

Additional Articles on MCS for the Australia MCS Report

by

**Professor Anne C. Steinemann and Amy L. Davis
University of Washington, Seattle, WA 98195-2700**

Abdel-Rahman A., Shetty A.K., Abou-Donia M.B. 2002. Disruption of the blood-brain barrier and neuronal cell death in cingulate cortex, dentate gyrus, thalamus, and hypothalamus in a rat model of Gulf-War syndrome. *Neurobiology of Disease* 10(3): 306-26.

Abel-Rahman A., Abou-Donia S., El-Masry E., Shetty A., Abou-Donia M. 2004. Stress and combined exposure to low doses of pyridostigmine bromide, DEET, and permethrin produce neurochemical and neuropathological alteration in cerebral cortex, hippocampus, and cerebellum. *Journal of Toxicology and Environmental Health Part A* 67(2): 163-92.

Abdel-Rahman A., Dechkovskaia A.M., Goldstein L.B., Bullman S.H., Khan W., El-Masry E.M., Abou-Donia M.B. 2004. Neurological deficits induced by malathion, DEET, and permethrin, alone or in combination in adult rats. *Journal of Toxicology and Environmental Health Part A* 67(4): 331-56.

Abou-Donia M.B. 2003. Organophosphorus ester-induced chronic neurotoxicity. *Archives of Environmental Health* 58(8): 484-97.

Abou-Donia M.B., Wilmarth K.R., Abdel-Rahman A.A., Jensen K.F., Oehme F.W., Kurt T.L. 1996. Increased neurotoxicity following concurrent exposure to pyridostigmine bromide, DEET, and chlorpyrifos. *Fundamentals of Applied Toxicology* 34(2): 201-22.

Abou-Donia M.B., Dechkovskaia A.M., Goldstein L.B., Shah D.U., Bullman S.L., Khan W.A. July 2002. Uranyl acetate-induced sensorimotor deficit and increased nitric oxide generation in the central nervous system in rats. *Pharmacology, Biochemistry, and Behavior* 72(4): 881-90.

Abou-Donia M.B., Dechkovskaia A.M., Goldstein B., Abdel-Rahman A., Bullman S.L., Khan W.A. 2004. Co-exposure to pyridostigmine bromide, DEET, and/or permethrin causes sensorimotor deficit and alterations in brain acetylcholinesterase activity. *Pharmacology, Biochemistry, and Behavior* 77(2): 253-62.

Abu-Qare A.W., Abou-Donia M.B. 2001. Combined exposure to sarin pyridostigmine bromide increased levels of rat urinary 3-nitrotyrosine and 8-hydroxy-2'-deoxyguanosine, biomarkers of oxidative stress. *Toxicology Letters* 123(1): 51-58.

Abu-Qare A.W., Abou-Donia M.B. 2001. Biomarkers of apoptosis: release of cytochrome c, activation of caspase-3, induction of 8-hydroxy-2'-deoxyguanosine, increased 3-nitrotyrosine, and alteration of p53 gene. *Journal of Toxicology and Environmental Health Part B, Critical Reviews* 4(3): 313-32.

Abu-Qare A.W., Abou-Donia M.B. 2008. In vitro metabolism and interactions of pyridostigmine bromide, N,N-diethyl-m-toluamide, and permethrin in human plasma and liver microsomal enzymes. *Xenobiotica* 38(3): 294-313.

Anderson R.C., Anderson J.H. 1999. Sensory irritation and multiple chemical sensitivity. *Toxicology and Industrial Health* 15(3-4): 339-45.

Ashford N.A. 1999. Low-level chemical sensitivity: implications for research and social policy. *Toxicology and Industrial Health* 15(3-4): 421-47.

Baldwin C.M., Bell I.R., O'Rourke M.K. 1999. Odor sensitivity and respiratory complaint profiles in a community-based sample with asthma, hay fever, and chemical odor intolerance. *Toxicology and Industrial Health* 15(3-4): 403-409.

Bascom R., Meggs W.J., Framptom M., Hudnell K., Kilburn K., Kobal G., Medinsky M., Rea W. 1997. Neurogenic inflammation: with additional discussion of central and perceptual integration of nonneurogenic inflammation. *Environmental Health Perspective* 105 (Suppl. 2): 531-37.

Bronstein A.C. 1995. Multiple chemical sensitivities—new paradigm needed. *Journal of Toxicology: Clinical Toxicology* 33(2): 93-94.

Brooks S.M., Weiss M.A., Bernstein I.L. 1985. Reactive airways dysfunction syndrome. Case reports of persistent airways hyperreactivity following high-level irritant exposures. *Journal of Occupational Medicine* 27(7): 473-76.

Caress S.M., Steinemann A.C. 2004. A national population study of the prevalence of multiple chemical sensitivity. *Archives of Environmental Health* 59(6): 300-305.

Caress S.M., Steinemann A.C. 2005. National prevalence of asthma and chemical hypersensitivity: an examination of potential overlap. *Journal of Occupational and Environmental Medicine* 47(5): 518-22.

Caress S.M., Steinemann A.C., Waddick C. 2002. Symptomatology and etiology of multiple chemical sensitivities in the southeastern United States. *Archives of Environmental Health* 57(5): 429-36.

DeRosa C.T., Hicks H.E., Ashizawa A.E., Pohl H.R., Mumtaz M.M. 2006. A regional approach to assess the impact of living in a chemical world. *Annals of the New York Academy of Sciences* 1076:829-38.

Elberling J., Linneberg A., Dirksen A., Johansen J.D., Frølund L., Madsen F., et al. 2005. Mucosal symptoms elicited by fragrance products in a population-based sample in relation to atopy and bronchial hyper-reactivity. *Clinical and Experimental Allergy* 35(1): 75-81.

- Farrow A., Taylor H., Northstone K., Golding J. 2003. Symptoms of mothers and infants related to total volatile organic compounds in household products. *Archives of Environmental Health* 58(10): 633-41.
- Gilbert M.E. 2001. Does the kindling model of epilepsy contribute to our understanding of multiple chemical sensitivity? *Annals of the New York Academy of Sciences* 933:68-91.
- Greene G.J., Kipen H.M. 2002. The vomeronasal organ and chemical sensitivity: a hypothesis. *Environmental Health Perspectives* 110 (Suppl 4): 655-61.
- Haley R.W., Billecke S., La Du B.N. 1999. Association of low PON1 type Q (type A) arylesterase activity with neurologic symptoms complexes in Gulf War veterans. *Toxicology and Applied Pharmacology* 157(3): 227-33.
- Jammes Y., DelPierre S., DelVolgo M.J., Humbert-Tena C., Burnet, H. 1998. Long-term exposure of adults to outdoor air pollution is associated with increased airway obstruction and higher prevalence of bronchial hyperresponsiveness. *Archives of Environmental Health* 53(6): 372-77.
- Johansson A., Löwhagen O., Millqvist E., Bende M. 2002. Capsaicin inhalation test for identification of sensory hyperreactivity. *Respiratory Medicine* 96(9): 731-35.
- Joffres M.R., Sampalli T., Fox R.A. 2005. Physiologic and symptomatic responses to low-level substances in individuals with and without chemical sensitivities; a randomized controlled blinded pilot booth study. *Environmental Health Perspectives* 113(9): 1178-83.
- Kelly K.J., Prezant D.J. 2005. Bronchial hyperreactivity and other inhalation lung injuries in rescue/recovery workers after the world trade center collapse. *Critical Care Medicine* 33 (Suppl 1): S102-S106.
- Kilburn K.H. 2003. Effects of hydrogen sulfide in neurobehavioral function. *Southern Medical Journal* 90(10): 997-1106.
- Kilburn K.H. 1999. Measuring the effects of chemicals in the brain. *Archives of Environmental Health* 54(3): 150.
- Lieberman A.D., Craven M.R. 1998. Reactive Intestinal Dysfunction Syndrome (RIDS) caused by chemical exposures. *Archives of Environmental Health* 53(5): 354-58.
- LoVecchio F., Fulton S.E. 2001. Ventricular fibrillation following inhalation of Glade Air Freshener. *European Journal of Emergency Medicine* 8(2): 153-54.
- Mackness B., Durrington P.N., Mackness M.I. 2000. Low paraoxonase in Persian Gulf War Veterans self-reporting Gulf War Syndrome. *Biochemical and Biophysical Research Communications* 276(2): 729-33.

MacPhail R.C. 2001. Animal models for chemical intolerance: role of central nervous system plasticity - episodic exposures to chemicals: what relevance to chemical intolerance? *Annals of the New York Academy of Sciences*. 933:103-11.

Miller C.S., Gammage R.B., Jankovic J.T. 1999. Exacerbation of chemical sensitivity: a case study. *Toxicology and Industrial Health* 15(3-4): 398-402.

Millqvist E., Bengtsson U., Lowhagen O. 1999. Provocations with perfume in the eyes induce airway symptom in patients with sensory hyperreactivity. *Allergy* 54(5): 495-99.

Millqvist E. 2005. Changes in levels of nerve growth factor in nasal secretions after capsaicin inhalation in patients with airway symptoms from scents and chemicals. *Environmental Health Perspectives* 113(7): 849-52.

Rogers W.R., Miller C.S., Bunegin L. 1999. A rat model of neurobehavioral sensitization to toluene. *Toxicology and Industrial Health* 15(3-4): 356-69.

Ross G.H., Rea W.J., Johnson A.R., Hickey D.C., Simon T.R. 1999. Neurotoxicity in single photon emission computed tomography brain scans of patients reporting chemical sensitivities. *Toxicology and Industrial Health* 15(3-4): 415-20.

Ross G.H. 1997. Clinical characteristics of chemical sensitivity: an illustrative case history of asthma and MCS. *Environmental Health Perspectives* 105 (Suppl 2) 437-41.

Rossi J. 3rd. 1996. Sensitization induced by kindling and kindling-related phenomena as a model for multiple chemical sensitivity. *Toxicology* 111(1-3): 87-100.

Rowat S.C. 1998. Integrated defense system overlaps as a disease model: with examples for multiple chemical sensitivity. *Environmental Health Perspectives* 106 (Suppl 1): 85-109.

Sykes R. 2006. Somatoform disorders in DSM-IV: mental or physical disorders? *Journal of Psychosomatic Research* 60(4): 341-44.

Ternesten-Hasseus E., Bende M., Millqvist E. 2002. CME: Increased capsaicin cough sensitivity in patients with multiple chemical sensitivity. *Journal of Occupational and Environmental Medicine* 44(11): 1012-17.

Yu I.T., Lee N.L., Zhang X.H., Chen W.Q., Lam Y.T., Wong T.W. 2004. Occupational exposure to mixtures of organic solvents increases the risk of neurological symptoms among printing workers in Hong Kong. *Journal of Occupational and Environmental Medicine* 46(4): 323-30.

Zibrowski L.M., Robertson J.M. 2006. Olfactory sensitivity in medical laboratory workers occupationally exposed to organic solvent mixtures. *Occupational Medicine* 56(1): 51-54.

Ziem G. 1999. Profile of patients with chemical injury and sensitivity, part II. *International Journal of Toxicology* 18(6):401-409.

Appendix: Related Articles

Anderson R.C. and Anderson J.H. 1997. Toxic effects of air freshener emissions. *Archives of Environmental Health* 52(6): 433-41.

Anderson R.C. and Anderson J.H. 1998. Acute toxic effects of fragrance products. *Archives of Environmental Health* 53(2): 138-46.

Anderson R.C. and Anderson J.H. 2000. Respiratory toxicity of fabric softener emissions. *Journal of Toxicology and Environmental Health Part A* 60(2): 121-36.

Anderson R.C. and Anderson J.H. 1999. Acute respiratory effects of diaper emissions. *Archives of Environmental Health* 54(5): 353-58.

Anderson R. and Anderson J. 2003. Acute toxicity of marking pen emissions. *Journal of Toxicity and Environmental Health Part A* 66(9): 829-45.

Anderson R.C., Anderson J.H. 2000. Respiratory toxicity of mattress emissions in mice. *Archives of Environmental Health* 55(1): 38-43.

Anderson R.C. and Anderson J.H. 1999. Respiratory toxicity in mice exposed to mattress covers. *Archives of Environmental Health* 54(3): 202-209.

Bridges B. 2002. Fragrance: emerging health and environmental concerns. *Flavour and Fragrance Journal* 17(5): 361-71.

Cooper S.D., Raymer J.H., Pellizzari E.D., Thomas K.W. 1995. The identification of polar organic compounds found in consumer products and their toxicological properties. *Journal of Exposure Analysis and Environmental Epidemiology* 5(1): 57-75.

Destailats H., Lunden M.M., Singer B.C., Coleman B.K., Hodgson A.T., Weschler C.J., Nazaroff W.W. 2006. Indoor secondary pollutants from household product emissions in the presence of ozone: a bench-scale chamber study. *Environmental Science and Technology* 40(14): 4421-28.

Duty S.M., Ackerman R.M., Calafat A.M., Hauser R. 2005. Personal care product use predicts urinary concentrations of some phthalate monoesters. *Environmental Health Perspectives* 113(11): 1530-35.

Muir T. and Zegarac M. 2001. Societal costs of exposure to toxic substances: economic and health costs of four case studies that are candidates for environmental causation. *Environmental Health Perspectives* 109 (Suppl 6): 885-903.

Pershall K.E. 2003. Contact and chemical sensitivities in the hospital environment.
Otolaryngologic Clinics of North America 36(5): 1021-34.

Steinemann A.C. 2009. Fragranced consumer products and undisclosed ingredients.
Environmental Impact Assessment Review 29(1): 32-38.

Steinemann A. 2004. Human exposure, health hazards, and environmental regulations.
Environmental Impact Assessment Review 24(7/8): 695-710.