

Evolution of Swimming Strokes according to the Rules









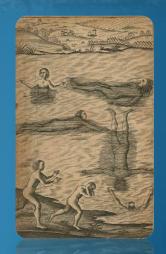
Swimming Ancients. Origins

Origins

Babylonian bas-reliefs and Assyrian wall drawings point to very early swimming skills among humans. The most ancient and famous of drawings depicting men swimming are to be found in the Kebir desert. They are estimated to be about 6,000 years old. The Nagoda bas-relief also has paintings of swimmers that date back some 5,000 years.



"Swimming drawing 6.000 years old."





Early swimming strokes

The archive of "The Times" of England contains reports of an 1844 race between Englishman Harold Kenworthy and two Native Americans named Flying Gull and Tobacco. The visitors from North America swam in a way that the anonymous "Times" writer described as "totally un-European," according to FINA.org. The stroke seems to have resembled modern freestyle. The Englishman lost the race swimming the breaststroke. In the 1840s, the sidestroke surpassed the breaststroke as the most popular racing stroke in England, according to FINA.org. In 1873, John Trugeon combined a freestyle-like arm motion with the breaststroke kick. This stroke became popular for short races.



"The stroke seems to have modern freestyle."



1896-1900

The Olympic Games were held in 1896 in Athens, a male-only competition.

Six events were planned for the swimming competition but only four events were actually contested:

100m, 500m and 1200m freestyle and 100m for sailors, starting from a rowing boat.

The second Olympic games in Paris in 1900 featured 200m, 1000m and 4000m freestyle, 200m backstroke and 200m team race. There were two additional unusual swimming event: obstacle swimming course (River Seine) and an underwater swimming race.



"Athens 1896"



"Paris 1900"



1904

The Olympic Games in 1904 in St.Louis included races over 50 yards(46m), 100 yards, 220 yards(200m), 440 yards, 880 yards (800m) and one mile (1,6Km) freestyle: 100 yards backstroke, 440 yards breaststroke and the 4x50 yards freestyle relay.

These Games differentiated between breaststroke and freestyle, so there are no two defines styles (breaststroke and backstroke and freestyle were more swimmers swam Trudgen.

A new flutter kick instead breastroke or scissor becaume known Australian crawl, technically front crawl.



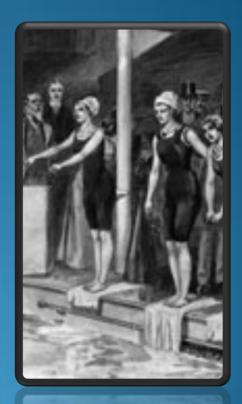
"100 yards St Luis 1904 "



FINA Ancients. Origins

Origins

Swimming has come a long way in 100 years of official FINA history. When the founding fathers of the federation gathered in London, 1908, there was no global standardisation of rules, structures, distances and general conditions under which race competitions could be held and records set. Swimming distances were often "guesstimates", while most events took place in open water in which no two venues offered the same conditions, some racing taking place against the tide, others with the tide, some in choppy sea, others in millpond conditions....



"FINA was founded in 1908"



1908-1956

For the first 65 years of FINA history, the Olympic Games was the only global competition open to swimmers.

London 1908 was the last male-only Games.

Mens programme from 1908 to 1956 were: 100m, 400m 1.500m freestyle, 100m backstroke, 200m breaststroke and 4x200m freestyle

Women programme were only 100m, 400m and 4x100m freestyle until 1924, when the 100m backstroke and 200m breaststroke were added to their schedule.



"London 1908"



1908

Six swimming events were contested in the Olympic Games in 1908 in London.

The men's competitions were 100m, 400m and 1500m freestyle; 100m backstroke, 200m breaststroke and 4x200m freestyle relay.

This was the first Olympic Games in which a 100m pool had been specially constructed inside the main stadium's track and field oval.



"200m breaststroke final London 1908"





"London 1908"



1912

For the first time women were allowed to swim competing in freestyle races in the Olympic Games in 1912 in Stockholm. Nine swimming events were held in the 100m course built in Stockholm harbour.

The men's competitions were 100m, 400m and 1500m freestyle; 100m backstroke, 200m and 400m breaststroke and 4x200m freestyle relay.

The women's competitions were 100m freestyle and 4x100m freestyle relay.



"Women 4x100 m Stokolm 1912 "





"Amberes 1920"

Evolution of the swimming strokes according to the rules. Alfonso Wucherpfennig LEN TSC member



1924

Eleven swimming events, six for men and five for women, were held in the Olympic Games in 1924 in Paris. Were the first to use standard 50m pool with marked lines and lane ropes.

The men's competitions were 100m, 400m and 1500m freestyle; 100m backstroke, 200m breaststroke and 4x200m freestyle relay.

The women's competitions were 100m, 400m freestyle; 100m backstroke, 200m breaststroke and 4x100m freestyle relay.



"First 50m pool with marked lines and lane ropes Paris 1924"





"Berlin 1936"



1936

Therefore, the butterfly arms with a breaststroke kick were used by a few swimmers in the 1936 Summer Olympics in Berlin for the breaststroke competitions.

In 1938, almost every breaststroke swimmer was using this butterfly style, yet this stroke was considered a variant of the breaststroke until 1952, when it was accepted as a separate style with a set of rules.

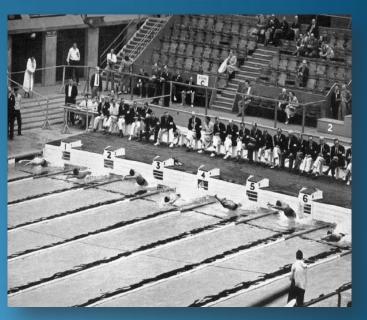


" 100 breaststroke Berlin 1936"



1936-1945

Around that time another modification to the backstroke became popular. Previously, the arms were held straight during the underwater push phase, for example by the top backstroke swimmer. Adolph Kiefer. However, Australian swimmers developed a technique where the arms are bent under water, increasing the horizontal push and the resulting speed and reducing the wasted force upward and sideways. This style is now generally used worldwide. In 1935 Topless swimsuits for men were worn for the first time during an official competition.



" 100 backtstroke London 1948"





"London 1948"

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1952

Another modification was developed for breaststroke. In breaststroke, breaking the water surface increases the friction, reducing the speed of the swimmer. Therefore, swimming underwater increases the speed. This led to a controversy at the 1956 Summer Olympics in Melbourne, and six swimmers were disqualified, as they repeatedly swam long distances underwater.



" 200 breaststroke Helsinki 1952"



1956

Thirteen swimming events, seven for men and six for women, were held in the Olympic Games in 1956 in Melbourne.

The men's competitions were 100m, 400m and 1500m freestyle; 100m backstroke, 200m breaststroke, 200m butterfly and 4x200m freestyle relay.

The women's competitions were 100m, 400m freestyle; 100m backstroke, 200m breaststroke, 100m butterfly and 4x100m freestyle relay.



" 200 butterfly Melbourne 1936"



1956

one Japanese swimmer, Masaru However, Furukawa, circumvented the rule by not surfacing at all after the start, but swimming as much of the lane under water as possible before breaking the surface. He swam all but 5m under water for the first three 50m laps, and also swam half under water for the last lap, winning the gold medal. The adoption of this technique led to many swimmers suffering from oxygen starvation or even some swimmers passing out during the race due to a lack of air, and a new rule was introduced by the FINA, limiting the distance that can be swum under water after the start and every turn, and requiring the head to break the surface every cycle.



" 200 breaststroke Melbourne 1956"



1956

The 1956 games in Melbourne also saw the introduction of the body roll, a sort of tumble turn to faster change directions at the end of the lane.



" 100 Freestyle Melbourne 1956"



1960

Fifteen swimming events were contested, eight for men and seven for women, were held in the Olympic Games in 1960 in Rome.

The men's competitions were 100m, 400m and 1500m freestyle; 100m backstroke, 200m breaststroke, 200m butterfly, 4x100m ind. medley and 4x200m freestyle relay.

The women's competitions were 100m, 400m freestyle; 100m backstroke, 200m breaststroke, 100m butterfly, 4x100m ind. medley and 4x100m freestyle relay.



"Swimming pool Rome 1960"



1964

Eighteen swimming events were contested, ten for men and eight for women, were held in the Olympic Games in 1964 in Tokyo.

The men's competitions were 100m, 400m and 1500m freestyle; 200m backstroke, 200m breaststroke, 200m butterfly, 400m ind. Medley, 4x100m ind. Medley, 4x100m freestyle and 4x200m freestyle relay.

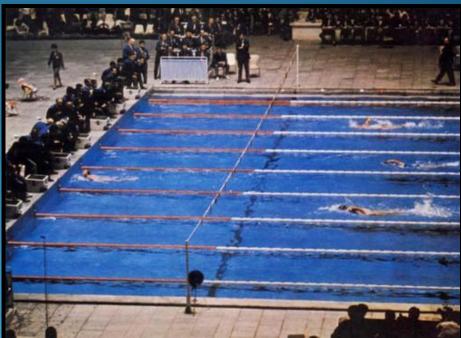
The women's competitions were 100m and 400m freestyle; 100m backstroke, 200m breaststroke, 100m butterfly, 400m ind.medley, 4x100m ind. medley and 4x100m freestyle relay.



"Swimming pool Tokyo 1964"







"Tokio 1964"



1972

In 1972, another famous swimmer, Mark Spitz, was at the height of his career. During the 1972 Summer Olympics in Munich, Germany, he won seven gold medals, more than any other Olympic athlete has ever won. Shortly thereafter in 1973, the first swimming world cup was held in Belgrade, Yugoslavia by the FINA.

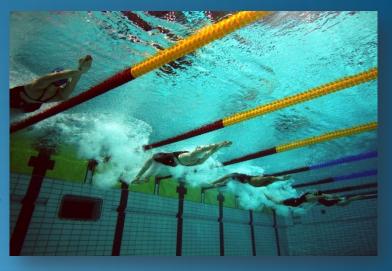


"Swimming pool Munich 1972"



1988 .Underwater backstroke

Breaking the water surface reduces the speed in swimming; this is true not only for breaststroke, but also for backstroke. The swimmers Daichi Suzuki (Japan) and David Berkoff (America) used this for the 100m backstroke at the 1988 Summer Olympics in Seoul. Berkoff swam 33m of the first lane completely underwater using only a dolphin kick, surfacing just before the turn, far ahead of his competition. The rules were quickly changed in the same year by the FINA to ensure the health and safety of the swimmers, limiting the underwater phase after the start to 10 meters, which was expanded to 15m in 1991



" underwater dolphin kicking"





Underwater backstroke. Seoul 1988



Evolution of the swimming strokes according to the rules. Alfonso Wucherpfennig LEN TSC member



Swimming strokes.Freestyle



"Last 20 years period"

Evolution of the swimming strokes according to the rules. Alfonso Wucherpfennig LEN TSC member



Swimming strokes.Freestyle

1991-1994	1994-2000	2000-2005	2005-2009	2009-2013
SW 5.1 Freestyle means that in an event so designated the swimmer may swim any style, except that in individual medley or medley relay events, freestyle means any style other than backstroke, breaststroke or butterfly. SW 5.2 Some part of the swimmer must touch the	SW 5.1 Freestyle means that in an event so designated the swimmer may swim any style, except that in individual medley or medley relay events, freestyle means any style other than backstroke, breaststroke or butterfly. SW 5.2 Some part of the swimmer must touch the wall upon completion of each length and at the finish. SW 5.3* Some part of the swimmer must break the surface of the water throughout the race, except it shall be permissible for the swimmer to be completely submerged during the turn	SW 5.1 Freestyle means that in an event so designated the swimmer may swim any style, except that in individual medley or medley relay events, freestyle means any style other than backstroke, breaststroke or butterfly. SW 5.2 Some part of the swimmer must touch the wall upon completion of each length and at the finish. SW 5.3 Some part of the swimmer must break the surface of the water throughout the race, except it shall be permissible for the swimmer to be completely submerged during the turn	SW 5.1 Freestyle means that in an event so designated the swimmer may swim any style, except that in individual medley or medley relay events, freestyle means any style other than backstroke, breaststroke or butterfly. SW 5.2 Some part of the swimmer must touch the wall upon completion of each length and at the finish. SW 5.3 Some part of the swimmer must break the surface of the water throughout the race, except it shall be permissible for the swimmer to be completely submerged during the turn	SW 5.1 Freestyle means that in an event so designated the swimmer may swim any style, except that in individual medley or medley relay events, freestyle means any style other than backstroke, breaststroke or butterfly. SW 5.2 Some part of the swimmer must touch the wall upon completion of each length and at the finish. SW 5.3 Some part of the swimmer must break the surface of the water throughout the race, except it shall be permissible for the swimmer to be completely submerged during the turn
	and for a distance of not more than 15 meters after	and for a distance of not more than 15 meters after	and for a distance of not more than 15 meters after	and for a distance of not more than 15 meters after
	the start and each turn. By that point, the head must have broken the surface.*	the start and each turn. By that point, the head must have broken the surface.	the start and each turn. By that point, the head must have broken the surface.	the start and each turn. By that point, the head must have broken the surface.
	*Rule changed in 1998			



Swimming strokes. Freestyle

Relevant changing rules in this period (1.998)

Some part of the swimmer must break the surface of the water throughout the race, except it shall be permissible for the swimmer to be completely submerged during the turn and for a distance of not more than 15 meters after the start and each turn. By that point, the head must have broken the surface.



"15m submerged"





"Last 20 years period"

Evolution of the swimming strokes according to the rules. Alfonso Wucherpfennig LEN TSC member



1991-1994	1994-2000	2000-2005	2005-2009	2009-2013
	_	_	SW 6.1 Prior to the starting	_
· ·			signal, the swimmers shall line up in the water facing the	•
_	<u> </u>	· ·	starting end, with both hands	•
			holding the starting grips. The feet, including the toes, shall	
be under the surface of the	or bending the toes over the			
			water. Standing in or on the	
			gutter or bending the toes over the lip of the gutter is	
		prohibited.	prohibited.	
	*Rule changed in 1998			



Relevant chanching rules in this period (1998)

Prior starting signal...

(2005)

The feet ,including the toes, shall be under the surface of the water.



"Feet over the surface of the water"



1991-1994	1994-2000	2000-2005	2005-2009	2009-2013
SW 6.2 At the signal for	SW 6.2 At the signal for	SW 6.2 At the signal for	SW 6.2 At the signal for	SW 6.2 At the signal for
starting and after turning	starting and after turning the	starting and after turning the	starting and after turning the	starting and after turning the
the swimmer shall push off	swimmer shall push off and	swimmer shall push off and	swimmer shall push off and	swimmer shall push off and
and swim upon his back	swim upon his back	swim upon his back	swim upon his back	swim upon his back
throughout the race. He	throughout the race except	throughout the race except	throughout the race except	throughout the race except
must be on his back at all	when executing a turn <u>as set</u>	when executing a turn as set	when executing a turn as set	when executing a turn as set
times except when	forth in SW.6.4.He must be	forth in SW.6.4. The normal	forth in SW 6.4. The normal	forth in SW 6.4. The normal
executing a turn. The	on his back at all times except	position on the back can	position on the back can	position on the back can
normal position on the	when executing a turn. The	include a roll movement of the	include a roll movement of the	include a roll movement of
	•	' ' '	body up to, but not including	• • •
•			90 degrees from horizontal.	9
to, but not including 90	of the body up to, but not	The position of the head is not	The position of the head is not	horizontal. The position of
	including 90 degrees from		relevant.	the head is not relevant.
·	horizontal. The position of			
not relevant.	the head is not relevant.			
	Bureau Interpretation.			
ı ·	"Except when executing a			
·	turn" means any deviation			
	from the normal backstroke			
· ·	position in order to execute a			
	continuous turning action.			
continuous turning action.				



Relevant changing rules in this period (1994)

As set forth in sw.6.4

He must be on his back at all time except when executing a turn.

Bureau Interpretation.

Except when executing a turn means
"any deviation from the normal backstroke position in order to execute a continuous turning action."



"On his back at all time except when executing a turn"



1991-1994	1994-2000	2000-2005	2005-2009	2009-2013
SW 6.3* Some part of the	SW 6.3 Some part of the	SW 6.3 Some part of the	SW 6.3 Some part of the	SW 6.3 Some part of the
swimmer must break the	swimmer must break the	swimmer must break the	swimmer must break the	swimmer must break the
surface of the water	surface of the water	surface of the water	surface of the water	surface of the water
throughout the race except	throughout the race except it	throughout the race except it	throughout the race. It is	throughout the race. It is
it shall be permissible for	shall be permissible for the	shall be permissible for the	permissible for the swimmer to	permissible for the swimmer
the swimmer to be	swimmer to be completely	swimmer to be completely	be completely submerged	to be completely submerged
completely submerged	submerged during the turn	submerged during the turn, at	during the turn, at the finish	during the turn, at the finish
during the turn and for a	and for a distance of not	the finish and for a distance of	and for a distance of not more	and for a distance of not
distance of not more than	more than 15 metres after	not more than 15 metres after	than 15 metres after the start	more than after the start and
15 meters after the start	the start and each turn. By	the start and each turn. By that	and each turn. By that point	each turn. By that point the
and each turn. By that	that point the head must	point the head must have	the head must have broken the	head must have broken the
point the head must have	have broken the surface.	broken the surface.	surface.	surface.
broken the surface.				
*Rule changed in 1991				



Relevant changing rules in this period (1991)

...to be completely submerged during the turn and for a distance of not more than 15 meters after the start and each Turn.



"to be completely submerged during the turn and for a distance of not more than 15mts"



Swimming strokes. Backstroke

1991-1994	1994-2000	2000-2005	2005-2009	2009-2013
SW 6.4 During the turn	SW 6.4 During the turn the	SW 6.4 During the turn the	SW 6.4 When executing the	SW 6.4 When executing the
the shoulders may be	shoulders may be turned over	shoulders may be turned over	turn there must be a touch of	turn there must be a touch of
turned over the vertical to	the vertical to the breast after	the vertical to the breast after	the wall with some part of the	the wall with some part of
the breast but the	which a continuous single	which a continuous single arm	swimmer's body. During the	the swimmer's body <u>in</u>
swimmer must have	arm pull or a continuous	pull or a continuous	turn the shoulders may be	his/her respective lane.
returned to a position on	simultaneous double arm pull	simultaneous double arm pull	turned over the vertical to the	During the turn the shoulders
the back upon leaving the	may be used for initiate the	may be used for initiate the	breast after which a	may be turned over the
wall. When executing the	turn. Once the body has left	turn. Once the body has left	continuous single arm pull or a	vertical to the breast after
turn there must be a touch	the position on the back,	the position on the back, any	continuous simultaneous	which a continuous single
of the wall with some part	there will be not kick or arm	kick or arm pull must be part of	double arm pull may be used	arm pull or a continuous
of the swimmer's body.	pull that is independent of	the continuous turning action.	to initiate the turn. Once the	simultaneous double arm pull
			body has left the position on	•
		-	the back, any kick or arm pull	
	have returned to a position	back upon leaving the wall.	must be part of the continuous	returned to the position on
	on the back upon leaving the	When executing the turn there	turning action. The swimmer	the back upon leaving the
	wall. When executing the	must be a touch of the wall	must have returned to the	wall.
	turn there must be a touch of	with some part of the	position on the back upon	
	the wall with some part of	swimmer's body.	leaving the wall.	
	the swimmer's body.			
SW 6.5 Upon the finish of	SW 6.5 Upon the finish of	SW 6.5 Upon the finish of the	SW 6.5 Upon the finish of the	SW 6.5 Upon the finish of
the race the swimmer	the race the swimmer must	race the swimmer must touch	race the swimmer must touch	the race the swimmer must
must touch the wall while	touch the wall while on the	the wall while on the back. The	the wall while on the back. The	touch the wall while on the
on the back	back	body may be submerged on	body may be submerged on	back in his/her respective
		the touch.	the touch.	lane.



Relevant rules in this period (1994)

...after which a continuous single arm pull or a continuous simultaneous double arm pull may be used for initiate the turn. Once the body has left the position on the back, there will be not kick or arm pull that is independent of the continuous turning action

(2005)

Once the body has left the position, any or arm pull, must be part of the continuous turning action

The body may be submerged on the touch.

(2009)

....in his/her respective line.



"backstroke turn"







"Last 20 years period"



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 7.1 From the beginning	SW 7.1 From the beginning	SW 7.1 From the beginning	SW 7.1 From the beginning of	SW 7.1 After the start and
of the first arm stroke after	of the first arm stroke	of the first arm stroke after	the first arm stroke after the	after each turn, the swimmer
the start and after each	after the start and after	the start and after each	start and after each turn, the	may take one arm stroke
turn, the body shall be	each turn, the body shall	turn, the body shall be	body shall be kept on the	completely back to the legs
kept on the breast and	be kept on the breast and	kept on the breast. Is not	breast. It is not permitted to	during which the swimmer
both shoulders shall be in	both shoulders shall be in	permitted to roll on to the	roll onto the back at any	may be submerged. A single
line with the normal water	line with the normal water	back at any time.	time. Throughout the race	butterfly kick is permitted
surface	surface*. Is not permitted		the stroke cycle must be one	during the first arm stroke,
	to roll on to the back at		arm stroke and one leg kick in	followed by a breaststroke
	any time*		that order.	kick.
SW 7.2 All movement of	SW 7.2 All movement of	SW 7.2 All movement of	SW 7.2 All movement of the	SW 7.2 From the beginning of
the arms shall be	the arms shall be	the arms shall be	arms shall be simultaneous	the first arm stroke after the
simultaneous and in the	simultaneous and in the	simultaneous and in the	and in the same horizontal	start and after each turn, the
same horizontal plane	same horizontal plane	same horizontal plane	plane without alternating	body shall be on the breast. It
without alternating	without alternating	without alternating	movement.	is not permitted to roll onto
movement.	movement.	movement.		the back at any time. From the
				start and throughout the race
				the stroke cycle must be one
				arm stroke and one leg kick in
				that order. All movements of
				the arms shall be simultaneous
				and on the same horizontal
				plane without alternating
				movement.
	*Rule changed in 1998			



Relevant rules

(1994)

Is not permitted to roll on to the back at any time (1998)

...and both shoulders shall be in line with the normal water surface.

(2005)

Throughout the race the stroke cycle must be one arm stroke and one leg kick in that order

(2009)

A single <u>butterfly</u> kick is permitted during the first arm stroke, followed by a breaststroke kick.



"Not permitted roll on to the back at any time"





1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 7.3 The hands shall	SW 7.3 The hands shall be	SW 7.3 The hands shall be	SW 7.3 The hands shall be	SW 7.3 The hands shall be
be pushed forward	pushed forward together	pushed forward together	pushed forward together	pushed forward together from
together from the	from the breast on, under,	from the breast on, under,	from the breast on, under, or	the breast on, under, or over
breast on, under, or	or over the water. The	or over the water. The	over the water. The elbows	the water. The elbows shall be
over the water and shall	elbows shall be under the	elbows shall be under the	shall be under water except	under water except for the
be brought back on or	water except from the last	water except from the last	for the final stroke before the	final stroke before the turn,
under the surface of the	stroke *at the finish*. The	stroke at the finish. The	turn, during the turn and for	during the turn and for the
water. The hands shall	hands shall be brought	hands shall be brought	the final stroke at the finish.	final stroke at the finish. The
not be brought back	back on or under the	back on or under the	The hands shall be brought	hands shall be brought back on
beyond the hip line,	surface of the water. The	surface of the water. The	back on or under the surface	or under the surface of the
except during the first	hands shall not be brought	hands shall not be brought	of the water. The hands shall	water. The hands shall not be
stroke after the start	back beyond the hip line,	back beyond the hip line,	not be brought back beyond	brought back beyond the hip
and each turn.	except during the first	except during the first	the hip line, except during	line, except during the first
	stroke after the start and	stroke after the start and	the first stroke after the start	stroke after the start and each
	each turn.	each turn.	and each turn.	turn.
	Rule changed in 1998			



Relevant rules

(1994)

The elbows shall be under the water except from the last stroke.

(1998) at the finish

(2005)

...except for the final stroke before the turn, during the turn and for the final stroke at the finish.



"The elbows shall be under the water"





AmandaBeard-elbows-out-recovery-before-finish.mpg



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 7.4 All movements	SW 7.4 All movements of	SW 7.4 All movements of	SW 7.4 During each complete	SW 7.4 During each complete
of the legs shall be	the legs shall be	the legs shall be	cycle, some part of the	cycle, some part of the
simultaneous and in the	simultaneous and in the	simultaneous and in the	swimmer's head shall break	swimmer's head must break
same horizontal plane	same horizontal plane	same horizontal plane	the surface of the water.	the surface of the water. The
without alternating	without alternating	without alternating	After the start and after each	head must break the surface of
movement.	movement.	movement.	turn, the swimmer may take	the water before the hands
			one arm stroke completely	turn inward at the widest part
			back to the legs. The head	of the second stroke. All
			must break the surface of the	movements of the legs shall be
			water before the hands turn	simultaneous and on the same
			inward at the widest part of	horizontal plane without
			the second stroke. A single	alternating movement.
			downward dolphin kick	
			<u>followed</u> by a breaststroke	
			<u>kick</u> is permitted while	
			wholly submerged. Following	
			which, all movements of the	
			legs shall be simultaneous	
			and in the same horizontal	
			plane without alternating	
			movement.	



side-doublePatadalegal.mpg

During each complete cycle, some part of the swimmer's head must break the surface of the water...



Relevant rules (2005)

A single downward dolphin kick is permitted while wholly submerged. Following which, all movements of the legs shall be simultaneous and in the same horizontal plane without alternating movement.



"Single downward dolphin kick"





1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 7.5 The feet must be	SW 7.5 The feet must be	SW 7.5 The feet must be	SW 7.5 The feet must be	SW 7.5 The feet must be
turned outwards during	turned outwards during	turned outwards during	turned outwards during the	turned outwards during the
the propulsive part of	the propulsive part of the	the propulsive part of the	propulsive part of the kick. A	propulsive part of the kick. A
the kick. A scissors,	kick. A scissors, flutter or	kick. A scissors, flutter or	scissors, flutter or downward	scissors, flutter or downward
flutter or downward	downward dolphin kick is	downward dolphin kick is	dolphin kick is not permitted	butterfly kick is not permitted
dolphin kick is not	not permitted. Breaking	not permitted. Breaking	except as in SW 7.4. Breaking	except as in SW 7.1. Breaking
permitted. Breaking the	the surface of the water	the surface of the water	the surface of the water with	the surface of the water with
surface of the water	with the feet is allowed	with the feet is allowed	the feet is allowed unless	the feet is allowed unless
with the feet is allowed	unless followed by a	unless followed by a	followed by a downward	followed by a downward
unless followed by a	downward dolphin kick.	downward dolphin kick.	dolphin kick.	<u>butterfly</u> kick.
downward dolphin kick.				



Relevant rules (2005)

...except as in SW 7.4

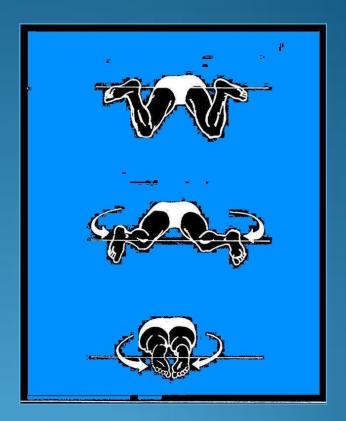
(2009)

...except as in SW 7.1

...downward butterfly kick.



"feet don't turned outward"



"feet turned outward"



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 7.6 At each turn and	SW 7.6 At each turn and at	SW 7.6 At each turn and at	SW 7.6 At each turn and at the	SW 7.6 At each turn and at the
at the finish of the race,	the finish of the race, the	the finish of the race, the	finish of the race, the touch	finish of the race, the touch
the touch shall be made	touch shall be made with	touch shall be made with	shall be made with both hands	shall be made with both hands
with both hands	both hands simultaneously	both hands simultaneously	simultaneously at, above, or	simultaneously at, above, or
simultaneously at,	at, above, or below the	at, above, or below the	below the water level. The	below the water level. The
above, or below the	water level. The shoulders	water level. The head may	head may be submerged after	head may be submerged after
water level. The	shall remain in the	be submerged after the last	the last arm pull prior to the	the last arm pull prior to the
shoulders shall in the	horizontal plane until the	arm pull prior to the touch,	touch, provided it breaks the	touch, provided it breaks the
horizontal plane until the	touch has been made. The	provided it breaks the	surface of the water at some	surface of the water at some
touch has been made	head may be submerged	surface of the water at	point during the last complete	point during the last complete
The head may be	after the last arm pull prior	some point during the last	or incomplete cycle preceding	or incomplete cycle preceding
submerged after the last	to the touch, provided it	complete or incomplete	the touch.	the touch.
arm pull prior to the	breaks the surface of the	cycle preceding the touch.		
touch, provided it breaks	water at some point during			
the surface of the water	the last complete or			
at some point during the	incomplete cycle preceding			
last complete or	the touch.			
incomplete cycle				
preceding the touch.				



Relevant rules in this period (1994)

The shoulders shall remain in the horizontal plane until the touch has

been made.



"breaststroke shoulders"



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 7.7 During each	SW 7.7 During each	SW 7.7 During each	-	-
complete cycle, of one arm	complete cycle, of one arm	complete cycle, of one arm		
stroke and one leg kick in	stroke and one leg kick in	stroke and one leg kick in		
that order, some part of the	that order, some part of the	that order, some part of the		
swimmer's head shall break	swimmer's head shall break	swimmer's head shall break		
the surface of the water	the surface of the water	the surface of the water		
except that after the start	except that after the start	except that after the start		
and after each turn, the	and after each turn, the	and after each turn, the		
swimmer may take one arm	swimmer may take one arm	swimmer may take one arm		
stroke completely back to	stroke completely back to	stroke completely back to		
the legs and one leg kick	the legs and one leg kick	the legs and one leg kick		
while wholly submerged.	while wholly submerged.	while wholly submerged.		
The head must break the	The head must break the	The head must break the		
surface of the water before	surface of the water before	surface of the water before		
the hands turn inward at	the hands turn inward at	the hands turn inward at		
the widest part of the	the widest part of the	the widest part of the		
second stroke	second stroke	second stroke		



...one arm stroke completely back to the legs and one leg kick while wholly submerged....



Relevant rules in this period (2005)

Delete the rule

* This rule has been move over others rules



"Breaststroke"





"Last 20 years period"



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 8.1 The body shall be	SW 8.1 From the beginning	SW 8.1 From the beginning	SW 8.1 From the beginning of	SW 8.1 From the beginning
kept on the breast, except	of the first armstroke after	of the first arm stroke after	the first arm stroke after the	of the first arm stroke after
when executing a turn.	the start and after each	the start and each turn, the	start and each turn, the body	the start and each turn, the
The shoulders shall be in	turn, the body shall be kept	body shall be kept on the	shall be kept on the breast .	body shall be kept on the
line with the water surface	on the breast and both ,	breast and both shoulders	Under water kicking on the	breast. Under water kicking
from the beginning of the	except when executing a	shall be in ine with the	side is allowed. It is not	on the side is allowed. It is
first armstroke, after the	turn shoulders shall be in	water surface. Under water	permitted to roll onto the	not permitted to roll onto
start and after each turn	line with the water surface	kicking on the side is	back at any time.	the back at any time.
and shall remain in that	from the beginning of the	allowed. It is not permitted		
position until the next	first armstroke, after the	to roll onto the back at any		
turn or finish. It is not	start and after each turn and	time.		
permitted to roll onto the	shall remain in that position			
back at any time.	until the next turn or finish.			
	Under water kicking on the			
	side is allowed. It is not			
	permitted to roll onto the			
	back at any time.			
SW 8.2 Both arms shall be	SW 8.2 Both arms shall be	SW 8.2 Both arms shall be	SW 8.2 Both arms shall be	SW 8.2 Both arms shall be
brought forward together	brought forward together	brought forward together	brought forward together	brought forward together
over the water and	over the water and brought	over the water and brought	over the water and brought	over the water and brought
brought backward	backward simultaneously.	backward simultaneously	backward simultaneously	backward simultaneously
simultaneously.		throughout the race, subject	throughout the race, subject	throughout the race, subject
		to SW 8.5.	to SW 8.5.	to SW 8.5.



Relevant rules (1994)

From the beginning of the first armstroke after the start and after each turn..

...except when executing a turn.

...both shoulders shall be in line with the water surface...after the start and after each turn and shall remain in that position until the next turn or finish.

..underwater kicking on the side is allowed.

(2000)

,both shoulders shall be in line with the water surface.

...troughout the race, subject to SW.8.5



michael_phelps_tum.avi



"Misty Hyman, kicking on the side"



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 8.3 All movements of	SW 8.3 All movements of	SW 8.3 All up and down	SW 8.3 All up and down	SW 8.3 All up and down
the feet must be executed	the feet must be executed in	movements of the legs must	movements of the legs must	movements of the legs must
in a simultaneous manner.	a simultaneous manner.	be simultaneous. The legs or	be simultaneous. The legs or	be simultaneous. The legs or
The legs or feet need not	Simultaneous up and down	the feet need not be on the	the feet need not be on the	the feet need not be on the
be at the same level, but	movements of the legs and	same level, but they shall	same level, but they shall not	same level, but they shall
no alternating movement	feet in the vertical plane are	not alternate in relation to	alternate in relation to each	not alternate in relation to
are permitted.	permitted. The legs or feet	each other. A breaststroke	other. A breaststroke kicking	each other. A breaststroke
	need not be at the same	kicking movement is not	movement is not permitted.	kicking movement is not
	level, but no alternating	permitted.		permitted.
	movement are permitted.			
SW 8.4 At each turn and at	SW 8.4 At each turn and at	SW 8.4 At each turn and at	SW 8.4 At each turn and at	SW 8.4 At each turn and at
the finish of the race, the	the finish of the race, the	the finish of the race, the	the finish of the race, the	the finish of the race, the
touch shall be made with	touch shall be made with	touch shall be made with	touch shall be made with	touch shall be made with
both hands	both hands simultaneously,	both hands simultaneously,	both hands simultaneously,	both hands simultaneously,
simultaneously, at, above	at, above or below the	at, above or below the	at, above or below the water	at, above or below the water
or below the water	water surface. The	water surface.	surface.	surface.
surface.	shoulders shall remain in			
	the horizontal plane until			
	the touch is made.*			
	* Add 1994 /delete 1998.			



Relevant rules (1994)

Simultaneous up and down movement of the legs and feet in the vertical plane are permitted.

The shoulders shall remain in the horizontal plane until the touch is made.

(2000)

...no alternate in relation each other.

...a breaststroke kicking movement is not permitted.



"From the beginning of the first armstroke"



1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 8.5 At the start and at	SW 8.5 At the start and at	SW 8.5 At the start and at	SW 8.5 At the start and at	SW 8.5 At the start and at
turns, a swimmer is	turns, a swimmer is	turns, a swimmer is	turns, a swimmer is	turns, a swimmer is
permitted one or more leg	permitted one or more leg	permitted one or more leg	permitted one or more leg	permitted one or more leg
kicks and one arm pull	kicks and one arm pull	kicks and one arm pull	kicks and one arm pull under	kicks and one arm pull under
under the water, which	under the water, which	under the water, which	the water, which must bring	the water, which must bring
must bring him to the	must bring him to the	must bring him to the	him to the surface. It shall be	him to the surface. It shall be
surface.	surface. <u>It shall be</u>	surface. It shall be	permissible for a swimmer to	permissible for a swimmer to
	permissible for a swimmer	permissible for a swimmer	be completely submerged for	be completely submerged
	to be completely submerged	to be completely submerged	a distance of not more than	for a distance of not more
	for a distance of not more	for a distance of not more	15 meters after the start and	than 15 meters after the
	than 15 meters after the	than 15 meters after the	after each turn. By that point,	start and after each turn. By
	start and after each turn. By	start and after each turn. By	the head must have broken	that point, the head must
	that point, the head must	that point, the head must	the surface. The swimmer	have broken the surface. The
	have broken the surface.	have broken the surface.	must remain on the surface	swimmer must remain on
	The swimmer must remain	The swimmer must remain	until the next turn or finish.	the surface until the next
	on the surface until the next	on the surface until the next		turn or finish.
	turn or finish.	turn or finish.		
	Rule changed in 1998			



Relevant rules (1998)

It shall be permissible for a swimmer to be completely submerged for a distance of not more than 15 meters after the start and after ach turn. By that point, the head must have broken the surface. The swimmer must remain on the surface until de next turn or finish.





"15 meters submerged"



Swimming strokes. Ind. medley



"Last 20 years period"



Swimming strokes . Ind.Medley

1991-1994	1994-2000	2000-2004	2005-2009	2009-2013
SW 9.1 In individual	SW 9.1 In individual	SW 9.1 In individual	SW 9.1 In individual medley	SW individual medley
medley events, the	medley events, the	medley events, the	events, the swimmer covers	events, the swimmer
swimmer covers the	swimmer covers the	swimmer covers the	the four swimming styles in	covers the four swimming
four swimming styles	four swimming styles in	four swimming styles in	the following order ;	strokes in the following
in the following order:	the following order:	the following order:	Butterfly, Backstroke,	order: Butterfly,
Butterfly, Backstroke,	Butterfly, Backstroke,	Butterfly, Backstroke,	Breaststroke, and Freestyle.	Backstroke, Breaststroke
Breaststroke, and	Breaststroke, and	Breaststroke, and		and Freestyle. <u>Each of the</u>
Freestyle.	Freestyle.	Freestyle.		strokes must cover one
				quarter (1/4) of the
				distance.
SW 9.2 In medley	SW 9.2 In medley	SW 9.2 In medley	SW 9.2 In medley events,	SW medley relay events,
events, swimmers will	events, swimmers will	events, swimmers will	swimmers will cover the	swimmers will cover the
cover the four	cover the four	cover the four	four swimming styles in the	four swimming strokes in
swimming styles in the	swimming styles in the	swimming styles in the	following order	the following
following order:	following order:	following order:	;Backstroke, Breaststroke,	order: Backstroke,
Backstroke,	Backstroke,	Backstroke,	Butterfly and Freestyle.	Breaststroke, Butterfly and
Breaststroke, Butterfly	Breaststroke, Butterfly	Breaststroke, Butterfly		Freestyle.
and Freestyle.	and Freestyle.	and Freestyle.		
SW 9.3 Each section	SW 9.3 Each section	SW 9.3 Each section	SW 9.3 Each section must	SW 9.3 Each section must
must be finished in	must be finished in	must be finished in	be finished in accordance	be finished in accordance
accordance with the	accordance with the rule	accordance with the rule	with the rule which applies	with the rule which applies
rule which applies to	which applies to the	which applies to the	to the style concerned.	to the stroke concerned.
the style concerned.	style concerned.	style concerned.		







Swimming strokes . Ind. Medley

Relevant rules (2009)
Each of the strokes must cover one quarter (1/4) of the distance.



"Each of the strokes must cover ¼ of the distance"



Swimwears. Origins









"Swimwears 1912-2009"

Bibliography

- ✓ FINA rules.
- ✓ FINA ancient origins.
- ✓ History of swimming. Wikipedia
- **√**



Evolution of the Swimming strokes according to the rules



THANKS FOR YOUR ATTENTION