

SUMMARY OF A PRELIMINARY REPORT ON AEROTOXIC SYNDROME AND THE NEED FOR RELEVANT DIAGNOSTIC TESTS ¹

February 2009

Researchers have found, in studies carried out over several decades, that many people who have recently flown in commercial jet aeroplanes have become unwell, with a range of symptoms in common. This condition is called Aerotoxic Syndrome. An internet search on the web sites of the Department of Health, NHS Direct, NICE and DEFRA yielded no information, whereas a general search located over 5,000 items.

The cause is thought to be due, primarily, to neurotoxic organophosphates contaminating the air circulating in cabins of jets, due to design flaws of the air intake system, which is sucked in through the engines. It would seem that airline companies, who have a duty of care to their staff and the paying public, are in breach of Health and Safety regulations by not complying with manufacturers' advice, according to the data sheet of just one ingredient of one particular product. The potential risks are described, with clear information for users:

“Tri-cresyl phosphate is neurotoxic in animals and man. These effects are delayed and may be permanent depending upon the degree of exposure.” Where respiratory problems may occur, precautions are advised, including the use of breathing equipment, masks and filters.

Symptoms vary, according to the toxic components of the air pollution and duration of exposure, and include chronic fatigue, sleep disorders, blackouts, seizures, neuromuscular pain, weakness, breathing disorders (if severe, could be fatal without a life support system), as well as gastro-intestinal, cardio-vascular and skin problems. Cognitive disabilities are a particular worry, as pilots can lose concentration while flying, putting all on board at risk, e.g. if they forget to put down the landing gear.

Patients with such symptoms may visit their GPs, who then arrange diagnostic tests. Very few healthcare practitioners are aware of this syndrome, as it is not a recognised illness, and national guidelines for diagnostic procedures do not exist. Patients are not, therefore, receiving an adequate diagnostic service, as tests are arranged in an ad hoc way. Useful tests may not be requested, others may be unnecessary – a waste of tax-payers money and healthcare resources not just in UK, but world wide. As airline companies are being deemed negligent, law suits have already started.

Through this paper the authors seek to stimulate debate within the various diagnostic fields, in whose departments many of the tests take place, and in the decision-making bodies of healthcare provision.

This paper also lends support to the campaign to get the causal factors addressed:

- **Appropriate air filters fitted into cabins of jet aeroplanes**
- **Monitoring of air quality**
- **Alarms to identify toxic fume events**
- **Correction to the design of aeroplane air intake systems**

¹ This referenced and peer reviewed paper has been published in the Journal of the Association of Neurophysiological Scientists: Vol.1 (2008) pages 107-118, copies available from the British Library.