

annually regardless of their ages, and the costs are paid by the Bureau of Labour Insurance (BLI). After each periodical examination on a worker engaged in a hazardous job, physicians need to assign the results to one of the four levels of management (Level 1, 2, 3 and 4). For workers with a management level of 2 or above, physicians need to make notes of the jobs that should be avoided and precautions that should be taken. Furthermore, for workers with a management level of 3 or above, physicians need to make diagnoses on the basis of the test results. All the health examinations are performed by health-care institutes accredited by BLI, and health-care institutes are required to report cases with a management level of 3 or above to both to the inspection authority. Therefore, the health examination system also serves as a part of the reporting system of occupational diseases and injuries in Taiwan.

1702d EFFECTIVENESS OF PERIODICAL MEDICAL EXAMINATION TO PREVENT WORK-RELATED ILL-HEALTH

^{1,2}Lode Godderis, ^{3,4}Jonas Steel, ^{3,4}Jeroen Luyten. ¹*Environment and Health, Department of Public Health and Primary Care, KU Leuven, Belgium;* ²*IDEWE, External Service for Prevention and Protection at Work, Belgium;* ³*Leuven Institute for Healthcare Policy, Faculty of Medicine, KU Leuven, Belgium;* ⁴*Department of Social Policy, London School of Economics and Political Science, UK*

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Introduction Periodic health examinations (PHE) have been a fundamental part of occupational health and safety (OHS) practice for decades. Nonetheless, PHE have not received a great deal of attention in health economics and ethics literature, which poses many interesting challenges from an efficiency and an equity perspective.

Methods We performed electronic searches in databases as EMBASE, PUBMED and Cochrane Library from September 2007. Search terms included MeSH, Emtree and free text terms related to economic evaluation, occupational health intervention and productivity. We independently included all studies based on three criteria:

1. the analysis was a full or partial economic evaluation (cost analyses);
2. included OHS interventions targeted at an employed population; and
3. were written in English, French, or Dutch.

Results The best available evidence assessing benefits of OSH interventions consisted of 156 economic evaluations. A broad range of intervention types was studied in the literature, most frequently health promotion (27%), or multiple intervention types within one study (31%). However, none of these studies specifically focussed on PHE. Studies mainly came from Europe (39%) and North-America (51%), and originated in diverse sectors and industries, most frequently health care (15%).

Conclusions Determining the value of OHS proved a theoretically complex endeavour and there are hardly data available on the value of PHE. While the majority of OHS interventions had positive conclusions, most studies were conducted in similar settings and showed substantial methodological deficiencies. Consequently, we need to be cautious to transfer results across settings or countries. Nonetheless, we rendered valuable insight into the potential cost-effectiveness of PHE

and key-elements to design a high-quality study. We have now set up a study in Belgium comparing short-, medium- and long-term outcomes in employees undergoing PHE, with a group without an intervention.

322 PREVALENCE OF OCCUPATIONAL EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA IN THE METAL WORKING INDUSTRIES: TRANSFERRING RESEARCH INTO INDUSTRIAL PRACTICE

Cláudia Fernandes*, Cláudia Ribeiro, Rita Aguiã, Mónica Henriques. *CATIM – Technological Centre for the Metal Working industry, Porto, Portugal*

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Introduction The exposure to respirable crystalline silica (RCS) in some industrial processes within the metal working industry is a recognised occupational hazard, mainly due to the classification of RCS as a group 1 carcinogen to the respiratory system, and the severity of the exposure consequences.

Methods This study was conducted based on the determination of the concentration of airborne RCS particles and the evaluation of its risk level among metal workers placed in 15 industrial SME's and 130 workplaces. The study was conducted in two industrial processes:

- i. foundry;
- ii. other processes with the exposure risk.

Occupational personal exposure to RCS was measured in all workers exposed using the NIOSH method 7500.

Result The range of RCS concentrations are:

- i. global sample is 1,159 mg/m³ – (0,006 mg/m³);
- ii. foundry 0,093 mg/m³;
- iii. other processes 0,018 mg/m³.

For the 130 workplaces monitored, 82 were higher than the permitted limit recommended by the Standard NP 1796: 2014. The processes with higher risk of exposure are those within 'pure foundry' such as metal melting, casting, sand moulding, pouring and repairing furnace.

Discussion The average concentrations of RCS for the assessed workplaces were higher than the exposure limits by NP 1796:2014. An intervention plan for each SME was designed encompassing measures at different levels aiming the promotion of health and wellbeing in the workplaces. Due to the severity of the exposures consequences urgent actions must be taken in the workplaces. The inclusion of measures that go beyond the definition of 'simple' personal protective equipment (PPE) are needed to raise the level of prevention. Such interventions are well seen by SME but conditioned by operational and budgeting issues. The information on this study, about occupational processes and individual tasks and the corresponding levels of RCS exposure can guide future needs for intervention in critical areas.

113 AN INTERVENTIONAL STUDY TO ASSESS THE INCIDENCE OF VITAMIN B12/D3 DEFICIENCY AMONG CORPORATE EMPLOYEES

¹Amar Kapadia, ¹Aditya Paliwal, ²R Rajesh. ¹*Reliance Industries Ltd, Hazira Manufacturing Division, Surat, India;* ²*Reliance Industries Ltd, Mumbai, India*

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