Impaired endothelium-dependent vasodilatation among workers with IGT may decrease heat dissipation by conduction, convection, radiation, and sweat evaporation and may pose a risk to develop HRI.

**Abstracts**

**1536 OCCUPATIONAL HEAT ILLNESS IN OUTDOOR WORKERS BEFORE AND AFTER THE IMPLEMENTATION OF A HEAT STRESS AWARENESS PROGRAM**

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**Introduction** Heat Stress is an occupational hazard expected to increase in severity and breadth with climate change. Workers exposed to heat and hot environments can have increased injuries, exacerbation of disease, reduced productivity, and heat illness resulting in death. Strategies to respond are mitigation policies and preparedness. The National Institute of Occupational Safety and Health’s (NIOSH) Revised Criteria for a Recommended Standard, Occupational Exposure to Heat and Hot Environments outlines training for and medical surveillance and research of worker populations exposed.

**Methods** Heat illness and worker’s compensation costs before and after the implementation of a Heat Stress Awareness Program (HSAP) were evaluated retrospectively in a cohort of outdoor municipal workers from 2010–2016. The HSAP brought training and medical surveillance to at-risk workers as outlined in NIOSH’s Criteria for a Recommended Standard Occupational Exposure to Heat and Hot Environments.

**Results** 526 outdoor workers met inclusion criteria. Prior to implementation of the HSAP the occupational heat illness rate was 3%, this decreased to 1% the first three years of the program and last year the last two years. Workers with heat illness were more likely to be extremely obese (p<0.0003) and more likely to have two or more heat illness risk factors. Total worker’s compensation costs decreased approximately 50% per illness or less than prior to HSAP.

**Discussion** Training, determining fitness for duty and regular medical monitoring prior to work in a hot environment may decrease frequency of occupational heat illness and occupational medical care costs in exposed workers. This study supports NIOSH’s Occupational Exposure to Heat and Hot Environments’ promulgation into U.S. law which can provide protection to vulnerable U.S. workers and may provide valuable guidance to the unknown numbers that will be added to the climate-vulnerable population as the global temperature continues to rise.

**1275 METHYLTRANSFERASE GENE EXPRESSION AS POSSIBLE MEDIATOR OF THE EFFECTS OF ARSENIC EXPOSURE: AN EPIGENETIC STUDY IN FOUNDRY WORKERS**

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**Introduction** Arsenic is an environmental carcinogen that undergoes methylation while metabolised. Subsequent intracellular methyl groups depletion can decrease global DNA methylation, facilitating carcinogenesis. On the other hand, hypermethylation in promoter regions of tumour suppressor genes related to arsenic exposure has been observed in-vitro. The effects of arsenic on enzymes regulating gene-specific methylation (DNA-methyltransferases) have not been fully

**1509 TRANSITION OF GOVERNMENTAL GUIDELINES TO PREVENT HEAT STROKE AT WORK IN JAPAN**

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**Introduction** In Japan, the prevention of fatal heat strokes at work has become more important along with the global warming.