



**International Committee of Occupational Health  
Scientific Committee on Thermal Factors (SCTF)**

**4<sup>th</sup> Meeting Report**

**Time:** Thursday, 3 June 2021, 7:00 a.m. – 8:30 a.m. GMT

**Venue:** Virtual Meeting on Zoom

**Participants:** Annex I

## 1. Welcome and Introduction

1.1 Jason Lee welcomed the attendees and provided updates to the committee:

1.1.1. Our last meeting that was scheduled for end 2020 was skipped due to confluence of schedules.

1.1.2. Pearl Tan from Singapore was introduced to the committee. She is the project manager of Project Heat-safe in Singapore.

1.2 The meeting agenda was as follows:

1.2.1 Presentation by Tord Kjellstrom on *'Heatshield EU Progress on Heat at Work'*.

1.2.2 Presentation by Yuri Hosokawa on *'Prehospital management of exertional heat stroke at sport competitions by the IOC Heat Expert Group'*.

1.2.3 Presentation by Seichi Horie on *"Decisions at ICOH Board online meeting on April 29, 2021"*.

1.2.4 Presentation by Jason Lee on *"Call for collaboration on study: Heat Stress among Healthcare Workers during COVID-19 Pandemic"*.

## 2. Tord Kjellstrom, *'Heatshield EU Progress on Heat at Work'*

2.1 [Link to presenter's deck](#)

2.2 Heatshield EU has been extended by one year due to the COVID-19 pandemic.

2.3 There is still a lack of studies from climate data to quantified heat exposure data to access impacts on productivity due to heat.

2.4 Bruno Lemke from Health Environment International Trust (HEIT) has found a correlation across most popular heat indices. Tord encouraged the committee to lead work in comparing outcomes of studies conducted using different heat indices.

2.5 Heatshield heat protection information materials: <https://www.heat-shield.eu/heat-shield-infographics>

2.6 Analysis from workplace heat impacts must link back to the overarching aim of reducing greenhouse gas emissions.

2.7 Discussions:

2.7.1 Question from Jason Lee: Have you tried to run correlation analyses on physiological-based climate indices with climatic-based indices?

2.7.2 Answer from Tord: Referring to Bruno's analysis on comparing heat stress indices, under 33°C in the shade, there is a strong correlation between UTCI and WBGT.

2.7.3 Question from Hsiao-Yu Yang: Do you need help to update and add information to the ClimateCHIP database?

2.7.4 Answer from Tord: Yes, local data should be the next set of data of interest to add to the ClimateCHIP database to attract local interest.

2.7.5 Follow up question from HY: We can contribute global gridded productivity data that corresponds to climate data on ClimateCHIP.

2.7.6 Follow up from JL: That is a good proposal – to provide an “outcome measure” which is work productivity, on top of climate data. The way ahead should be to accumulate local findings and extrapolate to relevant regions globally to formulate a gridded analysis of work productivity.

### **3. Yuri Hosokawa, *'Prehospital management of exertional heat stroke at sport competitions by the IOC Heat Expert Group'***

3.1 [Link to paper](#)

3.2 [Link to presenter's deck](#)

- 3.3 Heat illness in general is a public concern in Japan. However, most people are familiar with classic heat illnesses and exhaustion but not with the extent of heat stroke.
- 3.4 There is no formal protocol on prehospital care for heat stroke within the Japanese medical system — usually, there is insufficient cooling, e.g., cold water immersion, immediately after injury in Japan, compared to the international standard of care.
- 3.5 The paper contains guides and very detailed information, including illustrations for how to conduct prehospital care for heat stroke patients.
- 3.6 Tokyo Olympics 2020 is an opportunity to reform prehospital care of heat injuries in Japan. This is also the first time such policies and procedures are made for managing heat stroke in Olympics – this will help to shape the standard for heat-related medical care in future Games.
- 3.7 Discussion:
- 3.7.1 Question from Hilde Fæverik: Have you considered alternative technologies for measuring core temperature?
- 3.7.2 Answer from YH: The medical standard of using a rectal probe is still the most reliable way of measuring core temperature. The Thermistor pill is a good alternative, and we anticipate its use in a lot of athletes. This presents potential problems if and when they encounter accidents which require imaging as medical intervention.
- 3.7.3 Question from JL: Is it necessary to be so systematic in the assessment stage before medical intervention? Can cooling be used immediately on suspicion of heat injuries, or are there concerns regarding over-cooling?

- 3.7.4 Answer from YH: In the main text and in the algorithm, cooling is prioritized. But on paper, it is necessary to elucidate every single possible outcome. It is important to keep medical providers aware of symptoms of hypoglycemia and hyponatremia even though they are less likely to happen in an exertional context.
- 3.7.5 Question from Pearl Tan: How difficult is it to change the perception of medical doctors (MDs) in Japan given the cultural difference?
- 3.7.6 Answer from YH: Extremely difficult. MDs are at the top of the hierarchy in the medical system in Japan. It is getting a bit better given the recognition that I am getting from my work with the International Olympic Committee (IOC), but it will take awhile.
- 3.7.7 Comment and follow up from Seichi Horie: As a physician in Japan, I can agree that the culture is rigid. I think this is due to the historical and cultural system in Japan — a very hierarchical and bureaucratic society means that we cannot change the rules very easy. (To YH) What are your suggestions to improve things in Japan based on your experience overseas?
- 3.7.8 Answer from Yuri: We need to consider a medical control system and establish pre-hospital care in Japan that allows allied health professionals to give prehospital treatment to the patient before arrival at the hospital. This is done well in disaster medicine, but not outside of that context.

#### **4. Seichi Horie, “*Decisions at ICOH Board online meeting on April 29, 2021*”**

- 4.1 The International Congress on Occupational Health (ICOH) has been postponed from 2021 to 2022. It will be held online from 6 Feb 2022 to 11 Feb 2022.

4.2 Registration for ICOH 2022 opens in 9 Nov 2021. Abstract submissions are open from now until 31 Aug 2021. More information is available at <https://icoh2021.org>.

**5. Jason Lee, 'Call for collaboration on study: Heat Stress among Healthcare Workers during COVID-19 Pandemic'.**

5.1 [Link to poster](#)

5.2 Jason invites members to adopt the methodology and questionnaires used in a published study on understand practices and attitudes on PPE use amongst Healthcare Workers during the pandemic.

**6. AOB**

6.1 Matt Brearley shared about Australia's experience with heatstress and emergency healthcare responses during the pandemic and encourages the committee to collaborate in Jason's study.

6.2 Chuleekorn shared about the development of a personalized heat health warning system mobile application in Thailand. Jason Lee shared that many projects are developing the same application and should share resources with one another.

6.3 Jason Lee thanked the participants for attending.

*Meeting minutes were recorded by Nicholas Goh, endorsed by Sirkka Risannen (Secretary) and approved by Jason Lee (Chair).*

## Annex I – List of Attendees

Jason Lee (Chair), National University of Singapore, Singapore

Sirkka Rissanen (Secretary), Finnish Institute of Occupational Health, Finland

Tord Kjellstrom (Advisor), Health and Environmental International Trust, New Zealand

Chuleekorn Tanathithikorn, Department of Disease Control, Thailand

Clarence Leow, National University of Singapore, Singapore

Efi Yulianti Yovi, IPB University, Indonesia

Elsbeth Oppermann, Ludwig-Maximilian University of Munich, Germany

Hilde Fæverik, SINTEF AS Digital, Norway

Hsiao Yu Yang, National Taiwan University, Taiwan

Manoj Potapohn, Chiang Mai University, Thailand

Matt Brearley, Thermal Hyperformance, Australia

Matthias Otto, Nelson Marlborough Institute of Technology, New Zealand

Meng Zhen Zhao, Tsinghua University, China

Nicholas Goh, National University of Singapore, Singapore

Pearl Tan, National University of Singapore, Singapore

Seichi Horie, University of Occupational and Environmental Health, Japan

Vidhya Venugopal, Sri Ramachandra University, India

Wantanee Phanprasit, Mahidol University, Thailand

Screenshot of participants in meeting on Zoom:

