

Featured Research Studies

Basic Clin Pharmacol Toxicol. 2008 Feb;102(2):100-8.

Assessing developmental toxicant exposures via biomonitoring.

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Abstract

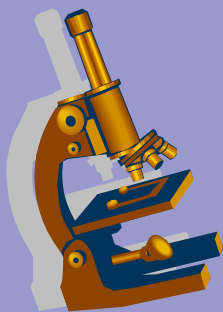
Most of the developmental effects that populations experience are believed to be linked with their exposure scenario and/or their susceptibility to these exposures. In environmental public health, most studies have focused on exposures to environmental chemicals but certainly other environmental factors and susceptibility factors must be considered.

Our laboratory assesses exposure to environmental chemicals by measuring the chemical, its metabolite(s) or chemical adduct(s) in a biological matrix taken from members of the populations of interest (via biomonitoring). To help interpret data from the many uses of biomonitoring and for other purposes in public health, we have determined, and made public, data on the concentrations of environmental chemicals in the general population of the USA.

Exposures at critical time periods of development to many of these chemicals have been linked with adverse developmental effects. In this paper, we examine this linkage using several chemicals as examples and providing biomonitoring information for these chemicals in the US population as a whole but also at various life stages.

PMID: 18226062 [PubMed - in process]

<http://www.ncbi.nlm.nih.gov/pubmed/18226062?dopt=AbstractPlus>



Neurotoxicol Teratol. 2007 Dec 15 [Epub ahead of print]

Mercury-induced cognitive impairment in metallothionein-1/2 null mice.

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Metallothioneins are central for the metabolism and detoxification of transition metals. Exposure to mercury during early neurodevelopment is associated with neurocognitive impairment. Given the importance of metallothioneins in mercury detoxification, metallothioneins may be a protective factor against mercury-induced neurocognitive impairment.

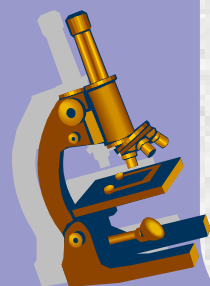
Deletion of the murine metallothionein-1 and metallothionein-2 genes causes choice accuracy impairments in the 8-arm radial maze. We hypothesize that deletions of metallothioneins genes will make metallothionein-null mice more vulnerable to mercury-induced cognitive impairment. We tested this hypothesis by exposing MT1/MT2-null and wild-type mice to developmental mercury (HgCl₂) and evaluated the resultant effects on cognitive performance on the 8-arm radial maze.

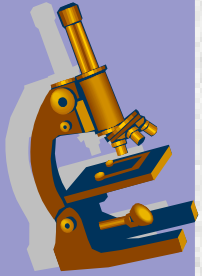
During the early phase of learning metallothionein-null mice were more susceptible to mercury-induced impairment compared to wildtype mice. Neurochemical analysis of the frontal cortex revealed that serotonin levels were higher in metallothionein-null mice compared to wild-type mice. This effect was independent of mercury exposure. However, dopamine levels in mercury-exposed metallothionein-null mice were lower compared to mercury-exposed wild-type mice.

This work shows that deleting metallothioneins increase the vulnerability to developmental mercury-induced neurocognitive impairment. Metallothionein effects on monoamine transmitters may be related to this cognitive effect.

PMID: 18226494 [PubMed - as supplied by publisher]

<http://www.ncbi.nlm.nih.gov/pubmed/18226494?dopt=AbstractPlus>





Qual Health Res. 2008 Mar;18(3):405-17.

Empowering processes and outcomes of participation in online support groups for patients with breast cancer, arthritis, or fibromyalgia.

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Ever since the rise of online support groups it has been presumed that there is an empowering effect from patients' participating in these groups, despite a lack of evidence to back up this assumption. In this study we explored if, and in which ways, patients feel empowered by participation. Additionally, we studied which empowering and disempowering processes occur as a result of taking part in these groups. To accomplish this aim, we interviewed 32 participants of online support groups. This analysis revealed the following empowering processes: exchanging information, encountering emotional support, finding recognition, sharing experiences, helping others, and amusement. Disempowering processes were mentioned far less often. Empowering outcomes mentioned were being better informed; feeling confident in the relationship with their physician, their treatment, and their social environment; improved acceptance of the disease; increased optimism and control; enhanced self-esteem and social well-being; and collective action.

This article demonstrates that participation in online support groups can make a valuable contribution to the emergence of empowered patients.

PMID: 18235163 [PubMed - in process]

<http://www.ncbi.nlm.nih.gov/pubmed/18235163?dopt=AbstractPlus>

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