

PROGRAM

Monday, October 11, 2004

08:30-08:45 OPENING SESSION (Hall A)

Chair: Y. Shapiro, Israel

Greetings:

Prof. Y. Shapiro, *Symposium President*Prof. K. Kanosue, *Chair of Section on Thermal Physiology, IUPS*Prof. A. Romanovsky, *President, Second PPTR Symposium 2006*

08:45-11:05 SESSION MON/S-01: NEURONAL MECHANISM OF (Hall A)
TEMPERATURE REGULATION AND THERMORECEPTION

Chair: K. Kanosue, Japan

TRACING BRAIN THERMOREGULATORY PATHWAYS FROM RATS 1
TO HUMANS (Keynote)**R. McAllen¹, M. Farrell¹, L. Carabott¹, M. McKinley¹, G. Egan¹, G. Jackson¹, D. Denton¹,
J. Johnson²**¹*Howard Florey Institute, University of Melbourne, Australia*²*University of Texas, USA***CENTRAL THERMOSENSITIVITY AND THE INTEGRATIVE RESPONSES 2**
OF ANTERIOR HYPOTHALAMIC NEURONS**J. D. Griffin***College of William and Mary, USA***HYPOTHALAMIC AND BRAINSTEM PATHWAYS CONTROLLING 3**
THERMOGENESIS IN BROWN ADIPOSE TISSUE (BAT)**S. F. Morrison, W. H. Cao, C. J. Madden***Neurological, Sciences Institute, Oregon Health & Science University, USA***COLD-INDUCED THERMOGENESIS MEDIATED BY GABA IN THE 4**
PREOPTIC AREA**T. Osaka***National Institute of Health and Nutrition, Japan***FEVER-INDUCING SYMPATHETIC NEURAL PATHWAYS 5****K. Nakamura***Graduate School of Medicine, Kyoto University, Japan*

11:05-11:30 COFFEE BREAK (Imperial Foyer)

11:30-13:00 SESSION MON/O-02: NEURAL FUNCTIONS IN THERMOREGULATION (Hall A)

Chair: K. Nakamura, Japan

THERMAL STRESS AND NEURAL FUNCTION: ADAPTIVE MECHANISMS IN INSECT MODEL SYSTEMS 6

R. M. Robertson

Queen's University, Canada

LOCAL ALTERNATED TEMPERATURE GRADIENTS AS FOOTPRINTS OF CORTICAL FUNCTIONAL ACTIVATION

A. M. Gorbach

Bioengineering and Physical Science, National Institutes of Health, USA

PURINERGIC SIGNALING IN HYPOTHALMIC MECHANISMS OF BODY TEMPERATURE REGULATION

V. N. Gourine¹, E. V. Melenchuk¹, D. M. Poputnikov¹, A. V. Gourine^{1,2}, K. M. Spyer²

¹*Institute of Physiology, National Academy of Sciences of Belarus, Belarus*

²*Royal Free and University College London Medical School, UK*

IDENTIFICATION OF TEMPERATURE-SENSITIVE NEURAL CIRCUITS IN MICE USING C-FOS EXPRESSION MAPPING

A. E. Ryabinin, N. O. Tsivkovskaia, R. K. Bachtell

Oregon Health & Science University, USA

PLATEAU POTENTIALS IN MOTONEURONES CONTRIBUTE TO TEMPERATURE REGULATION IN THE RAT

E. B. Rein¹, T. Eken^{1,2}, T. Lomo¹

¹*Institute of Basic Medical Sciences, University of Oslo, Norway*

²*Aker University Hospital, Norway*

SEROTONIN CELLS OF THE VENTRAL MEDULLA ARE NOT REQUIRED FOR SYMPATHETIC ACTIVATION OF BROWN ADIPOSE TISSUE

C. J. Madden, S. F. Morrison

Neurological Sciences Institute, Oregon Health & Science University, USA

11:30-13:00 SESSION MON/O-03: THERMAL RESPONSES TO COLD EXPOSURE

(Hall B)

Chair: H. Rintamäki, Finland

EFFECT OF LONG TERM ADAPTATION TO COLD ON THE IMMUNE RESPONSE

T. V. Kozyreva, L. S. Eliseeva

Institute of Physiology, Academy of Medical Sciences, Russia

THE EFFECT OF TROPISETRON VERSUS PLACEBO! ON COLD INDUCED OXYGEN CONSUMPTION AND SHIVERING IN MALE VOLUNTEERS

K. P. Ittner, L. Faerber, K. Taeger

University of Regensburg, Germany

WIND INDUCED THERMAL RESPONSES DURING REST AND EXERCISE IN COLD

T. T. Mäkinen, H. Rintamäki

Oulu Regional Institute of Occupational Health, Finland

BLOOD PRESSURE AND THERMAL RESPONSES TO WHOLE BODY COLD EXPOSURE IN MILDLY HYPERTENSIVE SUBJECTS: EFFECT OF HYDROCHLOROTHIAZIDE

S. Komulainen¹, T. Oja¹, H. Rintamäki², H. Virokannas¹, S. Keinänen-Kiukaanniemi¹

¹*University of Oulu, Finland*

²*Oulu Regional Institute of Occupational Health, Finland*

EFFECTS OF LEG EXERCISE ON METABOLIC AND THERMAL RESPONSES DURING COLD WATER IMMERSION UNDER SEVERE ENVIRONMENTAL CONDITIONS

H. Færevik¹, R. Reinertsen¹, G. Giesbrecht²

¹*SINTEF Health Research, Norway*

²*Health Leisure and Human Performance Research Institute, University of Manitoba, Canada*

EFFECT OF BODY HEAT CONTENT ON FACIAL TEMPERATURES AND TISSUE THERMAL RESISTANCE DURING EXPOSURE TO COLD WIND

M. B. Ducharme, D. Brajkovic

Human Protection and Performance Group, Defence Research and Development, Canada

13:00-14:30	SESSION POSL-01: GUIDED POSTER SESSION AND LUNCH	(Imperial Foyer)
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Chairs: T. Kozyreva, Russia and V. Gourine, UK

- 1. EVIDENCE FOR THERMOREGULATION BY DOPAMINE D₂ RECEPTOR IN THE ANTEROVENTRAL PREOPTIC REGION** **18**
R. C. H. Barros, L. G. S. Branco, E. C. Carnio
Universidade de São Paulo, Brazil
- 2. EFFECT OF HEAT AND COLD EXPOSURE ON THE RAT BRAIN MONOAMINE OXIDASE AND ANTIOXIDATIVE ENZYME ACTIVITIES** **19**
J. Djordjevic, G. Cvijic, V. Davidovic
Faculty of Biology, University of Belgrade, Serbia and Montenegro
- 3. 5-HT_{1A} RECEPTORS IN THE ANTEROVENTRAL PREOPTIC REGION ARE INVOLVED IN HYPOXIA-INDUCED ANAPYREXIA** **20**
L. H. Gargaglioni, L. G. S. Branco
Faculade de Odontologia de Ribeirao Preto, Universidade de Sao Paulo, Brazil
- 4. AFFERENT CONNECTION OF THE DORSOMEDIAL HYPOTHALAMUS INVOLVED IN THERMOREGULATION**
Y. Takashige¹, K. Yoshida¹, K. Nakamura², K. Matsumura³, K. Kobayashi³, K. Nagashima¹, K. Kanosue¹
¹*School of Allied Health Sciences, Osaka University, Japan*
²*Laboratory of Molecular Neurobiology, Graduate School of Biostudies, Japan*
³*Graduate School of Informatics, Kyoto University, Japan*
- 5. THE DORSOMEDIAL HYPOTHALAMIC NUCLEUS MEDIATES TERMOGENESIS ELICITED BY MICROINJECTION OF GABA INTO THE PREOPTIC AREA IN RATS**
A. Kobayashi¹, T. Osaka¹, K. Kanosue²
¹*National Institute of Health and Nutrition, Japan*
²*School of Sport Science, Waseda University, Japan*
- 6. ARGININE VASOPRESSIN IN FEVER: A STILL UNSOLVED PUZZLE**
A. Romanovsky¹, A. Steiner², L. Branco², L. Jansky¹, V. N. Gourine¹
¹*Institute of Physiology, National Academy of Sciences, Belarus*
²*Dental School of Ribeirao Preto, University of Sao Paulo, Brazil*
- 7. SIGNALING POSTPRANDIAL HYPERTHERMIA: A ROLE FOR CHOLECYSTOKININ**
M. Székely, A. Ember, G. Göbel, E. Petervari
Faculty of Medicine, University of Pecs, Hungary
- 8. EXPRESSION OF MT₁ AND MT₂ MELATONIN RECEPTOR mRNA IN SOME TISSUES OF RAT**
P. Sallinen, S. Saarela, M. Ilves, O. Vakkuri, J. Leppaluoto
University of Oulu, Finland
- 9. A COMPARATIVE STUDY OF THE ANTIPYRETIC EFFECTS OF INDOMETHACIN AND IBUPROFEN IN RATS**
R. Cristofolletti, A. S. C. Fabricio, D. M. Soares, G. E. P. Souza
Faculty of Pharmaceutical Science, University of Sao Paulo, Brazil
- 10. LPS-INDUCED FEVER IN DIABETIC RATS: ROLE OF KININ RECEPTORS**
O. O. Cardoso¹, M. C. C. Melo¹, D. M. Soares¹, M. J. Figueiredo¹, E. Geroldo², C. J. Lindsey², G. E. P. Souza¹
¹*Laboratory of Pharmacology, FCFRP-USP, Brazil*
²*EPM-UNIFESP, Brazil*

11. **CHARACTERIZATION OF PYROGENIC PROPERTIES OF POLY I: POLY C IN GUINEA PIGS**
T. Voss, C. Rummel, R. Gerstberger, T. Hübschle, J. Roth
Veterinary-Physiology, Justus-Liebig-University, Germany

12. **PYROGEN-INDUCED NUCLEAR STAT3 TRANSLOCATION IN ENDOTHELIUM OF RAT AND GUINEA PIG BRAIN**
C. Rummel¹, T. Voss¹, J. Muetze¹, J. Roth¹, R. Gerstberger¹, S. Kobayashi², K. Matsumura², T. Hübschle¹
¹*Veterinary-Physiology, Justus-Liebig-University, Germany*
²*Kyoto University, Japan*

13. **IDENTIFICATION AND DISTRIBUTION OF THE PROCALCITONIN-LIKE IMMUNOREACTIVITY IN THE RAT BRAIN FOLLOWING LIPOPOLYSACCHARIDE ADMINISTRATION**
F. J. Minano^{1,2}, E. Tavares², M. L. Ojeda¹, J. Ambrosiani¹, R. Maldonado²
¹*Labs for Clinical and Experimental Pharmacology, Valme University Hospital, Spain*
²*Faculty of Medicine, University of Seville, Spain*

14. **NEURTRALIZATION OF MACROPHAGE INFLAMMATORY PROTEIN 2 BLOCKS THE FEBRILE RESPONSE INDUCED BY LIPOPOLYSACCHARIDE IN RATS**
E. Tavares², F. J. Minano^{1,2}
¹*Labs for Clinical and Experimental Pharmacology, Valme University Hospital, Spain*
²*Faculty of Medicine, University of Seville, Spain*

15. **THE ROLE OF PURINERGIC SIGNALING IN FEBRILE AND CYTOKINE RESPONSES DURING SYSTEMIC INFLAMMATION**
V. Gourine^{1,2}, D. M. Poputnikov², N. A. Zhernosek², E. V. Melenchuk², V. N. Gourine², K. M. Spyer¹
¹*Royal Free and University College London Medical School, UK*
²*Institute of Physiology, National Academy of Sciences of Belarus, Belarus*

16. **ROLE OF PROTEASE INHIBITORS IN FEVER**
V. Gourine¹, V. N. Gourine¹, M. J. Kluger²
¹*Institute of Physiology, National Academy of Sciences of Belarus, Belarus*
²*Medical College of Georgia, USA*

17. **A SUBSIDIARY FEVER CENTRE IN THE MEDULLARY RAPHE?**
M. Tanaka, R. McAllen
Howard Florey Institute, University of Melbourne, Australia

18. **IS PROSTAGLANDIN (E₂) IMPORTANT TO FEVER INDUCED BY MIP-1 α IN RATS?**
D. M. Soares, F. H. V. Souza, R. Cristofolletti, A. S. C. Fabricio, G. E. P. Souza
Laboratory of Pharmacology, FCFRP-USP, Brazil

19. **SYSTEMIC VERSUS LOCALIZED INFLAMMATION: A ROLE FOR PROSTAGLANDINS AT DISTANT POINTS OF THE FEVER-INDUCTION PATHWAYS?**
C. Rummel¹, S. Barth², R. Gerstberger¹, T. Hübschle¹, J. Roth¹
¹*Veterinary-Physiology, Justus-Liebig-University, Germany*
²*Nutritional Physiology, Federal Research Center for Nutrition, Germany*

20. **ENDOGENOUS OPIOIDS PARTICIPATE ON PROSTAGLANDIN-F_{2 α} -CORTICOTROPIN-RELEASING FACTOR-, AND ENDOTHELIN-1-INDUCED FEVER**
D. Fraga¹, G. E. P. de Souza², A. R. Zamprônio¹
¹*Federal University of Parana, Brazil*
²*Faculty of Pharmaceutical Sciences, University of Sao Paulo, Brazil*

- 21. SUPPRESSION OF INFLAMMATION IN NEAR-TERM PREGNANT RATS:
A POSSIBLE CAUSE OF PREGNANCY-ASSOCIATED ANTIPYRSIS**
K. Imai-Matsumura¹, G. Jho¹, K. Matsumura², S. Kobayashi², T. Ibuki³, Y. Yamaszaki³
¹*Hyogo University of Teacher Education, Japan*
²*Graduate School of Informatics, Kyoto University, Japan*
³*Kyoto Prefectural University of Medicine, Japan*
- 22. IS THERE A ROLE FOR CYCLOOXYGENASE-2 IN ENDOTHELIN-1-
INDUCED FEVER?**
S. C. Fabricio, F. H. Veiga-Souza, R. Cristofolletti, G. E. P. Souza
Laboratory of Pharmacology, FCFRP-USP, Brazil
- 23. NITRIC OXIDE (NO) ACTIVATES INTRACELLULAR SIGNALING
PATHWAYS OF RAT MNPO CELLS IN PRIMARY CULTURE**
M. Kuth¹, D. Hild¹, S. Korte¹, M. Horowitz², R. Gerstberger¹
¹*Veterinary Faculty, Justus-Liebig-University, Germany*
²*Hadassah Medical School, The Hebrew University, Israel*
- 24. THE EFFECT OF PERFUSION OF PHENOXYBENZAMINE INTO THE
PREOPTIC AREA ON THERMOREGULATION IN COLD ACCLIMATED OR
NON-COLD ACCLIMATED RATS**
T. Saitou¹, T. Ishiwata¹, H. Hasegawa^{2,3}, S. Nomoto⁴, Y. Aihara¹
¹*Graduate School of Science, Tokyo Metropolitan University, Japan*
²*Faculty of Integrated Arts and Science, Hiroshima University, Japan*
³*Vrije University, Belgium*
⁴*Tokyo Metropolitan Institute of Geontology, Japan*
- 25. THE THERMOREGULATORY RESPONSE OF SHORT DAY ACCLIMATED
SOCIAL VOLES MICROTUS SOCIALIS TO LIGHT INTERFERENCE**
A. Alsalam Zubidat, A. Haim
University of Haifa, Israel
University of Haifa – Oranim, Israel

14:30-16:40 SESSION MON/S-04: INTEGRATION OF OSMOTIC AND (Hall A)
THERMAL SIGNALS AT THE LEVEL OF THE PREOPTIC
ANTERIOR HYPOTHELAMUS: A MULTIDISCIPLINARY APPROACH

Chair: R. Gerstberger, Germany

**NONLINEAR INTERACTIONS BETWEEN THERMAL, OSMOTIC AND
IMMUNE SIGNALS IN HYPOTHALAMIC NEURONS RECORDED IN RAT
BRAIN SLICES**

H. A. Braun¹, M. Dewald¹, M. Huber², B. Wollweber¹, H. Schneider¹, K. Voigt¹

¹*Institute of Physiology, University of Marburg, Germany*

²*Department of Psychiatry, University of Marburg, Germany*

**EFFERENT MULTISYNAPTIC PATHWAYS FROM PREOPTIC AREA TO
EFFECTOR ORGANS OF THERMO-AND/OR OSMOREGULATORY IMPORTANCE
AS REVEALED BY THE VIRAL TRACING TECHNIQUE**

T. Hübschle¹, K. Yoshida¹, B. Oldfield², M. McKinley², M. Mathai², R. Gerstberger¹

¹*Veterinary-Physiology, Justus-Liebig University, Germany*

²*Howard Florey Institute of Experimental Physiology and Medicine, Australia*

WARM AND COLD RECEPTORS ARE THERMOSTATS

S. Kobayashi, M. Okazawa

Graduate School of Informatics, Kyoto University, Japan

**THERMOREGULATORY RESPONSES IN RATS DURING SYSTEMIC SALT
LOADING**

M. Konishi¹, K. Nagashima¹, K. Asano¹, K. Kanosue²

¹*Graduate School of Medicine, Osaka University, Japan*

²*School of Sport Sciences, Waseda University, Japan*

**THE MEDIAN PREOPTIC NUCLEUS (MNPO) OF THE LAMINA TERMINALIS
AS HOMEOSTATIC RELAY STATION: THE ROLE OF NITRIC OXIDE**

R. Gerstberger¹, D. Hild¹, K. Hudl¹, S. Korte¹, M. Kuth¹, H. Schwimmer², T. Hübschle¹

¹*Veterinary Faculty, Justus-Liebig-University, Germany*

²*Hadassah Medical School, The Hebrew University, Israel*

**GENOMIC AND PROTEOMIC APPROACHES IN THE STUDY OF THE
HYPOTHALAMUS FOLLOWING HEAT-ACCLIMATION AND SUPERIMPOSED
HYPOHYDRATION**

H. Schwimmer, L. Eli-Berchoer, M. Horowitz

Faculty of Dental Medicine, The Hebrew University, Israel

Chair: D. Yablonskiy, USA

**INDIVIDUAL CHARACTERISTICS AND MATHEMATICAL MODELING
HUMAN THERMOREGULATION**

W. van Marken Lichtenbelt¹, F. E. M. Janssen², A. M. J. van Ooijen¹, A. J. H. Frijns²

¹Maastricht University, Netherlands

²University of Technology Eindhoven, Netherlands

**AN INTEGRATED MODEL FOR SIMULATING INTERACTIVE THERMAL
PROCESSES IN HUMAN-CLOTHING SYSTEM**

Y. Li¹, F. Z. Li^{1,2}, Y. X. Liu², Z. X. Luo²

¹Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong, China

²Dalian University of Technology, China

**PREDICTING RECTAL TEMPERATURE DURING HEAT STRESS AND
EXERCISE USING FIELD-MEASURABLE PHYSIOLOGICAL PARAMETERS**

J. W. Kaufman¹, S. A. Hastings²

¹Naval Air Systems Command, USA

²ARINC Inc, USA

AN ANALYTICAL MODEL OF A TEMPERATURE DISTRIBUTION IN THE BRAIN

A. L. Sukstanskii, D. A. Yablonskiy

Mallinckrodt Institute of Radiology, Washington University, USA

**EVALUATION OF THE COLD STRAIN INDEX (CSI) FOR PERIPHERAL
COLD ENVIRONMENTAL STRESS**

D. Moran

Heller Institute of Medical Research, Sheba Medical Center, Israel

**NONINVASIVE MEASUREMENT OF HUMAN BRAIN TEMPERATURE
USING ¹H-NMR SPECTROSCOPY AT 3 T**

Y. Yoshioka¹, Y. Kanbara¹, H. Oikawa², T. Inoue³, A. Ogawa³, S. Ehara³

¹High Field Magnetic Resonance Imagine Research Institute, Iwate Medical University, Japan

²Iwate Prefectural Fukuoka Hospital, Japan

³School of Medicine, Iwate Medical University, Japan

Chair: A. Arieli, Israel

**ADULT AND CHILD SLEEP PATTERNS OVER THE ARCTIC WINTER
TOTAL DARKNESS PERIOD**

G. R. Leon, M. M. Atlis

University of Minnesota, USA

**SEASONAL CHANGES OF THERMOGENESIS IN MONGOLIAN GERBILS
(MERIONES UNGUICULATUS)**

D. H. Wang, Z. W. Wang, Y. S. Wang

Institute of Zoology, The Chinese Academy of Sciences, China

**MECHANISMS OF BODY WEIGHT REGULATION AND THERMOGENESIS
IN SEASONAL ACCLIMATIZED BRANDT'S VOLES (MICROTUS BRANDTI)**

X. S. Li, D. H. Wang

Institute of Zoology, The Chinese Academy of Sciences, China

**CIRCADIAN BODY TEMPERATURE RHYTHM IN THE WILD BLACK-
LIPPED PIKAS (OCHOTONA CURZONIAE) IN THEIR NATURAL HABITAT
IN QINGHAI, CHINA**

**T. Matsumoto¹, A. Sakai², M. Saito³, T. Matsuzaki³, Z.-H. Ruan², N. Nishimura¹, Y. Inukai¹, M. Sato¹,
J.-B. Lee¹, Z.-G. Wang⁴, Q.-H. Chen⁴, X.-Q. Wang⁴, J. Sugeno¹**

¹*Aichi Medical University School of Medicine, Japan*

²*Institute on aging and Adaptation, Shinshu University Graduate School of Medicine, Japan*

³*Central Institute for Experimental Animals, Japan*

⁴*High Altitude Medical Science Institution of Qinghai, China*

**EFFECTS OF HOME APPLICABLE PERIPHERAL THERMAL STIMULATION
ON SLEEP ONSET LATENCY**

R. JEM Raymann^{1,2}, D. F. Swaab^{1,2}, E. J. W. van Someren^{1,2,3}

¹*Netherlands Institute for Brain Research, Netherlands*

²*Graduate School Neurosciences Amsterdam, Netherlands*

³*VU University Medical Center, Netherlands*

**DAILY RHYTHMS OF OXYGEN CONSUMPTION AND 6-SULPHATOXY
MELATONIN IN THE NORWEGIAN LEMMING LEMMUS LEMMUS**

A. Haim¹, E. Hohtola², S. Saarela²

¹*University of Haifa-Oranim, Israel*

²*University of Oulu, Finland*

Tuesday, October 12, 2004

09:00-11:10 **SESSION TUE/S-01: MOLECULAR AND CELLULAR
RESPONSES TO HEAT STRESS** **(Hall A)**

Chair: L. Sonna, USA

**INTRODUCTION FOR THE SYMPOSIUM ON MOLECULAR AND
CELLULAR RESPONSES TO HEAT STRESS**

L. A. Sonna

U.S. Army, USA

**IMMUNOLOGIC AUGMENTATION BY FEBRILE-RANGE HYPERTHERMIA:
A DUAL EDGED SWORD**

J. D. Hasday, I. S. Singh

The Mucosal Biology Research Center, University of Maryland School of Medicine, USA

**GENES AND MOLECULES SHAPE THE HEAT ACCLIMATED PHENOTYPE: GENO-
PHYSIOLOGICAL LINKAGE**

M. Horowitz

Faculty of Dental Medicine, The Hebrew University, Israel

**PHYSIOLOGICAL THERMOTOLERANCE – THE ROLE OF HEAT SHOCK
PROTEINS**

P. L. Moseley

University of New Mexico, USA

**IN VITRO MODELS OF THERMAL INJURY AND CYTOPROTECTION:
ASSESSMENT OF THERMAL AND PHARMACOLOGIC PRECONDITIONING
WITH CDNA ARRAYS**

S. T. Schuschereba¹, P. D. Bowman²

¹*Medical Research Detachment, U.S. Army, USA*

²*US Army Institute of Surgical Research, USA*

**HUMAN GENE EXPRESSION RESPONSES TO THERMAL STRESS AND
EXERTIONAL HEAT INJURY**

L. A. Sonna

US Army Research Institute of Environmental Medicine, USA

11:10-11:35 **COFFEE BREAK** **(Imperial Foyer)**

**11:35-13:05 SESSION TUE/O-02: TEMPERATURE REGULATION
THROUGH LIFE CYCLE**

(Hall A)

Chair: D. Wolfenson, Israel

PHYSIOLOGICAL MECHANISMS OF MENOPAUSAL HOT FLASHES

R. R. Freedman

School of Medicine, Wayne State University, USA

**GSH CONTENT, INDUCTION OF APOPTOSIS, IBAT HYPERPLASIA AND
MASS REGRESSION IN THE RATS EXPOSED TO DIFFERENT AMBIENT
TEMPERATURE**

B. Buzadzic¹, A. Korac², V. Petrovic¹, B. Korac¹

¹*Institute for Biological Research, Serbia and Montenegro*

²*Institute of Zoology, Faculty of Biology, University of Belgrade, Serbia and Montenegro*

**COMPARISON OF THERMOREGULATORY RESPONSES TO EXERCISE
IN DRY HEAT AMONG PRE-PUBERTAL BOYS, YOUNG ADULTS, AND
OLDER MALES**

O. Inbar¹, N. Morris², Y. Epstein^{3,4}, G. Gass²

¹*Zinman College, Wingate Institute, Israel*

²*Griffith University, Australia*

³*Heller Institute of Medical Research, Sheba Medical Center, Israel*

⁴*Sackler School of Medicine, Tel Aviv University, Israel*

**NUCLEAR STAT3 EXPRESSION IS REDUCED IN PREGNANT RATS AT
NEAR TERM**

E. Harré, A. Mouihate, S. Ellis, Q. J. Pittman

Neuroscience Research Group, Health Sciences Center, Canada

11:35-13:05 SESSION TUE/O-03: MEASUREMENTS AND TECHNIQUES (Hall B)

Chair: R. Reinertsen, Norway

**NON-INVASIVE THIGH MUSCLE TEMPERATURE MEASUREMENT
USING ZERO-HEAT-FLOW METHOD**

D. Brajkovic, M. B. Ducharme

Human Protection and Performance Group, Defence Research and Development, Canada

**ON TRAINING BACTERIA OR CONVERTING THEM INTO NANO-
MACHINES TO ACHIEVE TEMPERATURE REGULATION**

A. Tillu, E. Irani, S. B. Khadkikar, A. Kesarkar

Pune University, India

**BODY TEMPERATURE MEASUREMENTS IN THE CLINIC: EVALUATION
OF PRACTICE IN A NORWEGIAN HOSPITAL**

M. Sandsund¹, I. H. Geving¹, R. E. Reinertsen¹, P. Aadahl²

¹*SINTEF Unimed, Norway*

²*St. Olavs Hospital, Norway*

**SAFE COOLING LIMITS DURING HYPERTHERMIA TREATMENT AND
INDICES OF CORE TEMPERATURE**

M. B. Ducharme^{1,2}, C. Proulx², G. P. Kenny²

¹*Human Protection and Performance Group, Defence Research and Development, Canada*

²*Faculty of Health Sciences, University of Ottawa, Canada*

**EFFECTS OF CO₂ BATH IMMERSION (100 PPM) ON THERMOREGULATORY
RESPONSES IN HUMANS**

**M. Sato¹, J. Sugeno¹, H. Sato², M. Kudoh², N. Nishimura¹, T. Matsumoto¹, Y. Inukai¹,
A. Ogata¹, Y. Taniguchi¹, A. Osada¹**

¹*Aichi Medical University School of Medicine, Japan*

²*Kao Corporation, Tokyo Laboratories, Japan*

VALIDATION OF A NEW TELEMETRIC CORE TEMPERATURE MONITOR

J. M. McKenzie, D. S. Osgood

Mini Mitter Co., Inc., USA

**13:05-14:30 SESSION POSL-02: GUIDED POSTER SESSION
AND LUNCH****(Imperial Foyer)**

Chairs: Z. Arad, Israel and M. Dascomb, UK

1. **CARRY-OVER EFFECT OF SUMMER THERMAL STRESS ON CHARACTERISTICS OF THE PEOVULATORY FOLLICLE OF LACTATING COWS**
Z. Roth¹, A. Bor², R. Braw-Tal², D. Wolfenson¹
¹*Faculty of Agricultural, Food and Environmental Quality Sciences, The Hebrew University of Jerusalem, Israel*
²*Agricultural Research Organization, Institute of Animal Science, Israel*
2. **INDIVIDUAL TYPOLOGICAL PROFILES FOR HUMAN HEART RATE UNDER LOCAL COLD AND HYPOXIC EXPOSURES**
L. Maximov, N. N. Maximova
International Scientific Center "Arktika" FEB RAS, Russia
3. **BLOOD CHEMISTRY AND IMMUNE CELL CHANGES DURING ONE-WEEK OF INTENSIVE FIREFIGHTING TRAINING**
D. L. Smith¹, K. Dyer², S. J. Petruzzello³
¹*Skidmore College, USA*
²*Carle Medical Center, USA*
³*University of Illinois, USA*
4. **EXPERIMENTAL STUDY ON DYNAMIC CHANGE IN SWEATING AND EVAPORATION THROUGH CLOTHING DURING HOT EXPOSURE**
N. Kakituba
Ashikaga Institute of Technology, Japan
5. **THE ROLE OF WARD TEMPERATURE IN THE MANAGEMENT OF SCHIZOPHERNIA INPATIENTS**
R. Shiloh, A. Weizman, R. Isseroff, H. Hermesh, H. Munitz
Geha Mental Health Center, Israel
6. **EFFECTS OF HYPERBARIC OXYGENATION ON RAT HEATSTROKE**
K. C. Niu, S. M. Tsai, Y. W. Chen, M. T. Lin
Chi-Mei Foundation Medical Center, Taiwan
7. **GENOMIC APPROACH TO EVALUATE DIFFERENCES DUE TO HEAT ACCLIMATION IN BRAIN, HEART AND SKELETAL MUSCLE**
E. Kodesh, H. Schwimmer, L. Ali-Berchoyer, M. Horowitz
Division of Physiology, The Hebrew University of Jerusalem, Israel
8. **THE CHANGE IN PERIPHERAL SWEATING MECHANISMS OF THE TROPICAL MALAYSIAN WHO STAYS IN JAPAN**
J. B. Lee¹, J. S. Bae¹, T. Matsumoto², H. M. Yang¹, Y. K. Min¹
¹*College of Medicine, Soonchunhyang University, Korea*
²*Aichi Medical University, Japan*
9. **CHANGES IN VASCULAR COMPLIANCE IN HUMANS ACCLIMATED TO HEAT GIVEN DAILY AT A FIXED TIME**
M. Maruyama¹, T. Hara¹, M. Hashimoto¹, M. Koga², O. Shido¹
¹*School of Medicine, Shimane University, Japan*
²*School of Nursing, Shimane University, Japan*

- 10. EFFECT OF ALTERNATIVELY REPEATED EXPOSURE TO COLD AND WARM ENVIRONMENTS ON MANUAL AND MENTAL PERFORMANCE**
S. I. Sawada¹, S. Araki¹, K. Yokoyama², H. Sato³
¹National Institute of Industrial Health, Japan
²School of Medicine, Mie University, Japan
³Graduate School of Medicine, University of Tokyo, Japan
- 11. MUS MUSCULUS - A NEW MODEL FOR STUDYING THE DYNAMICS OF HEAT ACCLIMATION AND CROSS-TOLERANCE BETWEEN HEAT ACCLIMATION AND OXYGEN DEPRIVATION**
Z. Bromberg, M. Horowitz
Faculty of Medicine, The Hebrew University of Jerusalem, Israel
- 12. THE ROLE OF SOLAR AND UV RADIATION IN ENVIRONMENTAL STRESS ASSESSMENT**
D. S. Moran¹, K. B. Pandolf², A. Vitalis³, Y. Heled¹, R. Parker⁴, R. R. Gonzalez²
¹Heller Institute of Medical Research, Sheba Medical Center, Israel
²U.S Army Research Institute of Environmental Medicine, USA
³Massey University, New Zealand
⁴Center for Human Factors and Ergonomics, Forest Research Institute, New Zealand
- 13. EVALUATION OF THE ENVIRONMENTAL STRESS INDEX (ESI) FOR THE SOUTHERN HEMISPHERE**
D. S. Moran¹, K. B. Pandolf², A. Vitalis³, Y. Heled¹, R. Parker⁴, R. R. Gonzalez²
¹Heller Institute of Medical Research, Sheba Medical Center, Israel
²U.S Army Research Institute of Environmental Medicine, USA
³Massey University, New Zealand
⁴Center for Human Factors and Ergonomics, Forest Research Institute, New Zealand
- 14. THERMOREGULATORY EFFECTS OF A SURGICAL DRAPE IMPERVIOUS TO MOISTURE**
R. Lenhardt, P. E. Maglinger, D. I. Sessler
Outcomes ResearchTM Institute, University of Louisville, USA
- 15. PHYSIOLOGICAL RESPONSES OF BOS TAURUS AND BOS INDICUS CATTLE TO PROLONGED HEAT AND HUMIDITY**
D. Beatty¹, A. Barnes¹, E. Taylor¹, D. Pethick¹, R. Taplin², M. McCarthy³, S. K. Maloney⁴
¹Division of Veterinary and Biomedical Sciences, Murdoch University, Australia
²Division of Science and Engineering, Murdoch University, Australia
³Professional Agricultural Services, Australia
⁴School of Biomedical and Chemical Sciences, University of WA, Australia
- 16. HEAT ACCLIMATION INDUCES PROTECTION AGAINST CNS OXYGEN TOXICITY IN THE RAT: HSP72 MAY BE INVOLVED**
Y. Arieli¹, M. Eynan¹, H. Gancz², R. Arieli¹, Y. Kashi²
¹Israel Naval Medical Institute, IDF Medical Corps, Israel
²The Faculty of Food Engineering and Biotechnology, The Technion, Israel
- 17. OXYGEN CONSUMPTION PREDICTION USING A NOVEL ACTIGRAPHY METHOD**
D. S. Moran¹, Y. Heled¹, A. Laor¹, R. R. Gonzalez²
¹Heller Institute of Medical Research, Sheba Medical Center, Israel
²Bio-Tor, Inc., USA
- 18. HUMAN PHYSIOLOGICAL AND PSYCHOLOGICAL RESPONSES WHEN WEARING TWO DIFFERENT KINDS OF PROTECTIVE FACEMASKS**
Y. P. Guo, Y. Li, H. Tokura, A. S. W. Wong
Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong, China

- 19. INDIVIDUAL VARIATION IN COLD INDUCED THERMOGENESIS**
**A. M. J. van Ooijen¹, W. D. van Marken Lichtenbelt¹, A. A. van Steenhoven²,
K. R. Westerterp¹**
¹*Maastricht University, Netherlands*
²*University of Technology, Netherlands*
- 20. INHIBITION OF NEURONS IN ROSTRAL MEDULLARY RAPHE WITH
MUSICMOL AND 5-HT1A AGONIST INHIBITS COLD-INDUCED CUTANEOUS
BLOOD FLOW CHANGES IN CONSCIOUS AND ANESTHETIZED RABBITS**
Y. Ootsuka, W. W. Blessing
Center for Neuroscience, Flinders University, Australia
- 21. ADRENORECEPTOR MECHANISMS OF THE FORMATION OF THE
THERMOREGULATORY AND IMMUNE RESPONSES UNDER THE EFFECT
OF COLD EXPOSURE**
T. V. Kozyreva, L. S. Eliseeva, E. V. Gonsales
Institute of Physiology, Academy of Medical Sciences, Russia
- 22. IS NITRIC OXIDE INVOLVED IN THE BEHAVIORAL THERMOREGULATION
OF AMPHIBIANS**
K. C. Bicego¹, A. S. Abe¹, L. G. S. Branco²
¹*Instituto de Biociencias, Universidade Estadual Paulista, Brazil*
²*Facultade de Odontologia de Ribeirao Preto, Universidade de Sau Paolo, Brazil*
- 23. EFFECT OF THE SUBSTANCE P IONTOPHORESIS TO SKIN ON THE
THERMOREGULATORY PARAMETERS AT COOLING**
E. Ya. Tkachenko, V. P. Kozaruk, T. V. Kozyreva
Institute of Physiology, Academy of Medical Sciences, Russia

14:30-16:00 SESSION TUE/O-04: NON-SHIVERING THERMOGENESIS**(Hall A)**

Chair: B. Cannon, Sweden

CORRELATION OF TORPOR FREQUENCY AND NORADRENALINE-INDUCED THERMOGENESIS IN THE SIBERIAN HAMSTERS**M. Jefimow¹, M. Wojciechowski¹, A. Masuda², T. Oishi²**¹*Institute of General and Molecular Biology, Copernicus University, Poland*²*Faculty of Science, Nara Women's University, Japan***HYPERINDUCED THERMOGENESIS IN ELOVL3-ABLATED MICE (ROLE FOR ELOVL3 IN NON-SHIVERING THERMOGENESIS)****R. Westerberg¹, V. Golozoubova¹, P. Tvrdik¹, K. Retterstøl², A. Jacobsson¹**¹*The Wenner-Gren Institute, The Arrhenius Lab. F3, Stockholm University, Sweden*²*Institute of Clinical Biochemistry, University of Oslo, Norway***ACUTE EFFECT OF COLD ON THE ANTIOXIDANT ENZYMES ACTIVITIES AND UNCOUPLING PROTEIN-1 CONTENT IN THE BROWN FAT OF 6-HYDROXYDOPAMINE-TREATED RATS****V. Davidovic, N. Petrovic, J. Djordjevic, S. Durasevic, G. Cvijic***Faculty of Biology, University of Belgrade, Serbia and Montenegro***THE β 3-ADRENERGIC RECEPTOR IN THERMOGENESIS CONTROL****B. Cannon, J. Nedergaard, T. Bengtsson***The Wenner-Gren Institute, The Arrhenius Lab. F3, Stockholm University, Sweden***THE ARCHETYPAL UNCOUPLING PROTEIN, UCP1, AND THERMOGENESIS CONTROL****J. Nedergaard, I. G. Shabalina, N. Petrovic, B. Cannon***The Wenner-Gren Institute, The Arrhenius Labs. F3, Stockholm University, Sweden***COMPARATIVE THERMOREGULATORY DAILY RHYTHMS ON THE POPULATION LEVEL AND THEIR RESPONSE TO PHOTOPERIOD MANIPULATIONS****M. Spiegel¹, A. Haim²**¹*Lifshitz College, Israel*²*University of Haifa - Oranim, Israel*

14:30-16:00	SESSION TUE/O-05: PHYSICAL PERFORMANCE AND AMBIENT TEMPERATURE	(Hall B)
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Chair: L. Nybo, Denmark

CHANGES IN MAXIMAL CARDIORESPIRATORY CAPACITY AND SUBMAXIMAL STRAIN WHILE EXERCISING IN COLD

J. Oksa¹, H. Kaikkonen², P. Sorvisto¹, M. Vaappo¹, S. Rissanen¹, V. Martikkala³, H. Rintamäki¹

¹*Oulu Regional Institute of Occupational Health, Finland*

²*Oulu Deaconess Institute, Finland*

³*Eastern Finland Sports Institute, Finland*

ROWING IN THE HEAT, WHAT ARE THE LIMITATIONS FOR THE PERFORMANCE OF AN ELITE OLYMPIC ROWER

J. W. M. Willems¹, R. Heus¹, E. A. den Hartog²

¹*TNO Industrial Technology, Netherlands*

²*TNO Human Factors, Netherlands*

THE EFFECT OF HYPERTHERMIA ON REPEATED SPRINT PERFORMANCE

B. Drust¹, P. Rasmussen², M. Mohr², L. Nybo², B. Nielsen²

¹*School for Sport and Exercise Sciences Liverpool, John Moores University, UK*

²*August Krogh Institute, University of Copenhagen, Denmark*

LOCALLY APPLIED WARM WATER AND PULSATING NEGATIVE PRESSURE PREVENTS HYPOTHERMIA DURING LAPAROTOMIA

E. B. Rein¹, M. Filtvedt², L. Walløe¹, J. Ræder²

¹*Institute of Basic Medical Sciences, University of Oslo, Norway*

²*Ullevål University Hospital, Norway*

PERIPHERAL SKIN TEMPERATURE EFFECTS ON MUSCLE OXYGEN LEVELS

R. Pozos, C. Hom, P. Vasquez

San Diego State University, USA

EFFECT OF EXERCISE DURATION, INTENSITY AND ENVIRONMENT ON RATE OF RISE OF CORE TEMPERATURE DURING REPEATED WORK CYCLES

E. Song, T. Yue-Nie

DMERI@DSO, Military Physiology Program, Singapore

16:00-16:30	COFFEE BREAK	(Imperial Foyer)
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16:30-18:00	SESSION TUE/O-06: ADIPOSE TISSUES, PEPTIDES AND TEMPERATURE REGULATION	(Hall A)
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Chair: A. Haim, Israel

INHIBITORY EFFECTS OF HALOTHANE ON THE THERMOGENIC PATHWAY IN BROWN ADIPOCYTES: LOCALISATION TO ADENYLYL CYCLASE AND MITOCHONDRIAL FATTY ACID OXIDATION

K. B. E. Ohlson^{1,2}, N. Mohell¹, G. Bronnikov¹, I. Shabalina¹, K. Lennström¹, S. G. E. Lindahl^{2,3}, B. Cannon¹, J. Nedergaard¹

¹The Wenner-Gren Institute, The Arrhenius Labs. F3., Stockholm University, Sweden

²Lund University Hospital, Sweden

³Karolinska Hospital, Sweden

CENTRAL INHIBITION OF NITRIC OXIDE INDUCES A DOSE-DEPENDENT HYPERTHERMIA IN CONSCIOUS RATS THAT IS PREVENTED BY INDOMETHACIN

M. L. Mathai¹, I. Arnold¹, M. A. Febbraio², M. J. McKinley¹

¹Howard Florey Institute of Experimental Physiology and Medicine, University of Melbourne, Australia

²School of Medical Sciences, RMIT University, Australia

POLYINOSINIC: POLYCYTIDYLIC ACID INDUCED FEVER IN RATS IS CYTOKINE MEDIATED

S. Kent^{1,2}, M. E. Fortier¹, S. Poole³, P. Boksa¹, G. N. Luheshi¹

¹Douglas Hospital Research Center, McGill University, Canada

²School of Psychological Science, La Trobe University, Australia

³National Institute for Biological Standards and Control, UK

A NEW FUNCTION OF THE LEPTIN RECEPTOR: MEDIATION OF THE RECOVERY FROM LIPOPOLYSACCHARIDE HYPOTHERMIA

A. A. Steiner¹, M. D. Dogan¹, A. I. Ivanov², S. Patel¹, A. Y. Rudaya¹, D. H. Jennings³, M. Orchinik³, T. W. Pace⁴, K. A. O'Connor⁴, L. R. Watkins⁴, A. A. Romanovsky¹

¹St. Joseph's Hospital, USA

²Emory University, USA

³Arizona State University, USA

⁴University of Colorado, USA

THE EFFECTS OF MELANOCORTIN AGONISTS AND ANTAGONISTS ON LEPTIN-INDUCED FEVER IN RATS

V. F. Turek¹, D. H. Olster², K. R. Gililand³, M. Sheehy³, A. Ettenberg³, H. J. Carlisle³

¹Oregon Health Sciences University, USA

²Office of Behavioral and Social Sciences Research, National Institute of Health, USA

³University of California, USA

BRAIN LEPTIN TARGET CELLS IDENTIFIED WITH STAT3 IMMUNOHISTOCHEMISTRY: EVIDENCE OF FUNCTIONAL LEPTIN RECEPTOR EXPRESSION IN BRAIN ENDOTHELIUM

J. Mütze, J. Roth, R. Gerstberger, T. Hübschle

The Veterinary-Physiology, Justus-Liebig-University, Germany

16:30-18:00 SESSION TUE/O-07: ADVERSE CONDITIONS AND INDUCIBLE RESPONSES**(Hall B)**

Chair: M. Sawka, USA

HUMAN BODY TEMPERATURE REGULATION IN EXTREMELY STRESSFUL ENVIRONMENTS**M. Kosaka¹, M. Yamane¹, R. Ogai¹, T. Kato¹, N. Ohnishi¹, E. Simon²**¹Graduate School of Health and Sport Sciences, Chukyo University, Japan²W.G.Kerckhoff-Institute, Max-Planck Institute, Germany**HEAT SHOCK PRETREATMENT PROTECTS AGAINST CEREBRAL FREE RADICAL FORMATION AND ENERGY DEPLETION IN RAT HEATSTROKE****J. L. Wang¹, M. T. Lin²**¹National Yang-Ming University, Taiwan²Chi-Mei Medical Center, Taiwan**PROTECTIVE EFFECTS OF PURIFIED HUMAN UMBILICAL CORD BLOOD ON CIRCVLATORY SHOCK AND CEREBRAL ISCHEMIA IN EXPERIMENTAL HEATSTROKE****S. H. Chen^{1,3}, F. M. Change^{2,3}, Y. C. Tsai¹, K. F. Huang¹, C. L. Lin¹, M. T. Lin¹**¹Chi-Mei Medical Center, Taiwan²National Cheng Kung University Hospital, Taiwan³College of Medicine, National Cheng Kung University, Taiwan**THE THERMAL PREFERENCE IN HUMANS DURING MODERATE HYPOXIA****P. Golja^{2,3}, A. Kacin^{2,4}, M. J. Tipton², I. B. Mekjavic^{1,2}**¹Jozef Stefan Institute, Slovenia²Inst of Biomedical and Biomolecular Sciences, University of Portsmouth, UK³Polytechnic Nova Gorica, Slovenia⁴College of Health Studies, University of Ljubljana, Slovenia**THE INFLUENCE OF INTERMITTENT ALTITUDE ACCLIMATIZATION ON EXERCISE TEMPERATURE REGULATION****A. Kacin^{2,3}, P. Golja^{2,5}, M. J. Tipton², O. Eiken⁴, I. B. Mekjavic^{1,2}**¹Institute Jozef Stefan, Slovenia²Inst of Biomedical and Biomolecular Sciences, University of Portsmouth, UK³College of Health Studies, University of Ljubljana, Slovenia⁴Swedish Defence Research Agency, Karolinska Institute, Sweden⁵Nova Gorica Polytechnic, Slovenia

Wednesday, October 13, 2004

08:45-10:55 SESSION WED/S-01: HEAT-RELATED ILLNESSES

(Hall A)

Chair: N. Taylor, Australia

EXTREMES OF HUMAN HEAT TOLERANCE: LIFE AT THE PRECIPICE OF THERMOREGULATORY FAILURE (Keynote)

W. L. Kenney, D. DeGroot, L. Holowatz

Noll Physiological Research Center, Penn State University, USA

HOST FACTORS AFFECTING THE INDIVIDUAL'S SUSCEPTABILITY TO HEAT

Y. Epstein^{1,2}, E. Hadad^{1,2}, Y. Shapiro³

¹*Heller Institute of Medical Research, Sheba Medical Center, Israel*

²*The Sackler Faculty of Medicine, Tel Aviv University, Israel*

³*School of Health Sciences, Judea and Samaria College - Ariel, and Assuta Medical Centers, Israel*

THE NEUROPHARMACOLOGICAL BASIS OF HEAT INTOLERANCE AND ITS TREATMENT

M. T. Lin, C. P. Chang

Chi-Mei Medical Center, Taiwan

HYDRATION EFFECTS ON THERMOREGULATION AND EXERCISE-HEAT TOLERANCE

M. N. Sawka, S. N. Cheuvront, R. Carter III, S. J. Montain

US Army Research Institute of Environmental Medicine, USA

08:45-10:55 SESSION WED/S-02: SLEEP, CIRCADIAN RHYTHMS AND THERMOREGULATION

(Hall B)

Chair: E. van Someren, Netherlands

SLEEP, CIRCADIAN RHYTHMS AND THERMOREGULATION (Keynote)

E. J. W. Van Someren^{1,2}, R. JEM Raymann¹, D. F. Swaab¹

¹*Netherlands Institute for Brain Research, Netherlands*

²*VU University Medical Center, Netherlands*

TEMPERATURE EFFECTS ON CIRCADIAN CLOCKS

P. Ruoff¹, L. Rensing²

¹*School of Science and Technology, Stavanger University College, Norway*

²*University of Bremen, Germany*

SLEEP INERTIA AND THE CIRCADIAN MODULATION OF SLEEPINESS, BUT NOT SLEEP HOMEOSTASIS, IS ASSOCIATED WITH DISTAL VASODILATATION

K. Kräuchi

Center for Chronobiology, Psychiatric University Clinic Basel, Switzerland

CIRCADIAN CLOCK AS A THERMOREGULATORY MECHANISM

K. Nagashima

School of Human Sciences, Waseda University, Japan

PERIPHERAL THERMAL CHALLENGE: A TEST OF HEAT LOSS CAPACITY IN SLEEP ONSET INSOMNIACS

C. J. van den Heuvel, S. A. Ferguson, D. Dawson

Center for Sleep Research, University of South Australia, Australia

The Queen Elizabeth Hospital, Australia

10:55-11:20 COFFEE BREAK

(Imperial Foyer)

Chairs: D. Mitchel, South Africa and B. Wollweber, Germany

ALCOHOL EFFECTS ON TEMPERATURE-SENSITIVE HYPOTHALMIC NEURONS IN RAT BRAIN SLICES

B. T. Wollweber, H. Schneider, K. Voigt, H. A. Braun

Institute für Normale and Pathologische Physiologie, Philipps-University, Germany

HEAT SHOCK PROTEIN 70 GENE OVEREXPRESSING PROTECTS AGAINST HEATSTROKE INDUCED ARTERIAL HYPOTENSION AND CEREBRAL ISCHEMIA

C. P. Chang, M. T. Lin

Chi-Mei Medical Center, Taiwan

EFFECT OF HYPERVOLEMIC HEMODILUTION ON CEREBRAL GLUTAMATE, GLYCEROL, LACTATE AND FREE RADICALS IN HEATSTROKE RATS

C. K. Chang¹, C. P. Chang², M. T. Lin²

¹*Division of Neurosurgery, Mackay Memorial Hospital, Taiwan*

²*Chi-Mei Medical Center, Taiwan*

TORPOR - LIKE AND LEPTIN RESPONSES AS ADAPTATIONS OF THE GOLDEN SPINY MOUSE (ACOMYS RUSSATUS) TO VARIATIONS IN FOOD AVAILABILITY

R. Gutman, I. Choshniak, N. Kronfeld-Schor

Tel Aviv University, Israel

POSTURAL SWAY DURING REPEATED COLD EXPOSURES

T. M. Mäkinen¹, T. Pääkkönen², H. Rintamäki³, J. T. Korpelainen², V. Kampman², L. A. Palinkas⁴, J. Leppäluoto², J. Hassi¹

¹*Center for Arctic Medicine, University of Oulu, Finland*

²*University of Oulu, Finland*

³*Oulu Regional Institute of Occupational Health, Finland*

⁴*University of California, USA*

THE ROLE OF HEAT SHOCK PROTEIN 90 IN CELL RESPONSE TO HYPERTHERMIA

V. Yavelsky, O. Vais, B. Piura, M. Wolfson, A. Rabinovich, V. Fraifeld

Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel

Soroka Medical Center, Israel

Chairs: L. Kenney, USA and C. Haley, Australia

EFFECT OF CALCIUM ON THE COLD DEFENSE RESPONSE IN HYPERTENSIVE AND NORMOTENSIVE RATS

S. V. Lomakina, E. Ya. Tkachenko, T. V. Kozyreva

Institute of Physiology, Academy of Medical Science, Russia

AN OPEN-LOOP MODEL FOR INVESTIGATING MAMMALIAN THERMOSENSITIVITY

C. J. Gordon¹, C. D. Haley¹, P. L. McLennan¹, M. J. Tipton², I. B. Mekjavic³, N. A. S. Taylor¹

¹*University of Wollongong, Australia*

²*University of Portsmouth, UK*

³*Institute Jozef Stefan, Slovenia*

NOVEL, HIGH-AMPLITUDE BLOOD-FLOW OSCILLATIONS IN VASODILATING HUMAN SKIN

C. D. Haley, A. Zeyl, N. A. S. Taylor, A. B. Jenkins

University of Wollongong, Australia

HEAT INDUCED SLOWING OF EEG ACTIVITY IS NOT RELATED TO REDUCED CEREBRAL PERFUSION DURING PROLONGED EXERCISE

P. Rasmussen, H. Stie, L. Nybo, B. Nielsen

Institute of Exercise and Sports Sciences, University of Copenhagen, Denmark

INVESTIGATING HIGH-AMPLITUDE OSCILLATIONS IN RAT TAIL SKIN BLOOD FLOW DURING CORE HEATING AND COOLING

C. D. Haley, C. J. Gordon, N. A. S. Taylor, A. B. Jenkins

University of Wollongong, Australia

ALPHA-1-ADRENERGIC INDUCED CONTRACTION OF HEAT ACCLIMATED RAT AORTAE IS ENHANCED VIA MULTIPLE PATHWAYS

E. A. Nir¹, M. Horowitz²

¹*The Hebrew University of Jerusalem, Israel*

²*Hadassah Schools of Medicine and Dental Medicine, Israel*

Thursday, October 14, 2004

09:00-11:10 SESSION THU/S-01: FEVER - PART 1

(Hall A)

Chair: C. Blatteis, USA

**ELEVATED LEVELS OF CIRCULATING CYTOKINES AND ENDOTOXIN
ARE NOT NECESSARY FOR THE ACTIVATION OF THE SICKNESS OR
CORTICOSTERONE RESPONSES PRODUCED BY PERIPHERAL E.COLI
CHALLENGE**

**M. Fleshner, M. K. Hansen, K. A. O'Connor, J. C. Biedenkapp, L. R. Watkins, S. F. Maier,
J. Campisi**

University of Colorado, USA

**FEBRIGENIC ROLE OF MEDIATORS CARRIED IN THE BLOOD BY THEIR
TRANSPORTERS: OF THE HORSEMEN AND THEIR HORSES**

A. A. Romanovsky

St. Joseph's Hospital, USA

**COMPLEMENT IS REQUIRED FOR THE INDUCTION OF ENDOTOXIC
FEVER IN GUINEA PIGS AND MICE**

C. M. Blatteis, S. Li, Z. Li, V. Perlik, C. Feleder

College of Medicine, University of Tennessee Health Science Center, USA

**A ROLE FOR A CYCLOPENTANE PROSTAGLANDIN AS A NOVEL
ANTIPYRETIC IN RAT BRAIN**

Q. J. Pittman, L. Boissé, A. Mouihate

Neuroscience Research Group, Faculty of Medicine, University of Calgary, Canada

**EPOXYEICOSATRIENOIC ACIDS AS MEDIATORS OF ANTIPYRESIS:
HOW DO THEY FIT?**

W. Kozak¹, V. Fraifeld², A. Kozak³

¹*Institute of General and Molecular Biology, University Nicolaus Copernicus, Poland*

²*Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel*

³*University of Georgia, USA*

11:10-11:35 COFFEE BREAK

(Imperial Foyer)

**11:35-13:05 SESSION THU/O-02: BRAIN COOLING; VASCULAR
RESPONSES TO HEAT EXPOSURE**

(Hall A)

Chair: M. Cabanac, Canada

THE HOT AND HARD WORKING BRAIN

L. Nybo, B. Nielsen

August Krogh Institute, University of Copenhagen, Denmark

ABSENCE OF SELECTIVE BRAIN COOLING IN FREE-LIVING HORSES

N. Rump¹, D. Mitchell¹, S. K. Maloney^{1,2}, G. Mitchell¹, A. Fuller¹

¹*School of Physiology, University of Witwatersrand, Australia*

²*SA and School of Biomedical and Chemical Sciences, University of Western Australia, Australia*

**IN-VITRO HEAT EXCHANGE BEHAVIOUR OF THE RETE OF THE BOER
GOAT UNDER SPECIFIED LABORATORY CONDITIONS**

J. M. Kamau, S. J. Nsoso

Botswana College of Agriculture, Botswana

SELECTIVE BRAIN COOLING: A MULTIPLE REGULATORY MECHANISM

M. Caputa

Institute of General and Molecular Biology, Nicolaus Copernicus University, Poland

BRAIN TEMPERATURE REGULATION IN ANESTHETIZED RATS

M. Zhu, D. Nehra, J. J. H. Ackerman, D. A. Yablonskiy

Washington University, USA

**HISTAMINE RECEPTORS IN THE DIGITAL ARTERY OF THE WARM
ACCLIMATIZED FALLOW DEER (DAMA DAMA)**

A. Milton, W. Kallagher, H. Warrington, B. Callingham

University of Cambridge, UK

11:35-13:05 SESSION THU/O-03: ENVIRONMENTAL STRESS AND BODY (Hall B)
TEMPERATURE RESPONSE

Chair: M. Ducharme, Canada

**PHYSIOLOGICALLY-BASED APPROACHES TO ENHANCE FINGER
COMFORT IN OPEN SPACE AND OTHER EXTREME COLD CONDITIONS**

V. S. Koscheyev, G. R. Leon, A. Coca

University of Minnesota, USA

**EFFECT OF BILATERAL CAROTID COOLING ON THERMAL RESPONSES
DURING CYCLING AND ARM CRANKING WORKS DUE TO IDENTICAL
OXYGEN CONSUMPTION**

M. Torii¹, Z. Szygara², M. Iwashita¹

¹*Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan*

²*Institute of Human Physiology, University School of Physical Education, Poland*

**RELATIONSHIPS BETWEEN THERMOPHYSIOLOGICAL RESPONSES AND
PSYCHOLOGICAL THERMAL PERCEPTION DURING EXERCISE WEARING
AEROBIC WEAR**

A. S. W. Wong, Y. Li

Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong, China

**HEAT STRAIN AND GROSS EFFICIENCY AFTER PRE-COOLING IN THE
HEAT**

H. A. M. Daanen^{1,2}, E. van Es², J. de Graaf²

¹*TNO Human Factors, Netherlands*

²*Faculty of Human Movement Sciences, Vrije Universiteit, Netherlands*

**FINGER TEMPERATURES DURING MILITARY FIELD TRAINING AT
0- -29°C**

H. Rintamäki¹, S. Rissanen¹, T. Mäkinen¹, A. Peitso²

¹*Oulu Regional Institute of Occupational Health, Finland*

²*Northern Command Headquarters Oulu, Finland*

13:05-14:30	SESSION POSL-03: GUIDED POSTER SESSION AND LUNCH	(Imperial Foyer)
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Chairs: L. Branco, Brazil and F. Mioano Sanchez, Spain and V. Fraifeld, Israel

1. **HYPOHYDRATION MEASUREMENTS BY RADIO FREQUENCY ABSORPTIOMETRY**
R. Yanovitch¹, D. S. Moran¹, Y. Heled¹, E. Hadad¹, A. Laor¹, M. Margaliot², Y. Shapiro¹
¹Heller Institute of Medical Research, IDF Institute of Military Physiology, Sheba Medical Center., Israel
²MBD Ltd, Israel
2. **CORE TEMPERATURE MEASUREMENT BY MICROWAVE RADIOMETRY**
U. Eliyahu¹, D. S. Moran¹, Y. Heled¹, E. Hadad¹, M. Margaliot²
¹Heller Institute of Medical Research, IDF Institute of Military Physiology, Sheba Medical Center., Israel
²Soreq Nuclear Research Center, Israel
3. **CHANGING THE PARADIGM IN THE THERMOREGULATION THEORY**
K. P. Ivanov
I.P Pavlov Institute of Physiology, Russian Academy of Sciences, Russia
4. **MATHEMATICAL MODELING OF THERMAL PHYSIOLOGICAL RESPONSES OF CLOTHED INFANTS**
B. A. Ying¹, Y. L. Kwok¹, Y. Li¹, C. Y. Yeung², F. Z. Li¹
¹Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong, China
²The University of Hong Kong, China
5. **THE PATHOPHYSIOLOGY OF HEAT STROKE – AN INTEGRATIVE VIEW**
Y. Epstein
Heller Institute of Medical Research, Sheba Medical Center and the Sackler Faculty of Medicine, Tel Aviv University, Israel
6. **INTRAMUSCULAR TEMPERATURES DURING EXERCISE IN THE HEAT FOLLOWING PRE-COOLING AND PRE-HEATING**
J. D. Booth, B. R. Wilmore, A. D. Macdonald, A. Zeyl, L. H. Storlien, N. A. S. Taylor
University of Wollongong, Australia
7. **PERIPHERAL FINGER TEMPERATURE ASSOCIATED WITH SEQUENTIAL FINGER EXERCISE**
M. Camarena, P. Osborne, A. Rochet-Canabal, R. S. Pozos
San Diego State University, USA
8. **ADAPTIVE CHANGE IN MUSCULAR PERFORMANCE AND CIRCULATION BY STRENGTH TRAINING WITH REGULAR POST-EXERCISE COLD APPLICATION**
N. Ohnishi¹, M. Yamane², N. Ushiyama¹, S. Shirasawa¹, M. Kosaka², A. Shiono³, T. Okada³
¹Aichi Mizuho College, Japan
²School of Health and Sport Sciences, Chukyo University, Japan
³Aichi Medical University, Japan
9. **HUMAN ACE I/D POLYMORPHISM IS ASSOCIATED WITH INDIVIDUAL DIFFERENCES IN EXERCISE HEAT TOLERANCE**
Y. Heled¹, D. S. Moran¹, L. Mendel¹, A. Laor¹, E. Pras², Y. Shapiro¹
¹The Military Physiology Unit, IDF, Heller Institute of Medical Research., Israel
²The Danek Gartner Institute of Human Genetics, Tel Aviv University, Sheba Medical Center, Israel

10. EXPRESSION OF EXERCISE-INDUCED HSP70 IN LONG-DISTANCE RUNNER'S LEUKOCYTES

Y. O. Shin¹, J. K. Oh¹, H. S. Sohn¹, J. B. Lee², J. S. Bae², H. M. Yang², Y. K. Min², T. Matsumoto³

¹*Korea National Sport University, Korea*

²*College of Medicine, Soonchunhyang University, Korea*

³*Aichi Medical University, Japan*

11. PROGRESSIVE STRENUOUS EXERCISE INDUCE THE EXPRESSION OF HSP70 IN RAT SKELETAL MUSCLE AND MYOCARDIUM

Y. O. Shin¹, J. K. Oh¹, J. B. Lee², J. S. Bae², H. M. Yang², Y. K. Min², T. Matsumoto³

¹*Korea National Sport University, Korea*

²*College of Medicine, Soonchunhyang University, Korea*

³*Aichi Medical University, Japan*

12. EFFECT OF BLOOD VOLUME ON PLASMA VOLUME SHIFT DURING EXERCISE

T. Kawabata, T. Suzuki, T. Miyagawa

School of Medicine, Osaka City University, Japan

13. GLUCOSE-6-PHOSPHATASE ACTIVITY, GLUCOSE-6-PHOSPHATE AND GLYCOGEN CONTENT IN LIVER OF RATS DURING ACUTE AND CHRONIC EXPOSURE TO HIGH ENVIRONMENTAL TEMPERATURE

B. Miova, S. Dinevska-Kovkarovska, S. Mitev

Faculty of Natural Sciences and Mathematics, Gazi baba, Macedonia

14. THE EFFECT OF FASTING ON GLYCOGEN PHOSPHORYLASE ACTIVITY, GLUCOSE-1-PHOSPHATE AND GLYCOGEN CONTENT IN THE LIVER OF HEAT-ACCLIMATED RATS

S. Dinevska-Kovkarovska, S. Mitev, B. Miova

Faculty of Natural Sciences and Mathematics, Gazi baba, Macedonia

15. INFUSION OF TTX INTO THE PO/AH MODIFIES INCREASE IN CORE TEMPERATURE OF EXERCISING RATS

H. Hasegawa^{1,3}, T. Ishiwata², T. Saito², T. Yazawa², Y. Aihara², R. Meeusen³

¹*Faculty of Integrated Arts and Science, Hiroshima University, Japan*

²*Graduate School of Science, Tokyo Metropolitan University, Japan*

³*Vrije Universiteit, Belgium*

16. EFFECTS OF PHOTOPERIOD AND TEMPERATURE ON BODY WEIGHTS, SERUM LEPTIN LEVELS AND UNCOUPLING PROTEIN 1 CONTENTS IN BRANDT'S VOLES (MICROTUS BRANDTI) AND MONGOLIAN GERBILS (MERIONES UNGUICULATUS)

X. S. Li, D. H. Wang

Institute of Zoology, The Chinese Academy of Sciences, China

17. CHRONIC COLD ACCLIMATION IN NAKED MOLE-RATS: EFFECTS ON THE THERMOREGULATION AND ENERGY BALANCE

R. Woodley¹, R. Buffenstein²

¹*Medical School, University of Witwatersrand, South Africa*

²*City College of City University of New York, USA*

18. EFFECTS OF ALCOHOL ON THERMOREGULATION IN HUMANS

T. Yoda¹, L. I. Crawshaw², K. Saito³, M. Nakamura³, A. Konishi³, K. Nagashima⁴, S. Uchida³, K. Kanosue³

¹*Institute of Physical Education, Keio University, Japan*

²*Portland State University, USA*

³*School of Sport Science, Waseda University, Japan*

⁴*School of Allied Health Sciences, Faculty of Medicine, Osaka University, Japan*

- 19. CIRCADIAN BODY TEMPERATURE AND HEAT TOLERANCE IN TRPV1 KNOCKOUT MICE**
Z. Szèlenyi¹, Z. Hummel¹, J. Szolcsanyi¹, J. B. Davis²
¹*Medical Faculty, University of Pecs, Hungary*
²*GlaxoSmithKline, UK*
- 20. VOLUME PARTITIONS OF THE RETIE OF TSWANA GOAT, BOER GOAT AND THE SPRINGBOK**
J. M. Kamau
Botswana College of Agriculture, Botswana
- 21. MAGNESIUM DOES NOT REDUCE THE THRESHOLD OR GAIN OF SHIVERING**
N. Wadhwa, R. Lenhardt, P. Sengupta, J. Durrani, G. Chernyak, D. Sessler
University of Louisville, USA
- 22. EFFECT OF THE SUPRACHIASMATIC NUCLEUS LESION ON NYCTHEMERAL VARIATIONS IN CORE TEMPERATURE OF HEAT-ACCLIMATED RATS**
M. Maruyama, T. Hara, M. Hashimoto, O. Shido
School of Medicine, Shimane University, Japan
- 23. PREVENTION AND REPAIR OF CIRCULATORY SHOCK AND CEREBRAL ISCHEMIA INJURY BY CHINESE HERBAL MEDICINE, SHENGMAI SAN, IN RAT HEATSTROKE**
N. L. Wang¹, C. K. Chang¹, M. T. Lin²
¹*MacKay Memorial Hospital, Taiwan*
²*Chi-Mei Medical Center, Taiwan*
- 24. BODY TEMPERATURE, BEHAVIOR AND PLASMA CORTISOL CHANGES INDUCED BY CHRONIC INFUSION OF STAPHYLOCOCCUS AUREUS IN GOATS**
N. R. Mphahlele¹, A. Fuller¹, J. Roth², P. R. Kamerman¹
¹*University of the Witwatersrand, South Africa*
²*Veterinary-Physiology, Justus-Liebig-University Giessen, Germany*
- 25. HMG-C_oA REDUCTASE INHIBITOR, ATORVASTATIN, IS NOT ANTIPYRETIC IN RATS**
P. R. Kamerman, B. M. E. Modisa, N. R. Mphahlele
School of Physiology, University of the Witwatersrand, South Africa
- 26. STRESS: THE CAUSE OF HYPERTHERMIA IN CHEMICALLY CAPTURED IMPALA**
L. Meyer¹, A. Mathee², L. Fick¹, P. Kamerman¹, D. Mitchell¹, A. Fuller¹
¹*University of the Witwatersrand, South Africa*
²*National Zoological Gardens Game Breeding Centre, South Africa*
- 27. QUERCETIN IN COMBINATION WITH INDOMETHACIN AND/OR GELDANAMYCIN SHARPLY ENHANCES CYTOTOXICITY OF HEAT STRESS**
A. Kabakov, K. Budagova
Medical Radiology Research Center, Russia

**14:30-16:00 SESSION THU/O-04: COMPARATIVE ASPECTS IN
THERMAL BIOLOGY - PART 1**

(Hall B)

Chairs: R. Paul, Germany and M. Vera, Chile

**THERMAL PROFILES OF ZOOPLANKTON: A KEY TO GLOBAL MARINE
ECOLOGICAL CHANGE**

W. Greve

German Centre for Marine Biodiversity Research, Forschungsinstitut Senckenberg, Germany

**GLYCEROL PRODUCTION BY RAINBOW SMELT PROVIDES FREEZE
RESISTANCE TO ALLOW WINTER FORAGING**

W. Driedzic, K. A. Clow, C. E. Short

Ocean Sciences Center, Memorial University of Newfoundland, Canada

**DOES THE BEHAVIORAL FEVER OCCUR IN SNAILS PARASITISED WITH
TREMATODE LARVAE?**

E. Zbikowska

Institute of General and Molecular Biology, Nicholas Copernicus University in Torun, Poland

**INTEGRATIVE MECHANISMS OF THERMAL ACCLIMATION IN THE
MICROCRUSTACEAN DAPHNIA**

R. J. Paul, T. Lamkemeyer, J. Maurer, O. Pinkhaus, M. Seidl, B. Zeis

Institute of Physiology, Westfälische Wilhelms-Universität Münster, Germany

**SEASONAL WATER TEMPERATURES AFFECT NUCLEOLAR FUNCTION
IN AN EURITHERMAL FISH**

M. Alvarez^{1,2}, C. Quezada^{1,2}, C. Navarro^{1,2}, R. Pinto^{1,2}, M. Reyes^{1,2}, I. Delgado^{1,2}, A. Molina^{1,2}, P. Bouvet³, M. Krauskopf^{1,2}, M. I. Vera^{1,2}

¹*MIFAB, Chile*

²*Lab. de Biología Celular y Molecular, Universidad de Andrés Bello, Chile*

³*Ecole Normale Supérieure de Lyon, France*

**BEHAVIORAL MECHANISMS OF OVERWINTERING IN THE HELIX
POMATIA**

A. Nowakowska, M. Caputa, J. Rogalska, K. Wentowska

Institute of General and Molecular Biology, Nicholas Copernicus University in Torun, Poland

**14:30-16:00 SESSION THU/O-05: PHARMACOLOGY OF
THERMOREGULATION**

(Hall A)

Chair: H. Labrun, South Africa

**ROLE OF NITRIC OXIDE ON THE THERMOREGULATION DURING
SEPTIC SHOCK: INVOLVEMENT OF VASOPRESSIN****E. C. Carnio***Escola de Enfermagem de Ribeirao Preto, Universidade de Sao Paulo, Brazil***CORNEAL TEMPERATURE IN DRUG-FREE AND NEUROLEPTIC-TREATED
SCHIZOPHRENIA PATIENTS COMPARED TO HEALTHY SUBJECTS****R. Shiloh¹, A. Weizman¹, S. Portuguese¹, R. Gross-Isseroff¹, M. Sigler¹, L. Bodinger¹,
N. Katz¹, R. Stryjer², H. Hermesh¹, H. Munitz¹**¹*Geha Mental Health Center, Felsenstein Medical Research Center, Rabin Medical Center, Beilinson
Campus, Sackler Faculty of Medicine, Tel Aviv University, Israel*²*Beer-Yaakov Mental Health Center, Israel***ACUTE AND SUBACUTE EFFECTS OF CENTRAL NEUROPEPTIDE Y (NPY)
ON ENERGY BALANCE IN RATS****E. Pétervári, Z. Szélenyi, M. Szekély***Faculty of Medicine, University of Pecs, Hungary***CLOZAPINE, AN ATYPICAL ANTIPSYCHOTIC AGENT ACTIVE AT
SEROTONIN RECEPTORS, REVERSES COLD-INDUCED CUTANEOUS
VASOCONSTRICTION IN RABBITS AND RATS****W. Blessing***Centre for Neuroscience, Flinders University, Australia***DANTROLENE REDUCES THE THRESHOLD AND GAIN FOR SHIVERING****R. Lenhardt¹, C. M. Lin¹, S. Neeru², A. G. Doufas¹, E. Liem¹, Y. M. Shah¹,
A. Wadhwa¹, A. Bjorksten³, D. I. Sessler¹, A. Kurz⁴**¹*University of Louisville, USA*²*Washington University, USA*³*Royal Melbourne Hospital, Australia*⁴*University of Bern, Switzerland*

16:00-16:30 COFFEE BREAK**(Imperial Foyer)**

16:30-18:00 SESSION THU/O-06: COMPATATIVE ASPECTS IN THERMAL (Hall B)
BIOLOGY - PART 2

Chair: B. Tzschentke, Germany

**ACTIVATION OF THERMOREGULATORY CONTROL ELEMENTS IN
PRECOCIAL BIRDS DURING THE PRENATAL PERIOD**

M. Nichelmann

Medical University of Minsk, Belarus

**PRENATAL EPIGENETIC TEMPERATURE ADAPTATION: TURKEY IN
COMPARISON TO MUSCOVY DUCK**

M. Nichelmann

Medical University of Minsk, Belaus

METABOLIC RESPONSES TO REPEATED FOOD DEPRIVATIONS IN BIRDS

M. Laurila, E. Hohtola

University of Oulu, Finland

**THERMOREGULATORY USE OF HEAT INCREMENT OF FEEDING IN
THE TAWNY OWL (STRIX ALUCO)**

C. Bech¹, K. E. Praesteng²

¹*Norwegian University of Science and Technology, Norway*

²*University of Tromø, Norway*

**FUNDAMENTAL CHARACTERISTICS OF THE EARLY ONTOGENY OF
THERMOREGULATION IN BIRDS**

B. Tzschentke

Institute of Biology, Humboldt University of Berlin, Germany

THE THRESHOLD FOR EMOTIONAL FEVER IN PHYLOGENY

M. Cabanac¹, A. Cabanac²

¹*Faculty of Medicine, Université Laval, Canada*

²*Aquarium Park of Quebec, Societé des Parcs de Sciences Naturelles du Quebec, Canada*

Chair: A. Milton, UK

BODY TEMPERATURES AND SPONTANEOUS RUNNING ACTIVITY IN RATS AFTER SUBCUTANEOUS ADMINISTRATION OF LIPOPOLYSACCHARIDE

H. P. Laburn¹, D. Mitchell¹, T. Cartmell^{1,2}

¹*Brain Function Research Unit, School of Physiology, University of Witwatersrand, South Africa*

²*National Institute of Biological Standards and Control, UK*

EFFECTS OF SELECTIVE CYCLOOXYGENASE ENZYME INHIBITORS ON LPS-INDUCED HYPOTHERMIA AND SERUM TNF-- α ELEVATION IN BIOTELEMETERED RATS

E. S. Akarsu

Faculty of Medicine, Ankara University, Turkey

BACTERIAL ENDOTOXIN-INDUCED HYPOTHERMIA IN RATS: PUTATIVE ROLE OF CENTRAL DOPAMINERGIC NEUROTRANSMISSION AND PERIPHERAL INFLAMMATION

M. Diltor¹, S. Sarre², Y. Michotte², L. Huyghens¹

¹*Academisch Ziekenhuis, Vrije Universiteit, Belgium*

²*Pharmaceutical Chemistry, Vrije Universiteit, Belgium*

MICROSOMAL PROSTAGLANDIN E SYNTHASE-1 IS RESPONSIBLE FOR FEVER

K. Matsumura¹, W. Inoue¹, Y. Mizushima¹, H. Hosokawa¹, S. Uematsu², S. Akira², S. Kobayashi¹

¹*Graduate School of Informatics, Kyoto University, Japan*

²*Research Institute for Microbial Diseases, Osaka University, Japan*

THE EFFECT OF LIPOPOLYSACCHARIDE AND CYTOKINE ANTISERA ON BODY TEMPERATURE AND SPONTANEOUS RUNNING IN RATS

L. S. de Castro, L. Harden, I. du Plessis, H. P. Laburn

Brain Function Research Unit, School of Physiology, University of Witwatersrand, South Africa

THE ROLE OF NON-PROSTAGLANDIN EICOSANOIDS IN THERMOREGULATION

V. Fraifeld¹, L. Paul¹, J. Kaplanski¹, O. Sagi¹, M. Wolfson¹, T. Tchaikovskaya², I. Listowsky², M. J. Kluger³, W. Kozak^{3,4}

¹*Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel*

²*Albert Einstein College of Medicine, USA*

³*Medical College of Georgia, USA*

⁴*Institute of General and Molecular Biology, Nicolaus Copernicus University, Poland*

Friday, October 15, 2004

08:30-10:40 SESSION FRI/S-01: FEVER - PART 2

(Hall A)

Chair: C. Blatteis, USA

POSSIBLE SEQUENCE OF PYROGENIC AFFERENT PROCESSING IN THE POA

C. M. Blatteis, C. Feleder, V. Perlik

College of Medicine, University of Tennessee Health Science Center, USA

ROLE OF CARBON MONOXIDE IN THE THERMOREGULATION AND FEVER

L. G. S. Branco

Faculdade de Odontologia de Ribeirao Preto, Universidade de Sao Paulo, Brazil

IS INTERLEUKIN-6 THE NECESSARY PYROGENIC CYTOKINE?

J. Roth, C. Rummel, E. M. Harre, T. Voss, J. Mütze, R. Gerstburger, T. Hübschle

Veterinary-Physiology, Justus-Liebig-University Giessen, Germany

PRE-FORMED PYROGENIC FACTOR-INDUCED FEVER: ARE PROSTAGLANDINS IMPORTANT?

F. H. Veiga, A. S. C. Fabricio, M. C. C. Melo, G. E. P. Souza

Laboratory of Pharmacology, FCFRP-USP, Brazil

THE CYTOKINE-PROSTAGLANDIN CASCADE IN FEVER PRODUCTION: FACT OR FANCY? (Keynote)

C. H. Blatteis

College of Medicine, University of Tennessee Health Science Center, USA

08:30-10:40 SESSION FRI/S-02: HYPOTHERMIA IN BRAIN TREATMENT (Hall B)

Chair: R. Greif, Austria

THERAPUETIC HYPOTHERMIA - INTRODUCTION

R. Greif

Donauspital/ SMZ-Ost. Vienna, Austria

FROM THE ANIMAL EXPERIMENT TO HUMAN TRAILS IN HYPOTHERMIA TO IMPROVE NEUROOUTCOME

W. Behringer

Vienna General Hospital, Austria

MILDE HYPOTHERMIA AFTER CARDIAC ARREST - HOW DOES IT WORK?

M. Holzer

Medical University Vienna, Austria

THE RESULTS FROM LARGE HUMAN STUDIES ON THERAPEUTIC HYPOTHERMIA IN NEUROSURGERY AND TRAUMATIC BRAIN INJURY

R. Greif

Donauspital/ SMZ-Ost. Vienna, Austria

SO MANY ANIMAL STUDIES ON HYPOTHERMIA SO POOR RESULTS OF HUMAN SURGICAL TRAILS - THE DILEMMA OF RESEARCH

D. Warner

USA

DISCUSSION OF THE PANEL: WERE DOES HYOPTHERMIA RESEARCH GO NOW?

R. Greif¹, M. Holzer², W. Behringer³, D. Warner⁴

¹*Donauspital/ SMZ-Ost. Vienna, Austria*

²*Medical University Vienna, Austria*

³*Vienna General Hospital, Austria*

⁴*USA*

10:40-11:00 COFFEE BREAK (Imperial Foyer)

11:00-12:15	SESSION FRI/O-03: FARM ANIMAL AND LARGE MAMMALS IN HOT ENVIRONMENTS	(Hall A)
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Chair: I. Choshniak, Israel

LYMPHOCYTE FUNCTIONS IN DAIRY COWS UNDER HOT ENVIRONMENT

N. Lacetera, U. Bernabucci, D. Scalia, B. Ronchi, G. Kuzminsky, A. Nardone
Universita Degli Study della Tuscia, Italy

THE EFFECT OF FIBER CHARACTERISTICS ON THERMOREGULATORY RESPONSES AND FEEDING BEHAVIOR OF HEAT STRESSED COWS

A. Arieli¹, A. Rubenstein¹, U. Moallem², I. Halachmi², Y. Aharoni²

¹*Faculty of Agricultural Food and Environmental Quality, The Hebrew University of Jerusalem, Israel*

²*Agricultural Research Organization, Israel*

BENEFIT OF DIETARY SEAWEED (ASCOPHYLLUM NODOSUM) IN REDUCING HEAT STRAIN AND FESCUE TOXICOSIS: A COMPARATIVE EVALUATION

D. E. Spiers¹, P. A. Eichen¹, M. J. Leonard¹, L. E. Wax¹, G. Rottinghaus²,
J. E. Williams¹, **D. P. Colling**³

¹*Animal Science Research Center, University of Missouri, USA*

²*Veterinary Diagnostic Lab., University of Missouri, USA*

³*Acadian Agritech, USA*

BODY TEMPERATURES BEFORE, DURING AND AFTER PARTURITION IN FARM-MANAGED ANGORA GOATS AND THEIR KIDS

H. P. Laburn¹, A. Faurie¹, **D. Mitchell**¹, G. Mitchell^{1,3}, G. Kerley²

¹*Brain Function Research Unit, School of Physiology, University of Witwatersrand, South Africa*

²*Terrestrial Ecology Research Unit, University of Port Elizabeth, South Africa*

³*University of Wyoming, USA*

USE OF PHYSIOLOGICAL PARAMETERS TO PREDICT MILK YIELD AND FEED INTAKE IN HEAT-STRESSED DAIRY COWS

D. E. Spiers, J. N. Spain, J. D. Sampson, R. P. Rhoads

Animal Science Research Center, University of Missouri, USA

12:15-13:15	SESSION FRI/O-04 : CLOSING SESSION: ROUNDTABLE - PERSPECTIVES IN THERMAL PHYSIOLOGY	(Hall A)
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Chair : M. Horowitz, Israel

CLOSING SESSION - ROUNDTABLE

K. Kanosue¹, C. Blatteis², D. Mitchel², M. Sawka³, M. Horowitz⁴

¹*School of Sport Science, Waseda University, Japan*

²*University of Tennessee Health Science Center, USA*

³*US Army Research Institute of Environmental Medicine, USA*

⁴*The Hebrew University, Israel*