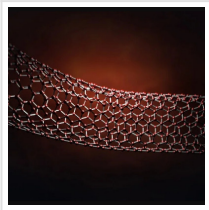
Like Asbestos, Do Carbon Nanotubes Have Potential Health Risks?



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A new study examines the recent literature on carbon nanotubes toxicity highlighting their strong inflammatory potential for the respiratory system.

Carbon nanotubes are the most promising type of nano-materials used in the field of nanotechnology for applications in medicine, sporting goods, automotive parts, and water filters, among others. The similarities in physico-chemical characteristics between asbestos and CNTs have raised many concerns about their danger. However, differently from asbestos, the heterogeneity in chemical and physical structures of carbon nanotubes makes it difficult to draw conclusions about their carcinogenic potential.

A recent study analyzed the results from the recent literature on an homogeneous group of carbon nanotubes focusing on the effects on the pleural membranes, the main target of asbestos carcinogenicity. The study was directed by Antonio Giordano, M.D., Ph.D., President of the Sbarro Health Research Organization (SHRO) and Professor in the department of Medical Biotechnology at the University of Siena, Italy, together with co-author Marcella Barbarino, Ph.D., staff member of the Department of Medical Biotechnologies, University of Siena, and the Sbarro Institute for Cancer Research and Molecular Medicine, at the Center for Biotechnology at Temple University's College of Science and Technology.

“Asbestos is probably the most known man-made tragedy that could be prevented and we cannot create the risk of another industrial catastrophe like the case of asbestos where a century passed before its carcinogenicity was recognized,” says Giordano. “We believe that future studies on CNTs toxicity must be assessed case-by-case and, on this premise, a new evaluation of the danger of CNTs for human health is urgently needed.”

The study, published in the prestigious scientific journal Cancers, concludes that a careful consideration of the data supporting the strong inflammatory potential of CNTs is needed, as

well as the data correlating CNT exposure with molecular alterations known to have a key role in mesothelioma onset.

“Cancer is a multi-step process and, especially in the case of mesothelioma, it could take years before it manifests itself. Fortunately, we are at the beginning of the CNT era and we do have the opportunity to establish safe management of these materials,” says Barbarino.

Read the original article on Newswise.