

The result of the above is that workers in GB are unjustly denied early detection of harm to their health, with prompt compensation and the opportunity to avoid further harmful exposures.

Unless action is taken to address these issues, by accurately ascertaining the distribution and addressing the determinants of ODs, their elimination will not be achieved in GB.

Poster Presentation

Psychosocial

0015

THE SIGNIFICANCE AND APPLICATION OF SALIVARY BIOMARKERS OF STRESS, CORTISOL AWAKENING RESPONSE, IN OCCUPATIONAL PSYCHOLOGY

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Objectives This study aims to investigate the correlation between cortisol awakening response (CAR) and sleep quality, mental stress, fatigue, workload and health status in a period of 28 days.

Materials and Methods A total of 28 subjects participated in this study. The saliva was collected by cotton-based Salivette at awakening, 30 min after awakening, and bedtime for a period of 4 weeks. The saliva cortisol was measured by LC-MS-MS. Four parameters were used to present CAR, 30 min post-awakening cortisol, CAR denoting rise from awakening to 30 min post-awakening (slope), AUC for CAR, and full AUC (= AUC for CAR + AUC for late decline). The outcomes variables included sleep quality measured by Pittsburgh sleep quality index (PSQI) questionnaire, and self-rated workload, mental stress, fatigue, and health score for each day.

Results CAR were correlated with fatigue score and stress score, but not with sleep quality (PSQI), workload and health score. Regarding parameters of CAR, AUC for CAR and full AUC are better than CAR slope and 30 min post-awakening to correlate with fatigue and stress. AUC for CAR and full AUC may represent the degree of mental stress and fatigue in the previous day.

Discussion We have found single day CAR and 4 week CAR were correlated with mental stress. But how to design a study to elaborate whether CAR can predict the occurrence of cardiovascular diseases (Karoshi) needs further to be solved. Solution for variation of CAR day-to-day and pick-up the day of most stressful are urgent.

Poster Presentation

Methodology

0016

ASSOCIATION BETWEEN PM 2.5 EXPOSURE AND LIPID PEROXIDATION WAS CONFIRM BY REPEATED MEASUREMENTS LONGITUDINAL STUDY WITH A PROPER INTERACTION TERM

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Objective to examine the relations between personal exposure to PM_{2.5} and inflammatory and oxidation markers.

Methods We conducted a panel study with three sampling time points (baseline, two months follow-up, and four months follow-up) among 68 healthy non-smoking young adults from 3 different areas (Area A [residential and commercial area], Area B [industrial area] and Area C [scientific park]).

Results the average PM_{2.5} concentrations was 37.3 µg/m³ for personal sampling and 31.6 µg/m³ for nearest air quality monitoring station. Among them, the personal PM_{2.5} concentrations in B zone was significant highest than A and C zone. For the longitudinal study, we used linear Mixed-model was as follows: $Y_{it} = \alpha_0 + \alpha_1 Time_{it} + \beta_0 Z_{km} + \beta_1 Z_{km} Time_{it} + \gamma X_{i0} + \epsilon_{km} + \epsilon_i + \epsilon_{it}$, where Z_{km} used four PM_{2.5} counting methods: (1) personal PM_{2.5} concentrations; (2) average personal PM_{2.5} concentrations at three sampling times; (3) average personal PM_{2.5} concentrations with area under the curve during 120 days; (4) average personal PM_{2.5} concentrations during 120 days (>35 µg/m³ vs. ≤35 µg/m³). After adjustment for age, gender, smoking habits, sampling zones, height, weight, temperature, and relative humidity, we found that the Urinary N7-MeG/creatinine was significantly decreased with PM_{2.5} exposure concentrations, and Urinary HEL/creatinine was significantly increased with PM_{2.5} exposure concentrations by time, regardless of which PM_{2.5} exposure models were used. While we only used average personal PM_{2.5} concentrations at three sampling times, we found that SDNN and GPx were significantly increased with PM_{2.5} exposure concentrations by time.

Poster Presentation

Working Conditions

0018

DO HIGHLY ACTIVE WORKERS DIE EARLY? ELUCIDATING THE PHYSICAL ACTIVITY HEALTH PARADOX IN A SYSTEMATIC REVIEW WITH META-ANALYSES

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Introduction New evidence suggests a physical activity (PA) health paradox, with positive health outcomes associated with high intensity leisure-time PA (LTPA), but negative health outcomes for those engaging in high intensity occupational PA (OPA). The aim of this study was to examine this paradox by systematically reviewing evidence on the association between high OPA and all-cause mortality.

Methods A systematic search of the literature was performed screening for eligible (peer-reviewed articles on prospective studies. Meta-analyses were performed assessing the association of high (compared to low) intensity OPA and all-cause mortality in males and females, estimating pooled hazard ratios (HR) with 95% confidence intervals (95% CI).