

Featured Research Studies

J Occup Environ Hyg. 2009 Apr;6(4):239-47.

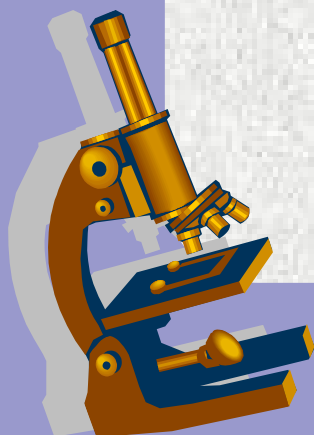
Volatile organic compounds and formaldehyde as explaining factors for sensory irritation in office environments.

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This study's database comprised results of volatile organic compound (VOC) measurements from 176 office buildings. In 23 of the 176 buildings, formaldehyde measurements were also conducted. It was suspected that the buildings had indoor air problems, but a walk-through inspection did not reveal any clear, abnormal contaminant sources. The 50 most abundant VOCs and their concentrations in 520 air samples were analyzed. The irritation potency was estimated for 33 out of the 50 common VOCs and their mixtures, as well as for formaldehyde. This information was used to calculate the recommended indoor air levels (RILs) for the VOCs. The RILs were considerably higher than the measured mean indoor air concentrations in the buildings. However, the RIL for formaldehyde was exceeded in most of the 23 buildings studied. According to the evaluation of irritation potency, formaldehyde was a more likely cause of sensory irritation than the mixture of common nonreactive VOCs at the concentrations that occurred in the buildings without abnormal indoor sources. Furthermore, environmental symptoms of office workers were characterized in 20 office buildings (including the database of 176 office buildings) with the aid of an indoor air questionnaire. The most frequent symptoms related to the indoor environment were involved the upper respiratory tract. However, no relationship could be shown between the reported symptoms and the occurrence of VOC and formaldehyde concentrations in these buildings. Generally, the study results indicated that formaldehyde was the more likely agent causing sensory irritation than the mixture of the common nonreactive VOCs at the concentrations occurring in the buildings without abnormal indoor sources.

PMID: 19184725 [PubMed - indexed for MEDLINE]



Med Hypotheses. 2009 Feb;72(2):135-9. Epub 2008 Nov 11.

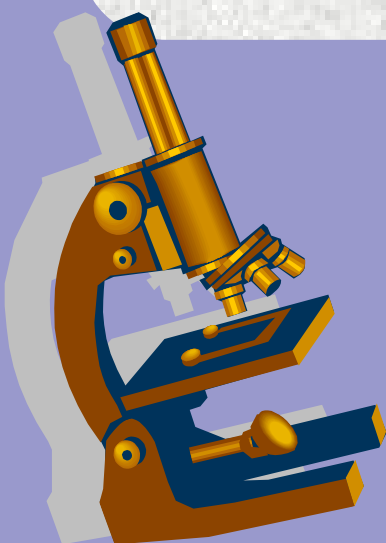
A role for the body burden of aluminium in vaccine-associated macrophagic myofasciitis and chronic fatigue syndrome.

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Macrophagic myofasciitis and chronic fatigue syndrome are severely disabling conditions which may be caused by adverse reactions to aluminium-containing adjuvants in vaccines. While a little is known of disease aetiology both conditions are characterised by an aberrant immune response, have a number of prominent symptoms in common and are coincident in many individuals. Herein, we have described a case of vaccine-associated chronic fatigue syndrome and macrophagic myofasciitis in an individual demonstrating aluminium overload. This is the first report linking the latter with either of these two conditions and the possibility is considered that the coincident aluminium overload contributed significantly to the severity of these conditions in this individual. This case has highlighted potential dangers associated with aluminium-containing adjuvants and we have elucidated a possible mechanism whereby vaccination involving aluminium-containing adjuvants could trigger the cascade of immunological events which are associated with autoimmune conditions including chronic fatigue syndrome and macrophagic myofasciitis.

PMID: 19004564 [PubMed - indexed for MEDLINE]



Environ Health Perspect. 2009 Mar;117(3):367-72. Epub 2008 Oct 16.



Methylmercury exposure and adverse cardiovascular effects in Faroese whaling men.

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BACKGROUND: Methylmercury (MeHg), a worldwide contaminant found in fish and seafood, has been linked to an increased risk of cardiovascular mortality. **OBJECTIVE:** We examined 42 Faroese whaling men (30-70 years of age) to assess possible adverse effects within a wide range of MeHg exposures from consumption of pilot whale meat.

METHODS: We assessed exposure levels from mercury analysis of toenails and whole blood (obtained at the time of clinical examination), and a hair sample collected 7 years previously. Outcome measures included heart rate variability (HRV), blood pressure (BP), common carotid intima-media thickness (IMT), and brainstem auditory evoked potentials (BAEP). We carried out multiple regression and structural equation model (SEM) analyses to determine the confounder-adjusted effect of mercury exposure. Taking into account correlations among related measures, we categorized exposure and outcomes in groups to derive latent exposure and response variables in SEMs. We used multiple regression analysis to compare the predictive validity of individual exposure biomarkers and the latent exposure variable on individual and latent outcomes.

RESULTS: The toenail mercury concentrations varied widely and had a geometric mean of 2.0 microg/g; hair concentrations averaged about 3-fold higher. Mercury exposure was significantly associated with increased BP and IMT. This effect was reflected by SEMs, but mercury in toenails tended to be the best effect predictor.

CONCLUSIONS: The results support the notion that increased MeHg exposure promotes the development of cardiovascular disease.

PMID: 19337510 [PubMed - in process]

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