JAPAN TRIATHLON UNION

Swim Safety Guide

Japan Triathlon Union

Project Planning Committee
Technical Committee
Technical Officials Committee
Medical Committee
Age Group Promotion Committee

Contents

Reference : Swim Operation Survey in Triathlon, Japan, 2023

1. In the beginning

The surroundings around triathlon, duathlon, and related multi-sports is always changing. Rapid changes in weather conditions or higher temperatures caused by climate change have a significant impact on the health and safety of athletes in these competition.
Especially in operation for swim, it's required to respond to higher water temperatures urgently.

A joint team of the JTU Project Planning Committee, Technical Committee, Technical Officials Committee, Medical Committee, and Age Group Promotion Committee conducted a questionnaire survey to domestic triathlon events with a special focus on the swim, and made discussion from their respective viewpoints, which were then compiled know-how to keep safety in swim into this guideline.

The swim surroundings differs depending on the location, such as ocean, river, lake, or pool, so the safety measures to be taken. However, preparation in advance is essential to be able to handle a variety of situations no matter where the swim venue is.

In this guideline , know-how for domestic local organizations and event organizers are compiled to operate swim in triathlon and related multisport events more safely, and to provide a swim surroundings where athletes can challenge triathlon with peace of mind. When applying these know-how, we would like to see flexibility depending on the characteristics of each venue or the challenges of each event.

We hope that this guideline will help you to implement safety measures in your swim operation.

2. Scope

The scope of this guidebook is as follows. You can flexibly change the scope of application for each member organization or convention.

1. Event Type
   This guidebook applies primarily to triathlon and multisport swim events.

2. Condition Surrounding
   This guidebook applies when surrounding condition such as weather, air/water temperature, or tidal influence affects on swim.

3. Targeted Readers
   This guidebook applies to all participants. This includes both elite and age athletes.

4. Users
   This guidebook is intended for use by
   Event organizers, regional triathlon organizations and related governing bodies, event organizing committees, event staff, medical staff, event technical officials, etc.

MEMO:

This guidebook is basically an overview of the safety management of swim at triathlon.

For details of the competition rules, please refer to the latest editions of the JTU Competition Rules (JTU CR), the World Triathlon (hereinafter referred to as “TRI”) Competition Rules TRI CR), and the TRI Event Organizers Manual (EOM), respectively.

This Guidebook will be revised as needed when JTU CR, TRI CR, and EOM are revised.

3: Examples of Safety in Swimming

(1) Swim Course Design
(2) Aid Stations in Swim
(3) Schedule before Swim Start
(4) Use of Floatation Devices (e.g. Res-Tube(R))
(5) “Swim Skip”
(6) Wetsuits
(7) Wet Suit Q&A
(8) In case of emergency
(9) Wetsuit wearing Regulations

3. (1) Swim Course Design

1. **Basic Approach for Swim Course Design**
   - For the basics of overall swim course design, it's in the "4.3 Swim Course" in EOM.

     Reference : World Triathlon Event Organizers Manual (EOM) page 172
     https://www.jtu.or.jp/wordpress/wp-content/uploads/2020/11/ITUEventOrganisersManual2019.pdf
     - 4.3. SWIM COURSE
   - To ensure the safety of participants, we recommend that the following points should be considered, by checking environmental conditions such as air and water temperatures.

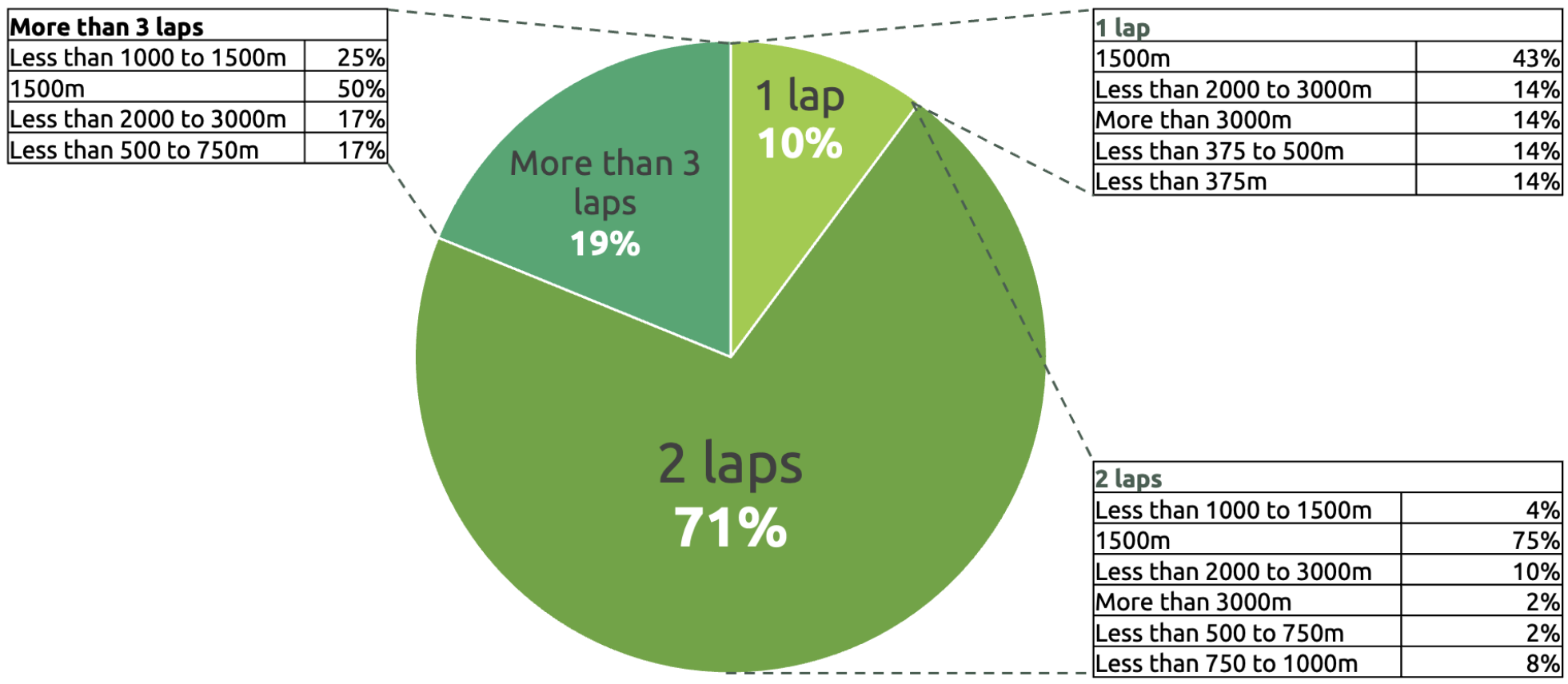
2. **Key Points to be considered**

   ① Lap counts / Swim Course Layout

   Considering the topography and water flow at the swim venue, consider measures to improve safety from time to time by adjusting the number of laps and reviewing the course design.

The figure below shows the results of a questionnaire survey on the current status of events in Japan by the end of 2023. 90% of the respondents were for two or more laps, indicating that there are many events that are considering improving safety by lapping.

How many laps on the swim course ?



* Swim Environment Questionnaire Survey for Triathlon Competitions in Japan 2023

3. (1) Swim Course Design

2. Key Points to Consider(cont.)

② Safety System

➢ Lifeguards

- The number of lifeguards should be determined according to the course layout and the rescue route from the water should be shared with the TOs/Medical staffs on the ground.
- For rescue routes, multiple routes should be considered depending on the pickup location and the number of patients/lifeguards/paramedics on land to avoid confusion during the actual rescue.
- It is recommended to check in advance which information should be handled on radio during rescue, so that the initial response will be quicker. Even if this is not the case in all cases, it is effective just to decide on signs in case of serious cases such as unconsciousness.

➢ Technical Official(TO)

- The TO team will play an important role in conjunction with the lifeguards and paramedics.
- By assigning TOs who have undergone water rescue training, it's expected to have much quicker rescue.

➢ Volunteer

- It is also effective to prepare volunteer's manual at each event, which described how volunteers around the swim area should act in case of an emergency.
- Helping communication between staffs on site and event headquarter, finding a family member of the patient, or keeping a rescue route, these may help smooth medical action which required quick action at an emergency.

③ Number of athletes participating

➢ The number of participants is an important factor to aspect of course design. We should try to know which swimmers of what swimming ability should start and in what order, and to predict as much as possible where a swimming group may appear or at where the density of swimmers may come high, so that the TOs in charge of the swim can coordinate and monitor the start and lap controls.

➢ Although it is difficult to predict the number of participants in advance, it is recommended to consider the course assuming the maximum number of participants to be recruited.

3. (1) Swim Course Design

Below chart shows advantages and disadvantages on 2 examples of swim course layout with consideration to improve swim safety.

	Advantages	Disadvantages
Example 1 When swim course distance is 1,500m, by changing to three 500m laps instead of two 750m laps will be more safer by increasing the number of times the athletes are out of water.	• By shortening the distance of each lap, the control area of the swim course can be narrowed down, making effective use of lifeguard personnel, boats, and other equipment, and strengthening the safety management control system. • In addition, the narrower control area will also shorten the handover time from the rescue point on the water to the medical team on the ground. • By increasing the number of laps and bring athletes ashore, there will be more opportunities for breathing and rehydration. In addition, the number of times the Technical Official (TO) can notice any physical changes, such as checking the color of the athlete's face, will also increase.	• Since the distance per lap is shorter, the density of swimmers on the course is likely to increase. Therefore, it may be that swimmers of various levels are in the same area, so consideration must be taken to the start time to avoid swim violations.
Example 2 Change the distance per lap on the swim course: make the first lap longer and the second lap shorter as described in the EOM (*).	It will be required longer swimming time in water by the long distance of the first lap. So we can expect lower swimmers density on the course, and less swim battle.	Depending on the number of participants, it is expected that the first-lap and second-lap swimmers may be mixed. Then some of them may confuse by the different course. The key point will be how to manage the laps.

3. (2) Aid Station in Swim

When determining the location of aid stations for the swim, the water temperature and air temperature forecast should be considered.

1. Location of aid stations
   - Aid stations should be located so that they can be provided at multiple times: at the start, at each lap, and at the end of the swim.
   - The role of aid stations is not only to provide hydration, but also to cool or warm athletes' bodies, calm them down, and talk to athletes who do not seem to be in good physical condition.

2. Example of aid station locations
   ① Near the transition exit
   ② Around the start waiting area
   ③ Near the swim start line
   ④ Near the landing point during the lap, just before entering the next lap
   ⑤ Beside the line from swim-up to transition

   - The above is not a mandatory, but we hope that you will plan to set up aid stations that contribute to the safety of athletes throughout the entire swim by combining these locations.

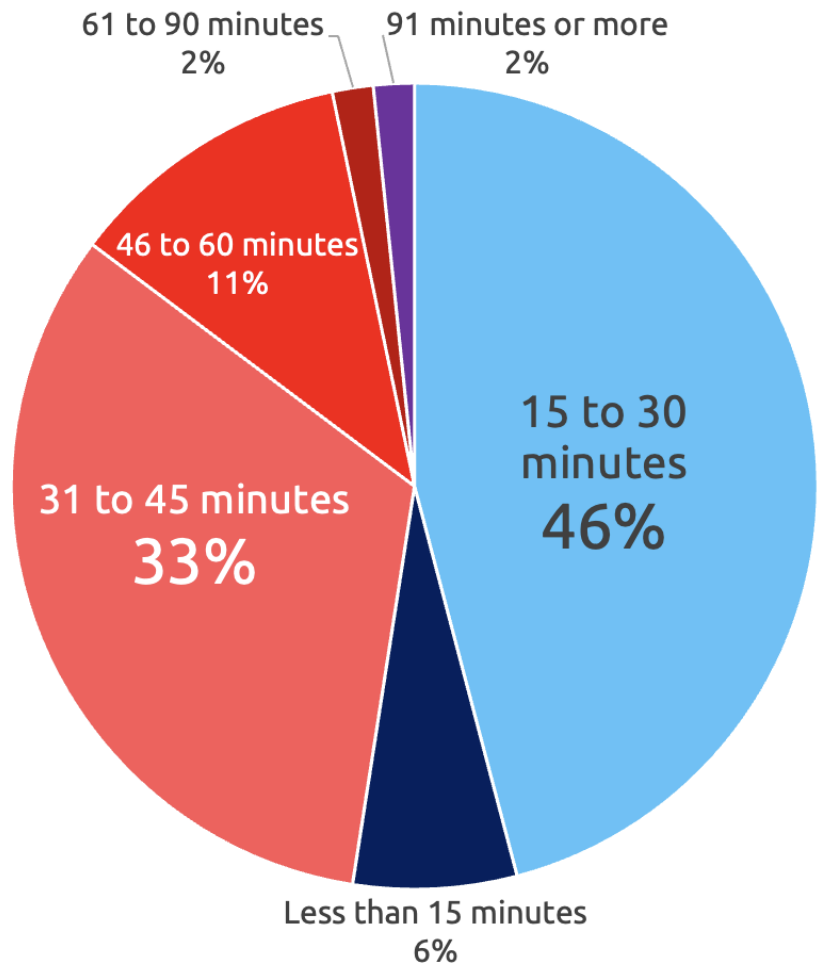
3. In case it is difficult to set up an aid station on swim venue
   - It may be considered to allowing athletes to take their own water or supplies before the start of the race. In this case, it is necessary to notify the athletes in advance.

4. Trash bins at the starting area
   - We recommend that you consider and properly prepare for the disposal of items that will become trash. In particular, since this will be a swim area where athletes will be barefoot, care must be taken to avoid injury.
   - Please keep in mind the followings at disposing trash
     ① Discard the water inside. remove caps and labels. Crush. etc.
     ② Announce to athletes how to dispose plastic bottles (sorting).

3. (3) Schedule before Swim Start

As indicated in the survey results, athletes may spend long periods of time waiting from 15 to 60 minutes after donning their wetsuits.

When wetsuits are mandatory or recommended,
How long the waiting time from an athlete put their wetsuits on to start ?



* Swim Environment Questionnaire Survey for Triathlon Competitions in Japan 2023

The followings are points to keep in mind when considering the time schedule until the swim start.
It is desirable to schedule to shorten the waiting time before the start and wetsuit wearing time as much as possible, with respect to the traffic control time and another operation.

1. Shorten the time from transition check-in to the start time as much as possible.

2. To prevent dehydration due to wetsuit wearing, the MC or TO in charge will sufficiently announce when wetsuit should be wear.

3. Announce for athletes to hydrate and the location of aid stations during waiting time. At the same time. It is also important for staffs to share the timing of hydration in the time schedule.

3. (4) Use of Flotation Devices

(e.g. Res-Tube(R))

In order to be much safer in swim competitions, the use of flotation devices, such as “Res-tubes®”, should be considered.

1. **Restricted-use items in the JTU competition rules.**
   URL：https://archive.jtu.or.jp/jtu/pdf/rulebook_20190123.pdf (*In Japanese only)
   (Restricted-use equipment)
   Article71 / Swimming shall promote safety management by introducing safety rescue equipment with the latest technology.
   2 / They may be worn Instant inflatable flotation devices (Res-tubes(R)) for safety. However, when inflated, the athlete may not continue his/her race.
   But in such a case, he/she may be able to continue his/her race but it results as a reference record, when permitted under the rules of the event.

2. **In order to accept some flotation devices partially in local rules**
   The following are notes when drafting local rules.
   - If an athlete wears a flotation device but not inflated, his/her record will be official.
   - Once an athlete wearing a flotation device inflated, he/she may be allowed to continue the race and will be recorded. However, no rankings will be awarded.
   - When resting on the inflated flotation device or continuing swimming with the tube inflated, an announcement will be made in advance to ask swimmers to be careful not to disturb other swimmers.
   - If a swimmer moved forward while holding onto the inflated flotation device, he/she will be disqualified and he/she shall stop the race after the swim.

＜**Example of Local Rule Description**＞
（Swim Restricted Equipment）
In the swim, new technology for safety rescue equipment shall be introduced to promote safety. Instantaneous inflatable flotation devices (Res-Tube(R), etc.) may be worn for safety purposes.

- If an athlete does not inflate his/her flotation device, he/she may continue to compete in the same manner as if he/she had not worn the equipment.
- If an athlete swims the course in the specified limit time after inflating the flotation device, he/she may continue to compete. However, it will result timed but not ranked.
- If an athletes inflates his/her flotation device and moves forward, he/she will be disqualified (DSQ) and shall stop the race after the swim.

3. (5) “Swim Skip”

“ Swim Skip” = A unique Japanese competition rule that allows athletes to skip the swim then to continue with the bike and run at their own discretion, as swim may have the most serious impact on the health and safety on the athletes.

We propose the following for consideration regarding “swim skip”.

1. **In the JTU competition rules, “Swim Skip” is described as follows.**
   URL：https://archive.jtu.or.jp/jtu/pdf/rulebook_20190123.pdf (*In Japanese only)
   (Swim Skip)
   Article 61 / When an athlete abandons before the swim start, during the race, or at the end of a swim lap, he/she may be allowed to resume from the next conduct according to the local competition rules. However, the athlete shall be excluded from the official record or marked as a “swim skip (SKP)”.

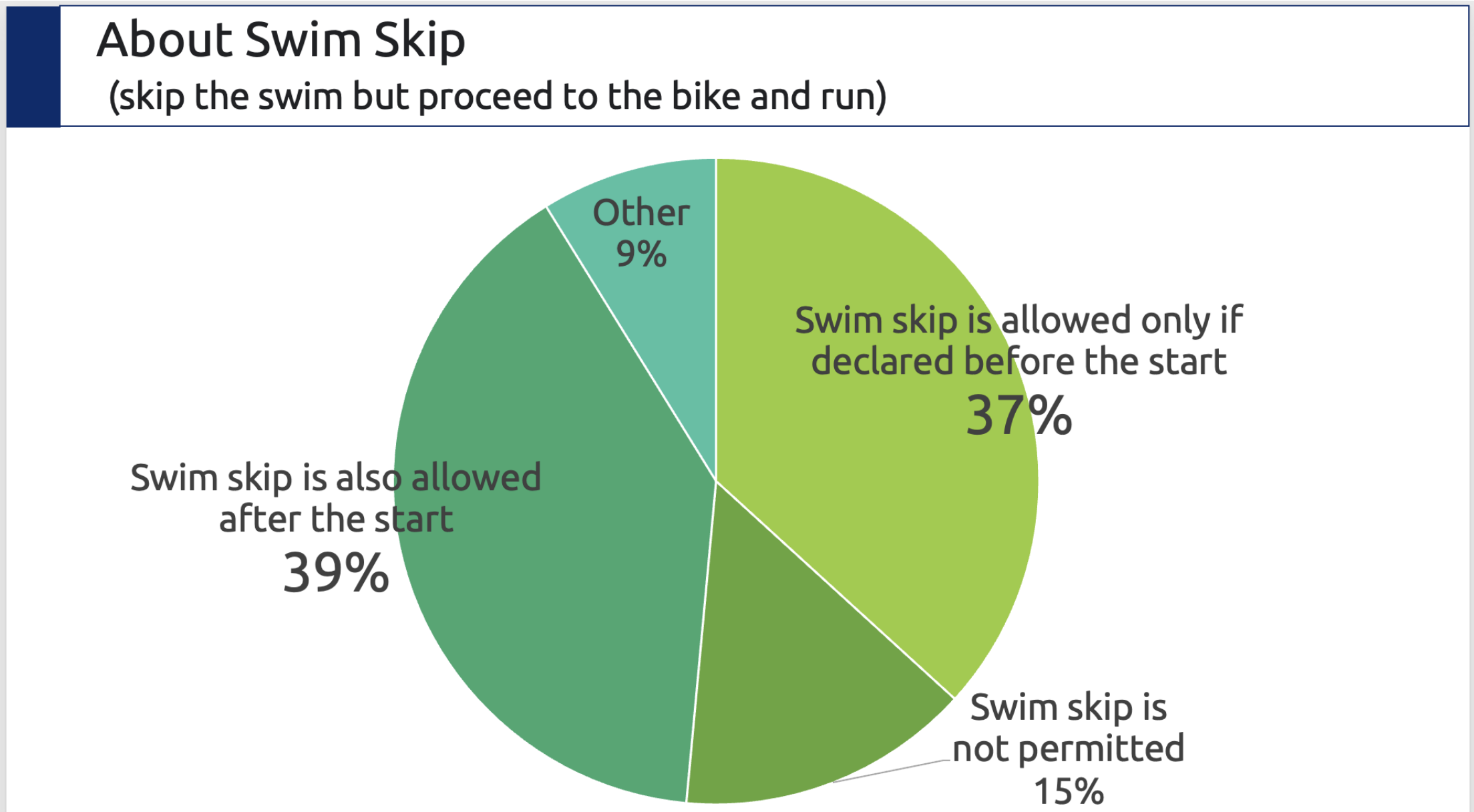
2. **“Swim Skip” should be clearly indicated in Local Rule to the athletes so that they are aware of it.**
   Points are as follows when local rule drafting.
   - "Swim skip" should be based on self-reporting by an athlete, with a clear points at where it is possible to do so.
   - Athletes who have declared "swim skip" and will participate in a swim warm-up or swim should be examined by the medical, and they may be able to continue his/her race if he/she was allowed to continue the race by the medical.
   - The “Swim Skip” should not be applied to athletes who have been advised by the lifeguard or TO to stop swimming.

   ＜Example of Local Rules＞
   (Swim Skip)
   “Swim Skip” is allowed in this event.
   “Swim Skip” will be allowed only when athlete self-reported.
   - The timing of self-reporting is as follows
     ① At Athlete Registration
     ② Before the swim start
     ③ After the swim warming-up
     ④ At the lap point

     If an athlete reports a swim-skip at timing ③ and ④ above, he/she shall be examined by medical staff and allowed to proceed to the next event only when it is determined that the athlete is able to continue the competition.
   - The athletes who have declared “Swim Skip” shall follow the TO’s instructions.

3. (5) “Swim Skip”

The result of the survey shows that 39% of events allow “swim skip” even after the start of the race, as shown in the figure below.
Please consider to implement “swim skip” in your event, to improve athletes’ safety.



* Swim Environment Questionnaire Survey for Triathlon Competitions in Japan 2023

3. (6) Wetsuit

When considering athletes' safety in swim, the wearing wetsuit should also be considered.

1. We have wetsuit regulation in the JTU Competition Rules, as follows; Please consider informing athletes of this at the athletes' briefing session at each event.

   Article 67 / In an event in which the wearing of wetsuit is mandatory or in which they may be worn, wetsuit shall be of a shape that satisfies the following conditions ;

   （1）Wetsuit shall be of a size that fits your body well.。

   （2）Shall not cover beyond the wrists and ankles.

   （3）Shapes that do not cover only the lower half of the body.。

   （4） Thickness not exceeding 5 mm (There is no limit to the thickness of each section, as long as it is within this range.)
   In the case of a two-piece wetsuit, the combined thickness of the overlapping part shall not exceed the 5 mm thickness limit.

   （5）The surface is not processed in such a way as to improve propulsion or buoyancy.

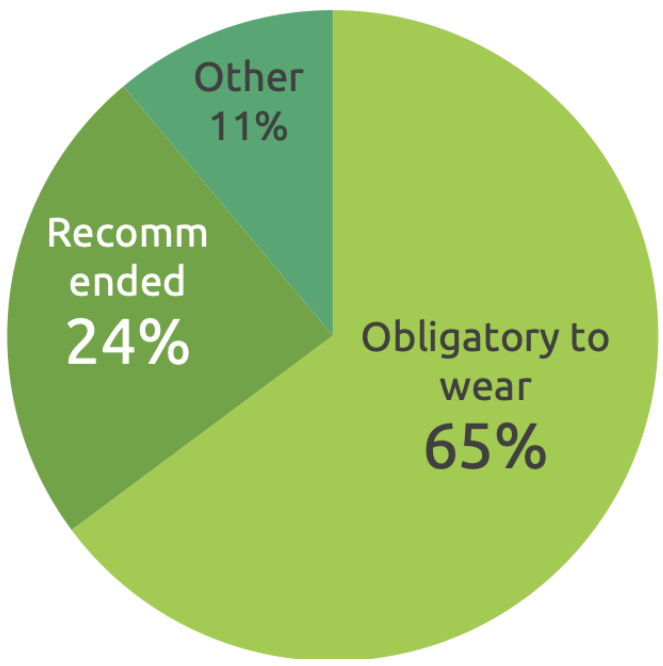
   （6）That do not contain anything inside that improves buoyancy.

   2 / Head cap covering your head may only be allowed to wear if it meets the regulation above.

As you can see below survey, about 65% of events have set it as mandatory to wear wetsuit.

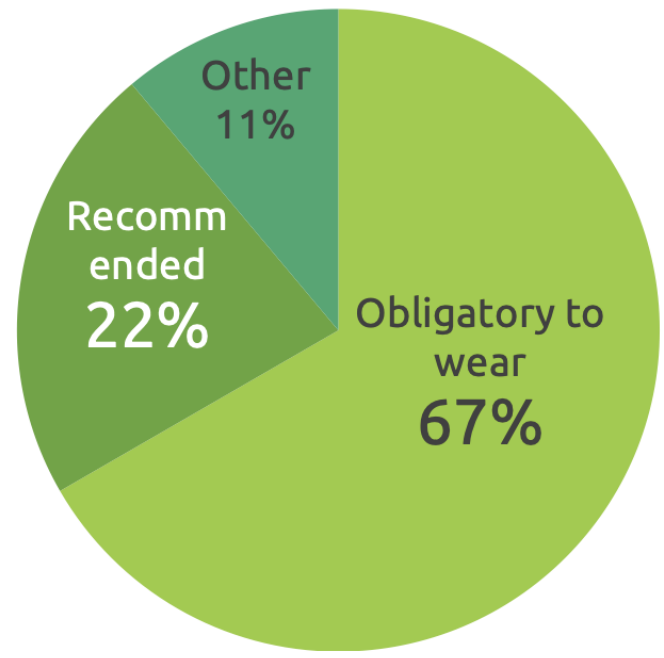
Wet Suit Wearing

SD and less than SD



SD and less than SD	
Obligatory to wear	35
Recommended	13
Other	6

Longer than middle



Longer than middle	
Obligatory to wear	6
Recommended	2
Other	1

* Swim Environment Questionnaire Survey for Triathlon Competitions in Japan 2023

3. (6) Wetsuit

2. Similarly, in the JTU Competition Rules, **Article 73** (Wetsuit Wearing Standards), water temperature range to wear wetsuit or not, is regulated. When wearing wetsuit is mandatory, wetsuit shall cover your torso.
   When referred recent air and water temperatures, it is recommended to check the following distance modifications.

3 / Distance Modifications

(1) Swim distance may be shortened or cancelled in accordance with the following table.

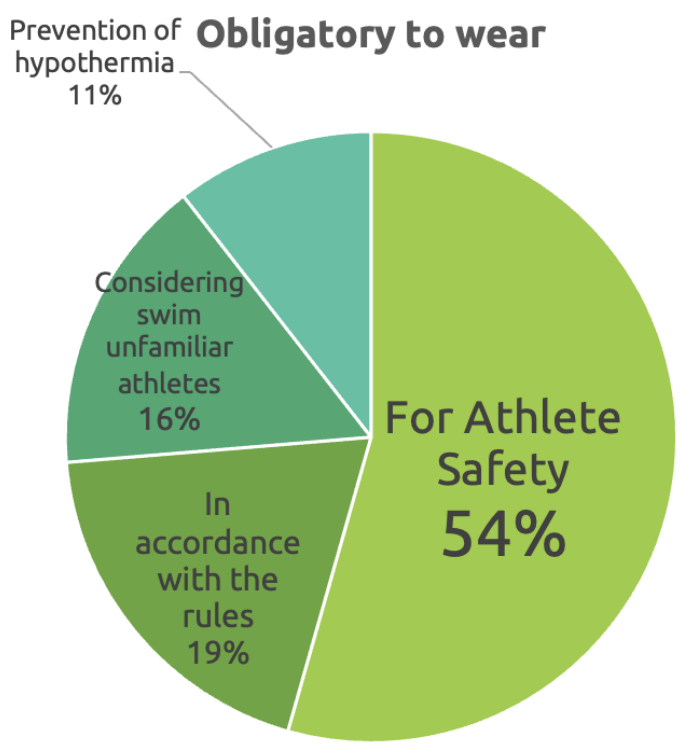
Original swim distance	Temperature of water								
	Above 33.0ºC	32.9-32.0ºC	31.9-31.0ºC	30.9-15.0ºC	14.9-14.0ºC	13.9-13.0ºC	12.9-12.0ºC	11.9-11.0ºC	Below 11.0ºC
Up to 300m	Cancel	Original distance							Cancel
750m	Cancel	Cancel	750m	750m	750m	750m	750m	Cancel	Cancel
1000m	Cancel	Cancel	750m	1000m	1000m	1000m	750m	Cancel	Cancel
1500m	Cancel	Cancel	750m	1500m	1500m	1500m	750m	Cancel	Cancel
1900m	Cancel	Cancel	750m	1900m	1900m	1500m	750m	Cancel	Cancel
2000m	Cancel	Cancel	750m	2000m	2000m	1500m	750m	Cancel	Cancel
2500m	Cancel	Cancel	750m	2500m	2500m	1500m	750m	Cancel	Cancel
3000m	Cancel	Cancel	750m	3000m	3000m	1500m	750m	Cancel	Cancel
3800m	Cancel	Cancel	750m	3800m	3000m	1500m	750m	Cancel	Cancel
4000m	Cancel	Cancel	750m	4000m	3000m	1500m	750m	Cancel	Cancel

3. (6) Wetsuit

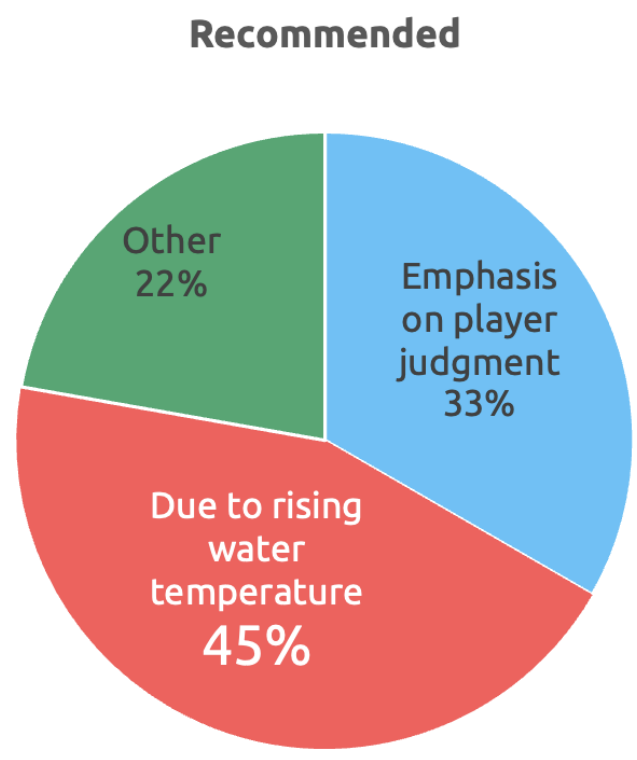
As shown in the survey below, 45% of events chose "due to higher water temperature" as the reason for “recommending” the use of wetsuit rather than “mandatory”.

When deciding wetsuit wearing “mandatory” or “recommended”, please refer and consider date of event, air and water temperature expected, opinions by Coast Guard, Life guards, and/or another rescue team (ease of rescue, impact when searching in water, or so on), addition to prevention of heat stroke and dehydration.

Reasons for the wetsuit wearing rule



For Athlete Safety	31
In accordance with the rules	11
Considering swim unfamiliar athletes	9
Prevention of hypothermia	6



Emphasis on player judgment	3
Due to rising water temperature	4
Other	2

* Swim Environment Questionnaire Survey for Triathlon Competitions in Japan 2023

3. (7) Wet Suit Q&A

Q1: I am a beginner in triathlon. I am not a good swimmer, but is it true that I can swim if I wear a wetsuit?
A1:One of the common triathlon myths is that “wearing a wetsuit will give you buoyancy, so even if you are not a good swimmer, you will be fine”. However, the main purpose of wearing a wetsuit is not buoyancy. In recent years, due to higher air temperature and water temperature during the summer, more and more events have changed the wetsuit requirement to a recommendation.

Q2:Can I use a wetsuit for surfing?
A2:Wetsuit for surfing have a different fit from those for triathlon, and are more focused on heat retention. The materials and characteristics are different from those for triathlon, where swimming is a prerequisite. Choose a triathlon-specific wetsuit that is easy to swim in.

Q3:Wetsuit is expensive and I can‘t afford to buy a new one. I have been wearing one for years. How long is the lifetime of a wetsuit?
A3: Triathlon-specific wetsuit uses a material called skin rubber, which contains countless air bubbles to provide buoyancy and softness. As the rubber hardens over time, the air bubbles shrink, so the flexibility and buoyancy of the wetsuit begins to decrease after approximately 3 to 4 years of use. Even if your body shape has not changed, if you feel tightness or constriction when wearing the skin, or if you feel a decrease in buoyancy, it is time to think about replacing it. Although a wetsuit does not become unusable immediately after its life expectancy, it may become prone to tearing. If you want to maintain the original performance of your wetsuit, periodic inspection and consideration of replacement every 3 to 4 years are recommended.

Q4:My body shape has changed since last season, but I can still fit in and wear it, is that OK?
A4:I have gained weight since last season! I worked too hard on muscle training and have pumped up! I have lost extreme weight! If you do not have a wetsuit that fits your body, you will swim differently and feel differently, and if the wetsuit is too small, it may constrict your body and make it difficult to breathe during the competition, which can be very dangerous. Be sure to try on your wetsuit before the race to make sure it is right for you!

Q5:Is it right to buy a long john or a full wetsuit?
A5:There are two main types of wetsuits: long johns (sleeveless, long pants) and full suits (long sleeves, long pants). Ideally, you should use one for the distance of the competition you plan to compete in and the temperature at the time of the competition, but it is unrealistic to buy so many expensive wetsuits. If you wear a full suit when the temperature rises, try to increase ventilation and avoid heat stroke by running water into the wetsuit after putting it on, zipping it up as much as possible during the time on land before the start, and not wearing the upper part of the wetsuit. During cooler temperatures, you can also take advantage of hot creams and other products that have a warming effect when applied to the skin.

3. (7) Wet Suit Q&A

Q6: I practice in the pool on a daily basis, so I don‘t have a chance to wear a wetsuit... I’m also afraid of the ocean.
A6: It is best to get fully accustomed to wearing a wetsuit before race day. First, look for information on local training sessions. Some triathlon schools and clubs offer wetsuit practice in the pool. Most triathlon competitions are in open water, such as oceans, lakes, ponds, and rivers. Attend a few open water practice sessions and swim the same distance as you would in a race. If you are a beginner, it is better to start with an aquathlon than to try a triathlon out of the blue. You will notice a difference in the way you swim and your range of motion when you try swimming in open water with a wetsuit on.

Q7: Wetsuits take a lot of time to put on and take off, don‘t they?
A7: It takes time to put on a wetsuit when your skin is wet. At practice sessions, senior athletes may be able to give you some tips, such as putting a plastic bag on your legs before putting the wetsuit on. It is best to get used to it by putting it on and taking it off many times. Be sure to check the details in advance so that you do not panic before the start!
On the day of the competition, even with careful preparation, you will often be short on time. Knowing how long it will take you to put on your wetsuit on a regular basis will help you manage your time before the swim start. To be able to put on and take off your wetsuit easily, you should definitely get used to it at practice sessions such as open water training sessions.

Q8: If the temperature is high, I will be drenched in sweat just putting on the wetsuit, and I will be tired before the start.
A8: Try to visualize the flow of the swim from the time you arrive at the competition venue to the start of the swim. Wearing a wetsuit that keeps you warm under the blazing sun may lead to heat stroke. Remember to hydrate before the start. Other ways to prevent your body from getting too hot include leaving zippers open, taking off your upper body, and splashing water on your body.

Q9: Water temperatures may be unexpectedly low in the first half and second half of the season. Is there anything we should be aware of?
A9: In addition to using hot cream as mentioned above, it is also a good idea to try experiencing a water temperature of 20°C in a water bath at a public bathhouse, etc., to understand whether you are tolerant of cold temperatures on a regular basis. If you are not comfortable with cold water, a test swim on the day of the race may make it difficult to move your body or cause shallow breathing if your body is cold.

Q10: I am afraid to swim open water without a wetsuit.
A10: It is best to get used to swimming in open water with or without a wetsuit. Practice in open water beforehand to get used to the differences from swimming in a marked pool where you can swim straight, holding your breath in waves, and what to do if you panic. You should also practice how to notify the lifesavers if you feel sick, and how to float on your back if your legs cramp or you get tired.

3. (8) In case of emergency

At a triathlon event, emergency response is critical to athlete safety. In the event of an emergency, prompt and effective action is required. This requires the establishment of an appropriate rescue system, athlete health management, and securing means of communication.

1. Rescue System

First, an adequate rescue system is essential for emergency response. To facilitate rescue operations on water and on land, a sufficient number of rescue staff and volunteers must be in place and properly trained. It is also important to prepare rescue tools and medical equipment. With these preparations in place, players can be quickly rescued and given first aid in the event of an emergency.

Please also refer to the following Water Safety Guidebook, posted in February 2024, to enhance your safety on land and in the water.

Triathlon Water Safety Guidebook (Event Safety Team, Business Strategy Office, Japan Lifesaving Association)
https://www.jtu.or.jp/wordpress/wp-content/uploads/2024/01/20240131-safetyguideline.pdf (*In Japanese only)

2. Toward Rescue Simulation Implementation

① Preparation：

1. Coordination of lifesavers and first-aid teams
2. Set a schedule (the day before or the morning of the event)
3. Secure transport personnel
   At least one person who can be in charge on the day of the event, and at least four people in total.
   (Each of these must be secured by someone other than the first-aid staff)
4. Share simulation details with first-aid team and on-site staff

② For participants：

TD, HR, Swim TO, Lifesaver Team,
First aid team, firefighters, related volunteers, etc.

3. (8) In case of emergency

3. **Athletes‘ Health Management**
Next, it is important to manage athletes’ health. Athletes’ health should be fully assessed prior to an event, and some measures may be taken to minimize a risk of illness or injury. In the event of a sudden change in physical condition during the competition, we will ensure that first-aid treatment is provided promptly by medical staff. Athletes themselves must also take care of their own physical condition and be adequately prepared in advance so that they can take appropriate action in case of an emergency.

4. **Securing Means of Communication**
Finally, it is essential to secure appropriate communication channel in case of emergency. Quick sharing information is essential in an emergency.
Appropriate communication tool such as mobile phone or radio must be in place to ensure quick communication among the event organizers, rescue staff, medical personnel, and/or another relevant party.
It is also important to determine emergency contact and protocols in advance and make them known to athletes, staffs, and others involved.

3. (9) References provided by Medical Committee

For reference, please refer to the following documents as stipulated by the World Triathlon.

- Event Organizers Manual (EOM) 390 pages
  https://www.jtu.or.jp/wordpress/wp-content/uploads/2020/11/ITUEventOrganisersManual2019.pdf
    - 6.3.11 Exceptional Heat Illness Prevention
- The upper water temperature limit:
    - 上限水温:
    - The IOC/FINA/ITU research “Thermal stress in open water swimming: establishingcompetition parameters for athlete safety” concluded that because no intoleranceor unusually high exercising core temperature were observed in maximal effortswims in lab test at 30°C - 32°C water T° such temperature are to be consideredsafe.
    - Considering the potential variability in physiological responses to thermal stressexists between swimmers subjected to lab test versus the race environment theresearch suggests a more conservative upper limit water T° of 31°C (87.8°F), becauseswimming in open-water competition might produce higher core temperaturethan is produced in lab trials. Between 31°C and 31.9°C the swim distance isshortened to 750m, and between 32°C and 32.9°C the swim is allowed only up to300m for the mixed relay triathlon.

Based on the above EOM, consider the following

1. In the season when water and air temperatures are likely to rise, we would like to establish a system that takes into account the physical fitness of the athletes as a standard, especially with reference to the following.
1. In Japan, there is currently no medical evidence to determine the causal relationship between the athlete‘s environment, temperature, and water temperature when wearing a wetsuit. However, we recommend that consideration be given to the recommendation of wearing a wetsuit with reference to the upper limit for wetsuit use in the following countries from a variety of perspectives.

✧TRI, UK, Australia: upper limit of 24.6℃

✧U.S.A.: upper limit of 28.9°C

3. (9) References provided by Medical Committee

- World-Triathlon_Competition-Rules_2023_20230208.pdf
  https://www.triathlon.org/uploads/docs/World-Triathlon_Competition-Rules_2023_20230208.pdf

4.2 Wetsuit Use:
a) Wetsuit use is governed by the following tables:
Elite, U23, Junior and Youth athletes:

Swim Length	Forbidden	Mandatory
Up to 1500m	20℃ and above	15.9℃ and below
1501m and longer	22℃ and above	15.9℃ and below

Age-Group from the youngest to 55-59 category:

Swim Length	Forbidden	Mandatory
Up to 1500m	22℃ and above	15.9℃ and below
1501m and longer	24.6℃ and above	15.9℃ and below

Age-Group from 60-64 category to the oldest:

Swim Length	Forbidden	Mandatory
All distances	24.6℃ and above	15.9℃ and below

- 2024 USA Triathlon Multisport Competition Rules (PDF; Updated 4/19/24)
  https://www.usatriathlon.org/multisport/rules

4.5 Temperature
The temperature parameters for the use of wetsuits and maximum time to be in the water for the varying swim distances are as follows:

a. Elite or Development (inclusive of Youth, Junior, and U25)

Table 1. Elite or Development Swimming Temperatures.

Swim Length	Mandatory	Forbidden
Up to 1500 meters	60.6° F(15.9℃) and below	68° F(20℃) and above
1501 meters and longer	60.6° F(15.9℃) and below	71.6° F(22℃) and above

b. USA Triathlon National Championship and World Triathlon Qualifying Age-Group Races

Table 2. Qualifying Age Group Race Swimming Temperatures.

Swim Length	Mandatory	Forbidden
All distances	60.6° F (15.9℃) and below	76.2° F(24.6℃) and above

c. All Other Races and Waves*

Table 3. Other Race Swimming Temperatures.

Swim Length	Mandatory	Permitted	Allowed	Forbidden
All distances	60.6° F (15.9℃) and below	Up to 78° F (25.5℃)	78.1° F (25.6℃) to 83.9° F (28.8℃)	84° F (28.9℃) and above

*Participants in a non-competitive race or wave are not eligible to have their results submited for rankings.
**Participants who choose to wear a wetsuit in a competive non-National Event Age Group race when the water temperature exceeds 78°F are not eligible to have their results submited for rankings or Age Group Awards.

3. (9) References provided by Medical Committee

- p13 84°F＝ 28.9℃
- british-triathlon-competition-rules-2023.pdf
- https://www.britishtriathlon.org/britain/documents/events/competition-rules/british-triathlon-competition-rules-2023.pdf
- p10 24.6℃
- AusTriathlon_Race-Competition-Rules_2023_Version-1.0-Oct_Final-OCT-2023-9am.pdf
- https://www.triathlon.org.au/wp-content/uploads/2023/10/AusTriathlon_Race-Competition-Rules_2023_Version-1.0-Oct_Final-OCT-2023-9am.pdf
- p8 24.6℃

4.2 Wetsuit Use:

a) Wetsuit use is governed by the following tables:

Elite, U23, Junior and Youth athletes:

Swim Length	Forbidden	Mandatory
Up to 1500m	20℃ and above	15.9℃ and below
1501m and longer	22℃ and above	15.9℃ and below

Age-Group from the youngest to 55-59 category:

Swim Length	Forbidden	Mandatory
Up to 1500m	22℃ and above	15.9℃ and below
1501m and longer	24.6℃ and above	15.9℃ and below

Age-Group from 60-64 category to the oldest:

Swim Length	Forbidden	Mandatory
All distances	24.6℃ and above	15.9℃ and below

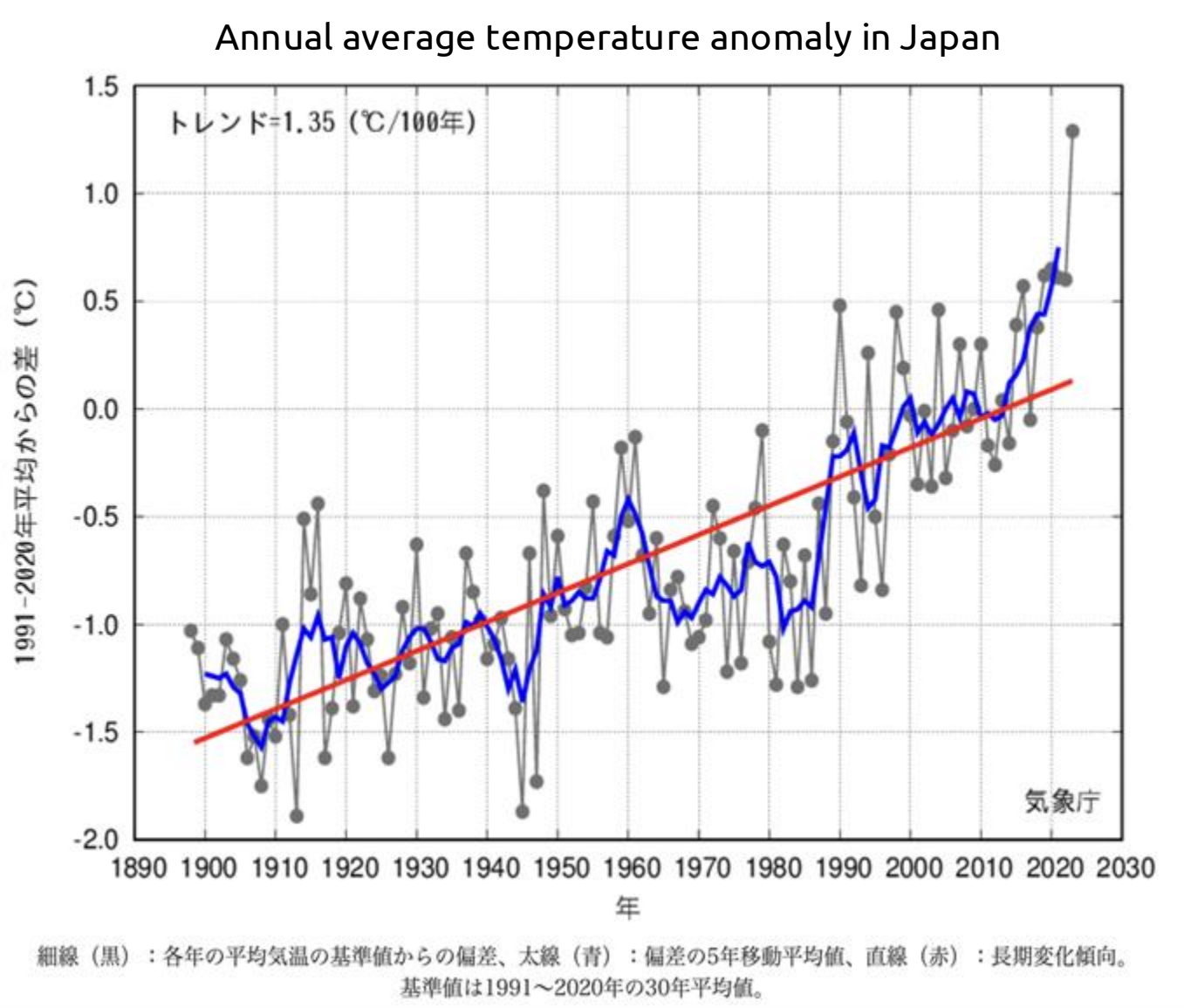
4: At last

4. (1) Triathlon and the Natural Environment

Have you heard of the term “global boiling” used by UN Secretary-General Antonio Guterres in his July 2023 press conference in response to the heat wave that occurred around the world, which cannot be described by the term “global warming”?

In places where the highest temperature were recorded throughout Europe, Africa, and Asia, the heat wave led to an increase in the number of people suffering from heat stroke and an increase in natural disasters such as droughts, wildfires, and floods. Rising temperature have increased water vapor, which in turn has caused torrential rains in many areas in the world.

How about Japan?
According to the Japan Meteorological Agency, this July was the hottest July since statistics began in 1898, surpassing 1978. The frequency of torrential rains has increased 3.8 times in the 45 years to 2020, according to the Meteorological Agency.



https://www.data.jma.go.jp/cpdinfo/temp/an_jpn.html

The worsening environmental problems are also affecting sports.

Global warming is increasing the number of extremely hot days, increasing the risk of heat stroke. The quality of play and performance is reduced. Heat stroke can cause mild symptoms such as dizziness and cramps, and in severe cases can lead to death.

In particular, extreme weather conditions such as heat waves, torrential rains, and typhoons have a major impact on triathlon, such as changes in competition events, shortening of distances, and cancellation of events.

On the other hand, there is also the impact of sporting activities on the natural environment.
Sports and environmental issues, such as the problem of garbage at sports events and food loss at large-scale sports events, affect each other, and we need to address environmental issues in order to protect the environment in which we can enjoy sports.

So what should we do?

4. (2) How Important cooperation among all parties

Have you ever heard of the story "A Drop of Hummingbird"?
A forest is ablaze from a forest fire. While other animals are running for cover, a hummingbird carries water with its tiny beak and drops drop by drop onto the flames. What we humans can do for nature may be just a drop in the bucket, but that "drop" is truly a drop in the ocean. However, even if that "drop" is really small, when those "drops" come together, they become a river and start to flow, and when they come together again, they become the ocean. We think it is important to raise awareness of environmental issues and start with "what we can do now.

Triathlon, duathlon, and related multisports need to coexist with nature and always be sensitive to changes in the environment. In order to continue to hold safe events while adapting to a changing environment, we must not only advance technology and strengthen safety measures, but also consider the natural environment.

To ensure the safety of triathlon, it is essential that athletes compete at their own risk, with consideration for the safety of other athletes, that athletic organizations take appropriate safety measures, that all parties involved make every effort to maintain the safety of the competition environment, and that all parties cooperate with each other.

We hope you will refer to this guidebook and cooperate with us to make your triathlon event safe, enjoyable and sustainable.

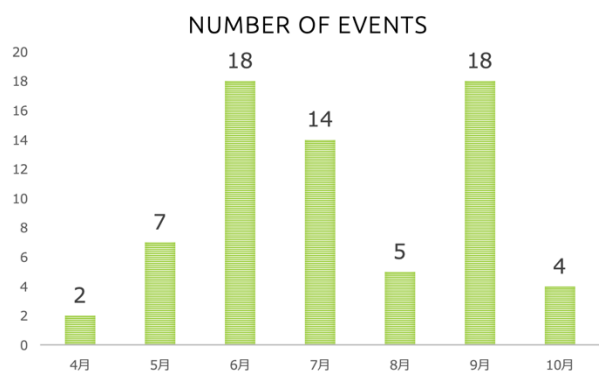
Reference : [Swim Operation Survey in Triathlon, Japan 2023]

At the end of 2023, we conducted a survey to investigate the current situation as [Swim Environment Survey in Triathlon 2023] with the cooperation of each member organization in Japan. Reference data is included in this manual, and some excerpts from the data are shown below.

The most frequent event season is from June to September.

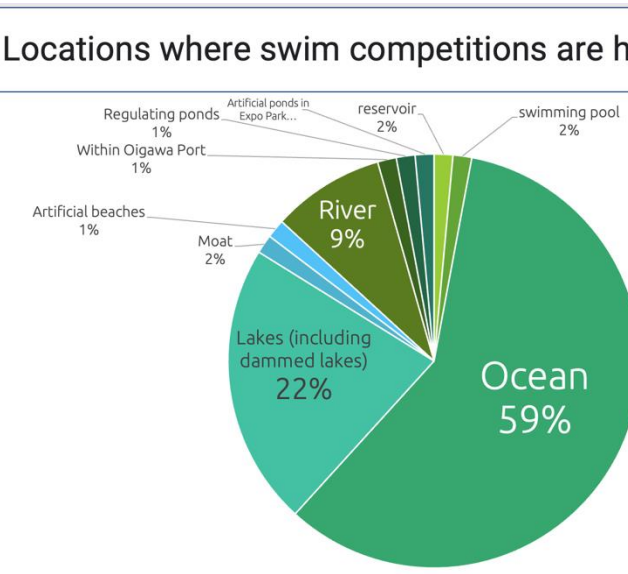
Timing and number of events

Timing	Num
April	2
May	7
June	18
July	14
Aug	5
Sep	18
Oct	4
All	68



Approximately 60% of the swim events are held in the ocean.

Locations where swim competitions are held

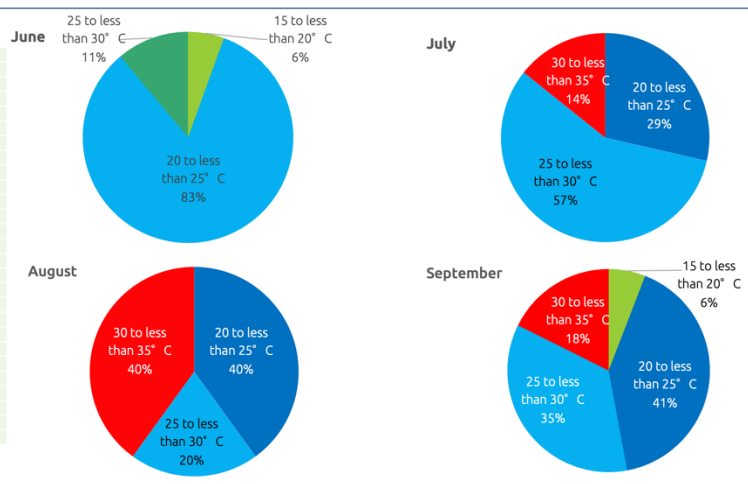


In July, 14% of the regions have air temperature exceeding 30 degrees Celsius at the time of swim start, and 40% in August.

According to rising air temperature at the time of swim start, there are some regions where become high water temperature at the time.

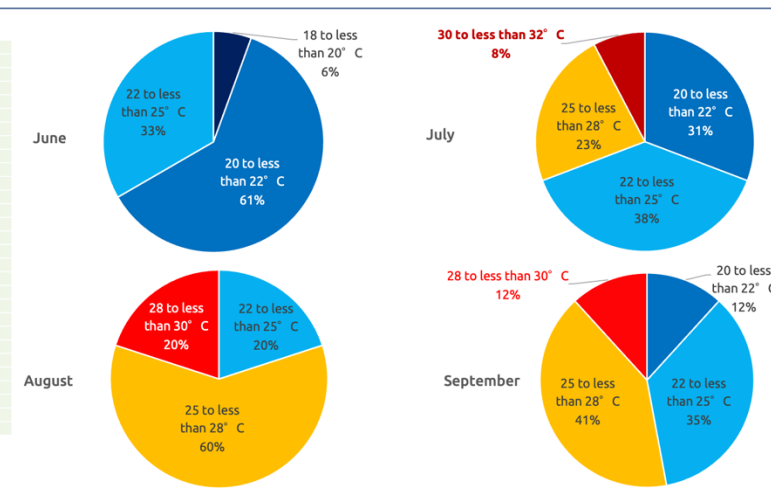
Temperature at swim start Seasonal

April	2
20 to less than 25°C	2
May	7
15 to less than 20°C	1
20 to less than 25°C	5
25 to less than 30°C	1
June	18
15 to less than 20°C	1
20 to less than 25°C	15
25 to less than 30°C	2
July	14
20 to less than 25°C	4
25 to less than 30°C	8
30 to less than 35°C	2
August	5
20 to less than 25°C	2
25 to less than 30°C	1
30 to less than 35°C	2
September	18
15 to less than 20 °C	1
20 to less than 25°C	7
25 to less than 30°C	6
30 to less than 35°C	3
October	4
Less than 15°C	1
20 to less than 25°C	1
25 to less than 30°C	2



Water temperature at swim start Seasonal

April	2
20 to less than 22°C	1
22 to less than 25°C	1
May	7
18 to less than 20°C	2
20 to less than 22°C	3
22 to less than 25°C	2
June	18
18 to less than 20°C	1
20 to less than 22°C	11
22 to less than 25°C	6
July	14
20 to less than 22°C	4
22 to less than 25°C	5
25 to less than 28°C	3
30 to less than 32°C	1
August	5
22 to less than 25°C	1
25 to less than 28°C	3
28 to less than 30°C	1
September	18
20 to less than 22°C	2
22 to less than 25°C	6
25 to less than 28°C	7
28 to less than 30°C	2
October	4
15 to less than 18°C	1
22 to less than 25°C	2
25 to less than 28°C	1

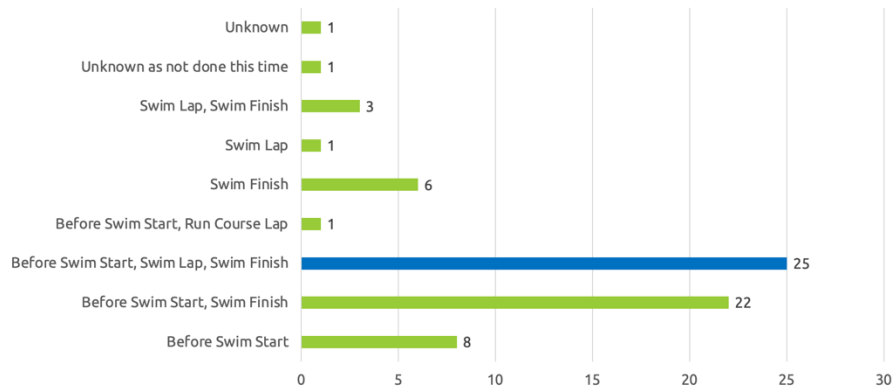


The locations of aid stations at the swim venue are in the corresponding situation described below.

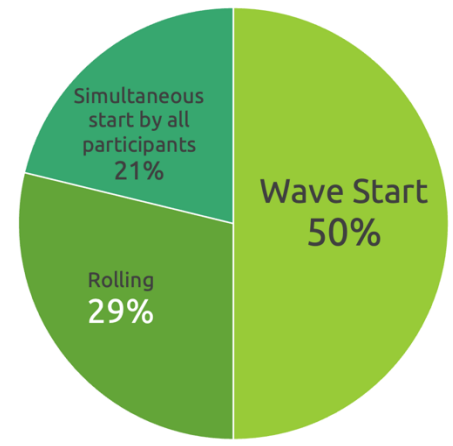
Wave start accounted for 50% of the swim start method.

About Aid Stations at the Swim Site

Please check if there is an aid station (environment where athletes can rehydrate) . (Multiple answers are acceptable)



About the Swim Start Method



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