

SWIM.EE

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**MODEL OF BACKSTROKE START TECHNIQUE**

NAMES OF PERIODS & PHASES:

- 1. Reaction & hands release phase
- 2. Pushing phase
- 3. Flight phase

- Gliding period
- 4. Entry & gliding phase
  - 5. Underwater kicking phase

- Pullout period
- 6. Pullout phase
  - 7. Swimming after start



AIM of movements. High speed for the beginning of the race !

Limiting positions      beginning:      from the start signal  
 ending:                      at the end of the start actions



**General cognitive assignments:**

- Avoid unnecessary movements during all phases
- Prepare for start, follow orders of starter, enter the water, take starting position and be ready for signal
- Keep muscles relaxed during gliding and kicking
- Decrease resistance during entry, gliding and kicking
- Increase propulsive forces during push-off, kicking and pullout
- Ensure correct timing of fixing joints for transfer of power during push, kicks and pullout
- Inhale after push-off and begin breathing after the finish of start actions
- Realise aims of movements in each phase but also prepare for the movements in following phase



**PHASES:****1. REACTION & HANDS RELEASE PHASE**

AIM of movements. Try to minimise duration !

Limiting positions	beginning:	from the starting signal
	ending:	when the hands leave the wall

**Parameters:**

The duration of reaction & hands release: 0.35- 0.50 (sec)

(This parameter indicate time necessary to prepare and begin pushing action. Parameter indicate not only reaction to signa but also time spent to all preparation movements before beginning real pushing actions. It is easier to reduce that duration then pushing time)

**Requirements for self control:**

Take good body position, hips nearly out of water  
Be ready to react with leg push first  
Immediately try to move head and shoulders forward  
React to the starting signal as quickly as possible

**2. PUSHING PHASE**

AIM of movements. Try to create maximum pushing power !

Limiting positions	beginning:	when the hands leave the wall
	ending:	when the feet leave the wall

**Parameters:**

The duration of pushing action : 0,20 - 0,12 (sec)

(It indicates pushing power, as well explosive form of push)

Forward speed of head during push: 4,2 - 5,5 (m/sec)

(Head speed forward indicate that not only pushing by legs, but also body and head need to move fast forward to take fly-position)

**Requirements for self control:**

Transfer impulsive pushing forces in forward and upward direction  
Arms must be brought forward straight, as quick as possible, not too high  
Head must move forward; back and hips up,  
At the end of push body angle must be diagonal and straight  
The duration of pushing action must be short

**3. FLIGHT PHASE**

AIM of movements. Try to increase the length of flight !









**THE WORLD BEST START, TURN, FINISHING AND SWIMMING TIMES & SPEEDS**

Men BACKSTROKE

distance	start 15m	swims	turns 15m	finish 5m	
50m	Rupprath	Theloke		Siembida	
		26,11	25,66	26,06	
sec		6,6		2,5	
m/sec		2,27	1,84	1,8	
100m	Nishikori	Neisser	Selkov	Versfeld	
	55,61	55,02	55,48	55,17	
sec		6,38		7,16	2,67
m/sec		2,35	1,8	2,09	1,69
200m	Selkov	Bridgewater	Krayzelburg	Merisi	
	1.57,42	1.58,54	1.58,84	1.59,59	
sec		6,6		7,87	2,68
m/sec		2,27	1,63	1,91	1,68