

Talent & Fitness Test

Diving Amersfoort, The Netherlands



Regional Training Center
Amersfoort

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The Royal Dutch Swimming Federation has three regional training centers for diving. At these centers beginning divers are tested and selected for different training groups: recreational, national potential, or international potential. Until recently divers were selected based on the observations of the head coach of the diving skills of the divers. At the training center in the city of Amersfoort, The Netherlands, a test has been developed to assign beginning divers to training groups based on a more objective method: performance on a physical test. In this article you can read how the test was developed and how the test should be administered.

By Wes Zimmermann, M.D., May 2006

Selecting divers

The sport of diving has developed internationally at a very fast pace. The European junior champions of today easily perform as well as the senior divers that competed in the Olympics twenty years ago. The scores of the international finalists steadily improve each year. Diving has all the characteristics of a high performance, professional sport. Full-time professional coaches select talented divers and train them in little elite groups, using a program of progressive skills and repeated moments of evaluation. National federations only invest money in divers identified as talents with international potential.

Until quite recently the best diving coaches in The Netherlands attended to every diver that registered to join their club. Divers were not selected: thick, thin, tall or short, every person was welcome. Ambitious divers practiced often, recreational divers only

a few times a week. The Royal Dutch Swimming Federation did not yet have a differentiated program of diving competitions. The national championships were open to every diver with a registration number. Nowadays there is a separate competition circuit for recreational divers and for competitive divers and the national championships are only open to elite divers, after they meet specific qualification criteria.

The Netherlands already has a national diving program with progressive skill levels. This system, which has 5 skilltests for springboard diving and 5 skilltests for platform diving, has been in place for over 10 years and has been adopted by all coaches who have prepared divers for recent international teams. A test was needed to identify physically talented children very early in their diving career.

What is talent?

Coaches of performance centers are always looking for talents. These talents they want to raise to success in junior and senior competitions. To become a champion the diver needs to have certain personal characteristics. Body and mind must be favourable for the sport. In diving that means: the diver must be of small stature, flexible, fast, he must be brave and have patience to practice endlessly the details of certain movements. To be successful in sports the environment of the diver must also be favourable, examples of this are the quality of the diving pool, the expertise of the coach, the cooperation of the parents and the availability of money for all sorts of things. This article does not deal with the environment of the diver.

The best way to assess a diver's body is to perform physical tests on a regular basis and study the progress of the diver. In other sports testing beginning, as well as advanced athletes, is a very common practice. A talented athlete is a boy or girl who scores very well on tests of physical characteristics that are important for a particular sport, with little or no specific training. If, for example, a diver is already very flexible in the pike position before he

has ever had any training, than the coach does not need to pay much attention to flexibility any more. Training time can be directed to other physical characteristics.

A talented athlete also is somebody who can obtain the same level of fitness as the current champions in the sport. If a beginning diver has a very poor vertical jump (representative of explosive legpower), then it is very unlikely that he, even after extensive training, can ever be competitive among top level divers.

Testing athletes for psychological talent for a particular sport is not a common practice. Especially at the very beginning of a sporting career it is very difficult to predict future competitive success. Coaches in diving do use practical impressions to assess the psychological talent of a diver. A coach can test a.o. 1. how quickly does a diver apply the specific directions given by the coach, how quickly does he learn dives? 2. Is a diver courageous when it comes to learning new dives? 3. Does a diver perform in competitions at a level that can be expected from practice, or much worse, or surprisingly better?

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Background of the Dutch Diving Talent Test

The city of Amersfoort, The Netherlands has a very successful “meet this sport” diving program for elementary school children. Every year more than 100 children ages 8-12 get a chance to participate in 6 diving lessons, to get an idea what the sport is like. Since 2004 every child in this program has taken the Dutch Diving Talent Test (DDTT) in lesson number 5. The test is administered in a small dry-land area immediately adjacent to the diving pool. Table 1 shows the ten items of the talent test. The test has been adopted and slightly altered from a version presented by the Mexican high performance coach Francisco Rueda. In the year 2000 coach Rueda visited the Netherlands and introduced his talent test to the Dutch coaches in a seminar organised by the Royal Dutch Swimming Federation. Rueda had already years of experience using his test to select Mexican junior divers for his team.

The results of the Mexican teams, both at the junior and

senior international level have been very impressive, over many years.

In the timeframe October 2004 – April 2006 236 children were tested in Amersfoort, 178 girls and 58 boys. All measurement values have been collected in an electronic database. The measurement values have been grouped according to gender and age. The final score for talent is based on percentiles of the measurement values. Table 2 shows the conversion formula from measurement value to talent score: 5 points are given to a measurement value in the top 10% in a certain group (= 90th percentile), 4 points are given to a measurement value in the top 20% (= 80th percentile), etc.

In summary it can be said that the DDTT is sport specific (adopted from diving Mexico) and based on measurement values of local (Dutch) schoolchildren with an interest in diving.

Table 2: conversion formula, used to produce table 3

measurement value in the top 10% of the group	= 90th percentile	= 5 points
measurement value in the top 20% of the group	= 80th percentile	= 4 points
measurement value in the top 30% of the group	= 70th percentile	= 3 points
measurement value in the top 40% of the group	= 60th percentile	= 2 points
measurement value in the top 50% of the group	= 50th percentile	= 1 point

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Table 1: the 10 exercises of the Dutch Diving Talent Test (DDTT)

Exercise	Title	Description
1	Body height	Body height in cm, standing, bare-feet.
		Measurement error: shoes, bent body posture.
2	Body weight	Bodyweight in kg, standing, wearing shirt + short.
		Measurement error: shoes.
3	Toe point (photo 1)	The diver is sitting on a mat, with straight legs and pointed feet. The tester measures the distance from the bottom of the big toes to the floor in cm.
		Measurement error: bent knees; if one toe is much closer to the floor than the other, take the average of the two toes to the floor.
4	Push ups from the knees (photo 3 + 4)	The diver is laying on the floor, face down, hands next to the shoulders, the knees bent (feet in the air). 20 seconds push ups.
		Measurement error: poorly executed repetitions do not count.
5	(Semi-) pike ups (photo 5 + 6)	The diver is laying on the floor, face up, arms extended past the head, hands slightly above the floor, the legs are straight up (90 degree angle in the hips). In the pike up the diver touches the toes and then the floor.
		Measurement error: poorly executed repetitions do not count.
6	Back extensions (photo 7 + 8)	The diver is laying on a table or platform, face down. The upper body is over the edge and hanging towards the floor. The hands are folded in the neck. A second diver prevents the first diver from falling, by sitting on the legs. The diver extends from the hanging position to the horizontal: 20 seconds.
		Measurement error: poorly executed repetitions do not count.
7	Stand and reach (photo 9)	The diver is standing on a raised surface (step or table) and bends forward, with straight legs. The diver reaches with both index fingers past the toes and touches a measurement tape.
		Measurement error: bending in the knees.
8	Shoulder flexibility (photo 2)	The diver is laying on a mat, the forehead touches the mat. The diver extends his arms along the head and holds a pen in two fists. The diver raises his arms along a measurement tape, the forehead remains on the mat.
		Measurement error: pushing the pen upward with the fingers, bend arms, the forehead lifts of the ground.
9	Standing long jump; 3 attempts	Long jump, from standing to standing. The jumping distance is from the front of the toes (start) to the back of the nearest heel (landing).
		Measurement error: the feet slide forward on impact, the diver falls on landing.
10	4 x 10 meter sprint; 2 attempts	4 x 10 meter sprint (dash); At 10, 20, 30 and 40 meters the diver touches a marking point on the floor (e.g. a cone).
		Measurement error: inaccurate use of the stopwatch.

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Details of executing the test

When executing the test the following materials are required: a scale for bodyweight, a measurement tape (body height and long jump), a ruler (toepoint), a padded, elevated surface (exercise 6), a stopwatch (sprint), a pen and a test form (one test form is given with this article). The exercises are always given in the same order, from 1-10. In one hour 10 candidates can be completely tested. Preceding every exercise there is a short verbal instruction and only a few moments to practice the required exercise. Most exercises can be measured quite accurately. Harder to judge are exercise 4 (push-ups from knees), 5 (semi pike-ups) and 6 (back extension to vertical). In these exercises the coach must determine the number of repetitions that have been performed correctly, poor executions do not count. Different coaches might score differently. Exercise 4 (push-ups from knees) and 5 (semi pike-ups) are difficult for untrained children to

perform correctly. When all participants have performed all exercises, the coach can tell each participant which exercise was very well performed and which exercise "needs work". In this way children get immediate feedback on their strong points and their weaker areas. Using table 3 the coach can convert the measurement values into talent scores (10 exercises x 5 points gives a maximum of 50 points). Converting the measurement values into talent scores may only be done the first time a diver takes the test. All children participating in this study have also only taken the test once. If a diver is given several chances to repeat the test, the performance will increase because he has figured out how to do it, a learning effect has taken place.

At the regional training center diving Amersfoort children are invited to join the training group "national potential" if they score 30 points or more.

Predictive value?

The divers of the regional training center Amersfoort have dominated the Dutch national championships for the last six years. But these divers are adults now and have not been selected at the beginning of their careers with the talent test. Only in a number of years from now we can determine whether the divers selected with the talent test really turned into champions. The predictive value of the test has yet to be established.

The training program in Amersfoort does incorporate the above described test repetitively for the same diver. Starting from the second time the test is given to the same diver, it is no longer called the Talent Test, but the fitness test. The test is used no longer to give points for talent,

but to monitor the progress of divers on the exercises of the test. All results of all divers on the exercises are kept in an electronic database. In this way in the future a diver can compare his individual progress on certain exercises against the scores of a champion on the same exercises. Of course children who want to dive, but have low talent scores on the test, are not refused to join the Amersfoort diving club. They are however directed to recreational diving lessons. At the end of every season divers are reevaluated. Sometimes divers progress from recreational lessons to the training group "national potential". It is unwise to ever write-off a child with ambition!

Offer

Coaches who want to learn how to administer the test and divers who want to participate in the test are welcome to visit our diving program in Amersfoort. On the website www.springschool.nl upcoming tests are announced. If clubs request us to do so, extra test days can be arranged.

About the author

Wes Zimmermann is a part-time age-group diving coach and responsible for the regional diving center Diving Amersfoort. His profession is a physician. He works for the Royal Dutch Army, in the department of occupational medicine. He specializes in the treatment of chronic overuse sports injuries.

Sponsors

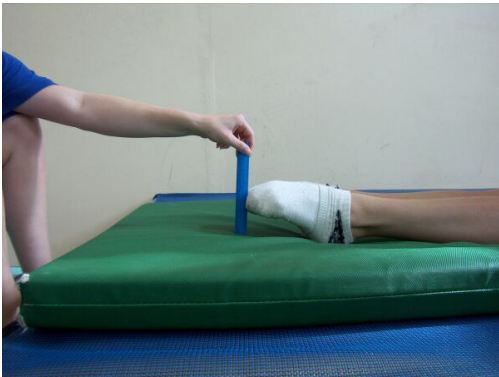
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Table 3: conversiontable from measurement value to talent score

Exercise	girls 8+9 years	girls 10+11 years	boys 8+9 years	boys 10+11 years	score
Height	128	140	133	144	5
	133	143	138	147	4
	135	147	140	148	3
	136	148	141	149	2
1	138	150	142	151	1
Weight	27,5	31	27	24	5
	29	33	30	35	4
	30	35	32	37	3
	31	36	33	39	2
2	32	38	34	40	1
Toe point	5	5	5	7	5
	5,5	6	6	7,5	4
	6	7	6,5	8	3
	6,5	7,5	7	8,5	2
3	7	8	7,5	9	1
Push-ups	19	19	19	20	5
(knees)	17	17	18	19	4
	15	15	15	18	3
	14	14	14	17	2
4	11	12	13	16	1
Pike-ups	18	19	14	16	5
(semi)	15	16	13	15	4
	13	15	12	13	3
	12	14	11	12	2
5	10	13	10	11	1
Back	19	19	19	20	5
extensions	18	18	18	19	4
	17	17	16	18	3
	16	16	14	17	2
6	15	15	12	16	1
Stand and	10	10	7	9	5
reach	9	8	4	5	4
	6	7	3	3	3
	5	5	2	2	2
7	3,5	5	1	1	1
Shoulder	38	38	36	39	5
flexibility	32	36	35	34	4
	31	35	32	32	3
	30	34	30	30	2
8	29	32	28	29	1
Standing long	164	168	175	183	5
jump	159	162	165	181	4
	152	159	160	176	3
	147	153	155	170	2
9	141	151	152	166	1
4 x 10 meter	11,04	10,68	10,38	10,16	5
sprint	11,05-11,38	10,69-10,90	10,39-10,50	10,17-10,34	4
	11,39-11,59	10,91-11,12	10,51-10,90	10,35-10,53	3
	11,60-11,69	11,13-11,30	10,91-11,01	10,54-10,65	2
10	11,70-12,00	11,31-11,42	11,02-11,19	10,66-11,00	1

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Photo 1 ↓



Exercise 3:
Toe point

Photo 2 ↓



Exercise 8:
Shoulder flexibility

Photo 3 ↓



Exercise 4:
Push-ups
starting position

Photo 4 ↓



Exercise 4:
Push-ups
ending position

Photo 5 ↓



Exercise 5:
(Semi-) pike-ups
starting position

Photo 6 ↓



Exercise 5:
(Semi-) pike-ups
ending position

Photo 7 ↓



Exercise 6:
Back extensions
starting position

Photo 8 ↓



Exercise 6:
Back extensions
ending position

Photo 9 ↓



Exercise 7:
Stand and
reach



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