
Anthropometric Measurements and Physical Parameters Contribution to swimmers Achievement

Salwa Al-shorman

Ziad Al- Kurdi

Abstract

This study aimed to identify the measurements of swimmers in the north team of swimming in some aspects of physical abilities, and to identify some physical abilities and the extent of the contribution of each of the anthropometric and physical abilities at the level of digital delivery in the swimmers. This study followed the descriptive approach to fit the nature of the study. The researcher used the form (freestyle, breaststroke, backstroke, butterfly), and of measurements Anthropometric consisted of (22) Measurement of anthropometric, namely: sex, weight, height, and lengths of each of the (arm, upper arm, forearm, palm, length of lower limb, thigh, leg, and foot), and symptoms of each of the (shoulders, chest), and Circumference each of the (chest, pelvis, center, palm, calf, foot), and the percentage of fat in each of the (upper arm, abdomen, bottom panel). The researcher used the form of capacity Physical consisted of (16) test and the capacity (power grip, strength muscles and legs, the strength of muscles of the arms, the strength of back muscles, flexibility of the shoulder joint, flexible joint basin, the elasticity of the ankle, and the curvature of the spine and extract the corners of the concavity cervical, convex dorsal, concave lumbar) as well as timing of swimmers in the four different styles (free and chest, butterfly, back). The study sample consisted of (15) swimmers from the north team who have been chosen intentionally. The results showed that the sample of the study, measurements Anthropometric and physical abilities fall within the conditions to be availability for the performance of swimmers four advanced way. The study reported a correlation statistically significant at the level of significance ($\alpha = 0,05$) between some measurements Anthropometric a (total length, the length of lower limb, the length of palm), as well as to the existence of a link with a statistically significant the significance level ($\alpha = 0,05$) between some of the physical abilities (strength of muscles of the legs, back muscle strength, grip strength, the strength of muscles of the arms, the strength of the abdominal muscles, pelvic joint flexibility) and the level of achievement in swimming.

Keywords: Anthropometric measurements, physical abilities, achievement, swimming.

.2013

(2006)

(1998)

:

()

-1

()

-2

()

:

.1

(15) (15-12)

-2011/3/1 :

.2

2011/4/15

:

.3

(1984)

(1983) (1981)

(1981) (50)

(1992)
(15-13) (17) 8 9

(1994)
(26)
(14-12)
) - - .(

(1995)
(643) (14-9)

(1997)
(14)
)
() (

(1999)

(20) ()

(22-19)

)

() ()

()

(2003)

(15-13) (12)

(25)

(25)

.

(Rastistav, Hlavaty, 2010)

(20) ()

(2009-2008)

(23-22)

-1 :

-2

.

(Beat Knechtle, Barbara Baumann, Patrizia, Thomas, 2010)

(26.4)

() (23)

) (15)

(

(26)

()

4 11 (15-12)

	()	()	()	
	52	1,73	15	-1
	57	1,75	15	-2
	63	1,70	15	-3
	61	1,71	14	-4
	74	1,88	14	-5
	40	1,58	13	-6
	63	1,70	12	-7
	75	1,69	12	-8
	45	1,48	12	-9
	57	1,63	12	-10
	49	1,46	12	-11
	62	1,66	15	-12
	52	1,61	12	-13
	47	1,62	12	-14
	51	1,60	12	-15

:

-

(8)

-

(2)

-

(6)

-

(3) ()

-

:

()

(250)

()

:

:

-

-

-

(2007) .()

-

:

: -

.

: -

.

: -

.

: -

.

: -

.

: -

.

: -

: -

.(2007) .

.(2007) .

		:	-
		:()	-
		:	-
		:	-
		:()	-
		:	-
()		:	:
		:	-
	.()	:	-
	.(push up) 30	:	-
	.(sit up)	:	-
.()		:	-

:

.1

.()

.2

.()

.3

.()

.4

.()

.5

.

.6

:

:

()

(1)

(1)

(11=)

.29	1.35	13.27	15	12		
.14	12.64	55.36	75	36		()
-.30	12.14	166.45	188	146		
-.14	5.20	81.91	91	74		
-.15	5.17	39.09	46	31		
.43	3.10	27.73	33	24		
1.22	1.96	18.36	23	16		
-.52	7.84	96.55	107	81		
-.65	6.28	50.91	60	39		
.20	4.05	46.27	53	40		
.37	2.00	25.73	30	22		
.28	6.08	108.00	117	100		
-.08	6.24	86.09	95	76		
-.08	6.24	86.09	95	76		
.22	4.72	93.64	100	86		
.35	5.67	77.18	87	70		
-.20	1.22	16.91	19	15		
-1.45	4.84	33.36	38	22		
1.66	3.64	23.68	33	19		
1.76	5.85	8.27	23	4		
.79	9.26	13.55	30	4		
1.15	6.55	9.64	22	4		

.2013

(1)

(1.76)

(0.08-)

(3 3-)

(1997)

(2)

(2)

2.00	1.50	12.75	15	12		
1.30	6.38	53.00	62	47		()
1.44	2.63	162.25	166	160		
-1.89	3.37	76.00	78	71		
-1.38	3.87	36.50	40	31		
-.56	2.50	25.25	28	22		
.00	.82	17.00	18	16		
.12	2.63	93.25	96	91		
.00	2.38	49.50	52	47		
.00	.58	43.50	44	43		
.00	.82	23.00	24	22		
1.92	4.19	103.75	110	101		
.49	5.80	81.50	89	75		
.49	5.80	81.50	89	75		
.00	3.87	90.50	95	86		
1.19	5.45	71.50	79	67		
-2.00	.50	15.75	16	15		
-1.19	4.65	29.50	34	23		
2.00	6.00	24.00	33	21		
2.00	3.50	5.75	11	4		
1.96	6.18	11.75	21	8		
.75	1.71	8.75	11	7		

(2)

(2.00)

(0.56-)

(3 3-)

(%70)

(3)

(3)

.63	10.34	30.00	47	18		
.77	10.99	26.64	46	14		
.13	8.36	24.27	38	10		
-.36	37.20	161.00	205	105		
.72	45.11	123.41	203	70		
.20	9.26	48.27	60	38	/	
.33	15.51	176.36	200	155		
.07	9.77	173.64	190	160		
.36	10.51	118.64	140	100		
.60	11.02	116.82	140	100		
.59	7.75	150.00	165	140		
.21	7.17	146.82	160	135		

(3)

(0.77)

(0.26-)

(3 3-)

(4)

(4)

1.06	5.10	24.00	31	19		
1.87	5.56	21.75	30	18		
-.33	9.04	16.50	25	6		
-1.75	22.29	152.75	170	120		
-.44	13.37	91.00	103	75		
.57	5.38	38.25	45	33	/	
1.78	7.14	179.50	190	175		
1.54	8.66	177.50	190	170		
-2.00	2.50	138.75	140	135		
.12	5.26	139.50	145	135		
-1.38	19.36	137.50	155	110		
-1.01	20.97	138.75	160	110		

(4)

(1.87)

(0.33-)

(3 3-)

(2)

(3)

(5)

(5)

1.52	7.97	33.99	52	28		/ 50 /
-.32	5.90	42.58	50	32		/ / 50
.82	7.56	39.94	55	31		/ / 50
.96	6.91	40.17	54	32		/ / 50

(5)

(1.52)

(50)

(0.32-)

(50)

(3 3-)

(6)

(6)

1.14	5.77	32.67	41	27		/ 50 /
1.26	7.94	44.20	55	37		/ / 50
-0.85	6.01	38.13	45	30		/ / 50
-1.48	4.86	36.97	41	30		/ / 50

(6)

(50)

(1.14)

(50)

(1.26)

(3 3-)

(7)

()

(7)

(11=)

/ / 50	/ 50 /	/ 50 /	/ / 50		
-.787(**)	-.739(**)	-.377	-.765(**)		
.004	.009	.252	.006		
-.105	-.096	-.087	-.251		()
.759	.780	.800	.456		
-.724(*)	-.610(*)	-.582	-.833(**)		
.012	.046	.060	.001		
-.354	-.172	-.326	-.525		
.286	.613	.327	.098		
-.455	-.446	-.532	-.599		
.159	.169	.092	.051		
-.238	-.142	-.489	-.268		
.481	.677	.127	.425		
-.037	.051	-.380	-.253		
.913	.881	.250	.453		
-.743(**)	-.670(*)	-.662(*)	-.763(**)		
.009	.024	.026	.006		
-.639(*)	-.639(*)	-.359	-.590		
.034	.034	.278	.056		
-.469	-.387	-.550	-.486		
.145	.239	.079	.129		
-.283	-.343	-.542	-.507		
.399	.301	.085	.111		
-.364	-.345	-.528	-.579		
.272	.298	.095	.062		
-.055	-.091	-.351	-.264		
.873	.790	.290	.432		

-.055	-.091	-.351	-.264		
.873	.790	.290	.432		
-.069	-.032	-.478	-.275		
.840	.925	.137	.413		
.478	.460	.226	.395		
.137	.154	.504	.229		
-.264	-.220	-.591	-.463		
.434	.515	.056	.151		
-.229	-.265	-.521	-.436		
.499	.430	.101	.180		
.032	.064	-.271	-.087		
.925	.852	.421	.799		
.688(*)	.602(*)	.235	.666(*)		
.019	.050	.487	.025		
.645(*)	.491	.360	.733(*)		
.032	.125	.277	.010		
.682(*)	.516	.305	.670(*)		
.021	.104	.362	.024		

.(0.05)

*

.(0.01)

**

(7)

()

()

(.733)

(.833-)

(.626-)

(.305)

(.602)

(.670-)

(.743-)

.(.688)

(8)

()

(8)

(4=)

	/ 50	/ 50	/ 50		
/ / 50	/	/	/		
-.775	-.816	-.775	-.775		
.225	.184	.225	.225		
-.400	-.632	-.800	-.400		
.600	.368	.200	.600		()
-1.000(**)	-.949	-.800	-1.000(**)		
.000	.051	.200	.000		
-.949	-.833	-.632	-.949		
.051	.167	.368	.051		
-1.000(**)	-.949	-.800	-1.000(**)		
.000	.051	.200	.000		
-.400	-.316	-.200	-.400		
.600	.684	.800	.600		
.949	1.000(**)	.949	.949		
.051	.	.051	.051		
-.738	-.500	-.211	-.738		
.262	.500	.789	.262		
-1.000(**)	-.949	-.800	-1.000(**)		
.000	.051	.200	.000		
.447	.707	.894	.447		
.553	.293	.106	.553		
.316	.500	.632	.316		
.684	.500	.368	.684		
-.949	-1.000(**)	-.949	-.949		
.051	.000	.051	.051		

-.400	-.632	-.800	-.400		
.600	.368	.200	.600		
-.400	-.632	-.800	-.400		
.600	.368	.200	.600		
-.400	-.632	-.800	-.400		
.600	.368	.200	.600		
-.800	-.949	-1.000(**)	-.800		
.200	.051	.000	.200		
-.258	.000	.258	-.258		
.742	1.000	.742	.742		
-.800	-.949	-1.000(**)	-.800		
.200	.051	.000	.200		
.775	.816	.775	.775		
.225	.184	.225	.225		
.775	.816	.775	.775		
.225	.184	.225	.225		
.632	.500	.316	.632		
.368	.500	.684	.368		
1.000(**)	.949	.800	1.000(**)		
.	.051	.200	.		

.(0.05)
.(0.01)

*
**

(9)

/ / 50	/ 50 /	/ 50 /	/ 50 /		
-.630(*)	-.635(*)	-.604(*)	-.799(**)		
.038	.036	.049	.003		
-.733(*)	-.670(*)	-.749(**)	-.840(**)		
.010	.024	.008	.001		
-.868(**)	-.868(**)	-.723(*)	-.851(**)		
.001	.001	.012	.001		
-.765(**)	-.610(*)	-.498	-.813(**)		
.006	.046	.119	.002		
-.782(**)	-.736(**)	-.752(**)	-.820(**)		
.004	.010	.008	.002		
-.889(**)	-.815(**)	-.659(*)	-.947(**)		
.000	.002	.027	.000		
-.358	-.495	-.515	-.347		
.280	.121	.105	.296		
-.303	-.431	-.625(*)	-.315		
.365	.185	.040	.345		
-.679(*)	-.612(*)	-.527	-.733(*)		
.022	.045	.096	.010		
-.642(*)	-.619(*)	-.566	-.644(*)		
.033	.042	.070	.033		
-.570	-.580	-.569	-.590		
.067	.062	.068	.056		
-.487	-.534	-.614(*)	-.498		
.128	.091	.044	.119		

.(0.05)

*

.(0.01)

**

.2013

) (9)
(
(.947-)
(.603)
(.752-)
(.217)
(.410) (.868-)
(.889-)
(.585)
) (10)
(
(10)

/ / 50	/ 50 /	/ 50 /	/ 50 /		
-1.000(**)	-.949	-.800	-1.000(**)		
.000	.051	.200	.000		
-.800	-.632	-.400	-.800		
.200	.368	.600	.200		
-.800	-.632	-.400	-.800		
.200	.368	.600	.200		
-1.000(**)	-.949	-.800	-1.000(**)		
.000	.051	.200	.000		
-.800	-.632	-.400	-.800		
.200	.368	.600	.200		
-1.000(**)	-.949	-.800	-1.000(**)		
.000	.051	.200	.000		
-.105	.000	.105	-.105		
.895	1.000	.895	.895		

.316	.500	.632	.316		
.684	.500	.368	.684		
.775	.816	.775	.775		
.225	.184	.225	.225		
.949	.833	.632	.949		
.051	.167	.368	.051		
.400	.632	.800	.400		
.600	.368	.200	.600		
.200	.316	.400	.200		
.800	.684	.600	.800		

.(0.05) *

.(0.01) **

949)

(10)

()

(1.00-)

(.949)

(.800-)

(.800)

(.833)

(.949-)

(1.00-)

.(.949)

(11)

(15=)

.001(a)	22.107	451.795	1	451.795		1
		20.437	9	183.933		
			10	635.727		
.000(b)	25.066	274.120	2	548.240		2
		10.936	8	87.488		
			10	635.727		

() :

() :

/ / 50 :

(0.05)

(25.066)

0.001

(22.107)

0.000

(12)

(15=)

.013(a)	9.483	178.389	1	178.389		1
		18.812	9	169.307		
			10	347.696		

() :

/ / 50 :

(0.05)

0.013

(9.483)

(13)

(15=)

.016(a)	8.829	283.184	1	283.184		1
		32.073	9	288.657		
			10	571.841		

() :
/ / 50 :

(0.05)

0.016

(8.829)

(14)

(15=)

.003(a)	16.912	311.703	1	311.703		
		18.431	9	165.879		
			10	477.582		
.001(b)	17.262	193.868	2	387.736		
		11.231	8	89.846		
			10	477.582		

() :
() :
/ / 50 :

(0.05)

0.001

(23.891)

(17)

(15=)

.001(a)	22.865	410.330	1	410.330	
		17.946	9	161.512	
			10	571.841	

() :

/ / 50 :

(0.05)

0.001

(22.865)

(18)

(15=)

.002(a)	17.494	315.349	1	315.349	
		18.026	9	162.233	
			10	477.582	

() :

/ / 50 :

(0.05)

0.002

(17.494)

:

:

-1

(

)

)

(

()

.(1997)

(2001)

(2003) (Rastlav,hlavaty, 2010)
(1999) (2006)
(1994) (1980) (1981) (1995)
-2
()
)

(1997)

(1994)

(1974) (Hunhsker)

) () ()

(

(48.97)

.(1994)

.(1994)

.(1978)

(1999)

(2003)

(Rastlav,hlavaty, 2010)

(1987)

(1997)

(1994)

:

-

-

-

-

:

-

-

-

-

-

-

-

. 1 . (1994) .
 . (1978) .
 . (1980) .
 . 162 -144 . (1995) .
 . 112 -92 . (1984) .
 .122-101 . (2001).
 1 . (1997) .
 .255-234 . (1992) .
 .127 -110 . (2006) .
 3 . (1994).
 .() . (1998) .

. (2006).

7

. (2004) .

5

. (1989).

.33-12

23-21

. (1997) .

. (1996) .

. (2003).

. (1999) .

Beat Knechtle, Barbara Baumann, Patrizia Knechtle, Thomas Rosemann, 2010, What Influences Race Performance in Male Open Water Ultra – Endurance Swimmers: Anthropometry or Training? Human Movement Vol.11(1), 5-10.

Rastislav Hlavaty, (2010).” The Anthropometric And Kinematic Determinants of Swimming Performance”. Department of Physical education and Sports, Institute of Engineering Pedagogy and Humanities, Faculty of Materials Science and Technology, Slovak .