

주요논문초록

Measured exposures by personal monitoring for respirable suspended particles and environmental tobacco smoke of housewives and office workers resident in Bremen, Germany

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본 연구에서는 유럽의 대기질(air quality)연구의 일환으로, 호흡성 부유분진(respirable suspended particles: RSP)과 환경성 흡연(environmental tobacco smoke: ETS)의 폭로를 측정하고자 하였다. 개별적인 폭로의 범위와 수준은 주부와 사무실 작업자들을 통하여 측정하였다. 비흡연가는 독일 브레멘 인구를 대표집단으로 택하여 그중에서 무작위로 추출하였다. 주부들은 일차로, 집에서와 사무실 작업자들의 폭로평가를 하기 위해 한 집단을 선발하고, 이차로 전반적인 폭로에 대한 작업장의 기여도를 평가하기 위해 두 번째 집단을 모집하였다.

모두 190명의 연구대상자로부터 호흡기대(breathing zone)에 가까운 곳의 공기 표본을 24 시간동안 개인 포집기(personal monitors)로 수집하였다. 호흡성 부유분진(respirable suspended particles: RSP)에 대해서는, 수집한 표본들을 ultraviolet-absorbing particulate matter(UVPM), fluorescing particulate matter(FPM), solanesol-related particulate matter(SolPM), 3-ethenylpyridine(3-EP)으로 분석하였다. 또한 모든 연구대상자의 타액내 cotinine 수준도 검사하였다.

연구결과, 전반적인 수준은 매우 낮음을 발견하였다. 대부분의 결과는 정량화 할 수 있는 한도보다 낮았다. 흡연가와 살거나, 흡연가와 같이 일하는 작업자들은 호흡성 부유분(respirable suspended particles: RSP)과 환경성 흡연(environmental tobacco smoke: ETS)을 fluorescing particulate matter(FPM)으로 측정시, 가장 높은 24시간 중위값(RSP 789 μ g, ETS 128 μ g)에 폭로되고 있었다. 24시간 가중 평균농도의 중위값에 근거한, 가장 높은 니코틴 수치는 흡연가와 일하는 사무실 작업자들에게서 볼 수 있었다(0.69 μ g \cdot m⁻³). 사무실 작업자들은 또한 가장 높은 코티닌 수준(1.6ng ml⁻¹)을 보였다.

결론적으로, 주거지와 작업장에서 흡연가와 함께 있음으로 해서 가장 높게 폭로되는 작업자들은 연간 20CE(cigarette equivalents) 이상을 흡입하고 있는 것으로 나타났다. 흡연가와 사는 주부들은 연간 11CE를 흡입하고 있었다. 집을 포함한 작업장외의 장소들이 총 RSP와 ETS분진폭로에 가장 영향이 있었다.

논문 목록

Hempel-J rgensen A, Kj rgaard SK, M lhave L: Cytological changes and conjunctival hyperemia in relation to sensory eye irritation. *Int Arch Occup Environ Health* 1998;71(4): 225-235.

Zhao W, Misumi J, Yasui T, Aoki K, Kimura T: Effects of methyl ethyl ketone, acetone, or toluene coadministration on 2,5-hexanedione concentration in the sciatic nerve, serum, and urine of rats. *Int Arch Occup Environ Health* 1998;71(4): 236-244.

Anttila A, Pukkala E, Aitio A, Rantanen T, Karjainen S: Update of cancer incidence among workers at a copper/nickel smelter and nickel refinery. *Int Arch Occup Environ Health* 1998;71(4): 245-250.

Moon C-S, Zhang Z-W, Shimbo S, Watanabe T, Moon D-H, Lee C-U, Lee B-K, Ahn K-D, Lee S-H, Ikeda M: Evaluation of urinary cadmium and lead as markers of background exposure of middle-aged women in Korea. *Int Arch Occup Environ Health* 1998;71(4): 251-256.

Perrin-Nadif R, Porcher J-M, Dusch M, Mur J-M, Auburtin G: Erythrocyte antioxidant enzyme activities in coal miners from three French regions. *Int Arch Occup Environ Health* 1998;71(4): 257-262.

Dufresne A, B gin R, Dion C, Jagirdar J, Rom WN, Loowereewanich P, Muir DCF, Ritchie AC, Perrault RG: Angular and fibrous particles in lung in relation to silica-induced disease. *Int Arch Occup Environ Health* 1998;71(4): 263-269.

Malchaire J, Rodrigues Diaz LS, Piette A, Goncalves Amaral F, Schaetzen D de: Neurological and functional effects of short-term exposure to hand-arm vibration. *Int Arch Occup Environ Health* 1998;71(4): 270-276.

Javelaud B, Vian L, Molle R, Allain P, Allemand B, Andr B, Barbier F, Churet AM, Dupuis J, Galand M, Millet F, Talmon J, Touron C, Vaissi re M, Vechambre D, Vieules M, Viver D: Benzene exposure in car mechanics and road tanker drivers. *Int Arch Occup Environ Health* 1998;71(4): 277-283.

Inoue O, Kanno E, Kudo S, Kakizaki M, Kataoka M, Kawai T, Ukai H, Ikeda M: High-pressure liquid chromatographic determination of toluene in urine as a marker of occupational exposure to toluene. *Int Arch Occup Environ Health* 1998;71(5):302-308.

Wrbitzky R, Angerer J: N,N-Dimethylformamide - influence of working conditions and skin penetration on the internal exposure of workers in synthetic textile production. *Int Arch Occup Environ Health* 1998;71(5):309-316.

Gonzalez M, Velten M, Cactineau A: Increased acquired dyschromatopsia among solvent-exposed workers: an epidemiology study on 249 employees of an aluminum-foil printing factory. *Int Arch Occup Environ Health* 1998;71(5):317-324.

Engels JA, van der Gulden JWJ, Senden TF, Kolk JJ, Binkhorst RA: The effects of an ergonomic-educational course. Postural load, perceived physical exertion, and biomechanical errors in nursing. *Int Arch Occup Environ Health* 1998;71(5):3336-342.

Rhomberg W: Exposure to polymeric materials in vascular soft tissue sarcomas. *Int Arch Occup Environ Health* 1998;71(5):343-347.

Liu C-S, Kuo H-W, Lai J-S, Lin T-I: Urinary N-acetyl- β -glucosaminidase as an indicator of renal dysfunction in electroplating workers. *Int Arch Occup Environ Health* 1998;71(5):348-352.

Teculescu DB, Sauleau E-A, Massin N, Bohadana AB, Buhler O, Benmghar L, Mur J-M: Sick-building symptoms in office workers in northeastern France: a pilot study. *Int Arch Occup Environ Health* 1998;71(5):353-356.

Yokoyama K, Araki S, Murata K, Nishikitani M, Okumura T, Ishimatsu S, Takasu N, White R.F.: Chronic neurobehavioral effects of tokyo subway sarin poisoning in relation to posttraumatic stress. *Arch Environ Health Int J*.1998;53(4):249-256.

Kilburn K.H., Thornton J.C., Hanscom B.: Population-based prediction equations for neurobehavioral tests. *Arch Environ Health Int J*.1998;53(4):257-263.

Blabus J.M., Stewart W, Bolla K.I., Schwartz B.S.: Simple visual reaction time in organolead manufacturing workers: influence of the interstimulus interval. *Arch Environ Health Int J*.1998;53(4):264-271.

Ritz B, Heinrich J, Wjst M, Wichmann E, Krause C.: Effect of cadmium body burden on immune response of school children. *Arch Environ Health Int J*.1998;53(4):272-280.

Pönkä A, Savela M, Virtanen M.: Mortality and Air pollution in Helsinki. *Arch Environ Health Int J*.1998;53(4):281-286.

Kapaki, E.N., Varelas P.N, Syrigou A.I., Spanaki M.V., Andreadou E, Kakami A.E., Papageorgiou C.T.: Blood lead levels of traffic-and gasoline-exposed professionals in the city of Athens. *Arch Environ Health Int J*.1998;53(4):2287-291.

Wang X-R, Yano E, Nonaka K, Wang M, Wang Z.: Pulmonary function of nonsmoking female asbestos workers without radiographic signs of asbestosis. *Arch Environ Health Int J*.1998;53(4):292-298.

Cordier S, Grasmick C, Paquier-Passelaigue M, Mandereau L, Weber J-P, Jouan M.: Mercury exposure in French Guiana: levels and determinants. *Arch Environ Health Int J*.1998;53(4):299-304.