

World Rowing Heat Safety Guidelines

– updated June 2026



Applicable for World Rowing regattas and event operations

Document status	Updated
Version	2026 updated
Date	26 June 2026
Basis of preparation	Prepared from the 2021 World Rowing Heat Safety Guidelines and the IOC consensus statement on sport events in the heat.
Scope	World Rowing regattas, events, training activities and venue operations in warm or hot environments, including Classic, Coastal, Beach Sprint and Indoor formats where relevant.

Purpose of this paper

This paper consolidates proposed updates to World Rowing heat safety guidance into a clearer operating framework. It retains the existing World Rowing structure while strengthening medical readiness, event operations, venue mitigation and protections for higher-risk athlete groups.

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Executive summary

The 2026 update strengthens World Rowing's operational approach to heat safety by introducing clearer risk thresholds, earlier warning triggers, specific medical capability requirements and more explicit planning obligations for organisers. The revised guidance is intended to support consistent, practical decision making before, during and after competition and training.

The most significant change is the introduction of a five-level, colour-coded Wet Bulb Globe Temperature (WBGT) risk scale, including an orange warning zone between moderate and high risk. This creates an earlier operational trigger for mitigation before conditions reach the high-risk red zone.

Key proposed changes

Area	Proposed update
Heat risk scale	Adopt a five-level colour-coded scale with an orange warning zone between moderate and high risk.
Vulnerable categories	Permit World Rowing to trigger one category earlier, or apply lower operational cut-offs, for Para, Junior and U23 events when conditions are borderline, athletes are not acclimatised, or historical heat data indicate elevated risk.
Pre-event planning	Require historical weather review for host venues and classify regattas as potentially hot or historically hot during planning.
Medical readiness	Require heat-management trained staff and medical personnel at historically hot or borderline events, with a designated heat deck at potentially hot regattas.
Venue mitigation	Use real-time on-course monitoring at start and finish. Mandate or strongly recommend shade, cooling rooms where feasible, ice supply, cold-water immersion capability, fans, misting in suitable environments and protected recovery spaces.
Competition operations	Allow earlier scheduling changes, shortened training windows, official rotation and Para-specific shortening of training and cool-down loops.
Operating principle Where local conditions, athlete groups, event format or historical thermal stress create additional vulnerability, the higher level of protection should be applied.	

1. Purpose and scope

These guidelines apply to World Rowing regattas, events, training activities and venue operations in warm or hot environments. They are intended to protect athletes, coaches, officials, volunteers and spectators from heat-related illness while supporting practical decision-making by organising committees and medical teams.

- The guidance should be applied before, during and after competition and training, including the boat park, warm-up area, finish area, mixed zone, recovery spaces and transport routes.
- The organising committee, World Rowing Technical Delegates, World Rowing Medical Officer and venue medical officer should share a clear communication pathway for environmental monitoring, heat warnings, mitigation actions and event modification decisions.
- These guidelines include World Rowing regattas, Coastal and Beach Sprint events and Indoor events. They may also be used by non-World Rowing regatta organising committees as a guide to be adapted to their specific resources, format and conditions.

2. Core medical principles

- Exertional heat stroke is a medical emergency. It should be considered in any collapsed athlete or in any athlete with central nervous system dysfunction, including altered mental status in hot environments.
- Accurate clinical assessment of possible exertional heat stroke requires core body temperature assessment using a rectal thermometer. Athletes with a rectal temperature above 40.5 degrees Celsius should be managed as exertional heat stroke using the cool first, transport second principle.
- Dehydration is a risk factor for heat illness, but heat illness can occur without obvious dehydration. Heat exhaustion and exertional heat stroke should not be excluded simply because dehydration is not apparent.
- Prevention requires adequate thermal acclimatisation, hydration, access to sodium and carbohydrate as appropriate, cooling strategies, shade and modification of exercise timing or volume when environmental risk is high.
- Medical and non-medical event staff should be trained to recognise and respond to dehydration, heat cramps, heat exhaustion and exertional heat stroke.

3. Environmental monitoring and heat stress assessment

Wet Bulb Globe Temperature (WBGT) remains the preferred operational index to define thermal risk for World Rowing events. WBGT is a **composite index used to assess environmental heat stress on humans**. Unlike a simple thermometer reading, WBGT considers **air temperature, humidity, radiant heat from the sun or hot surfaces, and air movement** to provide a more accurate representation of how hot conditions feel to the human body. Measurements should be taken on the race course, training course or at a representative on-water location using a fixed device. A handheld device can be used in addition in the boat park and pontoons.

- Historical weather data for at least the preceding 10 years should be reviewed during the bid and planning phase to identify historically hot venues and dates.
- At Classic World Rowing events from 2026 onwards, two on-water monitoring stations will be in place for constant monitoring and early action when conditions approach the high-risk zone.
- If historical data suggest a meaningful risk of heat stress, WBGT and other relevant environmental parameters should be reported beginning two hours prior to activity and then at least hourly during training and competition periods.

- Measurements should be recorded and communicated in a way that is visible to decision makers and easy for teams to understand.
- Where conditions are borderline, the trend across the day, solar load, wind, humidity, event duration and likely acclimatisation status of participants should be considered in addition to the raw WBGT value.

Table 1. World Rowing heat risk scale

Zone	WBGT	Risk level	Required actions
GREEN	< 21.0 C	LOW	Routine monitoring. Provide water, shade and standard medical cover.
YELLOW	21.0-24.9 C	MODERATE	Communicate heat conditions to teams. Reinforce hydration, cooling and scheduling advice.
ORANGE	25.0-27.9 C	WARNING	Organising committee heat alert. Activate enhanced mitigation plan, confirm trained staff and ice supply, review Para, Junior and U23 exposure, and prepare for schedule modification.
RED	28.0-31.9 C	HIGH	Implement active mitigation. Consider moving racing or training to cooler hours, reducing exposure duration, increasing recovery and hydration opportunities, shortening warm-up and cool-down demands, and escalating protections for all athletes. Racing should be suspended or rescheduled for Para (PR1), Junior and U23 categories.
BLACK	>= 32.0 C	EXTREME	Suspend or postpone racing and on-water training unless exceptional sport-specific justification and full medical mitigation are in place. Heat deck, rapid cooling capability and senior medical oversight are mandatory.

Operational note

For Para, Junior and U23 events, World Rowing may choose to trigger the next higher action band one category earlier when athletes are less acclimatised, where event duration is prolonged, or where local thermal stress levels have historically been problematic.

4. Regatta classification and required preparedness

Heat preparedness should be determined during the bid and planning phase, then reviewed again as forecast information becomes available.

Classification	Definition and minimum preparedness
Potentially hot regatta	Any regatta or event where historical weather data or forecast conditions suggest orange, red or black conditions may occur. A heat deck or equivalent treatment area must be designated.
Historically hot regatta	Any regatta or event held at a venue or during a period with repeated history of high or extreme heat, or where recent monitoring demonstrates repeated orange or higher conditions. Heat-management trained staff, designated medical personnel familiar with exertional heat stroke and a documented escalation pathway are required.

5. Heat deck and medical operations

- The Heat Deck is an area specifically designated and reserved for the treatment of heat-related incidents. It should be located in a cool and shaded area within or adjacent to the main athlete medical station and should have direct access from the finish area and exit pontoons.
- Minimum requirements include privacy, water supply and drainage, electricity, reliable ice supply, rectal thermometry, cold-water immersion capability, stretchers or wheelchairs, and staff trained in transfer, triage and cooling procedures.
- Safe and effective cold-water whole-body immersion requires sufficient staff immediately available. A minimum of four people is required to physically support the athlete and provide any necessary additional treatment.
- The lead medical physician should have training and, ideally, experience in emergency heat illness management. The World Rowing Physician should discuss heat illness management with the organising committee lead medical physician as part of event preparation.
- Medical volunteers should receive a hands-on pre-event training session in exertional heat stroke recognition, rectal temperature assessment, cold-water immersion, communication pathways and post-treatment management.
- A separate shaded or indoor recovery area with supervised cooling should be available for less severe heat illness so that the Heat Deck remains available for life-threatening cases.
- Water, ice bags and ice towels should be available at the finish line, but these do not replace aggressive whole-body cooling for exertional heat stroke.

6. Venue cooling, shade and infrastructure

- Shade should be provided wherever feasible in boat preparation, athlete waiting, warm-up, recovery, finish, mixed-zone and official work areas.
- Indoor or air-conditioned cooling rooms are recommended when high heat is expected and are strongly recommended in red or black conditions.
- Fans should be used to improve air movement in enclosed or still environments where this can be done safely.
- Misting fans may be used for spectators and in athlete warm-up or waiting areas when ambient temperature is high, humidity is not excessive and athletes can choose whether to use them. Misting must not create slippery surfaces or impair movement or vision.
- A venue ice plan should specify expected demand, storage, resupply arrangements and the authority to activate urgent extra supply.
- Where dark hardstand or pontoon surfaces accumulate radiant heat, active cooling of the surface area, reflective shading and traffic management should be considered.

7. Training and competition modification

- Training and racing should preferably be scheduled in the cooler parts of the day when high heat is forecast.
- When risk reaches the orange zone, mitigation procedures should be formally communicated to teams, officials and medical staff.
- When risk reaches the red zone, World Rowing and the organising committee should consider shortening exposure, increasing recovery opportunities, rotating officials, restricting midday training and modifying race operations.
- When risk reaches the black zone, on-water training should be suspended and racing postponed or cancelled unless the event can be moved to a safer time and full medical protections are in place.
- Any decision to alter event operations should preserve medical access, retrieval routes and quality of care.
- For Para athletes, the organising committee should plan shortened training and cool-down loops where feasible, minimise unnecessary transfer distances, preserve wheelchair-accessible shaded routes and reduce pre-start and post-finish exposure time in the sun.

8. Athlete preparation and recovery guidance

- Athletes should undertake heat acclimatisation strategies before competing in hot conditions. The preferred approach is training in an environment with temperature and humidity levels expected during competition. When this is not possible, passive or simulated heat exposure may be used.
- A practical target is 60 to 90 minutes of heat exposure on at least four sessions per week for around two weeks, with ongoing maintenance exposures when needed.
- Athletes should avoid beginning prolonged exercise in a hypohydrated state and should monitor hydration using body mass, urine concentration or colour, and thirst.
- For exercise exceeding one hour in the heat, fluids containing sodium and dilute carbohydrate may be used according to athlete preference and tolerance.
- Warm-up should still occur in the heat, but duration and intensity should be reduced. Cooling measures such as ice vests, cool towels, shade and cold fluids should be considered.
- Post-race recovery should include shade, walking assistance when needed, rehydration, sodium and carbohydrate replacement as appropriate, and supervised cooling for symptomatic athletes.

9. Specific additional considerations for Para, Junior and U23 athletes

- These groups may warrant lower heat operational triggers or earlier escalation because of variable acclimation, developmental considerations, higher dependency on support staff or altered thermoregulatory responses.
- At orange conditions or above, the World Rowing Medical Officer, Event Safety Officer and Chief of the Jury should specifically review whether these groups require additional rest, shorter exposure, extra transport support, shaded marshalling or event order adjustment.
- For Para competitors, cooling, hydration and transport arrangements should be reviewed individually where impairment, equipment, transfer needs or medication increase vulnerability.

10. OC staff, volunteers, rescue, marshals and umpires

- At all potentially hot regattas and events, organisers must take into account the vulnerability and safety of organising committee staff, volunteers, rescue teams, marshals and umpires, who are often exposed to heat for long shifts over successive days.
- Mitigation measures should mirror athlete protections where appropriate, with particular emphasis on increased roster rotation, shorter shifts, regular cold-water resupply, check-in communication, shade and sun-safe clothing.

11. Implementation and review

- These guidelines should be incorporated into the organising committee medical plan, venue operations plan and Technical Delegate briefing material.
- Heat actions should be rehearsed before competition, including monitoring, communications, finish-line triage, athlete transfer and Heat Deck operation.
- After each potentially hot or historically hot regatta, World Rowing should review environmental data, athlete presentations, operational issues and any recommended threshold refinements.

12. Evidence base and resources

Evidence base used for this update

- World Rowing Sports Medicine Commission. Hot Weather and Heat Safety Guidelines. Updated 26 July 2021.
- Racinais S, Hosokawa Y, Akama T, et al. IOC consensus statement on recommendations and regulations for sport events in the heat. *British Journal of Sports Medicine*. 2023;57:8-25.
- Hosokawa Y, Racinais S, Akama T, et al. Prehospital management of exertional heat stroke at sports competitions. *British Journal of Sports Medicine*. 2021.

Additional resources for organising committee lead physicians

- Sports Medicine Australia hot weather resources and policies.
- World Athletics endurance medicine resources on exertional heat stroke.
- NFHS Learn: Heat Illness Prevention.
- United States Centers for Disease Control and Prevention resources on heat illness.