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## **Teaching the start, turn and finish of backstroke**

The arm stroke, kicking, body position, breathing, timing, start, turn, and finish belong to the technical elements of all strokes. I focus on the last three elements in my lecture, and mainly the teaching process. A few words about the finish before start: the finish has two different parts. One is the last phase of the competition, and the other is touching wall at the end of the race. The length of the last phase of the race depends on the length of the swimming event, the fitness of the swimmer, and the swimmer's actual status in the race when he/she puts all of his/her residual energy in it. We should consider that when starting the last phase of the competition, swimmers, according to their instinct, increase the frequency of their strokes. As a consequence of it, in the biggest number of cases, the length of the stroke decreases resulting in slower swimming with a higher energy consumption. Because of that, the last phase of the competition starts with the lengthening of the stroke. Concentrating on that, we can reach a minimal frequency increase while maintaining the length of the stroke, so we can swim much faster, and that is the goal.

Swimmers should know precisely the number of strokes from the backstroke flag at race pace to touch in the wall. Swimmers should define the number of strokes until touching the wall (with a lot training and experience) and the last one should be accelerated. The swimmer is chasing and pushing his/her head down when doing the last arm stroke recovery. The opposite arm is helping the body accelerate with a dynamic second down sweep (rotation in the Hungarian style). The swimmer is doing faster kicking and a dolphin kick, finally, at the same time. The wall touch is accurate if the swimmer reaches the wall when doing the arm stroke entry.

The significance of these elements has been raised in the last decades. It is because the difference between the sums of these elements is frequently higher than the difference between the swimmer's competition results. This is why the importance of these technical elements became emphatic. The success of swimmers depends more on these three elements than before. Teaching of the start, turn, and finish is emphasized in the Hungarian's preparation system. This is one reason why Hungarian swimmers acquire silver medals in a world event when: a) the winner is much better, or b) the winner is also Hungarian.



*LEN Competition  
analyses by Rein  
Haljand [www.swim.ee](http://www.swim.ee)*

*EUROPEAN  
SWIMMING  
CHAMPIONSHIPS  
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## Men backstroke 100 m

FINAL	PEIRSOL 22.07.03 World Top 2006	A.VYATCHANIN 1.08.06	M.ROGAN 1.08.06	A.GRIGORIADIS 1.08.06	L.TONCOCK 1.08.06	M.CLAY 1.08.06	L.CZECH 1.08.06	H.MEEUW 1.08.06	S.DRIESEN 1.08.06
1 Result	53,61	0:53.5	0:54.07	0:54.34	0:54.51	0:54.52	0:54.56	0:54.59	0:54.84
2 Start time 15m	6,56	6,46	6,68	6,58	6,68	6,72	6,68	6,58	6,78
3 Start speed 15m	2,29	2,32	2,25	2,28	2,25	2,23	2,25	2,28	2,21
4 Lap time 25 m	12,04	11,98	12,26	11,98	12,1	12,06	12,2	12,06	12,22
5 Lap time 75 m	39,2	39,04	39,56	39,36	39,56	39,54	39,88	39,62	40
6 Swimm speed first 25 m	1,82	1,81	1,79	1,85	1,85	1,87	1,81	1,82	1,84
7 Swimm speed second 25 m	1,79	1,77	1,76	1,81	1,78	1,75	1,77	1,75	1,77
8 Swimm speed third 25 m	1,77	1,8	1,78	1,74	1,74	1,73	1,71	1,72	1,72
9 Swimm speed last 25 m	1,72	1,68	1,69	1,64	1,64	1,66	1,66	1,65	1,64
10 Frequency first 50 m	52	45	49	50	57	52	50	55	48
11 Frequency second 50 m	52	43	49	43	53	52	44	52	45
12 Stroke length first 50 m	2,06	2,33	2,15	2,17	1,89	2,02	2,12	1,92	2,19
13 Stroke length second 50 m	1,99	2,32	2,06	2,27	1,88	1,92	2,26	1,91	2,17
14 Turn time 15m	7,52	7,42	7,5	7,7	7,6	7,36	7,6	7,38	7,76
15 Turn speed 15m	1,99	2,02	2	1,95	1,97	2,04	1,97	2,03	1,93
16 Finishing time last 5m	2,77	2,58	2,69	2,8	2,79	2,92	2,62	2,83	2,66
17 Finishing speed last 5m	1,62	1,74	1,67	1,61	1,61	1,54	1,72	1,59	1,69
18 Av.Swimming speed	1,78	1,77	1,76	1,76	1,75	1,75	1,74	1,73	1,74
19 Av. Frequency	52	44	49	46	55	52	47	53	46
20 Av. Stroke length	2,03	2,33	2,11	2,22	1,88	1,97	2,19	1,92	2,18

Summary difference:

"+" better      "-" worse

Figure1. (prof. Rhein Haljand)



The traditional long term swimming teaching process (becoming accustomed to the water, teaching the four strokes, improving an up to date swimming technique, and avoidance of deterioration), which has existed in Hungary for decades, however, will be modified in this case. Because of the fact that these elements are connected to swimming competitions, we do not teach them during the second phase (teaching of the four strokes) of the teaching process. It is unnecessary to know if somebody doesn't want to become a competitor. We begin to teach these elements when swimmers (kids) are able to swim all the strokes (except the start, turn and finish) and teaching the up-to-date swimming technique as well. Because of this it is easier on the one side, but difficult in consequences of its nature.

We teach the rules first, introduce second, and swimmers will practice third. When teaching these elements, a big advantage is that our subjects are able to swim all strokes, they have serious experience considering the characteristics of the water, and they are more skilled and motivated than those who do not become competitors. So, they can learn these elements easier and sooner than other elements during the teaching process. But, if, somebody is able to perform these elements once, it does not mean that they have learned it and can do it during trainings when swimming intensely, in sets or in a competition environment as well.

It became common that following starts and turns, swimmers do dolphin kicks under the water surface until maximum 15 meters except in the case of the breaststroke. We consider this fact as a new stage of the swimming technique development history. A new technical element required only knowing how to swim (coordination capacity) until the middle of the previous century or a bit later in certain cases e.g. Kiefer backstroke turn. It could have been learned through practice in the water. In the next stage of the swimming technique development history, to perform a new technical element required not just being able to swim but also other qualities. To be able to learn the wave action breaststroke needed not just skill but flexible back and hip joints as well. So, to acquire this ability a dry land component appeared – as flexibility exercises. We consider the underwater dolphin kick a new stage of the swimming technique development history because this is the first technical element which requires not just the ability to swim, and flexibility (in the hip and the ankle), but an anaerob capacity as well, despite the fact that it could be easily understandable when we saw it for the first time. So, this is the first new technical element where the metabolic component appeared which could be acquired with a lot of training. Since we cannot get any oxygen during the 30% of the event (in a 50 meter pool) the proportion of the anaerob component has been raised. This fact should be put into consideration when planning the training sessions.

The demo film, after my oral presentation will follow the Hungarian approach. I consider this long term, like the process with four stages: becoming accustomed to the water, teaching, improving an up to date technique, and avoidance of deterioration. As I mentioned earlier, we begin to teach the start, turn, and finish of the backstroke when swimmers have finished learning the strokes and they begin to learn the up to date technique.

Becoming accustomed to the water is not to prepare the kids with the appropriate backstroke start, turn and finish, but, contain a lot of exercises that could be considered as a preparatory exercise to it. I will introduce just a few exercises from this stage in my demo film, but the imagination and the creativity of the coaches (teachers) could produce a lot of them, of course.



We will see young competitors in the film when starts the teaching, but it should be emphasized that the primary purpose is just to teach the correct movements of the backstroke start, turn and finish. All elements will not (cannot) be perfect. Development of the distance of the underwater dolphin kicks could be emphatic just in the puberty age. The reason for that is that it has a high anaerob component when performing. Since gaining energy in an anaerob way is called glikolízis, which is a biochemical process and has a key enzyme (PPK) which is hardly active before the age of puberty. In other words, the anaerob energy gaining is restricted in kids.

In the demo film puberty-aged swimmers can also be seen. To develop 15-meter dolphin kicks under the water surface can also be a main purpose for them. It should also be mentioned that the training intensity (even the highest) can never be the same than it is at a competition. So, the length of the stroke will never be the same. In consequence to this, to learn the correct and accurate start, turn and finish, they have to compete a lot, which is in accordance with other considerations in this age. We should do so later on, because they grow up, becoming stronger and stronger and their stroke length is also changing as a consequence of it. So, estimating the distance from the wall will always be a challenge and is an endless learning process for swimmers.

To summarize: every stroke's start, turn and finish should be taught. Teaching these elements is a long-term process which lasts from becoming accustomed to the water until the last competition of a certain swimmer. One thing must never happen: we feel, that once we have learned (taught) it; we don't have to deal with it anymore. However, it needs permanent practice. The key to the success is a perfect and effective performing of these elements (among other things). The difference between the international-level swimmers is decreasing. So, the differences among the sums of these elements could be a deciding factor to being a winner or not.