



Swimming

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About the Tutorial

Swimming is one of the popular Olympic sports which has numerous variants. This tutorial will give you an overview of how to play in swimming competitions, its variants and the rules to be followed.

Audience

This is an elementary tutorial meant for all those readers who are eager to learn swimming, either for amusement or to participate in swimming competitions.

Prerequisite

All that you need to have is a strong passion and eagerness to learn this sport. In addition, we assume that you can swim proficiently.

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1. Swimming – Overview

Swimming is the act of driving our body through water and resisting drowning by moving our hands and feet. Swimming as a recreational activity has been recorded in prehistoric cave paintings of Stone Age. It was mentioned in holy texts of various civilizations. It evolved as a competitive sport in the nineteenth century after the construction of artificial public swimming pools. St George's Baths, the first public swimming pool, was constructed in England in 1828 and it emerged as a competitive sport in England in 1830s. British Swimming organization was set up as National Swimming Society and was conducting competitions in England in 1837.



Competitive swimming as a race was held among swimmers and the goal is to swim faster than other participants. Various countries started participating in these competitions. Swimmers learnt about indigenous styles of other countries. The knowledge transfer among swimmers gave birth to many fusion styles. Swimming can be both an individual and team activity that helps in testing ones endurance, agility, breath control, and flexibility.

FINA

The administering body recognized by International Olympic Committee (IOC) for competitions in aquatics is FINA or Fédération Internationale de Natation. Apart from swimming, it also administers competitions in other aquatic sports. This body is based in Lausanne, Switzerland. It not only formulates rules for international swimming records and competitions but also organizes world swimming and world aquatic championships.

Participating Countries

More than 200 nations have member organizations affiliated to FINA. It is a wide sport played across all nations and continents. The countries that take part in swimming tournaments are USA, Australia, Canada, China, Korea, Tunisia, Great Brittan, Japan, Russia, Austria, Romania, Norway, Hungary, Serbia, Ukraine, Trinidad and Tobago, Netherlands, Italy, Germany, and France.

2. Swimming – Playing Environment

Swimming Pools

FINA has set rules on the length, breadth, and depth of swimming pools used for competitions. Swimming pools should be at least two meters deep. They can be fifty or twenty five meters long. The fifty meter long ones are used for long course races and the twenty five meter long ones are used for short course races. World records cannot be compared across pools of different lengths because it may be an advantage or disadvantage to swimmers to have more or less turns in a race.



Pools are divided into lanes. Lanes are labelled from zero and each lane should be at least 2.5 meters wide. World championship pools have ten lanes. Pools hosting other events can have eight lanes. They are usually equipped with starting blocks at both ends of the pool. According to FINA regulations, Automatic Officiating Equipment with touch pads should be used to record times. Sensors are used to monitor takeovers in a relay race.

There have been major changes in starting blocks over the past few years. Of late, the surface of the block is angled towards the swimming pool and starting blocks now have a raised, slant platform at the end of the main block called a **lip**. This allows the swimmer to launch with greater speed by taking a right angled crouched position and pushing off with the rear leg.

Swimming Equipment

Swim Suits

Men's swimwear include briefs and jammers. FINA has formulated some rules to prevent swimmers from taking advantage by wearing aerodynamic swim suits. They can wear only one piece of swim suit from the waist to just above their knees.

Women usually wear one-piece suits of various designs at the back. Some of the popular designs are racer back, axel back, corset, diamondback, and butterfly-back/Fly-Back. The suits can be of various lengths, however they are not allowed to wear suits that go past their knees or shoulders.



Swim cap

Swaying hair induces drag and slows down the swimmer. Long hair might also obstruct vision. A swim cap is used to lock hair and reduce drag. It is made of stretchable materials like, latex, silicone, spandex or lycra.

Goggles

Swimmers use goggles to prevent water and chlorine from getting into their eyes. While swimming at open pools, swimmers might choose tinted goggles to neutralize glare. Some goggles are also made of vision correcting lenses.

3. Swimming – How to Play?

Four major styles have been established in competitive swimming. They are:

- Butterfly
- Back Stroke
- Breast Stroke
- Freestyle

Butterfly

In this style, swimmers dive into the pool stretching their arms and shoulders width apart. They enter the pool either flat or slightly downwards. They rotate their arms in a semi circle to raise the body. The body propels as they push water toward their feet by moving their hands simultaneously. They push water backwards by synchronously moving their feet up and down. They can use dolphin or butterfly kick. This style was originated from the breast stroke and is considered to be the most difficult style.



FINA, the international swimming regulating body, accepted this stroke and formed a set of rules in 1952.

Rules

- Swimmers should keep their body on the breast at the start of the race and at each turn.
- They are not allowed to roll onto their back at any point during the race.
- They should synchronously move their arms.
- They should move their legs simultaneously, though need not be at the same level, but they are not permitted to move them alternatively.
- They are not permitted to use breast stroking leg kick.
- At each turn and when the race finishes, they should touch the board with both their hands and at the same time.
- They can use one or more leg kicks and one arm pull, but cannot remain in water for more than 15 meters, at the start of the race and at the turns. They should remain on the water surface unless they have to turn again or they are about to finish the race.

Back Stroke

In this style, swimmers swim on their back. They can breathe easily as their head will be above water throughout the stroke. However, swimmers cannot see where they are heading. In swimming pools with artificial lanes, most swimmers know how many strokes they take to reach the end.

Swimmers are allowed to turn their heads to see where they are heading, but it slows them down. This stroke looks like an inverted front crawl. Swimmers move their arms in semi circular motion, one after the other, to push water towards their legs. While they catch water with one arm the other arm recovers.

They kick water with pointed toes and try to reduce drag by keeping their legs as straight as possible. Their semi circular arm movement provides them the required push. The axis is longer and is along the swimmers body from head to toe.



At the start of the race, swimmers place their legs shoulder width apart, facing the wall and clinging to the start block. They usually bend their knees at right angle and get ready for the race. Once they hear the start signal they push themselves away from the start block with their feet. They swing their hands and dive into the water on their back.

Rules

- At the beginning of the race, swimmers are not allowed to stand in or on the gutter. They also cannot bend their toes over the lip of the gutter.
- Swimmers can push off at the start of the race and after turning.
- At turns, swimmers can turn their shoulders over the vertical to the breast. After that they can use a continuous single arm pull or a continuous double arm pull to take a turn. They should get back on their backs after leaving the wall.
- Swimmers can slightly roll their bodies over their backs but their body should only make an angle less than 90 degrees with the horizontal.
- Swimmers should take care to swim with some part of their body over water surface throughout the race. However, they can stay completely in water at the turns and at the finish of the race for a distance not more than 15 meters.
- While turning, swimmers should touch the wall with some part of their body.

Breast Stroke

This style is considered to be the oldest. In this style, swimmers stretch their arms forward and tilt their hands slightly downwards. While pulling their hands towards the waist, they bring their feet closer to the hips and fold their legs and kick water with their feet. This propels their body forward and gives them speed. The leg movement is similar to that of a frog, so it is also known as frog kick or whip kick.



In this stroke, the greater angle the swimmers' body makes with the water surface while trying to push the water backwards, induces drag and slows down the swimmer. Swimmers master this stroke by learning to reduce drag at the start of the race by keeping their body, from head to hips, as straight as possible.

To gain speed while pushing water backwards during a frog kick, swimmers should try to keep their heels immersed in water, but as close to the water surface as possible. They need to learn to manage their breath, by pulling in their stomach and bringing their face above the water surface, while moving their hands towards their hips.

Most long distance swimmers use this stroke. Captain Mathew Webb was the first man to swim across the English channel in 1875. He managed to cover the huge distance using this stroke. The relatively smaller arm stroke puts less pressure on swimmers and makes this stroke ideal for long distance swimming.

Rules

- They should start the race by swimming on their breast.
- They should separate their hands and take an arm stroke at the start of the race.
- They should take a leg kick after an arm stroke. An arm stroke and a leg kick together make a stroke cycle.
- At any point during the race, they cannot turn on their back.
- They should move their hands simultaneously.
- They should keep their hands at the same horizontal level.
- While pushing water from the breast, their hands can stay on, under or over the water surface.
- Their elbow should always remain in water. However, it can stay above the water surface at the final stroke before a turn, during the turn or at the end of the race.
- They can bring back their hands on or under the surface of water.
- They cannot bring back their hands beyond the hip line, except during the first stroke and each turn.
- They should turn their feet outwards during the propulsive part of the kick.
- They can break the surface of water with their feet, but they cannot take a downward butterfly kick immediately after that.
- At each turn and at the completion of the race, swimmers should touch the wall with both their hands simultaneously above or below the water level.
- They can submerge their head after the last arm pull just before the touch, but they should break the water surface at some point during the last complete or incomplete cycle preceding the touch.

Free Style

In free style races, very few restrictions are placed on the swimmer. The swimmer can choose to swim in any style. However, front crawl and free style have become synonymous as almost all swimmers across the world use front crawl in free style competitions. In this style, swimmers move their arms alternatively forward, pulling water backwards.

They flutter-kick their feet simultaneously. They move one of their arms in a semi circular motion in vertical plane while they catch water with the other arm and push it backwards. They might also choose to whip kick their feet. This variant is called the Trudgen.



Rules

- Front Crawl is the fastest of the four major styles. Since this style is not regulated, various variants of front crawl like Australian crawl, American crawl can be used in races.
- In free style events swimmers can swim in any style. But, in individual medley and medley relay events, swimmers can swim in any style other than back stroke, breast stroke or butterfly.
- After swimming through a lane length and at the finish of the race, swimmers should touch the wall with any part of their body.
- Swimmers should swim with some part of their body above the water surface, throughout the race. They can remain submerged in water while taking a turn and for a distance not more than 15 meters after the start and each turn.

4. Swimming– Variants

Swimmers are broadly classified as sprinters, middle swimmers, and distance swimmers. They practice differently and have slightly different abilities. Some swimmers are good at all the three forms while some excel in only one or two kinds.

Sprinting is intense swimming for a shorter distance. Sprinters practice to put in maximum effort throughout the swim and concentrate on managing their breath. They usually participate in 50, 100 and 200 meter races.



Distance swimmers are trained to swim faster for larger distances. They need to endure greater strain over a long course. A high average speed should be maintained throughout the race. They should also learn to relax while not totally dropping their speed during the long course. They usually participate in 800 or 1500 meter races.

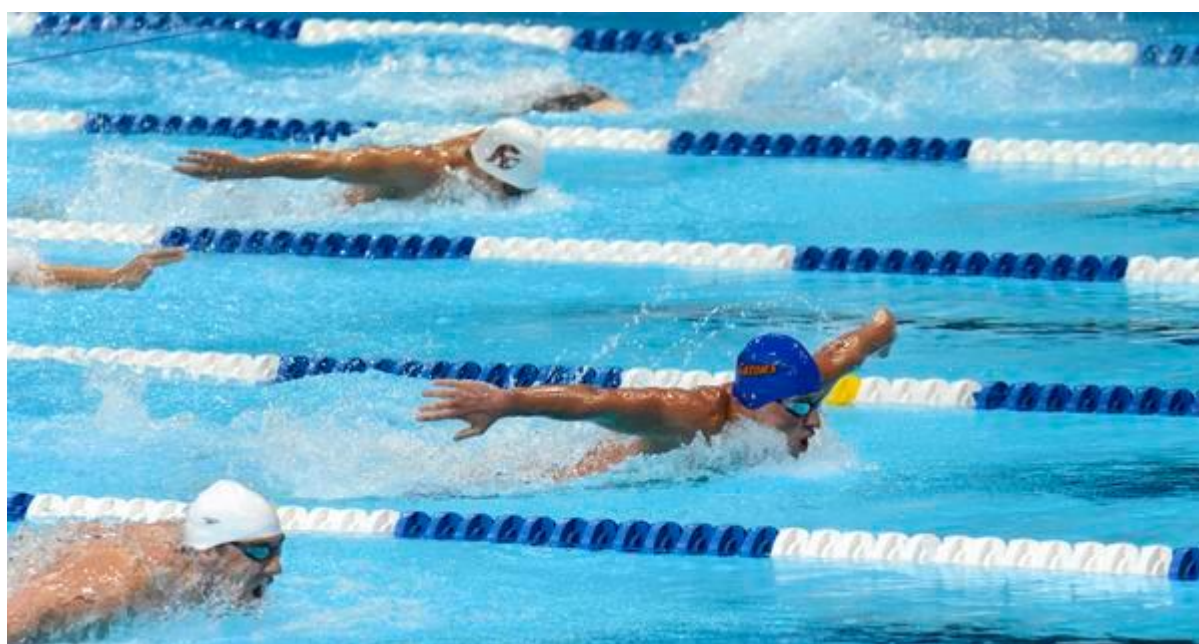
Middle distance swimmers do not drop their speed as fast as a sprinter on a long swimming course. They also tend to have greater initial speed than a long distance swimmers. They perform well when the track length is not too long and is between 200 meters and 400 meters.

5. Swimming – Tournaments

The events in any competition may have only one of the four major styles or a combination of all the four styles in a fixed order.

Individual Races

Competitions are held in each of the major four swimming styles. At the Olympics five events are conducted under free style. They are 50 meter, 100 meter, 200 meter, 400 meter, 1500 meter for men and 50 meter, 100 meter, 200 meter, 400 meter, and 800 meter for women. Two events, 100 meter and 400 meter are also conducted under all the other three styles, breaststroke, butterfly and backstroke, for both men and women.



Individual medley competitions are also held at various tournaments. In these competitions a single swimmer swims a quarter of the track distance in each of the four styles in the same race. At the Olympics, 200 and 400 meter individual medleys are conducted for both men and women. The swimmer swims butterfly, backstroke, breaststroke and finally freestyle in the same order in these medley events.

Other kinds of individual medley races of 100 meters, are conducted in other non-Olympics swimming championships. The swimmer should swim at least four strokes in each of the styles. So, the course length cannot be made any shorter.

Relay Events

Relay events are group events. Each country or team participating in the event forms a group of four swimmers. Each swimmer swims a quarter of the track distance. The fastest swimmer is usually placed at the end. The team spirit in a group event usually makes swimmers swim faster than individual races. Relay events can be both freestyle and medley. In a freestyle relay each swimmer swims in any style other than backstroke, breaststroke and butterfly. In a medley relay each swimmer swims a quarter

of the total course length in a different style in the order Backstroke, Breaststroke, Butterfly and Freestyle. A 4 × 100 meter freestyle relay, a 4 × 200 meter freestyle relay and a 4 × 100 meter medley relay events are part of swimming competitions at the Olympics.



Open Pool Swimming Events

Long distance free style marathons are conducted in large open water bodies like lakes, rivers and oceans. Swimmers are free to use any style in these events. However, most swimmers across the globe use front crawl in these competitions.



Since 2008, a 10 km open water swimming championship is a part of the Olympics. FINA also organizes other open marathon events of 5km, 10 km and 15 km at world aquatic championships, held once in every two years.

Swimming Events at the Olympics 2012

Following are the swimming events held at the Olympics 2012:

- 50 meter freestyle
- 100 meter freestyle
- 200 meter freestyle
- 400 meter freestyle
- 1500 meter freestyle for men and 800 meter freestyle for women
- 100 meter backstroke
- 200 meter backstroke
- 100 meter breaststroke
- 200 meter breaststroke

- 100 meter butterfly
- 200 meter butterfly
- 200 meter individual medley
- 400 meter individual medley
- 4 × 100 meter freestyle relay
- 4 × 200 meter freestyle relay
- 4 × 100 meter medley relay
- Marathon 10 km

6. Swimming – Champion of Champions

Swimming has evolved over time and new styles gave birth to new events and rules. It is difficult to compare champions across decades. Swimming as a sport is enjoyed and mastered by both men and women. Some of the famous swimming champions are listed below.

Name	Nationality
Krisztina Egerszegi (F)	Hungary
Michael Phelps (M)	U.S.A
Dawn Fraser (F)	Australia
Mark Spitz (M)	U.S.A
Shane Gould (F)	Australia
Tracy Caulkins (F)	U.S.A
Ian Thorpe (M)	Australia

Krisztina Egerszegi

Krisztina is a backstroke swimming champion from Hungary. She participated in the Summer Olympics at 1988, 1992 and 1996 and won the 200 meter backstroke in all the three Olympics.

At age 14 she became the youngest athlete ever to win an Olympic gold medal in swimming when she won the 200-metre backstroke at the 1988 Olympic Games in Seoul. After Dawn Fraser, she was the second woman to score a gold medal in any individual swimming event at three consecutive Olympics.



Michael Phelps

Phelps is an American swimmer. He won 22 Olympic medals and holds a record for winning 18 Olympic gold medals.

Phelps has won six gold medals at the 2004 Summer Olympics, eight gold medals at the 2008 Summer Olympics and four gold medals at the 2012 Summer Olympics.



Phelps is the world record holder in the 100-meter butterfly, 200-meter butterfly and 400-meter individual medley. He has won a total of 77 medals in major international competitions.

Dawn Fraser

Fraser is an Australian champion swimmer and is the first woman swimmer to get gold medals in any individual swimming event in three consecutive Olympics. She won the 100-meter freestyle three times in 1956, 1960 and 1964 Summer Olympics.

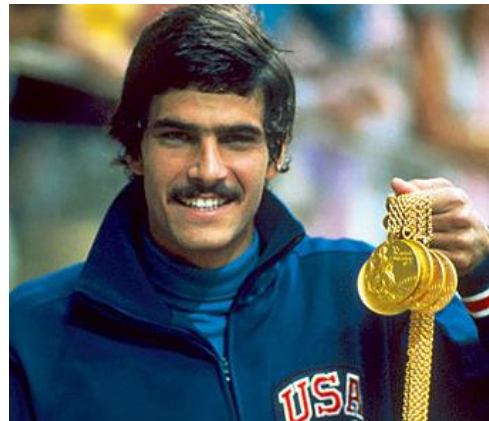
Fraser won eight Olympic medals, including four gold medals, and six Commonwealth Games gold medals. In October 1962, she became the first woman to swim 100 metres freestyle in less than one minute.



Mark Spitz

Mark Spitz is an American swimming champion. He won two gold medals at the 1968 summer Olympics. Spitz set a world record at the 1972 Olympic Games, when he won seven gold medals across individual and team events. He was a nine-time Olympic champion.

Apart from winning gold medals he also won a silver and a bronze medal along with five Pan American gold medals.



Tracy Caulkins

Tracy is an American former competition swimmer. She is considered to be one of the most versatile swimmers and has set U.S records in all the four styles. She could not participate in the 1980 summer Olympics because the U.S boycotted them.

Tracy won three medals at the 1984 summer Olympics. She has set 68 records out of which five are world records and 63 are records made in American championships.



Ian Thorpe

Ian Thorpe is an Australian freestyle swimming champion, who won five Olympic gold medals, three at the 2000 Summer Olympics and two at the 2004 Summer Olympics. He made his debut in 1997 through pan Pacific Championship and got fourth rank in 200 meter freestyle.

Thorpe won 400 meter freestyle in Perth World Championship in 1998 and became the youngest champion. After this he won the races in Olympics and Commonwealth games.

