EDUCATION AND TRAINING INITIATIVES TO BOOST HEALTH AND WORK PRODUCTIVITY IN A WARMING WORLD

Andreas D. Flouris

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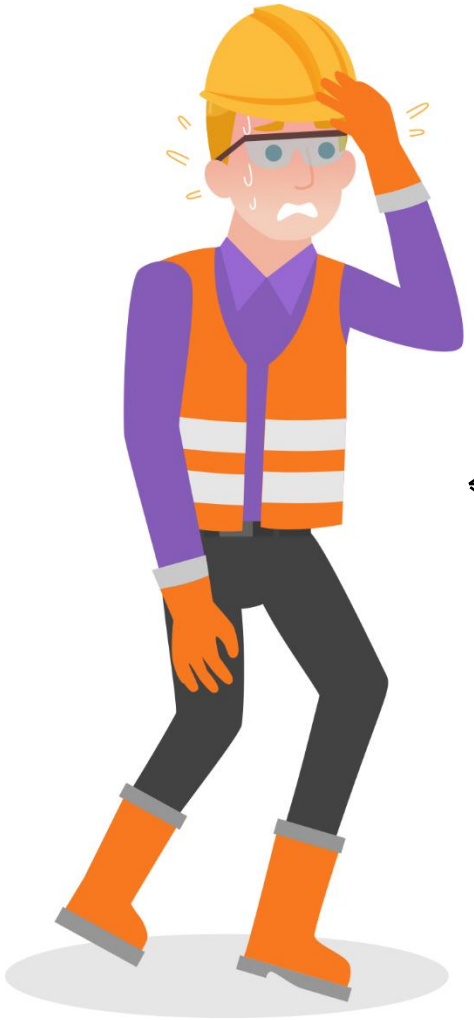
OCCUPATIONAL HEAT STRESS

Occupational heat stress = conditions under which a worker's body is storing heat



caused by

caused by

caused by

Harsh **environmental conditions**

Insulated and/or impermeable **protective clothing**

Increased **metabolic heat** from physically demanding tasks

FAME LAB

- **Mission**: to address the negative impacts of workplace heat stress on the health and productivity of workers in strategic European industries

HEAT SHIELD

European Commission | Horizon 2020 European Union funding for Research & Innovation

Funded by the EU Horizon 2020 research and innovation programme (no.668786)

FAME LAB

Mission: to develop and evidence-based heat mitigation plan for Qatar

International Labour Organization

Funded by the ILO Office of Qatar (no. 40262271/1)

FAME LAB

Mission: assessing and managing occupational heat stress risk in Greek industries

ΥΠΟΥΡΓΕΙΟ ΕΡΓΑΣΙΑΣ & ΚΟΙΝΩΝΙΚΩΝ ΥΠΟΘΕΣΕΩΝ

Supported by the Greek Ministry of Labour and Social Affairs

- **Mission**: understanding heat stress for workers in the electric power industry and providing recommendations for mitigation (work with Dr. Glen Kenny)

EPRI ELECTRIC POWER RESEARCH INSTITUTE

Funded by the Electric Power Research Institute

WORKER EDUCATION & TRAINING

- Assess needs
  - hazards assessment
  - profile of the target population
  - background on the social context of training
- Gain support
  - identify and involve key actors that provide ongoing advice, support, networking
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  - allow lerners to judge the progress toward new knowledge, skills, attitudes or actions
  - allow educators to judge the effectiveness of the training and what has been accomplished

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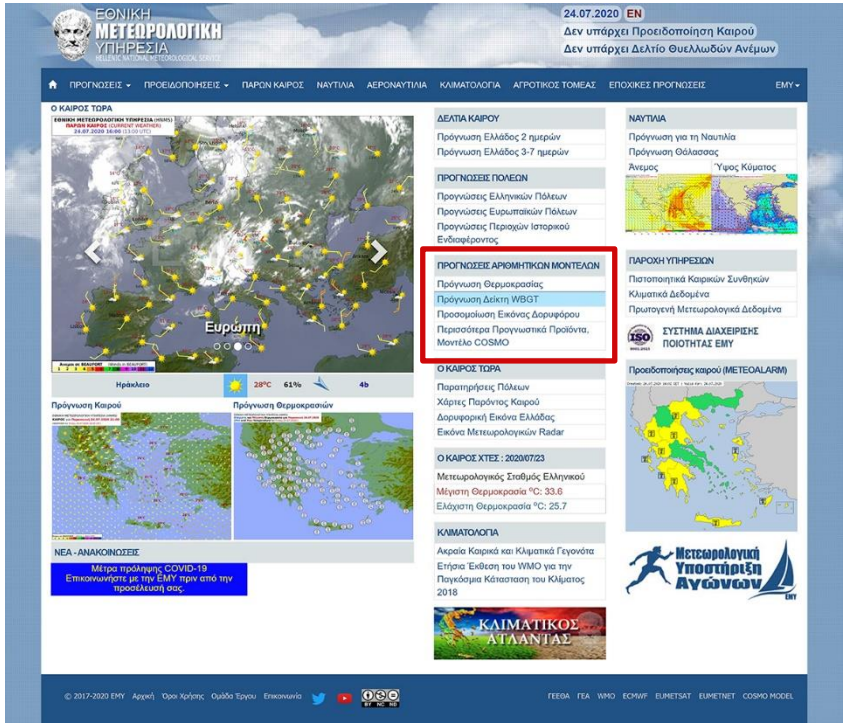
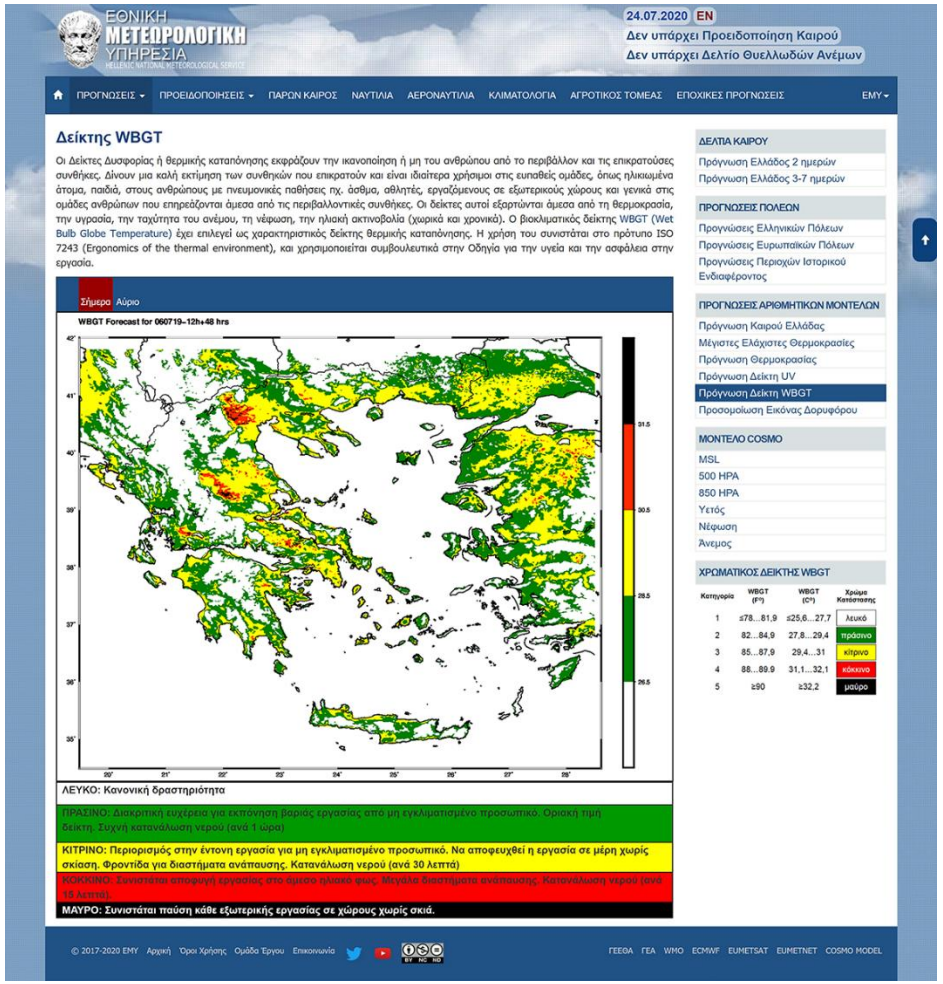
IMPROVING OCCUPATIONAL HEAT STRESS ASSESSMENT

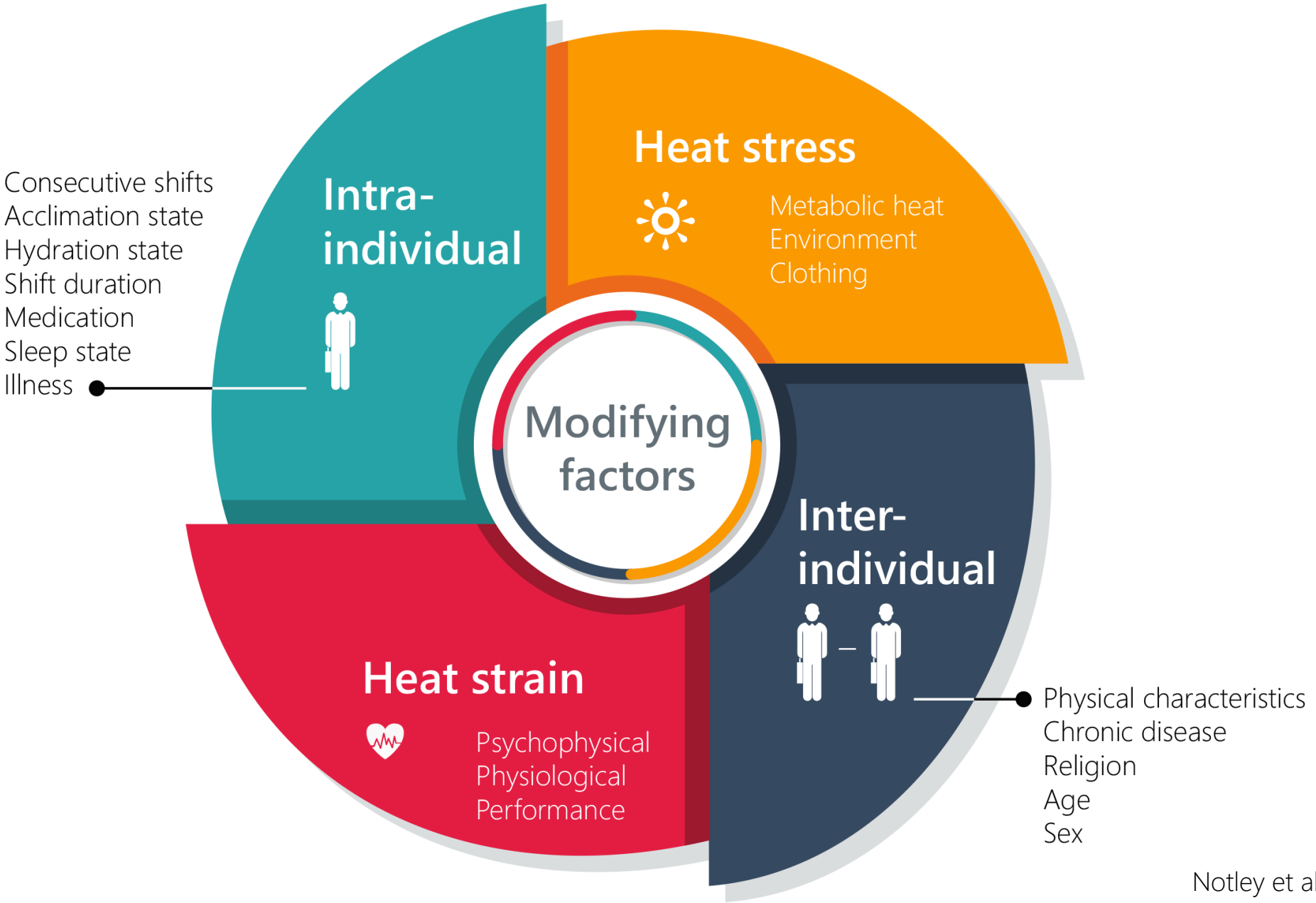
- Wet-Bulb Globe Temperature (**WBGT**) ---> largest evidence base for use in occupational settings
- **Popularize adoption** of WBGT for work settings



From the webpage of the Greek National Weather Service



FACTORS DETERMINING RESPONSE TO HEAT



Notley et al. 2019, Am J Ind Med

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COLLABORATION WITH KEY ACTORS

- Workshops with industry and worker stakeholders
  - Florence, Italy
  - Athens, Greece
  - Tønder, Denmark
  - Nicosia, Cyprus
  - Ljubljana, Slovenia
  - Loughborough, UK
  - Madrid, Spain
- Supporting European Trade Union Confederation
- Supporting Global Heat Health Information Network
- Meetings/Workshops with policy makers
  - WHO, Geneva
  - Honk Kong, China
  - Wellington, New Zealand
  - Doha, Qatar
  - Athens, Greece

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WHO – WMO REPORT ON OCCUPATIONAL HEAT STRESS

- Technical report on occupational heat stress to be jointly published in 2021 by:

World Health Organization

WORLD METEOROLOGICAL ORGANIZATION

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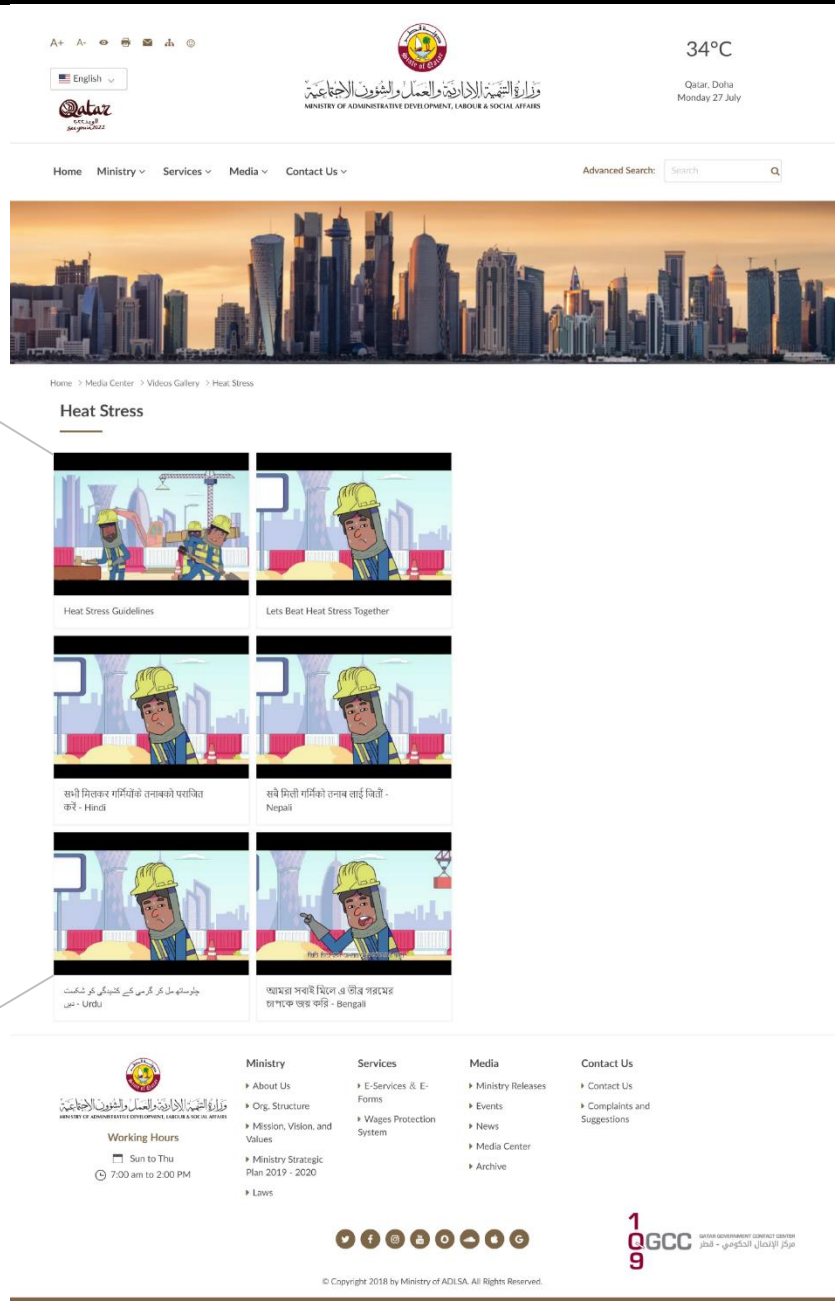
WORKER GUIDANCE IN QATAR



From the webpage of the Ministry of Administrative Development, Labour and Social Affairs

INFORMATION FOR WORKERS & EMPLOYERS

WORKING IN THE HEAT ?

Dehydration is a serious threat to your health

Hydration is about maintaining your body's water and electrolytes stores by ingesting fluid and salt to match the amounts you lose through sweating

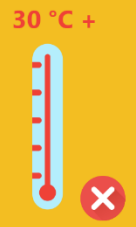
70%

OF EUROPEANS WORKING IN HIGH HEAT ARE DEHYDRATED

THIRST

DOES IT PROTECT ?

Thirst may not be sufficient to secure that you stay hydrated in hot conditions



WATER

AND SALT

Read these steps to secure adequate daily water and salt intake

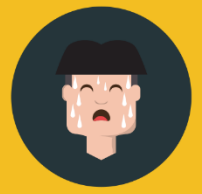
HABITS

DAY-TO-DAY

It is not only about hydrating at work. Hydrating at home is equally important

BALANCE

Find your balance. Hydration needs vary from person to person



SWEAT LOSS

Your water needs may be high if you are a "heavy-sweater"

ELECTROLYTES

If your blood pressure is normal, extra salt to your meals may help

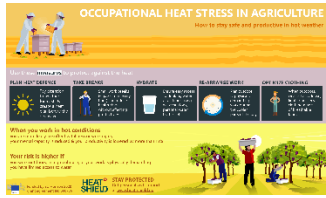
HEAT SHIELD

STAY PROTECTED

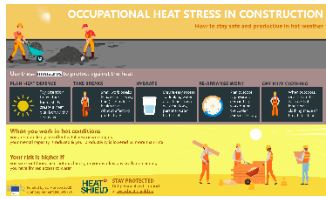
Get support personalized to your needs at www.heat-shield.eu

Funded by EU Horizon 2020 grant agreement No 668786

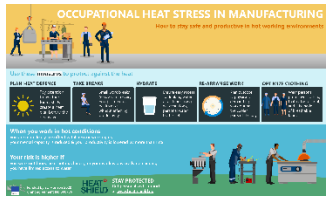
Agriculture



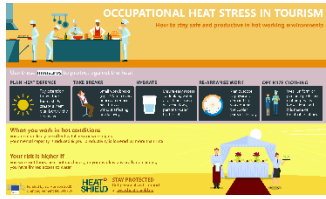
Construction



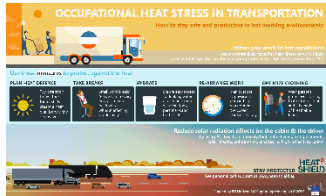
Manufacturing



Tourism



Transportation



INFORMATION FOR WORKERS, EMPLOYERS & OHS EXPERTS

FAME LAB

HEAT AFFECTS YOUR HEALTH AND PRODUCTIVITY

HOT FACTs upon which you can ACT to minimize the detrimental effects on your organization's performance

ACCIDENTS - WORKERS' HEALTH - ORGANIZATION PERFORMANCE

Heat stress impairs physical and mental work capacity

Substantial productivity losses surpassing 15% on hot days

Heat increases work injuries, leads to accumulated fatigue & acute sickness

Frequent work in the heat causes chronic health hazards (e.g., doubled risk of kidney disease)

Request the development of a heat mitigation plan for your organization

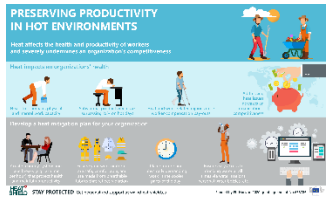
Create a buddy system and take breaks (e.g., 2-5 min per hour) that protect health and maintain productivity

Ensure your work uniform is safe, comfortable, and made from breathable fabrics that reflect radiation

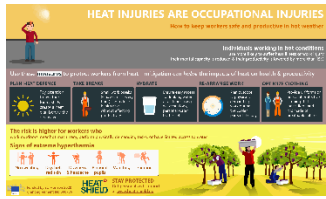
Plan outdoor and physically demanding work in the cooler parts of the day

Ensure easy access to drinking water at all times via water stations, personal water bottles, etc.

Employers



OHS experts



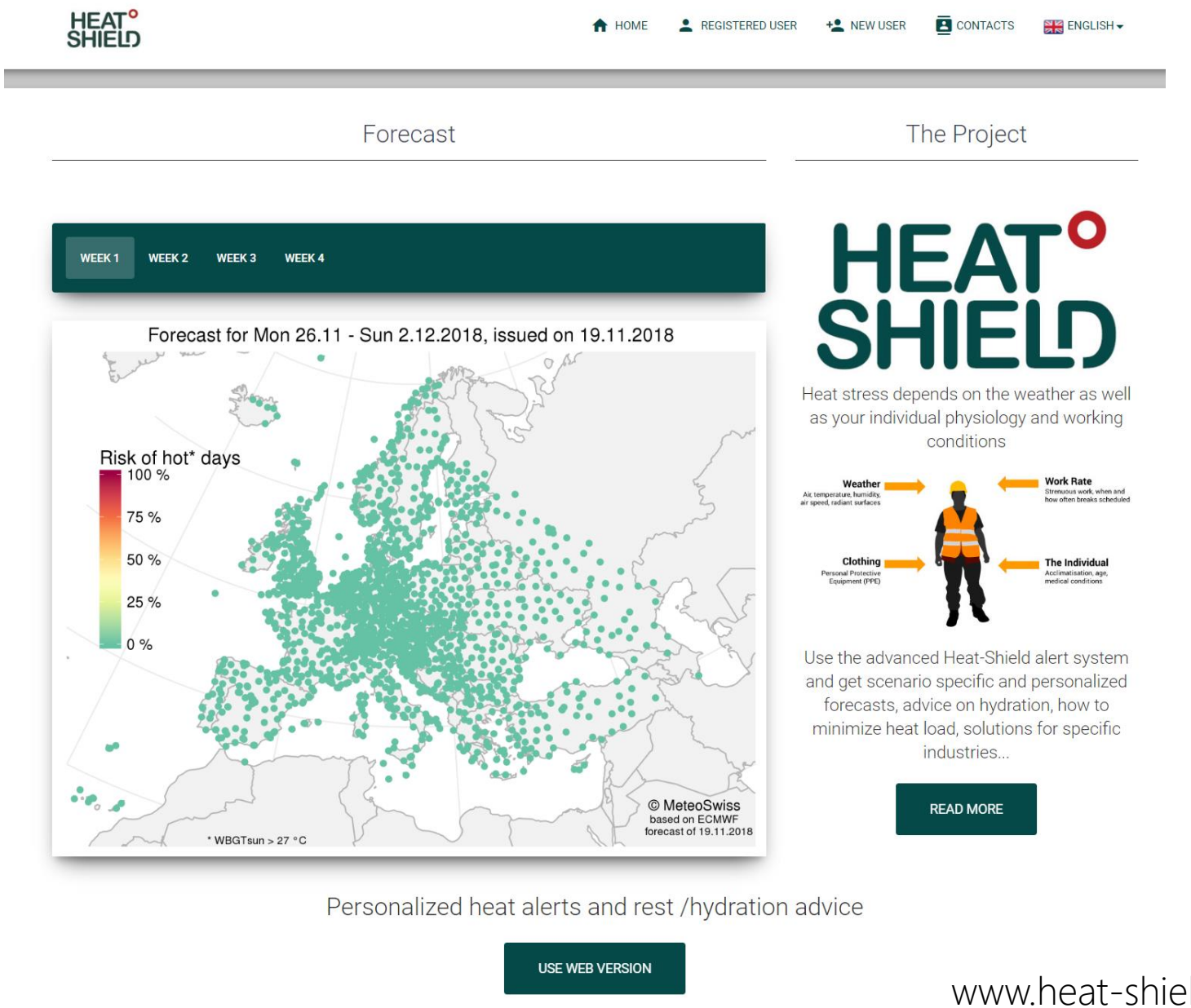
HEAT SHIELD **STAY PROTECTED** Get personalized support at www.heat-shield.eu

Funded by EU Horizon 2020 grant agreement No 668786

PERSONALIZED WARNING SYSTEM

- Online platform providing forecasts and guidance **up to 30 days in advance**

- Designed for **workers** and **employers**



www.heat-shield.eu

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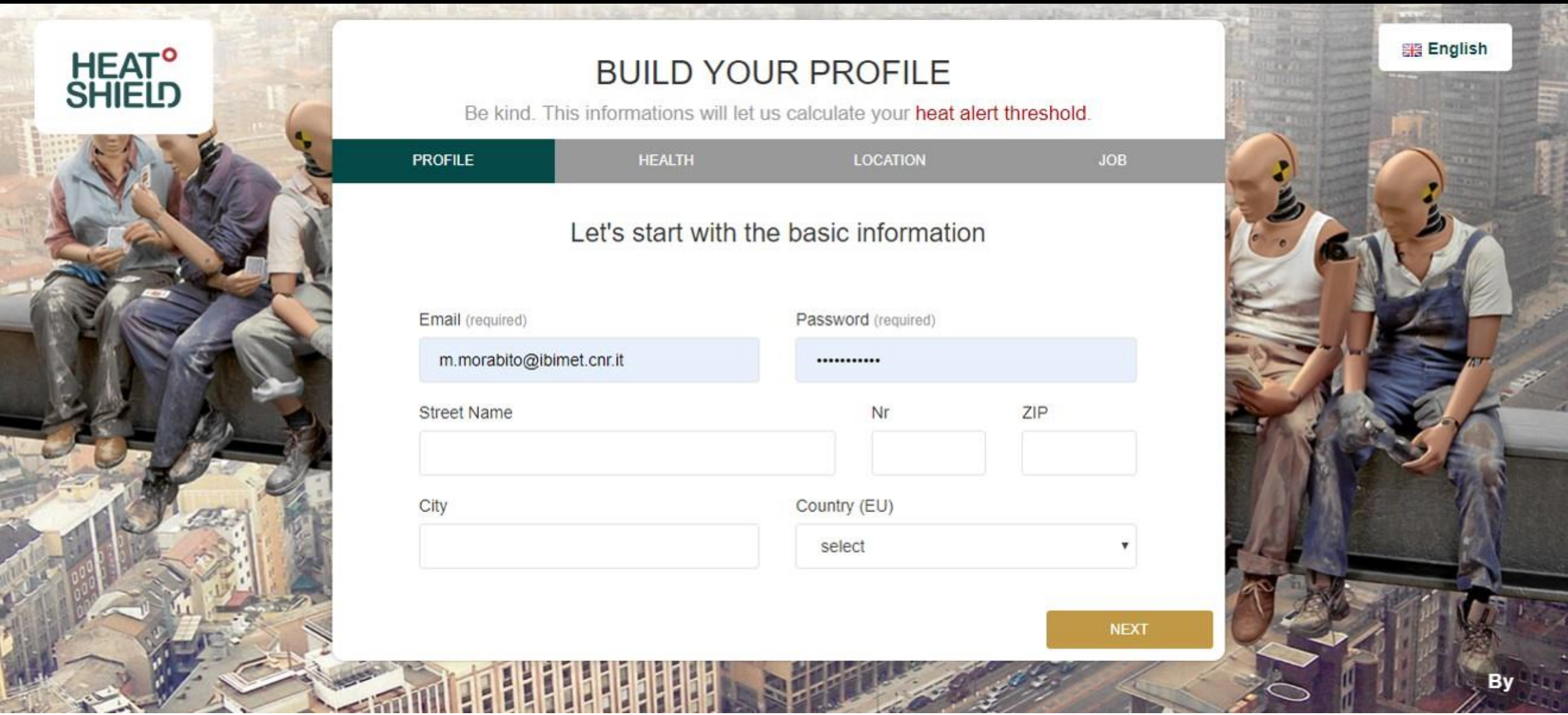

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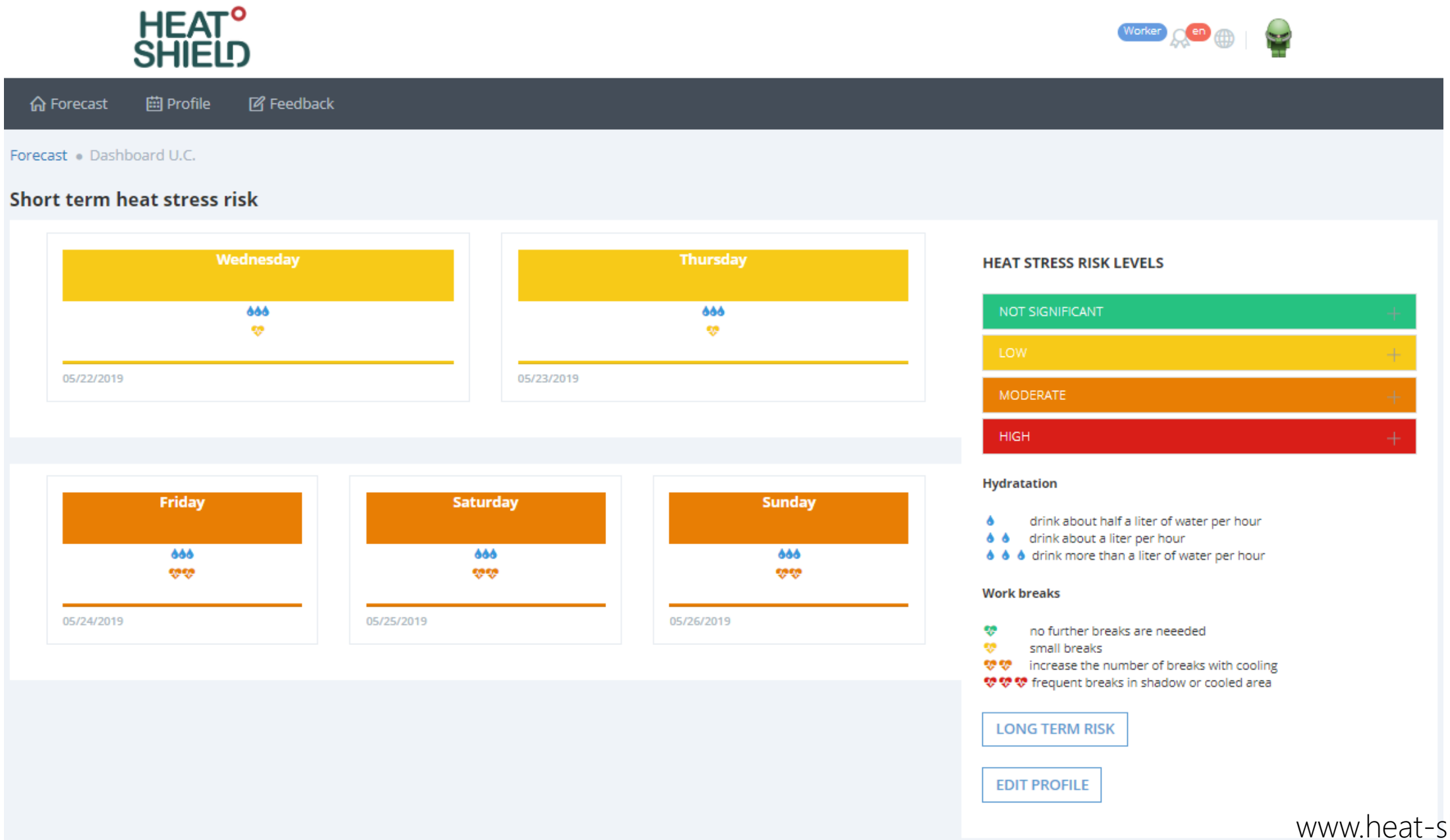

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PERSONALIZED WARNING SYSTEM

Posta in arrivo - Cartelle locali | Heatshield Heat Warning -

Scarica messaggi | Scrivi | Chat | Rubrica | Etichetta | Filtro veloce | Cerca <Ctrl+K>

Rispondi | Inoltra | Archivia | Indesiderata | Elimina | Altro

Da HeatShield <heatshield.unifi@gmail.com>

Oggetto **Heatshield Heat Warning** 06/07/2018, 05:00

A Marco Morabito

According to your profile's features, the heat stress threshold is expected to exceed in the next five days, in the area you selected

Please check the suggestions indicated in your profile

Heat Shield Staff

PERSONALIZED WARNING SYSTEM

HEAT SHIELD

Worker en

Forecast Profile Feedback

Forecast • Dashboard U.C.

Long term heat stress risk

Mon	Tue	Wed	Thu	Fri	Sat	Sun
05/27/2019	05/28/2019	05/29/2019	05/30/2019	05/31/2019	06/01/2019	06/02/2019
Mon	Tue	Wed	Thu	Fri	Sat	Sun
06/03/2019	06/04/2019	06/05/2019	06/06/2019	06/07/2019	06/08/2019	06/09/2019
Mon	Tue	Wed	Thu	Fri	Sat	Sun
06/10/2019	06/11/2019	06/12/2019	06/13/2019	06/14/2019	06/15/2019	06/16/2019
Mon	Tue	Wed	Thu	Fri	Sat	Sun
06/17/2019	06/18/2019	06/19/2019	06/20/2019	06/21/2019	06/22/2019	06/23/2019
Mon	Tue	Wed	Thu	Fri	Sat	Sun
06/24/2019	06/25/2019	06/26/2019	06/27/2019	06/28/2019	06/29/2019	06/30/2019
Mon	Tue					
07/01/2019	07/02/2019					

HEAT STRESS RISK LEVELS

- NOT SIGNIFICANT
- LOW
- MODERATE
- HIGH

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International Labour Organization

RECOMMENDATIONS RELATED TO COVID-19

- Support for the heat-related recommendations by the Global Heat Health Information Network

GLOBAL HEAT HEALTH INFORMATION NETWORK

ABOUT US | HEAT HEALTH | TAKE ACTION | WORK WITH US | LEARN | FORUM 2020 | FORUM 2018 | NEWS | EVENTS | HEAT AND COVID-19

Global partnership urges stronger preparation for hot weather during COVID-19

As the Northern hemisphere enters what is expected to be another record-breaking heat season, our network of health and climate experts have called for stronger preparation to keep people safe in hot weather without increasing the risk of the spread of COVID-19.

Updated 25 May 2020

GLOBAL HEAT HEALTH INFORMATION NETWORK

TECHNICAL BRIEF

PROTECTING HEALTH FROM HOT WEATHER DURING THE COVID-19 PANDEMIC

COVID-19 amplifies the health risks of hot weather, presenting individuals and local decision-makers with new challenges on the optimal ways to stay safe from both hot weather and COVID-19. Communities around the world are facing unprecedented compound risks as the health and socio-economic impacts of the pandemic exacerbate already deadly heat risks.

The COVID-19 pandemic amplifies health risks for many people in hot weather. To reduce heat-related illness and loss of life authorities and communities should prepare for hot weather and heatwaves — in addition to managing COVID-19 — before extreme heat strikes.

The last five years (2015-2019) saw the hottest average temperatures ever recorded at a global scale, including more frequent, longer and hotter heatwaves on every inhabited continent. This year is also on track to be one of the hottest years on record and the same is true for the coming decade — consistent with climate change trends.

Authorities should expect and urgently prepare for hot weather and heatwaves, in addition to managing COVID-19. Common public health actions to reduce heat-related illness and death may need to be modified in locations where they are restricted, unavailable or in contradiction to public health measures to limit the transmission of COVID-19. These measures include: "leave hot apartments for public spaces"; "go to public air-conditioned locations such as cooling centers, shopping malls, and libraries"; "regularly check on vulnerable persons"; "use fans to cool rooms without air-conditioning"; and "seek urgent medical care if showing signs of heat stroke".

Furthermore, hot weather conditions may complicate COVID-19 responses by increasing patient loads, and creating occupational health risks for health workers and responders.

This unprecedented situation highlights the need to clarify issues and decision-making options. This technical brief describes key considerations for decision-makers and practitioners on adapting existing plans, protocols and procedures for managing the risks of extreme heat during the COVID-19 pandemic. The accompanying Q&A series and checklists present further options, supporting evidence and resources to help all stakeholders and communities take informed action.

1

Shumake-Guillemot et al., 2020

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