

Uniformed personnel beat the heat with hydration regimes, work-rest cycles

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Uniformed personnel across the Home Team and Singapore Armed Forces (SAF) already undergo measures to regulate their temperatures and protect them from heat stress, but these are constantly being reviewed.

In a statement on Thursday, the Ministry of Defence (Mindef) said soldiers currently undergo hydration regimes, such as water parades and ingesting ice slurries, and commanders have the flexibility to modify attire and load requirements for strenuous activities. The former refers to the supervised drinking of water.

Training schedules can also be tweaked to mitigate the risk of heat-induced injuries, with soldiers having a work-rest cycle based on the wet-bulb globe temperature, which takes into account the effects of humidity, sun angle

and solar radiation.

This is on top of the heat acclimatisation that soldiers go through when they enlist in basic military training, or when they undergo specialised courses or operations.

Mindef said it pays close attention to heat injuries across the SAF, and that units are required to report incidents daily.

“As global temperatures may rise further, the SAF will need to adopt a science-based approach to improve heat resilience and performance initiatives,” added Mindef, citing the launch of the Heat Resilience and Performance Centre in January.

The centre looks to innovate solutions that can boost human resilience against heat stress, and is a tripartite collaboration between the SAF, the National University of Singapore and DSO National Laboratories.

Some solutions being studied include better-designed equipment



SAF soldiers in their hybrid uniform, designed to provide better comfort and heat dissipation. Mindef said commanders have the flexibility to modify attire and load requirements for strenuous activities. PHOTO: MINISTRY OF DEFENCE

and clothes that can dissipate heat, with Mindef seeking to glean insights that can improve current equipment, including the SAF hybrid uniform introduced in 2018 and the redesigned load bearing system that came out in 2020.

Mindef said: “The collective measures by the SAF have brought down the occurrence of serious

heat injury cases over the last decade.

“We will continue to monitor the ambient temperature and incidence of heat injuries, and will adjust our measures as necessary to keep training safe.”

Meanwhile, the Ministry of Home Affairs (MHA) said in a separate statement that its various de-

partments develop their own preventive measures to suit their operational needs, adding that uniform designs and materials are regularly reviewed to ensure their effectiveness in heat regulation.

A new operational police uniform was introduced in 2018. It is made from fabric that dries faster and is more efficient at absorbing

moisture.

That same year, the Singapore Civil Defence Force (SCDF) started allowing front-liners to use the corporate polo T-shirt as standard attire. It also introduced a new fire-fighting suit in 2023 that gives better protection from extreme heat and environmental conditions. Its highly breathable fabric layers also reduce heat stress.

Prison officers, too, have uniforms made of a cool and breathable fabric that helps mitigate the heat.

Across the board, the different Home Team departments also observe wet-bulb globe temperature readings, as well as hydration regimes.

In the case of the Singapore Prison Service, inmates have been reminded to stay hydrated.

The SCDF said it has increased the frequency of water breaks during training, adding that its fire-fighters are rotated during fire-fighting operations to ensure adequate rest and hydration.

Firefighters who display signs of heat injury are treated through the Responders’ Performance Vehicle, introduced in 2020.

The vehicle has portable forearm immersion chairs, deep cooling chairs and an automated cold water immersion.

MHA said: “The health and safety of our Home Team officers, including our national servicemen, is of paramount priority.”

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