

FACULTY OF OCCUPATIONAL MEDICINE



NEWSLETTER

Royal College of Physicians of Ireland

Volume 7, Issue 3

July 2009



Malaysia Admission Ceremony **May 2009**

Front row left to right:- Dr Vijayasingham, H.E. Eoin Duggan, Mr Selvarajah, Dr Paul Guéret, Dr Denis D'Auria, Dr P. Krishnan and Dr Ang Choo Lee

Back row left to right:- Dr Raj Naidu, Dr Albert Alphinston, Dr Vivekanandan, Dr GlenFernandez, Dr Luay Badran, Dr Marik Singh, Dr Zaffar Hussaini, Dr Ataollah Seyfour, Dr Priya Ganesh, Dr Shoruban, Dr Anselm Su and Dr D Porkodi

Swine flu

In Northern Ireland, GP consultations for flu and flu-like illness and calls to Out of Hours centres have increased - the GP consultation rate is higher than expected for this time of the year. There were 10 new cases of laboratory-confirmed swine flu this week, bringing the total number of laboratory-confirmed cases in Northern Ireland to 71.

According to the Department of Health & Children, in the Republic of Ireland as of 29th July 2009, an estimated number of cases will be provided based on information derived from the National Influenza Sentinel GP Surveillance Network and reported on a weekly basis through the websites of the Health Protection Surveillance Centre, the Health Service Executive and the Department of Health and Children. This gives a good estimate of the numbers of cases of influenza like illness being seen by GPs. This system shows that influenza like illness rates have increased in recent weeks and the latest of these reports a rate of 37 cases per 100,000 population in the week ending 26th July 2009. By way of context, the peak reported Influenza like illness rate during last winter was approximately 120 per 100,000.

The pandemic is gathering pace in Ireland generally and the following links provide valuable up-to-date information:-

<http://www.who.int/csr/disease/swineflu/en/index.html>

<http://www.nidirect.gov.uk>

http://www.dohc.ie/issues/swine_influenza

Smiley Lecture 2009

The Smiley lecture on Friday 20 November 2009 will be delivered by Dr Howard Frumkin MD, MPH, DrPH.

Dr Frumkin serves as director of the National Center for Environmental Health, Agency for Toxic Substances and Disease Registry in Atlanta, Georgia.



Howard Frumkin, MD, MPH, DrPH
Director, National Center for Environmental
Health, Agency for Toxic Substances and
Disease Registry

Before joining the CDC in September 2005, he was professor and chair of the Department of Environmental and Occupational Health at the Emory University Rollins School of Public Health, and professor of medicine at Emory Medical School, in Atlanta. At Emory, he founded and directed the Environmental and Occupational Medicine Consultation Clinic, the Occupational Medicine Residency training program, and the Southeast Pediatric Environmental Health Specialty Unit. Doctor Frumkin is an internist, environmental and occupational medicine specialist, and epidemiologist.

He previously served on the board of directors of Physicians for Social Responsibility (PSR), where he co-chaired the Environment Committee; as president of the Association of Occupational and Environmental Clinics (AOEC); as chair of the Science Board of the American Public Health Association (APHA); as a member of EPA's Children's Health Protection Advisory Committee, where he chaired the Smart Growth and Climate Change work groups; and on the National Toxicology Program Board of Scientific Counselors.

He currently serves on the Institute of Medicine Roundtable on Environmental Health Sciences, Research, and Medicine. In Georgia, he was a member of the state's Hazardous Waste Management Authority, the Department of

Agriculture Pesticide Advisory Committee, and the Pollution Prevention Assistance Division Partnership Program Advisory Committee, and is a graduate of the Institute for Georgia Environmental Leadership.

In Georgia's Clean Air Campaign, he served on the board and chaired the Health/Technical Committee. He was named Environmental Professional of the Year by the Georgia Environmental Council in 2004. He has served as a consultant to several corporations, including Hewlett-Packard, Southwire, Georgia Power, and Polaroid, and to several unions, including the Chemical Workers Association and the Utility Workers Union.

He is the author or co-author of over 100 scientific journal articles and chapters, and has written numerous books. Dr. Frumkin received his BA from Brown University, his MD from the University of Pennsylvania, his MPH and DrPH from Harvard, his internal medicine training at the Hospital of the University of Pennsylvania and Cambridge Hospital, and his occupational medicine training at Harvard. He is board-certified in both internal medicine and occupational medicine, and is a fellow of the American College of Physicians and the American College of Occupational and Environmental Medicine.

ABSTRACTS April 2009

Chronic obstructive pulmonary disease mortality in railroad workers

There is little information describing the risk of non-malignant respiratory disease and occupational exposure to diesel exhaust.

US railroad workers have been exposed to diesel exhaust since diesel locomotives were introduced after World War II. A retrospective cohort study in Boston examined the association of chronic obstructive pulmonary disease (COPD) mortality with years of work in diesel-exposed jobs. To examine the possible confounding effects of smoking, multiple imputation was used to model smoking history. A Cox proportional hazards model was used to estimate an incidence rate ratio, adjusted for age, calendar year, and length of follow-up after leaving work (to reduce bias due to a healthy worker survivor effect).

Workers in jobs with diesel exhaust exposure had an increased risk of COPD mortality relative to those in unexposed jobs. Workers hired after the introduction of diesel locomotives had a 2.5% increase in COPD mortality risk for each additional year of work in a diesel-exposed job. This risk was only slightly attenuated after adjustment for imputed smoking history.

The authors concluded that these results support an association between occupational exposure to diesel exhaust and COPD mortality.

Hart J et al. *Occupational and Environmental Medicine* 2009;**66**:221-226

Cancer risks in chemical production workers exposed to 2-mercaptobenzothiazole

This study investigated cancer risks in chemical production workers exposed to 2-mercaptobenzothiazole (MBT).

The mortality (1955–2005) and cancer morbidity experience (1971–2005) of a cohort of 363 male production workers exposed to MBT while employed at a chemical factory in north Wales were investigated. Two analytical approaches were used, indirect standardisation and Poisson regression.

Based on national mortality rates, significant excess mortality was found for cancers of the large intestine (observed; Obs 8, standardised mortality ratio (SMR) 232, 95% CI 100 to 457) and bladder (Obs 8, SMR 374, 95% CI 162 to 737). Non-significant excesses were shown for lung cancer (Obs 27, SMR 138, 95% CI 91 to 201) and multiple myeloma (Obs 3, SMR 440, 95% CI 91 to 1287). Based on national cancer incidence rates, significant excess morbidity was found for cancer of the bladder (Obs 12, standardised registration ratio (SRR) 253, 95% CI 131 to 441) and multiple myeloma (Obs 4, SRR 465, 95% CI 127 to 1191). Non-significant excesses were shown for cancers of the large intestine (Obs 9, SRR 181, 95% CI 83 to 344) and lung (Obs 26, SRR 152, 95% CI 99 to 223). In analyses that included follow-up information on an additional 1797 plant employees not exposed to MBT, Poisson regression showed significant positive trends both for risks of cancer of the large intestine and for risks of multiple myeloma in relation to estimated cumulative exposure to MBT.

The author concluded that MBT may be a human carcinogen but that confident evaluation awaits findings from other studies.

Sorahan T. *Occupational and Environmental Medicine* 2009;**66**:269-273



SpR prison visit 28/5/09 Beladd training centre in Portlaoise.

From left to right:-Dr Tom O'Connell(CMO Irish Civil Service), Dr Nuala Kelly SpR, Dr Geraldine Comiskey (Deputy CMO Irish Civil Service), Dr Sharon Lim SpR and Dr Alice Quinn SpR.

ABSTRACTS May 2009

Influence of vibration exposure on tactile and thermal perception thresholds

Are female healthcare workers at higher risk of occupational injury?

Differential risks of occupational injuries by gender have been examined across various industries. Researchers in Canada undertook a study to determine whether compensated work-related injuries among females are higher than their male colleagues in the British Columbia healthcare sector.

Incidents of occupational injury resulting in compensated days lost from work over a 1-year period for all healthcare workers were extracted from a standardized operational database and the numbers of productive hours were obtained from payroll data. Injuries were grouped into all injuries and musculoskeletal injuries (MSIs). Detailed analysis was conducted using Poisson regression modelling.

A total of 42 332 employees were included in the study of whom 11% were male and 89% female. When adjusted for age, occupation, sub-sector, employment category, health region and facility, female workers had significantly higher risk of all injuries [rate ratio (95% CI) = 1.58 (1.24–2.01)] and MSIs [1.43 (1.11–1.85)] compared to their male colleagues.

The authors concluded that occupational health and safety initiatives should be gender sensitive and developed accordingly.

Alamgir H et al. *Occupational Medicine* 2009 **59(3)**:149-152

A study in Sweden has been carried out to establish if intermittent exposure to hand-transmitted vibration had the same effect as continuous exposure on the temporary response of finger tactile and thermal perception thresholds.

Two laboratory experiments were conducted. In each, 10 healthy subjects, five males and five females, participated. The subjects' fingers were exposed to vibration under four conditions with a combination of different periods of exposure and rest periods. The vibration frequency was 125 Hz and the frequency-weighted acceleration was 5 m/s². A measure of the tactile or thermal perception was conducted before the different exposures to vibration. Immediately after the vibration exposure, the acute effect was measured continuously for the first 75 s. This was followed by regular measures for a maximum of 30 min.

The results showed that combinations of vibration with different periods of exposure and rest periods significantly influenced vibrotactile perception, but not thermal perception.

These findings suggest that intermittent exposure to hand-transmitted vibration might be more beneficial for the response of the finger vibrotactile sensation than continuous exposure. This is inconsistent with the evaluation methods in ISO 5349-1 for vibrotactile sensation, but accurate for thermal perception.

Burström L et al. *Occupational Medicine* 2009 **59(3)**:174-179

Incidence rates of surgically treated idiopathic carpal tunnel syndrome in blue- and white-collar workers and housewives in Tuscany, Italy

This study compared rates of surgically treated carpal tunnel syndrome (CTS) among blue- and white-collar workers and housewives in the general population.

Surgically treated cases of idiopathic CTS were investigated among 25–59-year-old residents of Tuscany, Italy, during 1997–2000, based on obligatory discharge records from all Italian public/private hospitals, archived according to residence on Tuscany's regional database. Population data were extracted from the 2001 census.

After excluding repeat admissions, 8801 eligible cases were identified. Age-standardised rates (per 100 000 person-years) of surgical CTS were: "blue-collar women", 367.8; "white-collar women", 88.1; "housewives", 334.5; "blue-collar men", 73.5; and "white-collar men", 15.3. Compared with reference categories (same-sex white-collar workers): female blue-collar workers experienced a 4.2-fold higher standardised rate; housewives, a 3.8-fold excess; and male blue-collar workers, a 4.8-fold excess (all $p < 0.001$). Male and female blue-collar workers showed approximately three to sevenfold higher age-specific rates compared to their white-collar counterparts (all $p < 0.001$). Housewives' rates were similar to those of blue-collar female workers up to 40–44 years of age, after which they were significantly lower ($p < 0.002$). At all ages, housewives' rates were much higher ($p < 0.001$) than those of white-collar women.

Surgically treated CTS was three to seven times more common (depending on age/gender) in blue-collar than in white-collar workers, which is difficult to explain by differences in body weight or other individual factors. Thus, occupational risk factors seem relevant throughout working life. The

high rates for full-time housewives suggest that domestic chores should be investigated as a possible risk factor for CTS.

Mattioli S et al. *Occupational and Environmental Medicine* 2009;**66**:299-304

Occupational injuries and fatalities in copper mining in Zambia

The metal mining industry employs approximately 15% of formally employed workers in Zambia, but there is little information about the magnitude of occupational injuries among the miners.

A retrospective study of occupational injuries and fatalities at one of the largest copper mining companies in Zambia was undertaken for the period January 2005 to May 2007, by researchers from Norway.

Information on injuries and fatalities was obtained from the electronic accident survey database of the company. Analysis was restricted to fatalities and those injuries that had prompted medical attention and at least 1 day of absence from work. Annual injury and fatality frequency rates (injuries per 1000 employee years and fatalities per 100 000 employee years, respectively) were calculated.

In the selected period, 165 injuries and 20 fatalities were recorded. The underground department had the highest frequency rates of fatalities (111/100 000 employee years) and injuries (5.5/1000 employee years). The most common cause of fatal injuries was fall of rock in the underground mines. The most frequent mechanism of injury was handling of tools and materials, and the most

commonly injured body parts were the hands and fingers.

The fatality rate is high compared to reported values from the metalliferous mining industry in developed countries, strongly suggesting that measures should be taken to reduce risks, particularly at underground sites.

Michelo P. et al. *Occupational Medicine* 2009
59(3):191-194

ABSTRACTS June 2009

Respiratory health of welders in a container yard, Sri Lanka

The fumes and gases released during welding can lead to respiratory ill-health.

This study aimed to assess the prevalence of respiratory symptoms (RS) and respiratory function (RF) of welders in comparison to a control group (CG).

A cross-sectional study was conducted among welders and controls selected from office support staff of a medical faculty. RS were determined by administering a questionnaire and RF with the use of an electronic spirometer.

41 welders and 41 controls participated. Chronic bronchitis was significantly higher among welders (27%; n = 11) than in controls (7%; n = 3) with an odds ratio of 4.6 [95% confidence interval (CI): 1.1–23.3]. Forced vital capacity (FVC), forced expiratory volume in the first second of forced vital capacity (FEV1.0), forced mid-expiratory flow rate (FEF25–75%) and peak expiratory flow rate (PEFR) were slightly higher among welders (2.97 l, 2.6 l, 3.4 l/s and 339 l/min, respectively) than in the

CG (2.79 l, 2.4 l, 3.38 l/s and 323 l/min, respectively), the differences of which were not statistically significant. On comparison of the observed values of welders with the predicted normal values, the observed FVC (2.97 versus 3.35 l, respectively) and PEFR (339 versus 538 l/min) had significantly lower values.

The authors concluded that welders are at a higher risk of developing chronic bronchitis with non-impairment of lung function than the control group.

Jayawardana P and Abeysena C. *Occupational Medicine* 2009 **59(4)**:226-229

Occupational exposure and sensitization to fungi among museum workers

Museum employees are exposed to fungi and storage mites in the workplace. This study evaluated the prevalence and risk factors of sensitization to moulds, as well as clinical symptoms associated with allergy in museum workers.

A total of 103 employees of the Polish National Museum (NM) in Warsaw, potentially exposed to fungi during their work, were assessed using a questionnaire and skin prick tests to common allergens and fungal extracts. The level of total and serum-specific IgE to moulds was evaluated, and spirometry was performed in all subjects. Mycological analysis of the workplace was also performed.

Penicillium, Aspergillus, Cladosporium, Alternaria, Trichoderma, Acremonium and Paecilomyces were the most frequent species isolated from investigated exhibits of NM. Thirty per cent of museum employees were sensitized to at least one of the fungal allergens. Logistic regression analysis revealed that duration of occupational exposure lasting >5 years, family history of atopy, presence of a cat at home, sinusitis, allergic rhinitis and a history of frequent respiratory infections were risk factors for the development of sensitization to fungi in this working group.

This study suggests an important role of fungi as occupational allergens for museum workers. The prevalence of allergic symptoms among these employees was relatively high. Further studies are necessary to elucidate the importance of particular fungal species in the development of occupational allergy.

Wiszniewska M et al. *Occupational Medicine* 2009
59(4):237-242

Mortality in employees at a New Zealand agrochemical manufacturing site

Previous studies at the Dow AgroSciences (Formerly Ivon Watkins-Dow) plant in New Plymouth, New Zealand, had raised concerns about the cancer risk in a subset of workers at the site with potential exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin. As the plant had been involved in the synthesis and formulation of a wide range of agrochemicals and their feedstocks, the mortality risk for all workers at the site was examined.

Workers employed between 1 January 1969 and 1 October 2003 were followed up to the end of 2004. Standardized mortality ratios (SMRs) were calculated using national mortality rates by employment duration, sex, period of hire and latency.

A total of 1754 employees were followed during the study period and 247 deaths were observed. The all causes and all cancers SMRs were 0.97 (95% CI 0.85–1.10) and 1.01 (95% CI 0.80–1.27), respectively. Mortality due to all causes was higher for short-term workers (SMR 1.23, 95% CI 0.91–1.62) than long-term workers (SMR 0.92, 95% CI 0.80–1.06) and women had lower death rates than men. Analyses by latency and period of hire did not

show any patterns consistent with an adverse impact of occupational exposures.

The authors concluded that the mortality experience of workers at the site was similar to the rest of New Zealand.

McBride D et al. *Occupational Medicine* 2009
59(4):255-263

Overweight, obesity and risk of work disability: a cohort study of construction workers in Germany

Although obesity and permanent work disability impose a great burden on the individual and are very costly for society, data on the impact of being overweight on occupational disability are sparse, especially in men who work hard physically. The aim of this study was to investigate the association of body mass index (BMI) with work disability among construction workers.

The association between BMI and work disability was examined during a mean follow-up period of 10.8 years in a cohort of 16 875 male construction workers in Württemberg, Germany, who participated in routine occupational health examinations from 1986 to 1992. Hazard ratios were calculated with normal weight (20.0–22.4 kg/m²) as reference using the Cox proportional hazards model, after adjustment for potential confounding factors.

Overall, a U-shaped association of BMI with all-cause work disability (total number = 3064 cases) was observed, with the lowest risk of disabilities at BMI levels between 25 and 27.4 kg/m². Strong positive associations were observed between BMI and work disability due to osteoarthritis or cardiovascular diseases, whereas BMI was inversely related to work disability due to cancer,

even after exclusion of the first 3 years of follow-up.

The authors conclude that moderate overweight is not associated with increased risk of work disability among construction workers, but obesity increases the risk of work disability due to osteoarthritis and cardiovascular disease.

Claessen H et al. *Occupational and Environmental Medicine* 2009;**66**:402-409

Faculty Dates for your diary

The schedule of Faculty Board meetings for 2009 is as follows:-

9 September

7 October

4 November

Other key dates for the Faculty this year are:-

Autumn Scientific Meeting, Friday 2 October

AGM, Smiley Lecture, Admission Ceremony and Annual Dinner, Friday 20 November

2010:-

Spring Conference - Friday 9 April

Autumn Scientific Meeting - Friday 1 October
(joint meeting with London FOM in Newry –
“Doctors in difficulty”)

AGM, Smiley Lecture, Admission Ceremony and annual dinner - Friday 19 November

Since January 2007, the newsletter has been produced in electronic format only.

If you have not already submitted your current e-mail address to the Faculty, kindly do so by e-mailing fom@rcpi.ie

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