

As a result, the cause-and-effect relationships of work accidents in member countries of the European Union were determined and evaluated.

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## GLOBAL CANCER TRENDS: IMPLICATIONS FOR CANCER RESEARCH AND PREVENTION

Christopher P. Wild

International Agency for Research on Cancer (IARC), World Health Organization, 150 cours Albert Thomas, Lyon CEDEX 08, France, 69372

МИРОВЫЕ ТЕНДЕНЦИИ ЗЛОКАЧЕСТВЕННЫХ ЗАБОЛЕВАНИЙ: ПОКАЗАНИЯ К ИССЛЕДОВАНИЯМ И ПРОФИЛАКТИКЕ РАКА. Кристофер П. Уайлд. Международное агентство по исследованиям рака, ул. Кур Альбер Тома, 150, Лион СЕДЕКС 08, Франция, 69372

**Key words:** cancer; prevention; risk factors; epidemiology

**Ключевые слова:** рак; профилактика; факторы риска; эпидемиология

Demographic changes and evolving patterns of risk factors will result in major increases in the cancer burden worldwide in the next two decades (World Cancer Report 2014; Stewart BW and Wild CP, Eds, IARC, 2014). At the same time in many countries treatment costs are spiralling while in others access to effective therapy remains extremely limited. The combination of growing cancer burden and challenges in ensuring access to treatment is a threat to sustainability of health care systems, indicating no country can treat its way out of the cancer problem. In response increased priority must be placed on prevention and early detection, with identification of risk factors being a critical foundation to primary prevention (Vineis P, Wild CP, Lancet, 383: 549, 2014). Much is known already, with typical estimates of 30-50% of cancers preventable if current knowledge was translated in to preventive interventions. However, there remain a number of common cancers for which the aetiology remains obscure (e.g. prostate, pancreas, kidney, brain and haematological cancers). Advances in understanding the underlying mechanisms of malignant transformation and the technology to investigate such pathways offer great opportunities to epidemiology (Wild CP et al., JNCI, 107: 353, 2014) through for example, biomarkers of exposure, classification of cancers into molecular sub-types, establishing biological plausibility of exposure-disease associations, and provision of valid surrogate endpoints in evaluation of interventions. Finally, molecular tools will allow exposures throughout the life-course to be linked to biological changes, possibly providing clues to subsequent cancer risk. In summary, translational cancer research stands at an exciting but critical point in time. A concerted effort is required to drive the advances in basic science towards prevention and early detection in order to complement the benefits to be gained in the area of personalized or stratified treatment.

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## DESIGN OF PROSPECTIVE FOLLOW UP OF CHRYSOTILE ASBESTOS MINERS AND PRODUCTION WORKERS IN ASBEST

Dana Hashim<sup>1</sup>, Evgeny Kovalevskiy<sup>2</sup>, Joachim Schüz<sup>1</sup>

<sup>1</sup>International Agency for Research on cancer, 150 cours Albert Thomas Lyon, France, 68008; <sup>2</sup>Izmerov Research Institute of Occupational Health, 31, Budennogo Ave., Moscow, Russia, 105275

СТРУКТУРА ПРОСПЕКТИВНОГО ДИНАМИЧЕСКОГО НАБЛЮДЕНИЯ У РАБОЧИХ ПО ДОБЫЧЕ И ПЕРЕРАБОТКЕ ХРИЗОТИЛА АСБЕСТА В ГОРОДЕ АСБЕСТ. Дана Хашим<sup>1</sup>, Евгений Ковалевский<sup>2</sup>, Йоахим Шүц<sup>1</sup> <sup>1</sup>Международное агентство по исследованиям рака, ул. Кур Альбер Тома, 150, Лион СЕДЕКС 08, Франция, 69372; <sup>2</sup>ФГБНУ «Научно-исследовательский институт медицины труда им. академика Н.Ф. Измерова», пр-т Будённого, 31, Москва, Россия, 105275

**Key words:** asbestos; chrysotile; epidemiology

**Ключевые слова:** асбест; хризотил; эпидемиология

**Introduction:** Asbest town in Sverdlovsk Oblast residents have been employed as miners and production workers in and around the Asbest town's open-pit chrysotile asbestos mines for over a century. We prospectively follow up cancer incidence and causes of death among Asbest workers occupationally exposed to chrysotile asbestos extending a currently ongoing retrospective cohort study. **Methods.** For the retrospective study mortality data was collected from medical death certificates from 54,000 worker records from January 1, 1975 through February 28, 2016 submitted to the Sverdlovsk Civil Acts Registration Office. Records were matched to vital status and causes of death by full birth name and birth date. A dataset was created that included death date, location, and all causes listed on medical death certificate. These were then converted to International Classification of Disease-10 (ICD-10) coding or, if a Russian classification (1988-98 or 1999-2001) was provided, to ICD-10. These methods will be replicated with another medical doctor and proportions of matching codes will be calculated to assure causes of death validity. Workers and veterans still alive and living in Asbest today will be enrolled for a prospective study including lifestyle questionnaire, biological sampling for subset, and followed up through the same mechanism for causes of death and with the Oncology Dispensary in Yekaterinburg and their clinical network for cancer incidence. **Results.** The ongoing project has identified 15,800 individual deaths thus far. The mean age of death was 60±0.12 (standard deviation) years. Limitations of the ongoing study are lack of many potential confounding factors and mortality data only. These limitations can be overcome defining a prospective cohort as information on lifestyle factors can be assessed prospectively

and participants can be followed prospectively for incidence of cancer. **Conclusions.** Due to its large size of the cohort, the detailed information on job history and decades of dust measurements in the mine and mills allowing individual cumulative exposure estimation, and the linkage with mortality data will provide informative risk estimates for various causes of death, in particular cancers associated or potentially associated with asbestos exposure. With the prospective expansion of the cohort with current workers and alive veterans more information can be collected to minimize limitations of the retrospective study, especially disentangling the effect of chrysotile exposure from other risk factors and studying cancer incidence rather than mortality. We therefore recommend the continuation as this study is among the most informative ones on health effects related to chrysotile exposure and of immense public health relevance of the affected workers.

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## PREVALENCE OF COMPUTER VISION SYNDROME AMONG OFFICE WORKERS

**Dundurs J., Rampane D.**

Riga Stradiņš University, 16, Dzirciema str., Riga, Latvia, LV-1007

РАСПРОСТРАНЕННОСТЬ СИНДРОМА КОМПЬЮТЕРНОГО ЗРЕНИЯ У ОФИСНЫХ РАБОТНИКОВ. **Дандурс Дж., Рампане Д.** Рижский университет им. Страдыня, ул. Дзирциема, 16, г. Рига, Латвия, LV-1007

**Key words:** *computer vision syndrome; office workers; gender differences*

**Ключевые слова:** *синдром компьютерного зрения; офисные работники; половые различия*

**Introduction.** Computer Vision Syndrome (CVS) is described by American Optometric Association as a group of eye and vision-related problems that result from prolonged computer use. Many individuals experience eye discomfort and vision problems when viewing digital screens for extended periods. The level of discomfort appears to increase with the amount of digital screen use. In Latvia more than 95% of companies use computers in their daily work. Many professions, such as economists, accountants, secretaries, administrators etc., work with computers for a whole day. Often they forget about visual hygiene and prophylaxis to prevent changes in vision. A long-term vision discomfort can lead not only to changes in employee health, but also economical disadvantages to the companies. **Aim and research methods.** In the study is collected information about the most common symptoms of CVS, their pathogenesis and prevalence in the world. The aim of the research is to find a prevalence of CVS between office workers in Latvia and to collect information about most common symptoms of CVS, vision hygiene and prophylaxis that is used in offices. **Results.** A total of 116 office workers from different cities, irrespective of their age, gender and working experience took part into this cross-sectional study. The mean age of participants was 38.4 years. As all the participants have noticed at least one of CVS symptoms after a long working with computer, that shows that CVS is very common between office workers in Latvia. The most common visual problems reported among computer users were tired eyes – 80.17% (93/116), neck pain – 54.31% (63/116), shoulder pain 40.52% (47/116) and dry eyes 32.76% (38/116). All participants had at least one of the CVS symptoms. Brightness of computer screen was balanced with amount of light in a room. 90.52% of respondents don't have a permanent reflection of bright objects (such as lights or window) in their screens. 90.52% do not use display filters for computers. There is found that double vision is related to working hours. People, who work with computer four to six hours per day are in a higher risk of developing double vision than others. These data are statistically significant after Chi-Square test ( $p=0.015$ ). Females were found to be at a higher risk to develop neck pain ( $p=0.008$ ). **Conclusion.** Computer vision syndrome is very common between office workers in Latvia. Offices are arranged partly ergonomically, but there is still an urgent need to increase the ergonomic awareness and awareness of vision hygiene and prevention among office workers to prevent development of symptoms that are related to use of computer. Females are in a higher risk to develop neck pain than males and the highest risk to develop double vision is for people, who work with computer for four to six hours per day.

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## THE INFLUENCE OF NOISE ON MEDICAL STAFF AND PATIENTS IN RADIOLOGY DEPARTMENTS

**Dundurs J., Tarasova A.**

Riga Stradiņš University, Dzirciema str., 16, Riga, Latvia, LV-1007

ВЛИЯНИЕ ШУМА НА МЕДИЦИНСКИЙ ПЕРСОНАЛ И ПАЦИЕНТОВ В ОТДЕЛЕНИЯХ РАДИОЛОГИИ. **Дандурс Дж., Тарасова А.** Рижский университет им. Страдыня, ул. Дзирциема, 16, г. Рига, Латвия, LV-1007

**Key words:** *MRI diagnostic; noise*

**Ключевые слова:** *МРТ; шум*

**Introduction.** Radiological diagnostic abilities are expanding nowadays. It is necessary for detecting of serious diseases in the early stages, but it is always associates with patients' high levels of stress. So, person whose basal level of stress is high, in most stressful situation such as magnetic resonance imaging (MRI), is unable to adequately withstand in this diagnostic test. **Aim and research methods.** Aim of the study is to explore the noise influence on medical staff and patients in the Departments of Radiology. In the study attended 150 patients, who had MRI. Data were systemized and analyzed using IBM SPSS Statistics 20.0 (US). **Results.** Patient age was from 19 to 83 years, mean age 44.04 (Std. Deviation 17.215). After the