



INTERNATIONAL
GOLF FEDERATION

IGF Extreme Heat Guidelines

for Golf Events

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*Updated in alignment with the 2023 IOC Consensus Statement on Sport Events in the Heat,
WMS 2024 Heat Illness Guidelines, and the latest evidence on cooling and prevention strategies.*

For reference use by event organizers, medical personnel, national federation, and designated IGF representatives only.

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Advisory Document — Not Mandatory

These guidelines represent recommended best practices for golf event organisers worldwide. They are advisory in nature and do not supersede local laws, regulations, or the specific requirements of event organisers or governing bodies. Organizers and Golf events directors retain full discretion over all decisions made in the context of their specific events.

1. Background

The IGF Extreme Heat Guidelines were first developed following consultations with the IGF Medical Committee, senior medical staff and event managers of the PGA European Tour, PGA TOUR, The R&A, members of the IOC Medical and Scientific Commission, and professional golfers. The third edition (2023) incorporated guidance from the Tokyo 2020 Olympic Games experience.

This fourth edition (2026) has been substantially revised and expanded to reflect:

- The 2023 IOC Consensus Statement on Recommendations and Regulations for Sport Events in the Heat (Racinais et al., 2023), the most comprehensive international framework currently in force.
- The Wilderness Medical Society 2024 Clinical Practice Guidelines for the Prevention and Treatment of Heat Illness.
- Emerging evidence on tropical and high-humidity environments, per-cooling strategies, and the specific needs of athletes competing in multi-hour outdoor events.
- Expanded sections on shelter infrastructure, tropical weather considerations, and on-course remedies — including ice coolers, water spray systems, and athlete-specific cooling devices.
- Updated pre-event planning, communication protocols, and roles and responsibilities.

These guidelines are not mandatory. Each event organiser or organising committee determines specific courses of action based on local circumstances, historical meteorological data, and applicable local laws and regulations. These guidelines do not prevail over local legislation or event-specific requirements. They are subject to review every two years (next due: 2028).

2. Introduction

Organising committees and golf event organisers have a responsibility to protect the health and wellbeing of all persons participating in, working at, or attending events held in conditions where extreme heat and humidity may constitute a health risk. Extreme heat is one of several environmental hazards addressed in a comprehensive event safety plan, alongside air quality, lightning, extreme wind, and sand or dust storms.

Golf presents a distinct risk profile compared to other outdoor sports. A full round of golf typically involves four to five hours of continuous outdoor exposure, during which players, caddies, officials, volunteers, marshals, media, and spectators accumulate significant heat stress. Caddies carrying heavy equipment and marshals walking the entire course may experience levels of physical exertion comparable to moderate-intensity endurance exercise, substantially elevating their risk of heat illness. The global expansion of professional and amateur golf into tropical, sub-tropical, and arid climates — including South-East Asia, the Pacific, the Arabian Peninsula, the Caribbean, Central America, and parts of Africa — means that event organisers must be prepared for environmental conditions that can be life-threatening. Even in temperate climates, exceptional heat events are increasing in frequency and severity due to global climate trends.

This document provides evidence-based guidance for all stakeholders involved in planning and delivering golf events in heat-affected environments.

i	Good to know — Introduction
•	Extreme heat risk affects everyone at a golf event — not just players. Caddies, marshals, and spectators may be at highest risk due to sustained exertion and limited access to shade.
•	Golf's long duration (4–5 hours) means cumulative heat exposure far exceeds that of shorter outdoor sports.
•	Events in tropical, sub-tropical, and arid regions require dedicated heat management plans from the outset of event planning.
•	These guidelines apply to all persons on or around the golf course: players, caddies, officials, volunteers, media, and spectators.

3. Understanding Heat Stress: WBGT and Key Metrics

Air temperature alone is an insufficient measure of heat stress on the human body. Relative humidity, solar radiation, wind speed, and radiant heat from surfaces all contribute to the physiological strain experienced by individuals working or competing outdoors. The Wet Bulb Globe Temperature (WBGT) is the internationally accepted composite index for measuring environmental heat stress during outdoor physical activity, and is used by major sports bodies including the IOC, FIFA, and others governing bodies.

WBGT is calculated as a weighted composite of wet-bulb temperature (reflecting humidity and evaporative cooling potential), globe temperature (reflecting radiant heat from the sun and environment), and dry-bulb temperature (air temperature):

$$\text{WBGT} = 0.7 \times \text{Wet-bulb temp} + 0.2 \times \text{Globe temp} + 0.1 \times \text{Dry-bulb temp}$$

In tropical and high-humidity environments, the wet-bulb component dominates — meaning that even at moderate air temperatures, high relative humidity can produce WBGT values exceeding safe thresholds for sustained outdoor activity.

3.1 Heat Index as a Secondary Reference

Where WBGT monitoring equipment is unavailable, the Heat Index (combining air temperature and relative humidity) should be used as a secondary reference. The Heat Index is calculated for shaded conditions and does not account for solar radiation; it therefore tends to underestimate heat stress for persons in direct sunlight. WBGT should always be preferred where equipment is available.

3.2 Golf-Specific WBGT Risk Scale

The following table summarises WBGT thresholds and recommended actions for golf events. These thresholds reflect the light-to-moderate exercise intensity of golf, but account for the extended duration of exposure and the particularly high exertion of caddies and marshals.

However, an effective golf-specific WBGT risk scale only works when it reflects the real people on the course, not just the numbers on a thermometer. Even when a table summarizes standard WBGT thresholds, those values need thoughtful adjustment because heat affects athletes, caddies, and tournament personnel differently depending on age, gender, fitness level, and job demands. Older individuals and younger adolescents generally face higher physiological strain at the same WBGT, while women may experience earlier onset of heat stress during prolonged exertion. Caddies and support staff often carry heavy loads or work continuously between holes, increasing their heat burden compared with players who rest between shots. Accounting for these human factors ensures that the WBGT scale isn't just technically correct—it's genuinely protective for everyone involved in tournament operations.

WBGT	Risk Level	Players / Caddies	Medical Team	Tournament Director
<28°C	Low	No restriction. Maintain standard hydration.	Normal monitoring.	Standard monitoring. Ensure hydration stations stocked.
28–30°C	Moderate	Increase fluid intake; seek shade between holes; electrolyte drinks recommended.	Alert medical team; monitor vulnerable persons.	Ensure hydration stations fully stocked; cooling areas open.
30–32°C	High	Mandatory rest breaks; electrolyte drinks; reduce exertion where possible; cooling aids provided.	Medical staff on active patrol; ice bath/cooling ready.	Consider restructuring tee times; issue public advisory; confirm shelter locations.
32–35°C	Very High	Consider voluntary withdrawal without penalty; limit exertion to minimum; use all cooling aids.	Activate heat illness protocol; ice-bath ready; monitor all persons actively.	Consult Medical Officer; strongly consider suspension of play.

WBGT	Risk Level	Players / Caddies	Medical Team	Tournament Director
>35°C	Extreme	Strongly advised not to play; voluntary withdrawal without penalty.	Full emergency protocol; prepare for multiple casualties.	Suspend play; activate emergency communications; open all cooling shelters.

** Note: On-site WBGT monitors should be positioned in representative open-air locations — not in shade or indoors — to provide accurate readings relevant to conditions experienced on the course.*

i	Good to know — WBGT and Heat Stress
•	WBGT is the gold standard for measuring heat stress at outdoor sporting events. It incorporates humidity, solar radiation, and wind — air temperature alone is insufficient.
•	A WBGT above 28°C should trigger enhanced hydration protocols and mandatory rest breaks for all participants.
•	At WBGT above 32°C, suspension of play should be actively considered in consultation with the Medical Officer.
•	In humid climates, dangerous WBGT levels can be reached even when air temperature feels moderate.
•	Where WBGT equipment is unavailable, use the Heat Index as a secondary reference — but be aware it underestimates solar heat stress.

4. Risk Factors for Heat Illness

Understanding who is most at risk and under what conditions is essential for effective event planning. The following risk factors are well-established in the medical literature and should be considered when developing event health plans.

4.1 Environmental Risk Factors

Air Temp (°C)	Air Temp (°F)	Relative Humidity	Risk Level	Notes
< 20	< 68	Any	Extremely Low	No specific heat management required under normal conditions.
21–25	69–77	Up to 100%	Low	Minimal risk. Standard hydration sufficient.
26–30	78–86	> 60%	Moderate	Risk increases with higher temperature and humidity. Begin enhanced monitoring.
31–37	87–99	> 30%	High	Risk is significant even at lower humidity. Risk mitigation required.
> 38	> 100	Any	Extremely High	Progressively higher risk. Mitigation strategies mandatory. Consider postponement.

The presence of wind or increased air flow reduces heat stress. Conversely, still, humid air — common in tropical environments — dramatically increases risk even at temperatures below 35°C. Course topography also matters hilly courses, long walks between tees, and areas with little natural shade substantially increase exposure.

4.2 Individual Risk Factors

- Lack of acclimatisation to heat or humidity — full acclimatisation can take 10–14 days of graduated exposure.
- Previous history of heat illness — significantly increases susceptibility to future events.
- Children, elderly persons (65+), and those with elevated Body Mass Index (BMI) are at increased risk.
- Persons with pre-existing cardiovascular or respiratory disease.
- Individuals taking medications that impair thermoregulation (diuretics, anticholinergics, beta-blockers, some antihistamines).
- Dehydration at the start of play — even a 2% body water deficit measurably impairs heat regulation.
- Lack of awareness or education about heat illness recognition and prevention.
- Current respiratory or gastrointestinal viral infection, which can impair normal temperature regulation.
- Poor sleep quality in the days before the event, particularly in hot accommodation without cooling.

i Good to know — Risk Factors

- Acclimatisation takes 10–14 days — athletes arriving from cooler climates are at significantly higher risk during the first week.
- Anyone with a prior history of heat stroke requires enhanced monitoring and should be pre-identified by the medical team.
- High BMI, cardiovascular disease, and certain medications all reduce the body's capacity to tolerate heat.
- Caddies and marshals are at particularly high risk due to their sustained physical activity throughout the full event day.
- Dehydration arriving at the course dramatically worsens all heat outcomes — pre-hydration education is essential.

5. Heat-Related Illness: Classification and Recognition

Heat-related illness exists on a spectrum from mild to life-threatening. Medical staff must be trained to recognise and differentiate between the following conditions, as appropriate treatment differs significantly across the spectrum. Any confusion or altered level of consciousness in a heat-exposed person should be treated as exertional heat stroke until proven otherwise.

Condition	Signs and Symptoms	Core Temp	Immediate Management
Heat Cramps	Painful muscle contractions (calves, thighs, abdomen); fatigue; heavy sweating; normal consciousness.	Normal	Rest in cool area; oral fluids + electrolyte replacement; gentle stretching.
Heat Syncope	Fainting or near-fainting; dizziness; pale skin; weak pulse.	Normal or mildly elevated	Lie flat with legs elevated; oral fluids; monitor for progression.
Heat Exhaustion	Weakness; nausea; headache; cool clammy skin; HR >100 bpm; possible vomiting.	37–40°C	Remove from heat; active cooling with water/fans; IV fluids if oral not tolerated; EMS if no improvement in 30 min.
Exertional Heat Stroke (EHS)	Core temp >40°C + CNS dysfunction: confusion, aggression, collapse, seizure, or loss of consciousness.	>40°C	CALL EMS immediately. Begin cold water immersion (CWI). Do not delay cooling. Hospital transport essential.

Rectal temperature measurement is the most accurate field method for heat stroke diagnosis. Axillary, oral, or tympanic (ear) thermometers significantly underestimate core temperature in heat stroke and must not be used for diagnostic purposes.

Note: Absence of sweating is NOT a reliable sign of heat stroke. Many exertional heat stroke patients continue to sweat. CNS dysfunction — confusion, combativeness, or collapse — is the key diagnostic indicator.

i **Good to know — Heat Illness Recognition**

- Any confusion, aggression, or loss of consciousness in a heat-exposed person is a medical emergency — treat as EHS until proven otherwise.
- Rectal temperature is the only reliable field measurement for diagnosing and monitoring heat stroke.
- Heat exhaustion can progress to heat stroke rapidly — do not delay cooling while awaiting EMS.
- Absence of sweating is not a reliable indicator of heat stroke; many EHS patients continue to sweat.
- Cramps and syncope are generally mild but must be monitored closely for progression toward heat exhaustion or stroke.

6. Exertional Heat Stroke: Emergency Response Protocol

Exertional heat stroke (EHS) is a medical emergency with a mortality rate that rises sharply with every minute the core body temperature remains above 40°C. The guiding principle is cool first, transport second. Initiating rapid cooling on-site before or during EMS transport has been demonstrated to dramatically reduce mortality and long-term organ damage.

⚠ This is a Life-Threatening Emergency — Act Immediately

- Every minute above 40°C core temperature increases the risk of organ failure and death.
- Do NOT wait for EMS to arrive before beginning cooling.
- Cold water immersion (CWI) is the gold standard. It must be available on-site at all events held in heat-risk environments.
- All confirmed or suspected EHS cases require hospital evaluation — apparent on-site recovery is not sufficient.

6.1 EHS Response Sequence

1. **RECOGNISE:** Identify altered consciousness, confusion, or collapse in a heat-exposed individual. Assume EHS until ruled out.
2. **CALL EMS:** Activate emergency services immediately. Do not wait to confirm temperature.
3. **COOL:** Begin aggressive whole-body cooling without delay. Cold water immersion (CWI) in an ice-water bath (2–5°C) is the gold standard. Target core temperature below 39°C before or during transport.
4. **POSITION:** If conscious and breathing, place in recovery position. If unconscious, protect the airway. Do NOT give fluids by mouth to an unconscious person.
5. **MONITOR:** Take rectal temperature every 5 minutes during cooling. Remove from ice bath when rectal temperature reaches 38.5°C to avoid overshoot hypothermia.
6. **TRANSPORT:** All confirmed or suspected EHS cases must be transported to hospital for evaluation of end-organ damage (renal, hepatic, cardiac, and coagulation markers).
7. **DOCUMENT:** Record time of collapse, time cooling commenced, temperature readings, and all interventions. This information is critical for hospital handover.

6.2 Do and Do Not — EHS Summary

Please consider that any cooling methods should be already used, for the ones available, during the transport from the field of play to the venue medical station or ice bath location.

⚠ Do NOT do this	✓ Do this instead
Wait for EMS before starting cooling	Begin cold water immersion immediately on recognition
Apply ice packs to neck, armpits, or groin only	Immerse the whole body in ice water — partial cooling is insufficient
Give oral fluids to an unconscious patient	Protect the airway; IV fluids administered by EMS/medical staff only
§Use a fan or misting as the sole cooling method	Use CWI; fans and misting may supplement but cannot replace immersion
Discharge after apparent recovery on-site	All EHS cases require hospital evaluation — do not discharge on-site
Use oral, axillary, or tympanic thermometers for EHS diagnosis	Use rectal thermometer for accurate core temperature measurement
i Good to know — EHS Emergency Response	
•	Cool first, transport second — every minute above 40°C increases organ damage and mortality risk.
•	Cold water immersion (CWI) must be available on-site at every event held in a heat-risk environment.
•	All EHS cases must go to hospital — apparent on-site recovery does not mean the emergency is over.
•	Rectal temperature is the only reliable field method for confirming and monitoring heat stroke.
•	Cooling target: core temperature below 39°C before or during transport to hospital.

7. Dehydration: Prevention, Recognition, and Management

Dehydration is both a primary risk factor for heat-related illness and a significant health concern in its own right. In tropical environments, sweat losses during a full round of golf can reach 1.5 to 2.5 litres per hour in players and caddies. Even a body water deficit of 2% of body weight measurably impairs physical and cognitive performance. A deficit of 5–8% causes dizziness, headache, and significant cardiovascular strain; losses exceeding 10% can be life-threatening.

PREVENTION: Electrolytes outside of matchplay (pre/post) important. Interestingly, some newer data suggests that electrolytes are quite hard to absorb during exercise (likely higher intensity more of a problem). But for those without relevant comorbidities (e.g., high blood pressure) electrolyte capsules (e.g. Saltstick buffered electrolyte capsules) would be great pre-round, as they are potent (but palatable) and really drive drinking.

7.1 Hydration Guidance

Condition	Fluid Recommendation	Intake	Electrolyte Guidance
Normal / Low heat (WBGT <28°C)	250–500 ml per hour		Water alone generally sufficient for rounds under 3 hours.
Moderate heat (WBGT 28–30°C)	400–600 ml per hour		Electrolyte drinks or salty snacks recommended for rounds over 2 hours.
High heat (WBGT 30–32°C)	600–800 ml per hour		Electrolyte replacement essential. Avoid plain water only — risk of hyponatraemia.
Very High / Extreme (WBGT >32°C)	Over 800 ml per hour; monitor urine colour		Mandatory electrolyte replacement. Oral rehydration salts if available.

7.2 Practical Hydration Guidance for Players and Caddies

- Pre-hydration: Players and caddies should begin each round well-hydrated. Pale yellow (straw-coloured) urine before play is a practical indicator of adequate hydration. Dark urine indicates existing dehydration.
- During play: Drink at every opportunity — tee boxes, hole completions, halfway houses — rather than only when thirsty. Thirst is a late indicator of dehydration.
- Electrolyte replacement: Plain water alone is insufficient during prolonged heat exposure (rounds exceeding 2 hours in high heat). Electrolyte-containing drinks or food prevent exercise-associated hyponatraemia (dangerously low sodium), which can occur when large quantities of water are consumed without electrolyte replacement.
- Post-round recovery: Fluid intake should continue after the round concludes. Weighing before and after play (every kilogram lost $\approx$ 1 litre of fluid deficit) is a useful tool for professional and elite events.

i	Good to know — Dehydration
•	A 2% body weight deficit from dehydration measurably impairs both physical and cognitive performance.
•	Thirst is a late indicator of dehydration — scheduled drinking at every opportunity is essential.
•	In high heat, plain water alone is insufficient for rounds over 2 hours — electrolyte replacement is essential to avoid hyponatraemia.
•	Urine colour is a simple, practical dehydration monitoring tool: pale yellow = well hydrated; dark yellow = dehydrated.
•	Sweat losses in tropical heat can reach 2.5 litres per hour — hydration stations every 2–3 holes is the recommended minimum.

8. Tropical and Sub-Tropical Weather: Specific Guidance

Golf events held in tropical or sub-tropical climates — including regions of South-East Asia, the Pacific Islands, the Caribbean, Central America, the Arabian Peninsula, the Indian subcontinent, and parts of Africa and Oceania — present a distinct and compounded set of environmental health risks. High ambient temperature combined with high relative humidity significantly impairs the body's primary cooling mechanism (evaporative sweat cooling), dramatically increasing the risk of heat-related illness even during light-to-moderate physical activity.

8.1 Why Tropical Climates Demand Special Consideration

In tropical environments, the combination of sustained high temperature (often 30–38°C), high relative humidity (frequently 70–100%), intense solar radiation, and limited wind creates conditions where the WBGT can reach the 'Very High' or 'Extreme' risk band even before midday. The key physiological challenge is that sweating — the body's primary cooling mechanism — becomes ineffective when ambient humidity is near-saturation because sweat cannot evaporate from the skin surface. This means the body continues producing heat without being able to dissipate it efficiently.

- At 35°C with 80% relative humidity, the effective heat stress on the human body is equivalent to approximately 50°C in dry conditions.
- Even acclimatised individuals experience significantly higher cardiovascular and thermoregulatory strain in tropical conditions compared to dry heat at the same temperature.
- Morning WBGT can already be in the 'High' risk band by 8:00 am in equatorial and monsoonal environments.

8.2 Acclimatisation Requirements for Tropical Events

Full physiological acclimatisation to tropical heat conditions takes 10–14 days of graduated heat exposure. Players, caddies, officials, and medical staff arriving from cooler climates are at substantially elevated risk during the first week. Event organisers should:

- Issue pre-event guidance to all participants recommending arrival at least 10–14 days before competition when feasible.
- Provide a structured acclimatisation schedule: begin with 60–90 minutes of moderate activity in heat on Day 1, increasing duration and intensity progressively.
- Ensure that pre-competition practice rounds are scheduled during the same time of day as the planned competition rounds to maximise heat adaptation.
- Consider shorter practice sessions and extended rest periods during the first four days for players arriving from temperate climates.

8.3 Scheduling Recommendations for Tropical Events

- Avoid scheduling play during peak solar radiation hours (10:00–14:00 local time) wherever the event format permits.
- Shotgun or split-tee starts that spread players across the course — and therefore shorten individual exposure to peak heat — should be considered.
- Early morning tee times (commencing 6:00–7:00 am) and late afternoon tee times (after 15:30) significantly reduce heat stress and should be prioritised wherever logistically feasible.
- In multi-round events, rest days should be strategically placed after the hottest days of play.
- All tee time schedules should be reviewed against the forecast WBGT for each day of play, with flexibility built in to adjust start times based on conditions.

8.4 Medical Planning for Tropical Events

Requirement	Detail	Minimum Standard
On-course WBGT monitoring	Calibrated WBGT monitors at multiple course locations, including exposed and shaded areas.	Readings every 30 minutes from 6:00 am; increase to every 15 min at WBGT >30°C.
Cold water immersion (CWI)	Ice-water bath (minimum capacity: adult full-body immersion) available at the medical facility.	Mandatory for all events where WBGT is expected to exceed 28°C.
On-course medical coverage	Senior medical personnel with heat illness training patrolling the course.	One medical officer per 6 holes in high-heat tropical conditions.
Player spotters	Trained spotters or video surveillance deployed to identify distressed athletes.	Required when WBGT exceeds 32°C or when the heat risk flag is Red.
EMS pre-positioning	Emergency Medical Services vehicle pre-positioned at the medical facility.	Mandatory. Response time target: under 10 minutes to any point on the course.
Cold fluids supply	Chilled water (4–10°C) and electrolyte drinks at every tee box and fairway station.	Minimum: one station every 2 holes. In tropical conditions: every hole.

8.5 Monsoon and High-Humidity Season Planning

Events during monsoon seasons or periods of extreme humidity require additional planning beyond standard heat guidelines:

- Lightning risk increases substantially during monsoon seasons — lightning protocols must be integrated with heat management plans, as sudden weather changes can occur within minutes.
- Ground conditions during monsoon periods may reduce cart access for emergency vehicles. Alternative evacuation routes should be identified and tested before the event.
- High humidity accelerates dehydration and impairs cooling even in overcast conditions — the absence of direct sunlight does not reduce heat stress when humidity is extreme.
- Wet conditions may make outdoor misting systems and wet towel cooling more effective, as evaporation is less the limiting factor than in dry heat.

8.6 Clothing recommendations

Proper clothing selection is another critical layer of protection in these environments, where high heat and humidity already compromise the body's ability to cool itself. Lightweight, breathable, and moisture-wicking fabrics help facilitate whatever evaporative cooling is still possible by pulling sweat away from the skin and allowing it to disperse more efficiently. In contrast, heavy, dark, or non-breathable materials trap heat and moisture, accelerating thermal strain. For golfers, caddies, and tournament staff who may spend several continuous hours exposed to direct sun, recommending performance apparel designed for hot climates—such as technical polyester blends, mesh-vented garments, and UV-protective fabrics—can meaningfully reduce heat stress and improve overall safety during play and course operations.

i Good to know — Tropical Weather Locations

- In tropical climates, dangerous WBGT levels can be reached before 9:00 am. Do not rely on time-of-day assumptions about heat risk.
- Evaporative cooling (sweating) is severely impaired at high humidity — the body cannot cool itself as effectively, even in physically fit and well-hydrated athletes.
- Acclimatisation for 10–14 days is essential before competing in tropical conditions. Arriving players are at highest risk during the first week.
- Schedule play in early morning or late afternoon wherever possible. Avoid 10:00–14:00 local time in tropical environments.
- Cold water immersion (ice bath) must be on-site and immediately accessible at every tropical event — it is the only intervention capable of rapidly reversing exertional heat stroke.
- Medical staffing ratios should be increased in tropical environments: target one medical officer per 6 holes when WBGT exceeds 30°C.

9. Shelter: Types, Standards, and Location

Access to appropriate shelter is one of the most effective and immediately deployable interventions for reducing heat-related illness at golf events. Shelter provides protection from direct solar radiation (which contributes 20% to WBGT), reduces skin temperature, and gives the body an opportunity to dissipate accumulated heat. All events conducted in conditions where WBGT is expected to exceed 28°C should have a defined shelter plan in place before the event opens.

9.1 Types of Shelter

Shelter Type	Description	Cooling Capacity	Recommended Use
Natural Shade (Trees / Vegetation)	Dense tree canopy or hedgerow providing overhead and lateral sun protection.	Moderate: reduces solar radiation; limited control of air temperature.	Excellent supplement to built structures. Holes with mature tree-lined fairways should be identified and communicated to players and caddies.
Open-Sided Shade Structures / Canopies	Tensile fabric or metal canopy structures providing overhead shade without enclosed walls.	Moderate: significant reduction in radiant heat; allows air circulation.	Primary shelter for spectators along fairways and at tee boxes. Minimum 1 per 3 holes in high-heat conditions.
Ventilated Tented Structures	Enclosed or semi-enclosed tents with large mesh side panels and/or fans or ventilation units.	Good: reduces solar radiation and air temperature by 3–6°C with air movement.	Midpoint cooling stations, halfway houses, and medical stations. Suitable for extended rest breaks.
Air-Conditioned Structures (Temporary)	Enclosed structures with mechanical air conditioning (portable or fixed units).	Excellent: can maintain internal temperature at 20–24°C regardless of external conditions.	Medical facility, dedicated athlete recovery areas, and vulnerable group refuge zones. Mandatory at WBGT >32°C.

Shelter Type	Description	Cooling Capacity	Recommended Use
Air-Conditioned Permanent Buildings	Clubhouse, hospitality suites, locker rooms, and other permanent cooled facilities.	Excellent.	Primary refuge in extreme heat events. Players and caddies should have unimpeded access at all times. Spectator access should be communicated via PA and app.
Emergency Cooling Pods / Containers	Pre-positioned insulated containers with ice and cooling equipment for on-course emergency use.	High for emergency management.	Positioned at identified high-risk locations (exposed holes, long walks between tees). Used when a person requires immediate cooling before medical team arrival.

9.2 Shelter Location Principles

The following principles should guide shelter placement at all golf events in heat-risk environments:

- Distribute shade structures at regular intervals throughout the course — spectators walking the full course should never be more than 300 metres from a shaded resting area.
- Prioritise the most exposed holes: identify holes with minimal natural tree cover, long distances between tee and green, and south-facing or west-facing orientations that maximise afternoon sun exposure.
- Position cooling stations at all tee boxes on exposed holes where players and caddies wait between shots — these are periods of reduced movement and increased radiant heat absorption.
- The medical centre, cold water immersion facility, and primary emergency cooling station must be accessible by vehicle from all points on the course within a target response time of under 10 minutes.
- Air-conditioned facilities must be clearly signposted from all spectator entry points, prominently featured on the event course map, and announced regularly via the public address system during high-heat periods.
- Halfway houses and on-course refreshment stations must always be covered and, where possible, equipped with fans or misting systems to provide active cooling in addition to shade.

9.3 Minimum Shelter Standards by WBGT Level

WBGT Level	Minimum Shelter Requirement
<28°C (Low)	Natural shade or open canopy structures at spectator assembly areas. Permanent buildings accessible.
28–30°C (Moderate)	Shade structures at all tee boxes on exposed holes. Halfway house shaded and stocked with cold fluids. Misting fans at key spectator areas.
30–32°C (High)	Air-conditioned or well-ventilated enclosed cooling areas open to all participants. Medical cooling facility operational. Misting stations on all exposed holes.
>32°C (Very High / Extreme)	Air-conditioned* refuge mandatory for vulnerable groups. Emergency cooling stations pre-positioned on course. All spectator areas shaded with active cooling. Locker rooms/permanent buildings open to players and caddies at all times.

* An important consideration is the placement of air-conditioning units and, specifically, where their exhaust heat is released. While indoor cooling provides essential relief in hot, humid environments, the heat expelled by compressors can unintentionally raise temperatures in nearby outdoor areas if not carefully managed. If this waste heat is vented toward walkways, seating zones, or work areas used by players, caddies, volunteers, or spectators, it can create localized “hot spots” that worsen thermal stress rather than alleviate it. Ensuring that air-conditioning systems dissipate heat away from public or operational spaces is therefore a key part of responsible event planning and heat-risk mitigation.

i	Good to know — Shelter
•	Spectators should never be more than 300 metres from a shaded resting area in high-heat conditions.
•	Air-conditioned facilities are mandatory for vulnerable groups when WBGT exceeds 32°C.
•	The medical centre and cold-water immersion facility must be vehicle-accessible from all course locations within 10 minutes.
•	Halfway houses and on-course refreshment stations must always be covered and, where possible, equipped with misting fans.
•	Pre-position emergency cooling stations on the most exposed holes to enable immediate first-response cooling before medical team arrival.
•	Communicate all shelter locations clearly via PA announcements, event app, course maps, and signage.

10. Cooling Remedies and Prevention: On-Course Measures

A comprehensive suite of cooling and prevention measures should be planned, deployed, and communicated to all event participants before and during the event. These measures operate on two levels: course-level infrastructure (water spray systems, ice coolers, shade) and individual athlete-level interventions (neck coolers, cold wet towels, pre-cooling strategies). Evidence from sports medicine research consistently shows that combining multiple cooling modalities produces better outcomes than any single intervention alone.

10.1 Ice Coolers and Cold Beverage Stations

Access to cold fluids is one of the most critical prevention tools for heat illness. Cold fluids (4–10°C) not only address dehydration but also provide internal (core) cooling when ingested and reduce thermal discomfort. Event organisers should:

- Position insulated ice coolers containing cold water and electrolyte drinks at every tee box and at green-to-tee walkways throughout the course. In tropical environments, this means 18 stations minimum.
- Ensure coolers are stocked with both water and electrolyte beverages. In high-heat rounds exceeding 2 hours, electrolyte replacement is essential to prevent hyponatraemia.
- Provide ice slurry drinks (crushed ice mixed with water or sports drinks) at the halfway house and all major spectator areas — ice slurry ingestion has been shown in research to reduce core temperature elevation more effectively than cold water alone.
- Offer ice for direct cooling applications (in bags or cups) at all on-course stations, separate from drinking supply.
- Maintain cooler temperatures: ice coolers should be replenished at minimum twice per day and checked hourly during extreme heat conditions to ensure cold chain integrity.
- Include a mobile ice resupply service (via cart or support vehicle) to maintain stations during play without interrupting the round.

10.2 Water Spray Systems and Misting

Heat-management strategies at golf events must be grounded in both environmental science and practical application. Water-spray and misting systems must also be applied with a clear understanding of when they genuinely cool the body and when they may unintentionally increase heat strain. Their effectiveness depends heavily on both water temperature and environmental humidity. Cooling occurs primarily when the water is sufficiently cold to draw heat away from the skin, or when evaporation is possible. However, in very humid tropical conditions—where sweat already struggles to evaporate—adding warm or ambient-temperature mist can actually accelerate heat gain, especially when combined with fanning that pushes warm, moisture-laden air across the skin. Recent modelling work, including studies from Ollie Jay’s research group, highlights that misting and fanning strategies must be carefully matched to environmental conditions and population characteristics to avoid counterproductive outcomes. Therefore, misting systems should be used selectively, ensuring the water is cool and the surrounding microclimate supports net heat loss rather than inadvertently increasing thermal load.

- Install fine-mist fan systems at all major spectator gathering areas, including the first tee, 18th green viewing areas, and half-way houses. Misting fans should operate continuously when WBGT exceeds 28°C.
- Provide hand-held water spray bottles (filled with cold water) at all on-course ice cooler stations for players and caddies to use during play — spraying the face, neck, and forearms provides rapid localised cooling.
- Consider portable cooling fans at tee boxes on exposed holes — research demonstrates that air movement combined with skin wetting (fan + wet skin) produces cooling comparable to ice towel application.
- In tropical environments where humidity limits evaporation, prioritise higher-flow water misting (larger droplets) over ultrafine mist, as direct contact with cool water provides conductive cooling even when evaporation is limited.
- Ensure adequate drainage or non-slip surfaces around all misting areas to prevent falls.

10.3 Shade Structures and On-Course Infrastructure

(See also Section 9 — Shelter.) In addition to primary shelter structures, the following on-course shade measures are recommended for high-heat events:

- Provide golf umbrellas for player and caddie use on exposed holes — large UV-protective umbrellas (minimum 120 cm diameter, UPF 50+) reduce radiant heat load significantly during waits at tee boxes and between shots.
- Position temporary shade sails or pop-up canopies at the most exposed tee boxes and within large spectator gallery areas where permanent shade is unavailable.

- Use light-coloured or reflective canopy materials where possible — dark colours absorb radiant heat and increase temperature under the structure.
- On-course marshals and officials should be provided with personal shade (hats with wide brims, UV-protective clothing) and scheduled rest rotations in shaded areas every 90 minutes during Very High or Extreme heat conditions.

10.4 Athlete-Specific Cooling Measures

Athletes (players and caddies) engaging in sustained physical activity require targeted, personal cooling interventions that can be applied during play without significantly interrupting competition. The following measures are supported by current sports medicine evidence and are recommended for all events where WBGT is expected to exceed 28°C:

10.4.1 Neck Coolers

Neck cooling collars or ice-filled neck wraps are a practical, competition-legal, and effective tool for reducing thermal discomfort and attenuating core temperature rise during sustained physical activity. Research demonstrates that cooling the neck reduces skin temperature at the neck and improves perceived thermal comfort, which in turn can support sustained exertion under heat stress.

- Provide reusable cooling collars (phase-change material or ice/gel type) to all players and caddies at events where WBGT is expected to exceed 28°C.
- Neck coolers should be pre-chilled and available at the first tee; replacement units or refill ice should be available at every 6-hole interval.
- Players may wear cooling collars between holes and during tee-box waits without rules implications. Officials should be briefed accordingly.
- Important: While neck cooling provides meaningful thermal comfort and reduces perceived exertion, it should not be treated as a substitute for whole-body cooling in heat stroke management. In EHS, cold water immersion remains the essential intervention.

10.4.2 Cold Wet Towels

Cold wet towels applied to large skin surface areas — particularly the face, neck, forearms, and thighs — provide both conductive and evaporative cooling and are among the most practically deployable cooling tools at golf events. Research published in sports medicine journals demonstrates that both ice towels and fan-assisted wet skin cooling reduce core temperature rise by approximately 0.5°C compared to no cooling during sustained activity.

- Pre-soak and chill large terry-cloth towels in ice water; maintain in insulated coolers at all on-course stations.

- Provide a minimum of two wet towels per player and caddie at the start of high-heat rounds; rotate with fresh chilled towels at each halfway house and at designated mid-course cooling stations.
- Encourage players and caddies to apply wet towels to the neck, forearms, and thighs during waits and between holes.
- In extreme heat, combine cold wet towels with fan airflow for maximum evaporative cooling effect (FANwet strategy) — this approach has been validated in tennis research and is directly applicable to golf rest intervals.

10.4.3 Ice Vests and Pre-Cooling

Ice-cooling vests (worn before or during play) reduce skin temperature and cardiovascular strain without reducing muscle temperature. Pre-cooling with ice vests prior to commencing play has been shown to reduce the rate of core temperature rise during sustained exercise, improving endurance performance and safety in hot conditions.

- Provide ice vests for use during warm-up and in the period between leaving the locker room and commencing play for all athletes at events where WBGT is expected to exceed 30°C.
- Mid-round application of cooling vests (e.g., during the halfway house break) can be beneficial in extending thermal tolerance through the back nine.
- Ice vests should be available for caddies, not only players — caddies typically carry heavier loads and walk further distances than their players.

10.4.4 Cold Water Immersion for Emergency Cooling

A portable cold-water immersion (ice bath) tub must be positioned at the medical facility at all events held in heat-risk environments. This is not an optional extra — it is a potentially lifesaving piece of equipment. In the event of exertional heat stroke, full-body cold water immersion is the only intervention capable of reducing core temperature at the speed required to prevent irreversible organ damage.

- Maintain a minimum of one portable immersion tub (capacity: adult full-body immersion) filled with water at 2–5°C at the medical facility throughout the event.
- Ensure a sufficient ice supply for the immersion tub is maintained throughout the entire event day — the same ice supply used for cooling stations must not deplete the medical reserve.
- The immersion tub should be operationally ready (filled, chilled, and staffed) at all times when play is in progress — not only during peak heat hours.

10.5 Prevention Strategies for Specific Groups

Group	Key Prevention Measures
Players	Acclimatise 10–14 days. Use neck coolers and wet towels during play. Pre-cool with ice vest. Drink 400–800 ml per hour. Wear light, UV-protective, moisture-wicking clothing. Apply SPF 30–50 sunscreen. Wear vented hat with wide brim.
Caddies	All player measures apply. Mandatory rest rotation every 90 min during Very High/Extreme heat. Shaded rest areas with cold fluids at all tee boxes. Consider reduced bag-carrying loads during extreme conditions. Prioritise caddie access to cooling collars and ice.
Officials / Marshals	Scheduled 30–45 min shaded rest rotations. Provide cooling collar and wet towel access. Sun-protective uniform required (hat, UV shirt). Hydration stations accessible at all marshal posts. Direct reporting line to Medical Officer.
Spectators	Clearly communicated shelter locations. Misting zones and cold-water stations throughout spectator areas. Regular PA announcements with heat guidance. Sunscreen kiosks. Prioritise access to air-conditioned areas for elderly and vulnerable spectators.
Volunteers / Event Staff	Minimum 20-min shaded break every 2 hours during high heat. Cold fluids and cooling aids at all volunteer stations. Pre-event heat awareness training. Buddy system for identifying colleague distress.
Media / Broadcasters	Access to on-course cooling stations. Right to withdraw from exposed positions during extreme heat. Air-conditioned press facilities maintained throughout the event.

i Good to know — Cooling Remedies and Prevention

- Combining multiple cooling modalities (neck cooler + wet towel + cold fluids + shade) produces significantly better outcomes than any single intervention alone.
- Ice slurry drinks cool from the inside — they are more effective at reducing core temperature than cold water alone and should be provided at the halfway house.
- Cold wet towels applied to the neck, forearms, and thighs reduce core temperature rise by ~0.5°C during sustained activity — a meaningful and readily deployable intervention.
- Ice vests for pre-cooling before play and during the halfway house break are recommended at all events where WBGT exceeds 30°C.
- The cold-water immersion tub is a lifesaving piece of emergency equipment — it must be filled, chilled, and operational at all times during play, with a dedicated ice reserve.
- Caddies often have higher heat exposure than players — ensure all cooling measures are equally accessible to caddies, not only players.
- Regular PA announcements reminding spectators of cooling stations and shelter locations during high-heat conditions are a simple but effective preventive measure.

11. Strategies for Reducing Risk of Heat Illness

Risk reduction requires a systematic, multi-layered approach encompassing scheduling, education, on-course provision, and emergency preparedness. The following strategies apply to all events held in heat-risk environments and should be implemented in full wherever conditions warrant.

11.1 Pre-Event Strategies

- Conduct a formal heat risk assessment based on historical meteorological data for the event location and time of year.
- Provide specific education on heat risk and available mitigations to all participants — players, caddies, officials, volunteers, media, and spectators — in advance of the event.
- Issue pre-event guidance on acclimatisation, hydration, clothing selection, and personal heat management to all registered participants.
- Confirm medical provision is appropriate for the anticipated heat risk, including cold water immersion equipment and adequate ice supply.
- Test all shelter, misting, and cooling infrastructure before the event opens.
- Brief all event staff and medical personnel on heat illness recognition, response protocols, and their specific role in the heat management plan.

11.2 Event Day Strategies

- Obtain WBGT readings beginning at 6:00 am and at minimum every 30 minutes throughout the event day. Increase frequency to every 15 minutes when WBGT exceeds 30°C.
- Display the current WBGT and corresponding risk level prominently on scoreboards, the event app, and the first tee area.
- Apply the IOC colour-coded heat flag system (or equivalent recognised system) to communicate heat risk to all persons on the course:
 - Green Flag: WBGT <28°C — Low risk
 - Yellow Flag: WBGT 28–30°C — Moderate risk; enhanced hydration required
 - Orange Flag: WBGT 30–32°C — High risk; mandatory rest breaks and cooling measures
 - Red Flag: WBGT 32–35°C — Very High risk; voluntary withdrawal permitted; play suspension under consideration
 - Black Flag: WBGT >35°C — Extreme risk; suspend play

- Provide cooled water and electrolyte drinks at every tee box and at fairway stations throughout the course.
- Consider pre-cooling strategies for athletes prior to play: ice vests, cold towels, and cold fluid ingestion before departing the locker room.
- Maintain hydration intake of approximately 600–1000 ml per hour during high heat, with electrolyte replacement for rounds exceeding 2 hours.
- Promote light-coloured, loose-fitting, UV-protective, moisture-wicking clothing. Consider permitting mid-round clothing change during Very High or Extreme heat conditions.
- Ensure all athletes wear a vented hat with a wide brim and apply sunscreen (SPF 30 minimum, SPF 50 recommended) before play.
- Avoid stimulants including caffeine during high heat conditions, as these impair thermoregulation.
- Persons with current respiratory or gastrointestinal illness should seek medical advice before commencing play, as infection impairs normal temperature regulation.

11.3 Clothing and Equipment Guidance

Item	Recommendation
Shirt / Upper body	Light-coloured, loose-fitting, moisture-wicking. UV-protective fabric (UPF 30+) preferred. Avoid dark colours and non-breathable fabrics.
Trousers / Shorts	Light-coloured, breathable fabric. Shorts permitted in high heat on tournament days where rules allow.
Hat	Vented hat with wide brim (minimum 7 cm) and mesh crown. Avoid solid-top caps that trap heat above the head.
Sunscreen	SPF 30 minimum; SPF 50 recommended for tropical/high UV index environments. Alcohol-based rather than oil-based for better compatibility with moisture-wicking fabrics. Reapply every 2 hours.
Sunglasses	UV400 protection or optical grade 3 minimum.
Footwear	Breathable, well-ventilated footwear. Avoid dark-coloured rubber or synthetic soles that absorb heat from hot artificial surfaces.

i Good to know — Strategies During Events

- WBGT should be measured every 30 minutes from 6:00 am, increasing to every 15 minutes when WBGT exceeds 30°C.
- The IOC colour-coded flag system (Green/Yellow/Orange/Red/Black) provides a simple, universally understood risk communication tool for all persons on the course.
- Pre-cooling strategies (ice vest, cold towels before play) can meaningfully reduce the rate of core temperature rise during competition — particularly beneficial for exposed back-nine holes in afternoon conditions.
- A mid-round clothing change during Very High or Extreme heat conditions reduces sweat-soaked clothing that paradoxically traps heat rather than allowing evaporation.
- Stimulants including caffeine should be avoided during high-heat conditions — they increase metabolic heat production and can impair thermoregulation.

12. Roles and Responsibilities

Role	Core Responsibilities	Actions Under High Heat Conditions
Tournament Director	Overall decision-making authority; may suspend play; coordinates all stakeholder communications.	Issues player/public heat communications; decides on play suspension or schedule changes; activates emergency protocol.
Medical Officer / IGF Medical Delegate	Monitors WBGT; advises TD on thresholds; manages medical response for affected persons.	Triggers escalation protocol; coordinates with EMS; manages cold water immersion; monitors all EHS cases.
Championship Director	Supports TD on scheduling and logistical decisions.	Co-signs play suspension decisions; manages contingency scheduling and broadcast implications.
Safety Officer	Ensures cooling equipment availability; identifies shelters; briefs marshals on heat protocols.	Activates indoor refuges; deploys additional cooling stations; supports crowd management during high heat.
Player Liaison	Communicates WBGT conditions and any action guidance to players and caddies.	Issues individual player notifications; manages voluntary withdrawal process; ensures cooling aids are accessible.
Medical First Responders (On-Course)	Patrol course for persons in distress; initiate first response to heat illness.	Apply cooling protocols on-site; summon EMS; accompany patient to medical facility; document all cases.
Marshals / Spotters	Course management; crowd control; identification of distressed individuals during play.	Report any player or spectator showing signs of heat illness to medical officer immediately. Do not leave an affected person unattended.

i Good to know — Roles and Responsibilities

- The Tournament Director has final authority on play suspension — but must consult the Medical Officer before any decision.
- Designate a named WBGT Monitor before the event begins — do not leave this as an unassigned task.
- The Player Liaison is the primary communication channel with players and caddies; all heat-related guidance should flow through this role.
- Marshals and spotters on exposed holes are often the first to identify a player or spectator in distress — briefing this group on heat illness recognition is essential.
- All role assignments must be confirmed and briefed at the pre-event safety meeting, at least 48 hours before play begins.

13. Education on Heat Levels

Education is a primary, low-cost risk-mitigation control. The IGF identifies a lack of heat awareness and proper education on mitigation measures as a distinct risk factor for heat illness at golf events, so all education described below should be delivered before exposure wherever possible and reinforced during the event.

At a minimum, a structured heat briefing should be delivered:

- at the Captains' / Team Managers' meeting and the Players' meeting prior to the first competitive round;
- at the daily officials' and volunteers' briefing; and
- continuously during the event via on-course signage, the published heat-level for the day, and announcements when the heat level escalates.

Therefore, the IGF recommends that specific education on risk and available mitigations be provided to participants in advance of the tournament, and the IOC consensus statement notes that heat-risk information must be communicated to all stakeholder groups — national federations, the sport's officials, medical staff, and media.

13.1 Who should be educated, and on what

Championship Committee, Tournament Director and Officials, Match Officials/Referees, and medical/first-aid personnel should be educated on:

- (a) the recognition of heat-stress illness, its spectrum from heat exhaustion to exertional heat stroke (EHS), and first-response actions (see Appendix C);
- (b) the heat-stress management interventions available at this event (cooling stations, hydration provision, schedule modification, suspension);
- (c) this Heat Policy in full, including who holds the authority to escalate the heat level or suspend/cancel play;
- (d) the use and interpretation of the daily heat-risk assessment, including where and when readings are taken and where data are recorded; and
- (e) their specific role in the evacuation and medical-response plan

Players, caddies, and Match Officials should hold a basic working understanding of:

- (a) the heat-level scale in use and what each level means for them;
- (b) the personal mitigation measures expected at each level;
- (c) how heat levels and any suspension will be communicated on course.

14. Communication Protocol

Clear, timely, and consistent communication is essential to maintaining the safety and confidence of all event participants when heat risk escalates. The following protocol should be activated when WBGT reaches 28°C or above.

14.1 Communication Channels

- Official event app push notification — primary channel for players, caddies, and media.
- On-course public address announcements — for spectators and general public. Recommended frequency: every 30 minutes when WBGT exceeds 28°C.
- Scoreboard and course signage — display current WBGT reading and colour-coded risk level at all times during play.
- Heat flag system — physical flags displayed at the first tee, halfway house, and at least three distributed points on the course to communicate current risk level visually.
- Player liaison communication — direct communication to player representatives and team captains.
- Media briefing — Tournament Director issues a brief statement to accredited media when play is suspended or under consideration for suspension.

14.2 Key Messages by WBGT Level

WBGT Level	Flag	Public Message
<28°C	Green	Conditions are within safe limits. Stay hydrated and seek shade when resting.
28–30°C	Yellow	Heat stress monitoring is active. All participants are advised to increase fluid intake and use shade where available. Cooling stations are open throughout the course.
30–32°C	Orange	Heat stress has reached the High level. Mandatory rest breaks are in effect. Cooling stations, ice, and misting areas are available. Medical staff are on active patrol. Persons with health concerns are advised to use shaded rest areas.
32–35°C	Red	Heat stress has reached the Very High level. The Tournament Director and Medical Officer are reviewing the situation. Players may withdraw without penalty. All persons are strongly advised to seek shade or air-conditioned areas. Further announcements will follow.
>35°C	Black	Heat stress has reached the Extreme level. Play is suspended. All persons must seek shelter or air-conditioned areas immediately. Emergency measures are in effect. Follow instructions from event staff.

i Good to know — Communication

- Pre-draft and approve all threshold-based public messages before the event begins — delays in communication during high-heat emergencies can have serious consequences.
- PA announcements reminding spectators of cooling stations and shelter locations should be made at minimum every 30 minutes when WBGT exceeds 28°C.
- The heat flag system provides a universally accessible, language-independent visual risk indicator — it is particularly valuable for international events with multilingual audiences.
- Media statements regarding play suspension should be issued by the Tournament Director only.
- Do not wait for symptoms to emerge before communicating elevated heat risk to all participants.

15. Pre-Event Planning Checklist

Use the following checklists to confirm all necessary preparations are in place before the event opens. All items should be signed off by the responsible officer at least 48 hours before play begins.

Medical and Safety Preparation	
☐	Appointed a named WBGT Monitor with access to calibrated on-site monitoring equipment.
☐	Reviewed historical WBGT/heat index data for the event location and identified likely risk periods.
☐	Briefed Medical Officer and safety team on WBGT thresholds and escalation protocol.
☐	Confirmed cold water immersion (ice bath) equipment is on-site, operational, and ice supply is adequate for full event days.
☐	Confirmed medical facilities are appropriately staffed and stocked for the anticipated heat conditions.
☐	Confirmed EMS vehicle is pre-positioned and response time to all course locations is within target.
☐	Deployed WBGT monitors to representative course locations; tested and calibrated.
☐	Identified and briefed course spotters for high-heat days when WBGT is expected to exceed 32°C.
☐	Collected pre-event medical declarations from players and caddies with known conditions.
☐	Confirmed all medical staff are trained in exertional heat stroke recognition and cold-water immersion protocol.

Cooling Infrastructure and Supplies

☐	Ice coolers stocked with cold water and electrolyte drinks at all tee boxes and on-course stations.
☐	Ice slurry drinks and additional ice supply confirmed at halfway house.
☐	Misting fans installed and operational at all major spectator areas.
☐	Shade structures installed and confirmed at all required locations per Section 9 shelter plan.
☐	Air-conditioned refuge areas open and accessible; confirmed for vulnerable group access.
☐	Neck coolers, cold wet towels, and cooling vests procured and available for players and caddies.
☐	Ice supply sufficient for immersion tub, on-course stations, and athlete cooling for full event days.
☐	Mobile ice resupply service confirmed and scheduled for each event day.
☐	Hand-held water spray bottles available at all on-course cooling stations.
☐	Emergency cooling pods pre-positioned at identified high-risk holes.

Communications and Logistics

☐	Drafted and approved threshold-based public messages for each WBGT level (28, 30, 32, 35°C).
☐	Confirmed PA system, event app, and scoreboards can display real-time WBGT and heat flag status.
☐	Heat flags (Green/Yellow/Orange/Red/Black) procured and distribution plan confirmed.
☐	Flag display locations confirmed: first tee, halfway house, and minimum three course locations.
☐	Briefed player liaison on communication protocol for players and caddies.
☐	Issued pre-event participant communication including hydration guidance, clothing recommendations, and cooling station locations.
☐	Published shelter and cooling station map in event app and printed course guides.
☐	Confirmed media briefing arrangements for play suspension scenarios.
☐	Confirmed radio/phone communication chain between WBGT Monitor, Medical Officer, and Tournament Director.

Decision-Making Readiness

☐	Confirmed the decision-making chain for play suspension: Medical Officer → Tournament Director / Championship Director.
☐	Confirmed no-penalty voluntary withdrawal arrangements for players wishing to withdraw citing heat.
☐	Reviewed local regulatory requirements and confirmed compliance obligations.
☐	Planned contingency scheduling for delayed start, extended break, or suspended play.
☐	Agreed WBGT threshold at which a senior team meeting will be convened (recommended: WBGT 32°C).
☐	Confirmed tropical/extreme weather contingency plan with all key personnel.

i Good to know — Pre-Event Checklist

- All checklist items should be completed at least 48 hours before play begins.
- No-penalty withdrawal for players citing heat must be confirmed in writing before the event opens.
- The decision-making chain must be confirmed and communicated to all relevant parties in writing.
- Ice supply should be sized for the worst-case heat scenario across all event days — do not plan based on average conditions.
- Test all PA, app, and signage systems in a live trial run before the event opens.

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Appendix A — Golf-Specific Heat Risk Index and Flag System

Adapted from IOC guidance and updated to reflect current evidence. Recommended actions are specific to the golf event context and are intended as a minimum standard. Tournament directors retain discretion over all decisions.

WBGT	Flag	Risk Level	Players / Caddies	Medical Team	Tournament Director	Spectators
<28°C	Green	Low	No restriction. Standard hydration.	Normal monitoring.	Standard monitoring.	No restriction.
28–30°C	Yellow	Moderate	Increase fluids; use shade; electrolytes.	Enhanced monitoring; alert vulnerable persons.	Ensure all cooling stations stocked.	Hydration stations open; shade available.
30–32°C	Orange	High	Mandatory rest breaks; all cooling aids; neck coolers and wet towels.	Active patrol; ice bath ready; cooling stations operational.	Review tee times; issue advisory; confirm shelters.	Misting zones and shaded areas open; PA announcements.
32–35°C	Red	Very High	Voluntary withdrawal without penalty; limit exertion; use all	Activate heat illness protocol; full emergency readiness.	Consult Medical Officer; actively consider play suspension.	Strongly advise air-conditioned areas; PA every 15 min.

WBGT	Flag	Risk Level	Players / Caddies	Medical Team	Tournament Director	Spectators
			cooling aids.			
>35°C	Black	Extreme	Strongly advised not to play. Voluntary withdrawal without penalty.	Full emergency protocol; multiple casualty preparation.	Suspend play; activate emergency communications.	Mandatory shelter; clear all exposed areas.

* No-penalty withdrawal applies from WBGT 32°C (Red Flag) onwards — confirm with rules officials before play begins.

** Heat flags should be displayed at the first tee, halfway house, and minimum three distributed points on the course.

i Good to know — Heat Risk Index	
•	Always use the highest available WBGT reading from on-course monitors as the governing threshold.
•	No-penalty voluntary withdrawal applies from Red Flag (WBGT 32°C) onwards — confirm with rules officials.
•	At Black Flag (WBGT >35°C), the Medical Officer should recommend suspension regardless of other considerations.
•	WBGT can rise rapidly during the course of a day — monitor continuously once above 28°C.
•	The flag system provides a language-independent communication tool — particularly valuable at international events.

Appendix B — Quick Reference: Cooling Measures by WBGT Level

This summary table provides a quick operational reference for event day cooling measure deployment.

Cooling Measure	<28°C Green	28–30°C Yellow	30–32°C Orange	32–35°C Red	>35°C Black
Ice cooler stations (all tee boxes)	✓ Stocked	✓ Stocked	✓ + Electrolytes	✓ + Ice slurry	✓ + Ice slurry
Cold wet towels (players/caddies)	Optional	Recommended	✓ Highly Recommended	✓ Highly Recommended	✓ Highly Recommended
Neck coolers (players/caddies)	Optional	Recommended	✓ Highly Recommended	✓ Highly Recommended	✓ Highly Recommended
Ice vests (pre-cooling)	Optional	Recommended	✓ Recommended	✓ Highly Recommended	✓ Highly Recommended
Misting fans (spectator areas)	Optional	✓ Operational	✓ Operational	✓ Operational	✓ Operational
Hand-held spray bottles	Optional	✓ Distributed	✓ Distributed	✓ Distributed	✓ Distributed
Air-conditioned refuge (open)	Open	Open	✓ Announced	✓ Highly Recommended	✓ Highly Recommended
Cold water immersion tub	Ready	Ready	✓ Operational	✓ Operational	✓ Operational
Emergency cooling pods (course)	Optional	Optional	✓ Deployed	✓ Deployed	✓ Deployed
Sunscreen kiosks / stations	✓ Available	✓ Available	✓ Promoted	✓ Promoted	✓ Promoted

Legal Disclaimer

IMPORTANT NOTICE – PLEASE READ CAREFULLY

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This Guide is provided solely for informational, educational and reference purposes only, and shall serve as a recommended framework. It does not, and is not intended to, constitute legal, medical, regulatory, or professional advice of any kind. It should not be treated as a substitute for qualified professional guidance in any of the foregoing fields or serve as a replacement of qualified healthcare professionals. Event organizers, safety personnel, and affiliated bodies should exercise their own professional judgment in evaluation of specific needs. Any reliance on the terms contained in this document shall be at such party's own risk.

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In all circumstances, applicable national laws, regulations, and local authority requirements take precedence over the recommendations set out in this Guide. Where any provision of this Guide conflicts with, or falls short of, mandatory legal or regulatory requirements in the host jurisdiction, those legal or regulatory requirements shall prevail without exception. Event organizers are solely responsible for identifying and complying with all such obligations and are strongly advised to seek independent legal and regulatory counsel specific to their jurisdiction and event.

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Organizers are strongly advised to seek independent legal, medical, safety, and insurance counsel when implementing the recommendations or guidelines described herein. Nothing in this Guide should be taken as a representation that compliance with its recommendations will satisfy any specific legal obligation.



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