Heat Management Protocol

Introduction

This policy is written to support The School's responsibility to its students and staff in respect of living, working and playing in a tropical climate. It is predicated upon medical research published, best practice in international schools and takes into account The School's geographical position. The Heat Management Policy works in conjunction with the Sunsmart Policy and Child Protection and seeks to explain in clear terms why careful consideration of the risks and hazards associated with a tropical climate is important and how a policy can help. This said, school leaders, teachers, coaches and those working outside with children are charged with the responsibility to employ common sense and wise precaution in a climate where the weather changes very quickly and where the risks of potential illness are high. The Heat Management Guidelines have been developed to ensure that all students and staff at UWCSEA East Campus are protected from Heat-Related illness, ranging from heat cramps to exhaustion and potential heatstroke, a life-threatening emergency due to the body's inability to cool oneself due to extreme heat.

Background

Heat-Related Illnesses

When the body heats too quickly to cool itself safely, or when too much fluid or salt is lost through dehydration or sweating, body temperature rises and heat-related illness may develop. There are three stages of Heat-related illness that all staff teaching at UWCSEA needs to be aware of:

1. Heat Cramps are experienced from fluid loss due to heavy sweating and usually occur in the abdomen or legs.
2. Heat Exhaustion derives from prolonged exposure in hot conditions with high fluid loss due to heavy sweating and an elevated body temperature below 40 degrees Celsius (104 Fahrenheit).
3. Heat Stroke is a condition when the core body temperature is higher than 40 degrees Celsius (104 Fahrenheit) and is potentially fatal.

Heat Stroke is a serious condition, with complications involving the central nervous system that occur after prolonged exposure to high temperatures. Heat cramps and Heat Exhaustion can quickly turn to heat stroke if signs and symptoms are not recognised and treatment is not administered quickly.

Singapore has a hot and humid climate for most of the year, with the temperature and humidity combining to make the temperature feel considerably hotter.

Some sporting activities can continue in conditions of high temperatures if risk factors are identified and managed down. Special attention needs to be paid to members of the school community with causes for concern on account of their health. Other risk factors include poor hydration, high temperatures and humidity, excessive physical exertion, insufficient recovery time, and inappropriate uniform and clothes. Students new to the country and environment are particularly vulnerable. A combination of these risk factors elevates the chance of someone suffering from a heat-related illness.

Ambient Temperature

Medical Conditions	**Temperature**
Fatigue is possible with prolonged exposure and activity. Continuing activity could result in heat cramps.	26-32C 80–90F
Heat cramps and heat exhaustion are possible. Continuing activity could result in heatstroke	26-40C 90–105F
Heat cramps and heat exhaustion are likely. heatstroke is probable with continued activity	40-54C 105–130 F
Extreme danger — heat stroke is imminent	Over 54C Over 130 F

Signs and Symptoms of the three stages of Heat-Related Illness

Stage 1: Signs and Symptoms of Heat Cramps

1. Profuse Sweating;
2. Fatigue;
3. Thirst;
4. Muscle Cramps.

Stage 2: Signs and Symptoms of Heat Exhaustion

1. The signs and symptoms of Heat Cramps; and
2. Headache;
3. Dizziness and lightheadedness;
4. Weakness;
5. Nausea and Vomiting;
6. Cool Moist Skin;
7. Dark Urine

Stage 3: Signs and Symptoms of Heat Stroke

1.
2. Throbbing headache;
3. Dizziness and lightheadedness;
4. Lack of sweating despite the heat;
5. Red, hot, and dry skin;
6. Muscle weakness or cramps;
7. Nausea and vomiting;
8. Seizures;
9. Rapid, shallow breathing;
10. Unconsciousness;
11. Rapid heartbeat-strong or weak;
12. Confusion, disorientation, or staggering

Education and Prevention

Provide Staff Training (Annual):

1. Sunsmart Policy Guidelines;
2. Signs, symptoms and treatment of heat-related illnesses and Hyperthermia;
3. Risk factors associated with the onset of heat-related illnesses;
4. First Aid - All staff are First Aid trained

Educate students and parents regarding sun and heat exposure (Yearly)

1. Sun Protection Awareness through PE/PSE;
2. Banners/poster/screen campaign;

3. Education through the curriculum;
4. Make parents aware of our Sunsmart Policy and meet annually with PA.

Ensure students are protecting themselves (Daily)

1. The Junior school are required to wear sun hats;
2. The Middle school are recommended to wear sun hats;
3. Spare hats and water bottles made available;
4. Encourage the daily application of sunscreen in physical activity - sunscreen dispensers on the field and aquatics centre;

Encourage students to avoid dehydration (Daily)

1. Students to have water bottles in class, PE, activities and trips;
2. Students engaging in physical activity should be encouraged to drink 100 to 250ml of water every 20 minutes.

Ensure this policy is reflected in the planning of outdoor classes, activities, events and minor works projects (Yearly)

1. Tree planting for shade is actively considered and encouraged;
2. Current and future projects consider the use of shading;
3. Physically energetic sports, competitive games during the cooler periods of the day/months;
4. Musical, class photos, sporting events, trips planned for cooler months;
5. Junior School play time-limited to 20 minutes outside to reduce risk of heat illness

Monitor the weather and issue advice

1. Weather Station to monitor temperature and humidity on a real-time basis;
2. Temperature, humidity and measurements displayed

Adhere to the standard operating procedure

1. Ensure all staff are aware of the procedure;
2. Display standard operating procedure;
3. Ensure activity providers and external companies adhere to SunSmart guidelines

Heat Management Guidelines for Outdoor Sports and Activities

1. The Heat Index will be automatically calculated from the weather station. Daily readings from the weather station will be publicly available. Staff involved in outside activities need to check readings prior to engaging in these activities to be aware of the zone they are currently in.
2. PE Staff and Coaching Staff should monitor temperature on a regular basis and adjust activities based on \ the zone and the climate factors.
3. Staff who are on duty should make themselves aware of the Heat Index status.

Table of Required Actions

Heat Index Below 33℃	The following actions are standard practice for all UWCSEA East Outdoor Activities
1	The School shall provide adequate water supply at all teaching stations.
2	Staff should inform students to apply sun lotion before lessons, games and activities.
3	Students should be encouraged to wear hats in the High School and compulsory in the Junior School and Middle School for break, lunch and PE lessons
4	All athletes and students should bring water bottles to training and PE classes
5	Recommended water breaks every 30 minutes.
6	Where possible spend transitions, rest periods and direct teaching moments in shade provided around facilities.
7	Students that want to take a break should do so at any time. In the

	'Start of Lesson' protocol students are made aware of their right to take a break.
8	Staff to watch/monitor players carefully.

Level 1

Heat Index Between 33℃ & 40℃	As above PLUS
1	During competitive and training matches, students should be rotated out on a regular basis.
2	Staff identify students who present a higher risk of suffering from heat-related illnesses and provide these students with an alternative to training in the heat.
3	Staff should brief students of increased risk at beginning of practicesand lessons of increased heat illness risk within and above this zone.
4	Students showing signs and symptoms of heat-related illness should withdraw from the activity and be escorted to the nurse.
5	Recommended water breaks every 20 minutes.
6	The suggestion is that lessons take place in the shade as much as possible.
7	Modify training and/or games to allow for regular hydration and rest.

Level 2

Heat Index between 41°C & 54°C	As above PLUS
1	Staff should clearly brief students of extreme risk of heat illness within this zone and exclude students who have not hydrated throughout the day.
2	Recommended water breaks every 15 minutes.
3	Junior School outdoor activities cancelled.
4	Outside activities with a high physical exertion nature moved to shaded areas where possible or indoors.
5	Lessons should be moved to shaded areas or indoors where possible
6	Students showing signs and symptoms of heat-related illness should withdraw from the activity and be escorted to the nurse.
7	Electrolyte consumption should be encouraged and utilized for athletes practising and competing in this zone.
8	The maximum duration of exposure in this temperature is one hour.
9	Practices and or fixtures can be cancelled at the discretion of the Director of Sport and Activities / Manager of Health and Safety.

Level 3

Heat Index above 54°C	Heat Stroke Imminent & Extreme Risk
1	All non air conditioned activities are cancelled

Appendix - Further Notes for Training Purposes

The Heat Index

The Heat Index is an accurate measure of how hot it really feels when the effects of humidity are added to high temperature.

The UV Index in Singapore

The International UVI is a measure of the level of UV radiation. The values of the index range from zero upward. The higher the UVI, the greater the potential for damage to the skin and eye, and the less time it takes for harm to occur. World Health Organisation measurements place Singapore as VERY HIGH or EXTREME on the International UV Index all year round.

Other Heat Related Notes:

1. Heat emergencies can afflict any age patient, with or without underlying health problems, in a variety of ambient temperatures;
2. High temperatures, high humidity, and high exertion are often factors that lead to a heat emergency;
3. Heat emergencies are most common in elderly patients, infants and young children, obese patients, athletes, and other patients with underlying health problems;
4. Heat exhaustion is a circulatory system problem. It presents as hypovolemia. The patient has a normal or slightly elevated core temperature problem;
5. Heat stroke is a life threatening neurological problem. The patient has an extremely high core temperature problem;
6. 50% of heat stroke patients have hot, red, dry skin. 50% of heat stroke patients have hot, red, moist skin;
7. Many medications and illnesses compromise bodies ability to thermoregulate;
8. Water intake and urination frequency are key history findings to differentiate hyponatremia and heat exhaustion.