to influence the level of achievement for young swimmers.

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