Study alleging link between non-stick surfaces and arthritis does not pan out

By ACSH Staff — July 15, 2011

Researchers at the School of Medicine at West Virginia University have violated every tenet of sound epidemiology, says ACSH’s Dr. Gilbert Ross, in their attempt to link levels of a chemical used to make teflon-like surfaces to arthritis among a population of people exposed to the tainted water.

The chemical perfluorooctanoic acid (PFOA) is used in the manufacture of non-stick consumer products (but is in fact not present in the final product) and trace amounts have been detected in the Ohio River and its tributaries near the site of a DuPont Chemical plant. The levels of PFOA in people’s blood in that area are minuscule yet the study authors compared myriad health outcomes to different concentrations of PFOA blood concentrations and, using the age-old technique known as data-dredging, found a statistical association between the highest PFOA levels and subjects complaints of arthritis.

Dr. Kim Innes and colleagues examined data on nearly 50,000 adults living in areas of Ohio and West Virginia where DuPont Chemical released PFOA into the water supply. The study was part of what s known as the C8 Science Panel, which was established as part of a larger effort to monitor this population following the settlement of a 2001 class-action lawsuit against DuPont. The researchers found that nearly eight percent of the study population complained of arthritis, and that those in the top quartile of PFOA blood levels were 20 percent more likely to have arthritis than those in the bottom quartile.

However, the researchers acknowledge that the eight percent rate of arthritis reported by participants in this study is actually lower than the national average for adults. They attribute this difference to an underreporting of arthritis by the study participants, yet this appears to be just the tip of the study s flaws.

What s wrong with this study? " Dr. Ross asked. A better question would be, what s not wrong with it? This is junk science at its most disturbing, clearly generated by the litigation now ongoing.

Further, notes Dr. Ross, a twenty-percent differential in an epidemiological study amounts to nothing. Especially in a study that is pure data dredging, meaning there was no clear hypothesis to begin with, and the researchers themselves acknowledge that the design of this study can’t prove the association between arthritis and blood PFOA levels. Dr. Ross is also bothered by the absence of a biological hypothesis regarding how PFOA would induce arthritis a lack made all the more glaring by the researchers failure to actually specify the type of arthritis they’ve associated with the chemical. It’s like saying cancer without defining what kind you’re referring to, he says. Ultimately, the University of West Virginia team’s findings are too fraught with confounding factors and
inconsistencies to be considered seriously except by plaintiff s attorneys.


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