

Senate Standing Committee on Economics
ANSWERS TO QUESTIONS ON NOTICE
Innovation, Industry, Science and Research Portfolio
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AGENCY/DEPARTMENT: COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION

TOPIC: Asbestos Fibres

REFERENCE: Written Question – Senator Eggleston

QUESTION No. BI-8

A study from the University of Edinburgh found that multi-walled nanotubes behaved like asbestos fibres. Now, given the potential for nanotechnology to be applied to so many aspects of our day to day lives without the consumer necessarily being aware of it:

- (a) what specific funding has been provided to the CSIRO to investigate the health risks; and
- (b) does this amount take into account the multi-million dollar pay outs that have resulted from asbestos related law suits?

ANSWER

Several points should be noted about the University of Edinburgh study (Poland et al, 'Carbon nanotubes introduced into the abdominal cavity of mice show asbestos-like pathogenicity in a pilot study' *Nature Nanotechnology*, published online: 20 May 2008, doi:10.1038/nnano.2008.111):

- the study showed that long and straight multi-walled carbon nanotubes (MWCNT), but not short and tangled MWCNT, can induce a biological response similar to that of long and straight asbestos fibres when injected into the abdominal (peritoneal) cavity of normal mice;
- as the route of exposure was injection and not inhalation, the study did not address the question of whether inhalation of MWCNT can lead to asbestos-like health effects, as the inhaled MWCNT would have to migrate to the mesothelium as inhaled asbestos fibres do; and
- the seven-day study could not demonstrate that mice exposed to MWCNT actually develop the disease mesothelioma, although the symptoms observed were very similar to those induced by some asbestos fibres.

- (a) CSIRO has recognised the importance of this research and has allocated a portion of the funding provided to the new Niche Manufacturing Flagship to initiate research on the impact of nanomaterials on human health and the environment. In addition, CSIRO has been engaging with relevant government agencies, offices and regulatory bodies, in particular the Australian Office of Nanotechnology, the National Industrial Chemicals Notification and Assessment Scheme, the Office of the Australian Safety and Compensation Council (the Department of Education, Employment and Workplace Relations), and the Department of Environment, Water, Heritage and the Arts, to build appropriate linkages for transferring urgent research information required by these bodies.

- (b) The level of funding that CSIRO has allocated is modest with research focused on a limited number of nanomaterials. CSIRO has a close working relationship with the Woodrow Wilson International Center for Scholars which is facilitating policy research into nanotechnology health risks. CSIRO is also exploring establishing international collaborative links to research centres such as the University of Edinburgh that are carrying out research into nanotechnology health risks.

The study published by the University of Edinburgh demonstrates the need and urgency for longer-term and comprehensive studies to fully determine the health (and environmental) implications from exposure to a variety of nanomaterials, not just MWCNTs. Such research is, by its nature, very expensive and the study of nanotechnology health risks would likely benefit from coordination at a national or international level to ensure the most efficient and effective use of funds.