



3rd International Conference and Exhibition on
Occupational Health & Safety
June 24-25, 2014 Valencia Conference Centre, Valencia, Spain

Scientific Tracks & Abstracts



Occupational Health-2014

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Session Chair

Chen-Peng Chen

China Medical University, Taiwan

Session Co-Chair

Shaun Lundy

University of Greenwich, UK

Session Introduction

Title: Change in metabolic load and thermoregulation as a result of using N95 masks under influence of temperature

Chen-Peng Chen, China Medical University, Taiwan



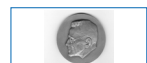
Title: Assessment of energy expenditure in workers in the automotive industry

Michaela Machajova, Trnava University, Slovakia



Title: Polysystemic analysis for risk group revealing in nuclear plant stuff

Mikhail Karganov, Russian Academy of Medical Sciences, Russia



Title: The association between business health culture index and health related productivity loss

Ruey-Yu Chen, Taipei Medical University Taiwan



Title: Professional ethics in occupational safety and health practice

Shaun Lundy, University of Greenwich, UK



Title: Benefits of pre-employment medical for potential employees from developing countries in oil and gas industry

Ahmad Latif, Qatar Petroleum, Qatar



Title: The feasibility study of the occupational health service

Machajova M, Trnava University, Slovakia



Title: Prenatal metal exposure and pregnancy outcomes: trimester with higher predictability

Mohsen Vigh, National Institute of Occupational Safety and Health, Japan



Title: An assessment of exposure to respirable crystalline silica and the impact on lung function among quarry workers in Queensland

Kevin Hedges, University of Western Sydney, Australia



Title: Trends in work place injury and consequent absence from work in the County of Gävleborg

Leah Okenwa Emegwa, University of Gävle, Sweden



Title: Application of Mindfulness-based Stress Reduction (MBSR) Approach to Construction Professionals

Mei-Yung Leung, City University of Hong Kong, Hong Kong



Title: Health and Safety Management System to Prevent Workplace Accidents

Melih Güneri, Tetra Pak Health and Safety Coordinator, Turkey



Title: Assessment of safety and health risks at construction projects of Oman

Ali S Alnuaimi, Sultan Qaboos University, Oman



Title: The management of health care workers' latent tuberculosis infection at hospitals of Vhembe district

Takalani Tshitangano, University of Venda, South Africa



Title: Upper Extremities Symptoms among Mobile Hand-Held Devices Users and Their Relationship to Device use: A preliminary study in Sharjah University students

Abeer Ahmed Abdelhamed, University of Sharjah, United Arab Emirates



Title: Screening of presbycusis in the workplace and identification of environmental factors

A. Mettoudaine, University of SidiBel Abbes, Algeria



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Change in metabolic load and thermoregulation as a result of using N95 masks under influence of temperature

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N⁹⁵ masks are commonly used in a variety of environmental settings to protect the workers from inhalation of airborne particulates. However, the confinement of the nose and mouth when using a mask interrupts the direct exchange of metabolic heat with the air, risking an excess physiological strain, particularly in the workplaces where elevated temperature and humidity may be expected. We studied the change in metabolic load and thermoregulation when N95 masks of different face piece designs were used. In the study, twenty participants (10 males and 10 females) were evaluated for physiological properties involved in thermoregulation, including those of body-core thermal load (metabolic rate, blood pressure, pulse rate, and core temperature) and of peripheral heat exchange (trans epidermal water loss, skin moisture, and skin temperature), when they used N95 masks (a cup-shaped and a three-flap foldable mask) in a climatic chamber pre-set at a temperature of 19-34°C and a relative humidity of 65%. The readings of physiological indicators were taken during the periods of acclimation and respirator use and were compared to analyze the thermal strain attributed to respirator use. The results revealed a significant level of thermoregulation, evidenced by the increase in TEWL and skin moisture, as required for the dissipation of metabolic heat when the N95 masks were used. The males showed a greater thermoregulatory response to respirator use than the females. When using a respirator, the users should consider a mask of greater flexibility and reduce the duration of each single use to alleviate the thermal strain.

Biography

Chen-Peng Chen is an Associate Professor at the Department of Occupational Safety and Health, China Medical University, Taiwan. He received his PhD in Environmental Toxicology from the University of Wisconsin-Madison and his postdoctoral training from the Colorado School of Mines. He was a Scientist at the US National Institute for Occupational Safety and Health in affiliation with the National Occupational Research Agenda Dermal Exposure Research Program from December 2001 to May 2006, and also the Acting Director of the Program from 2005 to 2006. He has published over 70 papers, with 20 being SCI-indexed journal articles.

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