

**Nº 10**

# **Boletín LADEP**

**Boletín Nº10 - 1<sup>er</sup> Trimestre 2011**

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laboratorio  bservatorio  
de Enfermedades Profesionales de Andalucía

## Boletín LADEP

*Boletín Nº10 - 1<sup>er</sup> Trimestre 2011 (Enero - Marzo)*

**Boletín Editado por: Juan Luis Cabanillas Moruno**

**Boletín Maquetado por: David Carrión Rico**

## REVISTAS INTERNACIONALES CONSULTADAS

- AMERICAN JOURNAL OF INDUSTRIAL MEDICINE
- ARCHIVES BELGES
- INDIAN JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE
- INDUSTRIAL HEALTH
- INTERNATIONAL JOURNAL OF HYGIENE AND ENVIRONMENTAL HEALTH
- JOURNAL OF OCCUPATIONAL HEALTH
- JOURNAL OF OCCUPATIONAL MEDICINE AND TOXICOLOGY
- MEDICINA DEL LAVORO
- OCCUPATIONAL AND ENVIRONMENTAL MEDICINE
- OCCUPATIONAL MEDICINE
- SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH
- THE NEW ENGLAND JOURNAL OF MEDICINE

## REVISTAS NACIONALES CONSULTADAS

- ARCHIVOS DE PREVENCIÓN DE RIESGOS LABORALES
- MEDICINA Y SEGURIDAD DEL TRABAJO
- REVISTA DE LA SOCIEDAD ESPAÑOLA DE MEDICINA Y SEGURIDAD DEL TRABAJO

**Artículo Nº1**

Revista: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE - 54:1-9, 2011

**Título**

*Physical examination has a low yield in screening for carpal tunnel syndrome (Bajo rendimiento del examen físico en el cribado del síndrome del túnel carpiano)*

**Autores**

Dale AM, Descatha A, Coomes J, Franzblau A, Evanoff B

**Antecedentes**

**Background.** Physical examination is often used to screen workers for carpal tunnel syndrome (CTS). In a population of newly hired workers, we evaluated the yield of such screening.

**Métodos**

**Methods.** Our study population included 1,108 newly hired workers in diverse industries. Baseline data included a symptom questionnaire, physical exam, and bilateral nerve conduction testing of the median and ulnar nerves; individual results were not shared with the employer. We tested three outcomes: symptoms of CTS, abnormal median nerve conduction, and a case definition of CTS that required both symptoms and median neuropathy.

**Resultados**

**Results.** Of the exam measures used, only Semmes-Weinstein sensory testing had a sensitivity value above 31%. Positive predictive values were low, and likelihood ratios were all under 5.0 for positive testing and over 0.2 for negative testing.

**Conclusiones**

**Conclusions.** Physical examination maneuvers have a low yield for the diagnosis of CTS in workplace surveillance programs and in post-offer, pre-placement screening programs.

**Artículo Nº2**

Revista: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE - 54:224-231, 2011

**Título**

*Occupational asthma in the aluminum smelters of Australia and New Zealand: 1991-2006 (Asma laboral en esmaltadores de aluminio de Australia y Nueva Zelanda: 1991-2006)*

**Autores**

Donoghue M, Frisch N et al.

**Objetivo**

**Objective.** To examine the incidence of occupational asthma in the seven aluminum smelters of Australia and New Zealand from 1991 to 2006.

**Métodos**

**Methods.** Incidence and exposure data were collected by survey from the smelters prospectively during the study period.

**Resultado**

**Results.** The incidence of occupational asthma across all smelters combined was highest in 1992 at 9.46/1,000/year, declining to 0.36/1,000/year in 2006; a 96.2% reduction. The incidence of occupational asthma was correlated with geometric mean total fluoride concentration, measured as personal samples from employees undertaking anode changing ( $r_s = 0.497$ ,  $P < 0.001$ ).

**Conclusiones**

**Conclusions.** The control of exposures, respiratory protection and pre-placement medical assessments undertaken during the study period seem to have contributed to the substantial decline in occupational asthma incidence.

**Artículo Nº3**

Revista: AMERICAN JOURNAL OF INDUSTRIAL MEDICINE - 54:118-127, 2011

**Título**

*Exposure to anesthetic gases and congenital anomalies in offspring of female registered nurses (Exposición a gases anestésicos y anomalías congénitas en hijos de enfermeras expuestas)*

**Autores**

Teschke K, Abanto Z, Arbour L et al

**Antecedentes**

**Background.** Studies of offspring of mothers exposed to anesthetic gases have shown associations with congenital anomalies reported by the mothers, but rarely in studies with objectively ascertained outcomes. We conducted a retrospective cohort study to examine associations between registry-ascertained congenital anomalies in offspring and anesthetic gas exposure of mothers employed as nurses.

**Métodos**

**Methods.** A cohort of registered nurses in British Columbia, Canada, was linked to records of births and congenital anomalies from 1990 to 2000. Exposures were assessed via a survey of anesthetic gas use in all hospitals in the province and records of nurses' jobs, departments, and hospitals.

**Resultado**

**Results.** Departments most frequently reporting anesthetic gas use were operating rooms, post-anesthetic recovery rooms, and maternity units. In the cohort of 15,317 live-borne children of 9,433 mothers, 1,079 had congenital anomalies. Anomalies were associated with ever and probable maternal exposure to halogenated gases (ORs: 1.49, 95% CI: 1.04-2.13; and 2.61, 95% CI: 1.31-5.18, respectively) and to nitrous oxide (ORs: 1.42, 95% CI: 1.05-1.94; and 1.82, 95% CI: 1.11-2.99). Anomalies most frequently associated with exposure were those of the heart (OR, halogenated gases: 2.31, 95% CI: 1.07-4.97) and integument (OR, halogenated gases: 3.56, 95% CI: 1.53-8.32; OR, nitrous oxide: 3.02, 95% CI: 1.37-6.64). Gases most frequently associated with anomalies were halothane (predominantly used early in the study period), isoflurane, and sevoflurane (predominantly used later in the period).

**Conclusiones**

**Conclusions.** In this study, where both exposures and outcomes were assessed objectively, certain congenital anomalies were associated with estimated anesthetic gas exposure.

**Artículo Nº4**

Revista: INTERNATIONAL JOURNAL OF HYGIENE AND ENVIRONMENTAL HEALTH - 2011. Jan;214(1):66-70. Epub 2010 Sep 16

**Título**

*Sleep apnoeas and neurobehavioral effects in solvent exposed workers (Apnea del sueño y efectos neuroconductuales sobre los trabajadores expuestos a solventes)*

**Autores**

Godderis L, Dours G, Laire G, Viaene MK.

**Antecedentes**

**Background.** Exposure to organic solvents may cause an increase of sleep apnoeas, which may explain the excess of fatigue, concentration and memory problems reported in exposed workers.

**Métodos**

**Methods.** Polysomnography was performed in 21 long-term exposed printers and 27 controls. In addition, a questionnaire regarding sleep related complaints, Q16 questionnaire and computerized neurobehavioral tests were administered. The groups matched well regarding age, weight, neck circumference and schooling level. A semi-quantitative cumulative exposure index was calculated.

**Resultado**

**Results.** Excessive sleepiness while watching TV ( $p < 0.01$ ) and diminished sexual interest ( $p = 0.03$ ) was found in the organic solvent-workers. The sleep complaints score correlated positively with the exposure index and duration (both  $p = 0.01$ ). The polysomnography results showed an increase of central apnoeas in the exposed workers (67%) compared to the referents (30%). The presence of central apnoeas was positively correlated with the exposure index ( $p < 0.05$ ) in regression models. Of the neurobehavioral test only hand-eye coordination was dose-related impaired in the exposed workers. The co-existence of abnormal values on at least one neurobehavioral test and the presence of central apnoeas was observed in the exposed workers, but did not reach significance.

**Conclusiones**

**Conclusions.** Workers chronically exposed to low organic solvent levels may experience mild sleeping problems, however, our data do not support the hypothesis that the clinical picture of chronic toxic encephalopathy can be primarily caused by the induction of sleep apnoea syndrome. It seems thus that the risk to experience central apnoeas rather accompanies the risk of impaired neurobehavioral performance with increasing exposure in a working population.

**Artículo Nº5**

Revista: JOURNAL OF OCCUPATIONAL MEDICINE AND TOXICOLOGY - 2011, 6:7doi:10.1186/1745-6673-6-7

**Título**

*Engineered Nanomaterials: exposures, hazards and risk prevention (Nanomateriales artificiales: exposiciones, peligros y prevención de riesgos)*

**Autores**

Yokel RA, MacPhail R

**Abstract**

Nanotechnology presents the possibility of revolutionizing many aspects of our lives. People in many settings (academic, small and large industrial, and the general public in industrialized nations) are either developing or using engineered nanomaterials (ENMs) or ENM-containing products. However, our understanding of the occupational, health and safety aspects of ENMs is still in its formative stage. A survey of the literature indicates the available information is incomplete, many of the early findings have not been independently verified, and some may have been over-interpreted. This review describes ENMs briefly, their application, the ENM workforce, the major routes of human exposure, some examples of uptake and adverse effects, what little has been reported on occupational exposure assessment, and approaches to minimize exposure and health hazards. These latter approaches include engineering controls such as fume hoods and personal protective equipment. Results showing the effectiveness - or lack thereof - of some of these controls are also included. This review is presented in the context of the Risk Assessment/Risk Management framework, as a paradigm to systematically work through issues regarding human health hazards of ENMs. Examples are discussed of current knowledge of nanoscale materials for each component of the Risk Assessment/Risk Management framework. Given the notable lack of information, current recommendations to minimize exposure and hazards are largely based on common sense, knowledge by analogy to ultrafine material toxicity, and general health and safety recommendations. This review may serve as an overview for health and safety personnel, management, and ENM workers to establish and maintain a safe work environment. Small start-up companies and research institutions with limited personnel or expertise in nanotechnology health and safety issues may find this review particularly useful.

## Artículo Nº6

Revista: MEDICINA DEL LAVORO - 2011; 102, 2: 167-173

### Título

**Scientific research and academic promotion in Occupational Medicine: what are the rules of the game?** (Investigación científica y promoción académica en Medicina del Trabajo: ¿cuáles son las reglas del juego?)

### Autores

Franco, G

### Introducción

**Introduction.** Recently, the National University Council (CUN) recognized the importance of bibliometric indicators in assessing scientific output and the Ministry of Education, University and Research established that the selection committees' decision must be guided by internationally recognized metrics including the impact factor (IF).

### Aim

**Aim.** To analyse methods and tools of metrics to assess scientific performance in Occupational Medicine by examining some critical aspects for entry-level positions and academic promotion in the Universities.

### Métodos

**Methods.** By means of different databases (Web of Knowledge®, Scopus®, SCImago), the h-index was studied to assess the scientific output in the field of Occupational Medicine. The h-index was used as an index of both output and quality of overall output of researchers, disciplines, journals, and countries.

### Resultados

**Results.** Italian scientific output in the Public, Environmental & Occupational Health subject category (h-index=62) was lower than almost the total of other medical disciplines and, at an international level, is ranked at 12th place (other disciplines ranked 3rd to 9th). Output was 32% compared to that of the USA (other disciplines ranged from 42% and 61%). However, it should be noted that most scientific papers of Occupational Medicine researchers are published mainly in journals of different disciplines (with a higher IF) rather than in journals of Public, Environmental & Occupational Health (with a lower IF).

### Conclusiones

**Conclusions.** Assuming that selection committees' decisions will be guided by metrics and will respect the minimum standard proposed by CUN, Occupational Medicine researchers aiming at academic promotion will have good reason to ask themselves not only which journals are most useful but also which journals have the greatest impact. This fact could have profound implications for the future of the discipline.

**Artículo Nº7**

Revista: OCCUPATIONAL AND ENVIRONMENTAL MEDICINE - 2011; 68:108-115

**Título**

*Neurobehavioral effects of long-term exposure to pesticides: results from the 4-year follow-up of the PHYTONER Study (Efectos neuroconductuales de la exposición a plaguicidas a largo plazo: resultados del seguimiento durante 4 años del estudio PHYTONER)*

**Autores**

Baldi I, GruberA, Rondeau V et al.

**Objetivos**

**Objectives.** The aim of the PHYTONER study is to investigate the role of pesticides on neurobehavioral performances in French vineyard workers.

**Métodos**

**Methods.** 929 workers affiliated to the health insurance system for farmers in the Bordeaux area of south-western France were enrolled in the study in 1997-1998. They were contacted for a first follow-up in 2001-2003. Participants completed a questionnaire and nine neurobehavioral tests. They were classified according to their life-long pesticide exposure, as directly exposed, indirectly exposed or non-exposed. Educational level, age, sex, alcohol consumption, smoking, psychotropic drug use and depressive symptoms were taken into account in the analysis.

**Resultados**

**Results.** 614 subjects were available for investigation at follow-up. Follow-up analysis confirmed that the risk of obtaining a low performance on the tests was higher in exposed subjects, with ORs ranging from 1.35 to 5.60. Evolution of performances over the follow-up period demonstrated that exposed subjects had the worst decreases in performance. The risk of having a two-point lower score on the Mini-Mental State Examination was 2.15 (95% CI 1.18 to 3.94) in exposed subjects.

**Conclusiones**

**Conclusions.** These results suggest long-term cognitive effects of chronic exposure to pesticides and raise the issue of the risk of evolution towards dementia. The PHYTONER study is the first to provide prospective data on the natural history of neurological disorders associated with pesticide exposure.

**Artículo Nº8**

Revista: SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH - 2011; 37(1):30-36

**Título**

*Physical workload and accelerated occurrence of lumbar spine diseases: risk and rate advancement periods in a German multicenter case-control study (Carga de trabajo físico y aparición rápida de enfermedades lumbares: RAP (riesgo y tasa de periodos de avances) en un estudio multicéntrico de casos y testigos)*

**Autores**

Seidler A, Euler U, Bolm-Audorff U, Ellegast R, Grifka J, Haerting J, Jäger M, Michaelis M, Kuss O

**Objetivos**

**Objective.** In a German multicenter case-control study of lumbar disc diseases, we calculated risk and rate advancement periods (RAP) for physical workload.

**Métodos**

**Methods.** Patients aged 25-70 years with clinically and radiologically verified lumbar disc herniation (286 males, 278 females) or symptomatic lumbar disc narrowing (145 males, 206 females) were compared with population control subjects (453 males and 448 females). For this analysis, all manual handling of objects of about  $\geq 5$  kg and postures with trunk inclination of  $\geq 20^\circ$ , as assessed by technical experts, were included in the calculation of cumulative lumbar load, determined by biomechanical model calculations. Logistic regression analysis was applied to calculate RAP, adjusted for region.

**Resultados**

**Results.** We found a steep positive dose-response relationship between age and lumbar disc narrowing among men as well as women; however, we did not find a monotonic increase in lumbar disc herniation risk with age. As a monotonic increase in disease risk with age constitutes a fundamental assumption underlying the RAP concept, we restricted our RAP analysis to cases with symptomatic lumbar disc narrowing. Among men, there was a positive dose-response relationship between the cumulative lumbar load and the acceleration of lumbar disc narrowing. In the highest exposure category, a RAP of 28.0 years [95% confidence interval (95% CI) 9.7-46.3 years] was found. Among women, the RAP was 8.8 years (95% CI 2.4-15.2 years) in the highest exposure category.

**Conclusiones**

**Conclusion.** This study emphasizes the conceptual importance of risk acceleration - causation not only comprises the occurrence of a disease (that without a specific exposure would not have occurred at all) but also the accelerated occurrence of a disease (that without exposure would have occurred later in life).

**Artículo Nº9**

Revista: SCANDINAVIAN JOURNAL OF WORK ENVIRONMENT & HEALTH - 2011;37(2):120-128

**Título**

*The effect of workplace intervention on pain and sickness absence caused by upper-extremity musculoskeletal disorders (Efecto de la intervención en el lugar de trabajo sobre el dolor y el absentismo laboral causado por trastornos osteomusculares de extremidad superior)*

**Autores**

Shiri R, Martimo K-P, Miranda H, Ketola R, Kaila-Kangas L, Liira H, Karppinen J, Viikari-Juntura E

**Objetivos**

**Objective.** The aim of this study was to assess the effect of an ergonomic intervention on pain and sickness absence caused by upper-extremity musculoskeletal disorders.

**Métodos**

**Methods.** In this randomized controlled study, subjects aged 18-60 years (N=177) seeking medical advice due to upper-extremity symptoms were included if their symptoms, or the exacerbation of symptoms, had started <30 days prior to the medical consultation and immediate sick leave was not required. Workplace ergonomic improvements were made in the intervention group. Data on symptoms and sickness absences were gathered during one-year follow-up.

**Resultados**

**Results.** Pain intensity, pain interference with work, leisure time, or sleep did not differ between the intervention and control group during the one-year follow-up. During the first three months of follow-up, the percentage of employees with sickness absence due to upper-extremity or other musculoskeletal disorders did not differ between the intervention (N=89) and control (N=84) group, but the total number of sickness absence days in the intervention group was about half of that in the control group (mean 6.2 versus 9.8 days for upper-extremity disorder and 6.0 versus 11.5 days for upper-extremity and other musculoskeletal disorders combined). During 4-12 months of follow-up, the percentage of employees with sickness absence due to upper-extremity disorder (10.1% versus 16.7%, P=0.20) or upper-extremity and other musculoskeletal disorders combined (20.2% versus 32.1%, P=0.07) was lower in the intervention than the control group.

**Conclusiones**

**Conclusion.** Our findings suggest that an early ergonomic intervention reduces sickness absence due to upper-extremity or other musculoskeletal disorders.

**Artículo Nº10**

Revista: THE NEW ENGLAND JOURNAL OF MEDICINE - 2011; 364:791-793

**Título***Combating Environmental Causes of Cancer (La lucha contra las causas ambientales del cáncer)***Autores**

Christiani DC.

**Abstract**

In April 2010, the President's Cancer Panel – an advisory committee comprising physicians and scientists appointed by President George W. Bush in 2006 – released a report emphasizing the need for stronger regulations to control Americans' exposure to toxins.<sup>1</sup> Between September 2008 and January 2009, the panel had convened four meetings to assess the status of environmental cancer research, policy, and programs addressing known and potential effects of environmental exposures on cancer risk. The group heard testimony from 45 representatives of academia, government, industry, the environmental and cancer advocacy communities, and the general public.