

The 17th International Conference on Environmental Ergonomics ICEE2017



**November 12 – 18, 2017
Kobe, Japan**

**Editors:
ICEE2017 Local Organising Committee**

The 17th International Conference on Environmental Ergonomics ICEE2017



PROGRAMME SCHEDULE

**November 12 – 18, 2017
Kobe, Japan**

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Environmental Ergonomics XVII / editors Local organising committee. International Society for Environmental Ergonomics.

PREFACE

It is a great pleasure to introduce the 17th International Conference on Environmental Ergonomics (ICEE) held in Kobe, Japan from November 12th to 18th 2017. This is the second time that the ICEE has been held in Japan, where previously it was held in Fukuoka in 2002. The host city of Kobe is a vibrant port city and hub for people, information and goods from around the world. Kobe's location nestled between the mountains and sea gives the city beautiful natural diversity and is convenient to visit other attractive cities such as Kyoto, Osaka, Nara, Himeji in Kansai. In addition, Kobe has a laid-back and open atmosphere, which can be enjoyed all throughout the year. The month of November should be especially beautiful for viewing the autumnal colors around the city and mountainside. We trust that you will have a fruitful and pleasant visit to Kobe and Kansai area in Japan.

We are pleased to announce that over 200 people have registered for the conference, coming from 27 countries. ICEE is a small, single session, family type meeting that always provides a great opportunity for researchers to come together and discuss relevant topics in our field of research. The conference attracts researchers throughout all stages of their research career and has been particularly keen on supporting the next generation. This year has been no exception as we have awarded 67 free student places. In addition we have created two Early Career Research Symposiums to continue our support post PhD graduation. We have three fantastic sessions from senior scientist, including a special symposium focused on Asian populations. The calibre of the research continues across a total of 91 oral presentations and 93 poster presentations. The International and Local Organizing Committee reviewed all papers.

In total 23 sponsors have supported ICEE2017, Kobe. We are very grateful for the support of all sponsors, with special thanks for the continued support from WL Gore & Associates for funding the presenting students. In addition, we are grateful to Experimental Physiology and The Physiological Society for their generous donation towards the best student oral and poster presentation prizes. We would like to take this opportunity to thank all participants and the ICEE Executive Committee for entrusting us with such a fantastic opportunity to organize ICEE2017. We warmly welcome you all and hope that you have a great time for science and social activities in ICEE2017, Kobe.

ICEE2017 Local Organising Committee

ICEE2017 Local Organising Committee

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Yoshimitsu Inoue (Osaka International University)

Takeshi Nishiyasu (Tsukuba University)

Nicola Gerrett (Kobe University)

Naoto Fujii (Tsukuba University)

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Dai Okushima (Kobe Design University)

ICEE2017 Conference Website:

http://icee2017.h.kobe-u.ac.jp/ICEE2017_c/Welcome.html

An introduction to the history of the International Conference on Environmental Ergonomics:

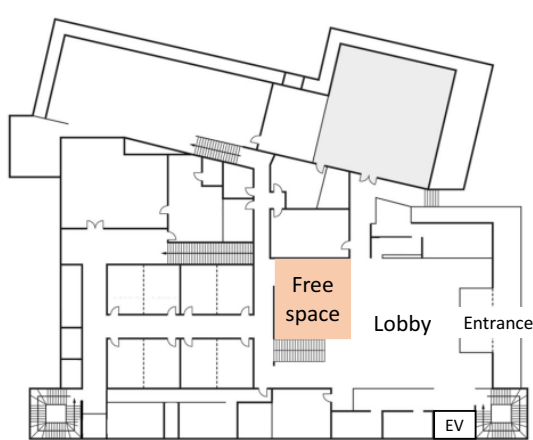
<http://www.environmental-ergonomics.org/>

Location: Ikuta Shrine Hall

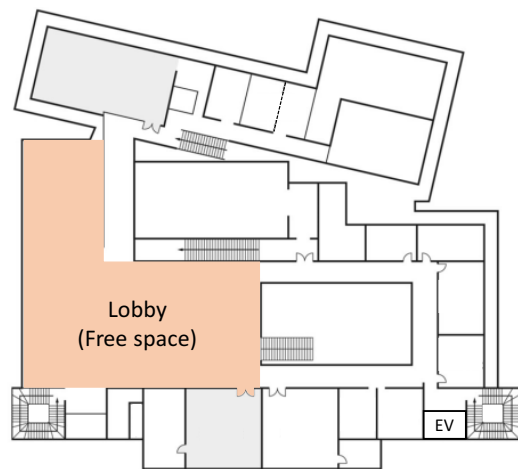
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Floor map

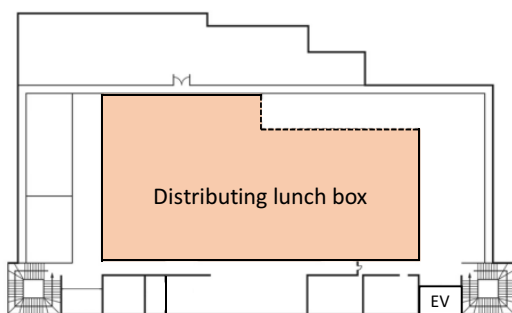
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ICEE 2017 Week Schedule

Date/Time	Sunday 12th November
16:00-18:00	Registration

Date/Time	Monday 13th November
7:30-8:30	Registration
8:30-8:50	Welcoming address: Prof Kondo
8:50-9:30	Keynote speaker: Prof Morimoto
9:30-10:20	Oral presentation 1: Temperature regulation 1 (x4)
10:20-11:00	Coffee break & poster presentations 1 (x20)
11:00-12:15	Oral presentation 2: Occupation (x6)
12:15-13:35	Lunch, Experimental Physiology announcement by Dr. Tipton
13:35-15:05	Symposium 1: Early Career researchers 1 : Heat loss response
15:05-15:45	Coffee break & poster presentations 1 (x20)
15:45-16:40	Oral presentation 3: Perception 1 (x3)
16:40-17:10	JSPS announcement
17:10-17:50	Meeting adjourned for the day. Announcements. Group Photo
18:00-20:00	Welcome reception

Date/Time	Tuesday 14th November
7:30-8:00	Registration
8:00-9:15	Oral presentation 4: Physiology and Exercise Physiology (x6)
9:15-9:55	Coffee break & poster presentations 2 (x20)
9:55-10:45	Oral presentation 5: Materials and design 1 (x4)
10:45-12:00	Oral presentation 6: Materials and design 2 (x6)
12:00-13:20	Lunch
13:20-15:20	Symposium 2: Aging in a Hotter World
15:20-16:10	Oral presentation 7: Temperature regulation 2 (x4)
16:10-16:50	Coffee break & poster presentations 2 (x20)
16:50-17:30	Oral presentation 8: Heat Exposure 1 (x3)
17:30-18:10	Oral presentation 9: Heat exposure and Adaptation (x3)
18:10-18:20	Meeting adjourned for the day. Announcements
18:45-late	Student party

Date/Time	Wednesday 15th November
7:30-8:00	Registration
8:00-9:15	Oral presentation 10: Exercise performance (x6)
9:15-9:45	Poster presentations 3 (x20)
9:45-10:35	Oral presentation 11: Fire fighters (x4)
10:35-11:15	Coffee break & poster presentations 3 (x20)
11:15-12:45	Symposium 3: Clothing assessment and Development
12:45-14:05	Lunch
14:05-14:15	Meeting adjourned for the day. Announcements

Date/Time	Thursday 16th November
7:30-8:00	Registration
8:00-9:05	Oral presentation 12: Perception 2 (x5)
9:05-10:10	Oral presentation 13: Heat adaptation (x5)
10:10-10:50	Coffee break & poster presentations 4 (x20)
10:50-11:50	Oral presentation 14: Temperature regulation 3 (x5)
11:50-13:10	Lunch
13:10-14:40	Symposium 4: Thermoregulation in Asians
14:40-15:20	Coffee break & poster presentations 4 (x20)
15:20-16:25	Oral presentation 15: Modeling and design (x5)
16:25-17:15	Oral presentation 16: Temperature regulation 4 (x4)
17:15-17:25	Meeting adjourned for the day. Announcements

Date/Time	Friday 17th November
7:30-8:00	Registration
8:00-8:50	Oral presentation 17: Temperature regulation 5 (x4)
8:50-9:55	Oral presentation 18: Sports Clothing (x5)
9:55-10:35	Coffee break & poster presentations 5 (x19)
10:35-11:15	Oral presentation 19: Heat exposure 2 (x3)
11:15-11:55	Oral presentation 20: Body morphology (x3)
12:00-13:20	Lunch
13:20-14:50	Symposium 5: Early Career researchers 2: Adaptation
14:50-15:30	Coffee break & poster presentations 5 (x19)
15:30-16:00	Closing ceremony and Awards
18:30-21:30	Conference Banquet

Date/Time	Saturday 18th November
9:00-12:00	Interesting Group Meeting for Environmental Ergonomics (Kobe University)

ICEE2017 Abstracts			
Author (s = student)	Title	Abstract page	Board no
KEYNOTE Mon 08:50-09:30	Keynote	Abstract page	
Morimoto	Environmental Physiology in Japan -Past and present-	1	
ORAL Mon 09:30-10:20	Temperature regulation 1 Chair and co chair: Clare Eglin and Tze-Huan Lei	Abstract page	
Stewart	Internal and external cooling methods and their effect on body temperature and manual dexterity	2	
Castellani	The effects of separate and combined forearm and face heating on hand temperatures and dexterity during cold exposure	3	
Færevik	Rescue and survival in Arctic sea regions	4	
Wakabayashi	Greater contribution of glycolytic metabolism during exercise in cold water with hypothermic skeletal muscle	5	
POSTER Mon 10:20-11:00	Poster session 1	Abstract page	Board no
Miyazawa (s)	Estimation method of air flow in microenvironment inside clothes using a tracer gas	6	1
Deng (s)	Effect of traits of microclimates in protective clothing on thermal protective performance: A review	7	2
Burke	Comparison of air gap behaviour at partial saturation using microclimate sensors with a sweating thermal manikin and guarded hotplate	8	3
Song	Modelling the effects of air gap size on human physiological and psychological responses in chemical protective clothing	9	4
Yuan	Assessment and improvement of thermal-physical properties on 3D printed bionic body armor	10	5
Kwon	Relationships between yachting characteristics and the PPE usage features	11	6
Takemura	Immediate effects of shoes for the treatment inducing a slightly high heel and the special bottom structure during challenging walking gaits	12	7
Troynikov	Thermal and vapour resistance of different triathlon suits	13	8
Classen	Characterization of PCM textiles by a heat release tester and subject trials	14	9

Wang	The development of the specific requirements of energy-saving shirt in Taiwan	15	10
Barwood	Repeated L-Menthol application to the skin improves thermal perception and enhances cycling performance in the heat	16	11
Fournet	Children thermal comfort during physical activity: how to bridge the gap ?	17	12
Curran	Arteriovenous anastomoses (AVAs) modeling study	18	13
Gkiata (s)	Effects of cryotherapy on diabetic peripheral neuropathy symptoms: a case study	19	14
Eglin	Comparison of endothelial function and sensory thermal thresholds in cold sensitive and control individuals	20	15
Kawai (s)	Effects of odor stimulation with essential oil on muscle sympathetic nerves activity in humans	21	16
Tipton	Changes in lung function during exercise are independently mediated by increases in deep body temperature	22	17
Hayashi	Effect of food intake on the respiratory response to CO ₂	23	18
Iimura (s)	Effect of pedal cadence on the calf venous compliance after moderate cycling exercise	24	19
ORAL Mon 11:00-12:15	Occupation Chair and co chair: John Castellani and Braid MacRae	Abstract page	
Rissanen	Performance of respiratory protective equipment in the cold environment	25	
Ciuha	Heat shield project: The effect of a summer heat wave on the productivity in an automobile-parts manufacturing plant	26	
Walker	Thermal strain during job-related tasks conducted by the National Ambulance Resilience Unit	27	
Looney	Energy expenditure estimation during military load carriage over complex terrain	28	
Koyama	Evaluations of the daytime light environment adapted to the type of working task; Comparison between blue excitation and purple excitation white LEDs	29	
Sandsund	Musculoskeletal symptoms in the Norwegian fishing fleet. A register data and self-reported questionnaires study	30	
SYMPOSIUM Mon 13:35-15:05	Early career researcher: heat loss response Chair and co chair: Naoto Fujii and Nicola Gerrett	Abstract page	
Fujii	The mechanisms underlying cutaneous vasodilation during exercise in the heat	32	

Gerrett	Sweat glands ion reabsorption	33
Notley	Heat strain over consecutive work shifts	34
Lucas	Intervention to reduce heat strain and kidney damage among sugarcane workers in El Salvador	35
ORAL Mon 15:45-16:40	Perception 1 Chair and co chair: Igor Mekjavic and Lauren Penko	Abstract page
Takamatsu	Physiological evaluations and development for comfort cabin	36
Havenith	Ethnic differences in preferred air flow temperature in a vehicle environment	37
Fojtlin (s)	An innovative HVAC control system: Comparison of the system outputs to comfort votes	39
Ohno	Does the vertical position of the axis of whole-body rolling affect discomfort in seated persons?	40
ORAL Tues 08:00-09:15	Physiology and exercise physiology Chair and co chair: Matt White and Ash Willmott	Abstract page
Tipton	The human ventilatory responses to different stresses	41
Dobashi (s)	Separate effects of voluntary hyperventilation and resultant hypocapnia on metabolic and cardiovascular responses during and following supramaximal exercise	42
Matsutake (s)	Combined effects of cold pressor test and apnea on cardiovascular responses during dynamic two-legged knee extension exercise	43
Cao (s)	Expiratory flow limitation under moderate hypobaric hypoxia does not influence ventilation, oxygen uptake, and operating lung volumes during incremental running in endurance runners	44
Bröde	Q_{10} effect and thermal cardiac reactivity related to the interrelation between heart rate and oxygen consumption under heat stress	45
Cheung	Oxygen availability effects on exercise performance and tissue oxygenation during mild hypothermia	46
POSTER Tue 09:15-09:55	Poster session 2	Abstract page Board no
Kato (s)	Experimental study on the practical effect of solar radiation on a clothed human body by using a thermal manikin	47 1
Song	Effects of wind and air gap on the thermal resistance of chemical protective clothing fabrics	48 2

Hunt	Agreement between the measured and estimated effects of wind-speed on the heat exchange properties of military protective clothing	49	3
Wang (s)	The application of 3D scanning technology in the assessment of protective clothing and its validity verification	50	4
Eckels	Determining temperature ratings for children's sleeping bags	51	5
Bernard	Exertional heat illness and acute injury related to WBGT during deepwater horizon clean-up	52	6
Su (s)	Performance analysis of membrane fabric used for thermal protective clothing in steam and radiant hazards	53	7
Wang	Body-mapping nano-porous polyethylene (PE) clothing could prompt radiative body heat dissipation in moderate warm indoor environments	54	8
Chen	A novel high elastic fabric with comfortable properties developed for burn survivors	55	9
Roh (s)	Regional differences in skin hydration on the hand by medical glove type	56	10
Ruan (s)	Effects of bathing on psychophysiological responses in the elderly and the young males	57	11
Watanabe (s)	Study on psychological effects by reproduction of ambient music and sound effects	58	12
Kim (s)	Self-identified thermal comfort zone and perceived climate changes: a questionnaire study in temperate, tropical and cold climates	59	13
Otani	Effects of variations in air velocity on endurance exercise capacity and thermoregulation in a hot environment	60	14
Coull (s)	Thermal sensitivity to a warm and a cold stimulus: An age comparison	61	15
Oue	Effect of short-term endurance interval training on venous compliance in humans	62	16
Stadnyk (s)	Functional and physical adaptations to resistance training with external muscle heating	63	17
West (s)	Shoe microclimate: an objective and subjective evaluation	64	18
Bratadewi (s)	Effects of cold young coconut water ingestion for precooling on physiological responses during exercise in hot and humid environment	65	19
Lasisi	Thermoregulatory properties of hair: is human hair morphology adaptive?	66	20
ORAL Tue 09:55-10:45	Materials and design 1 Chair and co chair: Edith Classen and Adam Potter		Abstract page

Xu	Effect of material thermal properties on thermal performance of multi-layer personal protective ensembles	67
Watson (s)	Investigation of low risk category industrial workwear materials for use in hot environments	68
Satsumoto	Evaluation of CO ₂ permeability for water vapour permeable waterproof clothes	69
Veselá	Analysis of local clothing area factors of typical office clothing items and their correlation to the ease allowance at various body landmarks	70
ORAL Tue 10:45-12:00	Materials and design 2 Chair and co chair: Emiel DenHartog and Meng Deng	Abstract page
Lu	The development of smart heating gloves and performance evaluation	71
Jussila	Heated gloves for rewarming and sustaining hand temperatures at cold work	72
Troynikov	Hand movement, skin deformation behaviour and glove-skin interfacial pressure: impact on therapeutic glove design	73
Udayraj (s)	A numerical study to analyse the effect of dynamic and heterogeneous microclimates in protective clothing on skin burn injury	74
Watson (s)	Evaluating the effect of transient sleeping environments on athletic sleep quality using thermal manikins	75
Classen	Determination of the insulation of baby sleeping bags-material test versus manikin test	76
SYMPOSIUM Tue 13:20-15:20	Aging in a hotter world Chair: Larry Kenney	Abstract page
Alexander	The aged human cutaneous vasculature: altered mechanisms of vasodilation, emerging knowledge, and remaining questions	78
Crandall	Aging and integrated cardiovascular responses to heat stress	79
Inoue	Aging, sweating, and sweat gland function	80
Kenny	Environmental factors impacting responses of older individuals to heat	81
ORAL Tues 15:20-16:10	Temperature regulation 2 Chair and co chair: Joseph Costello and Alexandros Sotiridis	Abstract page
Barwood	Acute anxiety predicts components of the cold shock response on cold water immersion before and after repeated immersion: implications for control of ventilation	82

Fujimoto (s)	Low intensity exercise delays shivering response to core cooling	83
Lei (s)	Behavioural and autonomic thermoregulation during exercise in differing thermal profiles of heat matched for vapour pressure	84
Cotter	The body core is far more thermosensitive than the skin in driving behavioural thermoregulation during swimming	85
ORAL Tue 16:50-17:30	Heat Exposure 1 Chair and co chair: Mariaan Sandsund and Emily Watkins	Abstract page
Maley	Evaluation of commercial cooling systems to minimise thermal strain while wearing chemical-biological protective clothing	86
Lucas	Validation of core body temperature estimation from heart rate in sugarcane harvesters	87
Waldock (s)	Physiological and perceptual responses in the elderly to simulated daily living activities in UK summer climatic conditions	88
ORAL Tue 17:30-18:10	Heat exposure and adaptation Chair and co chair: Takeshi Nishiyasu and Rachel Burke	Abstract page
Watkins (s)	A new occupational heat tolerance test	89
Willmott (s)	The efficacy of twice daily long-term heat acclimation on heat acclimation state, immune function and exercise tolerance	90
Lee	Effects of 28-day cold and heat cross exposure on thermoregulatory and behavioral responses in mice	92
ORAL Wed 08:00-09:15	Exercise performance Chair and co chair: Chris Tyler and Nathalie Kirby	Abstract page
Osborne (s)	The effects of cycling in the heat on gastrointestinal inflammation and neuromuscular performance	93
Sotiridis (s)	Hypoxic acclimatization does not improve exercise performance and thermoregulatory responses in the heat: no evidence of cross-tolerance/adaptation	94
Okuyama (s)	Thermal and cardiorespiratory responses and exercise performance in the heat during high intensity intermittent exercise that mimics rugby game	95
Levels	The effects of heat exposure on the final sprint during a 20-km cycling time trial	96
Minett	Cold-water immersion recovery improves repeated sprint performance following a short training block in the heat	97

Ang	Effects of training in cool vs. warm environment on subsequent aerobic performance in a warm and humid condition	98	
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Wu	Heat stress evaluation of miners in hot underground coal mines using an improved predicted heat strain model and an improved thermophysiological model	99	1
DenHartog	Development and validation of bench-level and manikin test methods to predict heat related comfort properties of mattresses	100	2
Hirata	Fast computation of temperature and water loss in human models for simultaneous exposure to ambient heat and solar radiation	101	3
Potter (s)	How much of a difference in evaporative potential is important?	102	4
Tsoutsoubi (s)	Influence of thermal balance on reactive hyperaemia	103	5
Amorim (s)	Incidence of heat waves in Cyprus and its association with mortality	104	6
Kim (s)	Effects of dual-functional vest with body cooling and drinking water supply on the alleviation of heat strain	105	7
Sumisato (s)	Observation and questionnaire on the relationship between the thermal index ETVO and behavior of people in Kyoto	106	8
Ioannou (s)	Physical demands and hydration status of grape-picking workers in Europe	107	9
Ozaki	Conductive heat loss with aluminum sheet in wet condition	108	10
Horiuchi	Impact of combined cool and hypoxic exposures on energy cost during walking in healthy adults	109	11
Thake	Shake-Spear 17: Normoxic and hypoxic peak exercise responses before and after an Antarctic traverse	110	12
Ohtaka	Control strategies for accurate force generation and relaxation in isometric contraction of lower limb	111	13
Gleadall-Siddall (s)	Reliability of oxidative stress parameters and repeated 16.1 km time trial performance	112	14
Cheung	The effects of local muscle cooling on motor unit firing properties	113	15
Fukuba	Dissociated dynamics of brachial artery and forearm skin blood flows during sinusoidal leg cycling exercise	114	16
Massey	Size does matter! Conductive toe skin cooling in matched male and female volunteers	115	17
Ichinose	Reduction of venous return abolishes muscle metaboreflex-mediated rise in cardiac output in exercising humans	116	18

Tsuzuki	Thermal environment and sleep in wintershelter-analogue settings	117	19
Yurkevicius	The effects of facial heating during cold exposure on hand/finger temperature, dexterity, and strength	118	20
ORAL Wed 09:45-10:35	Firefighters Chair and co chair: Yoram Epstein and Leonidas Ioannou	Abstract page	
Xu (s)	Influence of sudden ambient temperature change on thermal response of human body dressed in firefighting clothing	119	
Hunt	Body core temperature remains elevated following recovery from firefighting activities in the Australian Defence Force	120	
Macrae	Core body temperature dynamics during fire fighter heat exposure training	121	
Oksa	Muscular fatigue and recovery after a heavy work bout in the heat: comparison of four recovery interventions on muscle structure and mechanical properties in firefighters	122	
SYMPOSIUM Wed 11:15-12:45	Clothing assessment and development Chair and co chair: George Havenith and Faming Wang	Abstract page	
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Fournet	Using Infra-Red analysis for sports clothing development	125	
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Thur 08:00-09:05	Perception 2 Chair and co chair: Takako Fukazawa and Anna West	Abstract page	
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Mekjavic	Perception of thermal comfort during skin cooling and heating	128	
House	Comparison of constant vs. intermittent forced-air ventilation under body armour and the impact on heat strain, thermal perception and thermal comfort	129	
DenHartog	Effects of task and motivation on sensations of discomfort and task performance	130	
Umemiya	Comparison of thermal environment, thermal sensation and sleep quality among thermal control patterns in summer sleeping rooms	131	

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Garrett	Effectiveness of short-term heat acclimation on intermittent exercise in the heat with moderately-trained females controlling for menstrual cycle phase	132	
Kirby (s)	Heat acclimation for female endurance performance in hot and normothermic conditions	133	
Poirier (s)	Does heat acclimation improve whole-body heat loss in older men?	134	
Stanley	Divergent physiological adaptations from short-term heat acclimation in dry vs humid conditions at equivalent heat index: no performance change in temperate conditions	135	
Garrett	Effectiveness of short-term heat acclimation on intermittent exercise in the heat with moderately-trained males	136	
POSTER Thur 10:10-10:50	Poster session 4	Abstract page	Board no
Bae (s)	Classification of manual dexterity and mobility for firefighter's protective gloves using Don-doff, ASTM dexterity, Minnesota dexterity, Bennett hand tool and ASTM torque tests	137	1
Kim (s)	Maximum heart rate as a correction factor in predicting firefighters' rectal temperature using heart rate	138	2
Kim	Firefighter's personal protective equipment and burn injuries: an empirical study in Korea	139	3
Watkins (s)	Fire service instructors' working practices: A United Kingdom Survey	140	4
Lu	The impact of shape memory alloy size on the protective performance of fabrics used in fire-fighter's protective clothing	141	5
Tokizawa	Effects of combined cooling applications before and during exercise on heat strain while wearing protective clothings	142	6
Potter (s)	Effects of layering on thermal insulation and vapor permeability	143	7
Miyazawa (s)	Airflow in microenvironment under sportswear generated by running motion	144	8
Moran	Physiological and logistic considerations in the integration of females in the IDF combat units	145	9
Tyler	The effect of high-intensity short-term heat acclimation on exercise capacity in the heat in trained cyclists	146	10
Park	Effects of 14-day acclimation to cold and heat on cold tolerance in males	147	11
Ueda	Sex differences in the development of peripheral sudomotor sensitivity to acetylcholine	148	12

Vliora (s)	Seasonal changes in environmental temperature increase UCP1 in subcutaneous white adipocytes.	149	13
Ohnishi	The relationship between body water content measured by bioelectric impedance analysis and whole body sweat loss and body temperature in response to heat exposure	150	14
Jung (s)	Body regional heat pain thresholds in Korean young males by methods of limit and level	151	15
Griggs (s)	Thermal perceptions of individuals with a spinal cord injury	152	16
Maley	Role of cyclooxygenase in the vascular responses to extremity cooling in Caucasian and African descent males	153	17
Best (s)	Subjective preferences of varying menthol mouthwash concentrations	154	18
Borg (s)	The effect of ambient temperature deception on perceived exertion and physiological variables during fixed-intensity cycling in the heat	155	19
ORAL Thur 10:50-11:50	Temperature regulation 3 Chair and co chair: Nigel Taylor and Kohei Dobashi	Abstract page	
Coull (s)	Regional sweat distribution in young and older individuals	156	
Meade (s)	Hypohydration impairs whole-body evaporative heat loss during exercise in the heat	157	
West (s)	Sweat distribution and perceived wetness across the human foot	158	
Massey	No sweat boys! Think X-Linked hypohidrotic ectodermal dysplasia	159	
Che Muhamed	Thermoregulatory responses during eccentric downhill running exercise in trained male.	160	
SYMPOSIUM Thu 13:10-14:40	Thermoregulation in Asians Chair and co chair: Jason Lee and Joo-Young Lee	Abstract page	
Lee	Cold adaptation, aging, and Korean women divers (haenyeos)	162	
Wakayabashi	Multiple organs coordination for cold induced thermogenesis in Japanese males	163	
Wijayanto	Thermoregulatory responses during exercise in hot-dry and warm-humid environment in Indonesian males	164	
Che Muhamed	Eccrine sweat gland function of tropical natives during exercise in hot-humid and hot-dry environments	165	

ORAL Thur 15:20-16:25	Modeling and design Chair and co chair: Chuansi Gao and Margherita Raccuglia	Abstract page
Kuklane	Clothing design parameters that affect estimation of clothing insulation change due to posture and motion	166
Bogerd	Prediction of thermophysiological responses to local skin cooling using the Fiala thermophysiological model	167
Welles	Human thermoregulatory model based estimation of metabolic rate from core body temperature	168
Hepokoski	Analysis of thermal comfort and draft discomfort in a transient and asymmetric environment	169
MacRae (s)	Skin temperature measurement using contact thermometry: A systematic review of validity and comparability between setups	170
ORAL Thur 16:25-17:15	Temperature regulation 4 Chair and co chair: Andrew Garrett and Martin Poirier	Abstract page
Skinner (s)	Effect of passive heat stress on cerebral blood flow responsiveness across the menstrual cycle and between the sexes	171
Malcolm (s)	The influence of high intensity intermittent exercise in the heat on neuromuscular and cognitive function	172
Low	Differential regulation of body and brain temperature during hyperthermia in humans	173
Cooper	The influence of passive heat stress on cognitive function	174
ORAL Fri 08:00-08:50	Temperature regulation 5 Chair and co chair: Mike Tipton and Tomomi Fujimoto	Abstract page
Fujii	K_V , K_{ATP} , and K_{Ca} channels are involved in cutaneous reactive hyperemia but not venous occlusion induced cutaneous vasoconstriction in young adults	175
Eglin	The effect of acute beetroot juice supplementation on the responses to local cooling and endothelial function in cold sensitive individuals	176
Maeda	Relationship between endothelium-dependent vasodilation and cold-induced vasodilation	177
Burke (s)	Effect of nitrate supplementation on vascular function, oxidative stress and a 16.1 km time trial in a normoxic environment with a younger active population.	178
ORAL Fri 08:50-09:55	Sports clothing Chair and co chair: Kalev Kuklane and Siyeon Kim	Abstract page

Qi (s)	Effect of sportswear cover area on thermoregulation during running	179	
Du (s)	The influence of sports bra on thermoregulation during running in heat	180	
Lin	Validation of body-mapping sports shirts designs on thermal physiological responses and comfort in warm and humid environment	181	
Gao	Thermophysiological responses of exercising in body mapping T-shirts in a warm and humid environment: subject test and predicted heat strain	182	
Raccuglia (s)	T-shirt sweat absorption mapping	183	
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Saito	How much could a mist fan decrease WBGT values at an extreme hot outdoor worksite in summer ?	185	2
Yokoe	Consideration of air-conditioning operating method which can save the energy consumption and awakening of occupants.	186	3
Takakura	Can human biologically adapt to the forthcoming climate change? From the viewpoint of workable hours under thermal stresses	187	4
Ueno	Regional and age related incidences of heat disorder across Japan	188	5
Takeda	Whole body and skin thermal sensation are not improved with regular exercise in elderly men	189	6
Fišer	Car cabin thermal comfort measurement under real traffic conditions	190	7
Fukazawa	Relevance between thermal comfort limit by metabolism in Japanese young female and male	191	8
Kakitsuba	Diurnal variation in the core interthreshold zone and its relation to cutaneous sensation threshold zone	192	9
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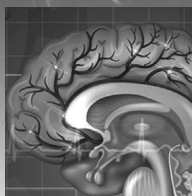
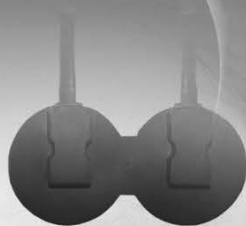


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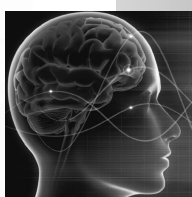
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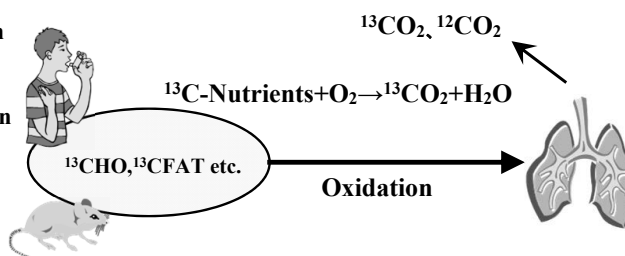


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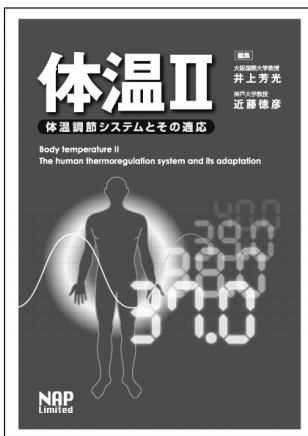
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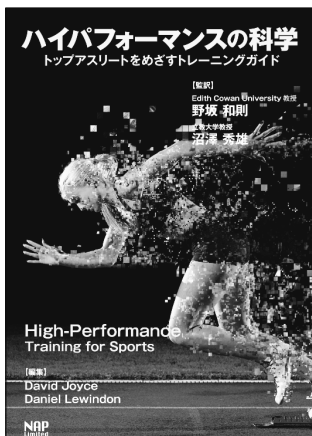
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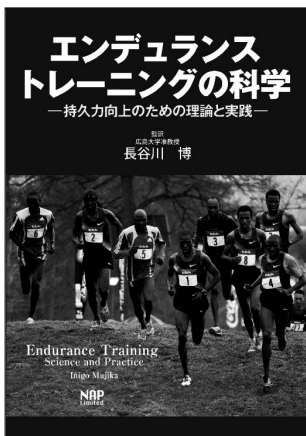


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