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Suicide mortality among electricians

Järvholm and Stenberg[1] evaluated suicide mortality rates among electricians ("exposed to electromagnetic fields (EMFs)") and glass and wood workers ("unexposed to EMFs") in the Swedish construction industry. Standard mortality rates were lower for the two job groups compared to the Swedish general population. This is likely to be due to the healthy worker effect. The internal cohort analysis showed that electricians had a lower suicide mortality rate than glass and wood workers.

As the authors rightfully point out, these results should not be seen as evidence against the association between exposure to EMFs and suicide, in particular because no quantitative estimates of exposure were obtained to directly evaluate this association. Järvholm and Stenberg cited a small measurement survey in the Swedish construction industry, which indicated that exposure levels were low and comparable between the two occupational groups. Therefore, one would not expect to see an EMF mediated increase in suicide risk among electricians compared to glass and wood workers, if an association between EMF exposure and suicide truly exists.

Järvholm and Stenberg suggested that the difference in suicide rate between the two job groups was unlikely to be due to differences in socioeconomic factors, but they did not provide an alternative explanation. One possible explanation may be a healthy worker survivor effect related to employment status (for example, at time of death) within this cohort. That is, active workers may be more physically and mentally fit than those who left the industry or are unemployed, and may therefore be at lower risk of committing suicide.[2] A large body of literature suggests that unemployment and suicide are positively related,[3 4] and being out of work was positively associated with suicide in the electric utility industry.[2] Since cessation of work also leads to cessation of work related exposures, employment status may be an important potential confounder (or perhaps effect modifier) for the association between work related exposures and suicide. The lower suicide rate among electricians compared to glass and wood workers may be explained by a larger proportion of glass and wood workers with an inactive employment status at the time of death.

Although it is unlikely that consideration of employment status, if possible, would greatly alter the conclusions reached by Järvholm and Stenberg,[1] it would be informative to see its influence on the rate ratio.

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Authors' reply

We appreciate Dr Wijngaarden's interest in our report and his suggestion for understanding the differences in risk. Dr Wijngaarden suggests that difference in unemployment rate between electricians and glass worker and wood workers could be an explanation.

We have no data on employment status at time of death and can therefore not test this hypothesis. However, if employment status is an important predictor, this could explain some of the difference, as the wood workers had a different employment structure to the other groups. Electricians and glass workers have had permanent positions for a long time, while wood workers were employed for a certain project, for example, building a house, before the 1990s. When the project was finished they had to find another employer. Today, most construction workers have permanent positions in Sweden.

In our search of the literature in an attempt to understand differences in suicide rates between occupations, we found little information. This might be an important area of research in the future.

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Are incinerator workers exposed to PCDDs and PCDFs?

Kumagai and his colleagues[1] have reported that incinerator workers employed at intermittently burning incineration plants were not necessarily exposed to high concentrations of polychlorinated dibenzo-*p*-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). The authors' conclusions were based on concentrations of PCDDs and PCDFs in serum samples of the workers.

I have deep concerns regarding the study methodology and results which do not consider the accumulation of PCDDs and PCDFs in the adipose tissue. PCDDs and PCDFs are organochlorines with different degrees and positions of chlorination, which determine their persistence and toxicity. They are lipophilic and difficult to metabolise, and any environmental exposure of living organisms to them results in their accumulation and persistence in fat tissues.[2] Meanwhile, it is feasible to use blood sera to obtain and analyse PCDDs and PCDFs. Adipose tissue organochlorines levels have been regarded as a preferred indicator of human exposure. Levels in adipose tissue are known to be higher and more representative of the cumulative internal exposure.[2 3] Previously, Archibeque-Engle and colleagues[4] did not find a significant relation between serum concentration and tissue residues for organochlorine compounds. Based on the lack of correlation between adipose tissue and serum, as well as an absence of some compound residues in serum, the authors emphasised that adipose tissue should be analysed in addition to serum.

Finally, I would like to acknowledge the authors for such original subject study, which enables us to raise the profile of and discuss new hypotheses in environmental and occupational health.

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Importance of work intensity on respiratory problems in hairdressers

We read the report by Hollund *et al* with great interest.[1] We agree that there is limited information about the prevalence of airway symptoms caused by highly reactive chemicals in hairdressing salons. In this well designed study, authors focused on age as a risk factor and observed an increased prevalence of respiratory symptoms among the oldest and youngest hairdressers and observed more symptoms among hairdressers over 40 years of age.

Work intensity, work duration, working conditions, and job titles (master, and fellow hairdresser) should also be considered as risk factors for occupational asthma and respiratory symptoms. With the exception of work intensity, these features have been reported as risk factors in previous studies.[2–4] Work intensity is an objective parameter for evaluating occupational exposures. In our study, we calculated work intensity from the average number of chemical applications per week (bleaching, dye, and permanent wave) and observed a 3.6 times higher risk of occupational asthma among hairdressers with high work intensity (95% CI 1.2 to 10.9) with a significant trend (χ^2_{trend} 4.9, p = 0.027).[5] However, we did not observe any excess by work duration, which probably is a result of the healthy worker effect. Hollund *et al* stated that the older hairdressers had more customers than the younger ones, which may be

evidence of higher occupational exposures. If they had used work intensity as a more objective criterion than age, they might have prevented possible misclassifications by age. Working conditions of hairdressers and exposures depend on country and regional variability, which might also affect study results. In the United States and United Kingdom, the term "hairdressers" is inclusive, denoting women's hairdressers and barbers for men.[6] In Turkey, however, the term addresses women's hair salons only. Most of the studies on hairdressers have been published from Nordic and industrialised countries.[7–11] Studies from developing countries will help to describe the extent of occupational health problems among hairdressers and to identify aetiological factors.

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NOTICES

27th International Congress on Occupational Health: The Challenge of Equity in Safety and Health at Work, Iguassu Falls, Brazil, 23–28 February 2003

The Congress will have about nine keynote conferences, approaching different angles of the Central Theme; those themes will then be discussed in depth by Panels (60), where different opinions will be debated. There will be about 60 mini-symposia organised by the ICOH Scientific Committees and Work Groups; facilities for the presentation of 1000 posters; and about 500 free papers. Interest groups may schedule meetings in Congress areas.

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First World Congress on Work-Related and Environmental Allergy (1st WOREAL), and Fourth International Symposium on Irritant Contact Dermatitis (ICD), Helsinki, Finland, 9–12 July 2003

Congress on Work-Related and Environmental Allergy

- Work related and environmental aspects of respiratory and skin allergy
- Specific issues related to pathophysiology and skin allergy
- Management and prevention of allergy

Irritant Contact Dermatitis Symposium

- Occupational irritant dermatitis
- Prevention of irritant dermatitis
- Alternative methods for the assessment of irritants
- Irritant dermatitis from cosmetics

Satellite events

- Satellite Symposia, 9 July 2003
- Allergy School, 9–10 July 2003
- 7th International NIVA Course on Work-Related Respiratory Hypersensitivity, 11–15 July 2003

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CORRECTIONS

We apologise for the following errors in table 4 of the paper by Wong *et al* (Associations between daily mortalities from respiratory and cardiovascular diseases and air pollution in Hong Kong, China. *Occup Environ Med* 2002;**59**:30–5).

- Mortality from pneumonia and influenza: 4 Pollutant model, under NO_2: "1.004 (1.017 to 1.025)" should read: "1.004 (0.984 to 1.025)".
- Mortality from ischaemic heart diseases: 2 Pollutant model, also under NO_2: "1.022 (1.011 to 1.003)" should read: "1.022 (1.011 to 1.033)".

We apologise for the following error in the paper by Yassin *et al* (Knowledge, attitude, practice, and toxicity symptoms associated with pesticide use among farm workers in the Gaza Strip. *Occup Environ Med* 2002;**59**:387–393).

The page reference at the start of the paper should be 387–393, and not 387–394.

Importance of work intensity on respiratory problems in hairdressers

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Notes