

Note: the author uses the term “neuropsychologist”, which is actually not correct. Daniel Dumalin is in fact a neuro-physiologist and a psychologist.

Neuropsychologist researches consequences of toxic fumes in Aircraft

“Permanent brain damage in pilots and cabin crew”

For the first time, a scientist in Belgium started a research into the consequences of toxic fumes in aircraft. Neuropsychologist Daniel Dumalin attempts to determine if toxic substances that are released in air supply incidents, influence flight crews. The preliminary results are disturbing.

For years, a discussion has been ongoing in the aviation industry about fume events related health risks. During such events, toxic air from the engines enters cabin and cockpit via the air conditioning system. Sometimes this is accompanied by dense smoke, but in many cases there will be only a penetrating smell in the aircraft. There are numerous stories of pilots feeling unwell at the controls and fainting cabin crew. Eventually, some of them appear to have permanent health issues. They suffer severe headaches, extreme fatigue and concentration problems. In several cases they suffer tremors or numbness in certain body parts. In the sector this is called the Aerotoxic Syndrome. It could occur not only after a fume event, but also as a result of repeated exposure to low doses of toxins in the air. So far, there is not a single airline that will recognise this as an occupational disease. As a consequence, pilots and cabin crew who are forced to give up their jobs for health reasons cannot claim any compensation.

Fight

“ I’ll fight for all these people”, says neuropsychologist Daniel Dumalin from Oostende, Belgium. He compares the problems in aviation to those in the asbestos- or tobacco industries in the 60’s and 70’s. “There too, it was attempted to down play the health risks for a long time. It wasn’t until the scientific evidence became overwhelming, that the industry changed its attitude”. Dumalin has the plan to subject (ex-) cabin crew members and (ex-) pilots to an extensive brain research. With this, he is the first in Belgium to research the Aerotoxic Syndrome. “I will take a QEEG-scan (measuring and mapping brain wave activities, red.) from every one and compare their results to those from healthy people. If a test person had previous MRI- or PET- scans, I will include those for a thorough analysis”.

Earlier research into Aerotoxic Syndrome was usually restricted to blood analysis or autopsies. Dumalin is therefore hoping to add an extra dimension to existing scientific studies. Although he has started his research only recently, the first results already show a disturbing pattern. “So far I have examined seven people, and in all seven I noticed at least the same brain damage. It relates to damage in brain areas that control cognitive processes. This causes e.g. concentration disorders, memory problems or a hypersensitivity to trigger signals. Even more striking is that in people who haven’t been flying any more for over 10 years, the damage is as evident as in people who flew recently”.

Cheaper

According Dumalin, this damage shows a remarkable resemblance to brain damage related to the exposure to Organo Phosphates. Not coincidentally, according earlier research that turned out to be one of the toxic substances that are released during fume events in an aircraft. “Of course it is still too early to draw any conclusions, but the preliminary results are remarkable”. In de coming weeks, Dumalin will submit another 4 people to the same examination, in total he’s hoping to get at least 50 test persons. “At that point the conclusions would be rather solid. And besides, after that one could repeat the same research in other countries. One big advantage of such a QEEG-test is that it is a lot cheaper than e.g. an MRI-research. Thus, in a few year’s time and on a world wide scale, we could acquire a large number of test persons in a relatively simple and cheap way.

That would only reinforce the evidence". The neuropsychologist considers it crucial for science to take the Aerotoxic Syndrome serious. "When you hear about pilots feeling so unwell during a fume event that they can barely manage to control the aircraft, it is of great importance for us to find out what could be wrong. Not to mention the possible negative influence on the health of frequent flyers. It is our duty to investigate this thoroughly".
For more info about participation in this research: AerotoxBrain@proximus.be or info@flyaware.nl