NEUROTOXIC NEWS

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Dr. Sarah McKenzie Ross

"We still know too little about Aerotoxic Syndrome"

Dr. Sarah McKenzie Ross is an award-winning consultant clinical neuropsychologist and clinical psychologist, and an honorary professor at University College London. She works as a clinician, university lecturer, and researcher. In various legal cases, she has supported victims of Aerotoxic Syndrome.

What are your specialties?

"My main specialization lies in the neuropsychological consequences of neurological disorders – such as traumatic brain injury, strokes, and neurodegenerative diseases. Additionally, I focus specifically on neurotoxicology, aviation psychology, and adult mental health."

Where do you currently work?

"I run my own practice in the United Kingdom and also teach at various clinical psychology and neuropsychology training programs."

How did you become involved with Aerotoxic Syndrome?

"That was in 2005, when a representative from the British Airline Pilots' Association contacted me. He asked me to give a lecture at an international conference about my work on neuropsychological and psychiatric complaints following exposure to organophosphate pesticides. After that, several pilots and crew members were referred to me for evaluation."

What cognitive complaints do you see in this group of patients?

"The most common problems are impaired working memory and attention, short-term memory problems, executive dysfunction, and slowed processing speed."

How do you investigate these complaints?

"I use neuropsychological tests and structured clinical interviews."

Are these complaints unique, or do they also occur in other disorders?

"These impairments also occur in other disorders. A diagnosis can only be made after other conditions are ruled out – which is why collaboration with other medical specialists is crucial – and if the clinical and medical history supports such a diagnosis."

Are these complaints reversible or permanent?

"We simply don't know because no follow-up studies have been conducted on flight crew, nor treatment studies. I have heard anecdotal reports of crew members improving over time, but I've also evaluated people who have been ill for years."

How do patients respond to a possible diagnosis?

"Usually, they propose the diagnosis themselves. I don't necessarily make that diagnosis, as it's not an accepted diagnostic category in medicine. It implies causality that may not be adequately established, and there are no tests that can confirm this diagnosis.

Instead, I speak about the likelihood that symptoms are due to toxic exposure versus another medical or psychiatric condition. I advise people whether further testing is needed and if other specialists should be consulted.

Many patients come to me convinced their symptoms are caused by exposure to contaminated air. Sometimes I've had to suggest this is unlikely, given their test results and clinical history, which are more consistent with another neurological disorder.

Neuro Toxicity Research Foundation

This can lead to frustration in people with strong beliefs. But my role is to work impartially, independently, and evidence-based. I must ensure people are properly evaluated and that other conditions are ruled out before assuming neurotoxic exposure is responsible."

Are there measurable abnormalities in brain activity in long-term exposed patients?

"No. There have been reports of changes in brainwave activity by one researcher, but these should be interpreted with caution. The tests used are not diagnostic."

How severe are the cognitive impairments in daily functioning?

"They're at a level where many pilots no longer feel safe flying planes. That's why they end their careers."

What is the impact on one's identity and self-confidence?

"It's significant. Most pilots I've interviewed love flying, wanted to do it their whole lives, studied hard and paid a lot of money to train, and enjoyed the work. They wanted to work until retirement and were devastated that they had to give up the job they loved so much."

Is enough attention given in psychology to this form of neurotoxicity?

"Healthcare professionals in the UK are not trained in toxicology and rarely consider a toxic cause for a patient's complaints. This needs to change. I've succeeded in adding toxicology education to the medical and pharmacological curricula at UCL, and I teach at several universities. But much more needs to be done to raise awareness, especially considering society is now flooded with chemicals and pollution."

"Many pilots no longer feel safe enough to fly aircraft, which is why they are ending their careers."

What would you, as a specialist, want GPs, occupational physicians, and specialized doctors to understand better?

"Toxicology in general. Increasingly, we are learning that modern illnesses are linked to exposure to toxic substances."

What should the public really know about the first signs?

"Symptoms are non-specific and can be attributed to a number of factors: flying at altitude, jet lag, alcohol consumption, viruses caught on planes, etc. The only advice is: if an individual feels persistently unwell after a flight, they should seek medical attention."

What changes do you think are needed in how these complaints are recognized and treated?

"Further research is needed. I'm thinking of large-scale epidemiological studies on flight personnel, specifically examining the impact of all aspects of their work on their health. All potentially confounding factors should be considered, such as burnout, jet lag, sleep deprivation, ozone exposure, etc.

Plus some kind of objective measurement of exposure to contaminated air, such as technical reports, onboard air sampling, or blood and urine tests, and further testing for neurological damage like brain scans and EEGs.

Additionally, outcome and treatment studies need to be initiated. Toxicology must be taught to healthcare professionals to raise awareness, and awareness must also be raised among the general public."

John Hoyte's childhood dream became a nightmare

"I could no longer string five words together"

John Hoyte had one big dream: to become a pilot. His fascination with flying began early and remained central throughout his life. Until it made him seriously ill and cost him his pilot's license.

"I've always been fascinated by flying, from my earliest childhood," says Hoyte. "I started flying when I was 20 or 21 and got my license then. From 1978 to 2005, I worked as a pilot."

His aviation career started with crop dusting. Although he was aware of the risks of working with toxic pesticides, he felt well-prepared. "Because I was so aware of the danger, I worked very carefully. During those years, nothing ever happened to me that could be linked to the pesticides I carried." After a few years, he deliberately chose to switch to commercial passenger flights, thinking it would be safer. Hoyte mainly flew night routes for TNT, a demanding job that took him all over Europe. He considered himself a very fit, competent pilot with a passion for his profession.

The onset of symptoms: 1990

The first sign that something was wrong came in a German supermarket in 1990. "I was shopping during a layover when suddenly all the shelves started moving before my eyes and the floor was rising and falling. At the same time, I felt overwhelmed by heat and had no control over my body temperature." Back at his hotel, Hoyte looked in the mirror and saw his pupils had shrunk to tiny dots. "I looked at myself and thought: 'Something really bad is happening here.' That was the first time I realized something was fundamentally wrong."

A gradual decline

In the months and years that followed, more symptoms developed: memory issues, speech difficulties, an echo in his head... "At one point, it was so bad I couldn't speak more than five words in a row." Despite his growing problems, Hoyte told no one about his symptoms. "As a pilot, you immediately lose your job if you say you have these problems. I had a big house with a mortgage and needed this job." It became his new normal. On the outside, he looked like the same cheerful John, but inside he knew something was seriously wrong. "I became very introverted because every time I opened my mouth, I feared I wouldn't be able to speak properly."

The 2005 crisis

After 15 years of gradual decline, Hoyte hit a critical point. "Right before a flight, I realized it would be irresponsible for me to fly. At that moment, I got out of the cockpit, left the plane, and drove home. I thought: 'It's better not to fly today because if I make the wrong move, I'll kill all these people in the back.'" A decision with major consequences. John was immediately grounded, and his pilot's license was revoked. Doctors diagnosed him with PTSD and high stress. John didn't identify with these diagnoses but knew he couldn't go on like this.

The breakthrough: A phone call from Tristan Lorraine

Six months later, on January 2, 2006, Hoyte received a phone call that would change his life. Tristan Lorraine, a representative from the pilot union BALPA, asked if he would participate in tests for toxic cabin air. "I had no idea what he was talking about," Hoyte recalls. "I knew people sometimes talked about oil fumes in the cabin, but I never connected it to my own problems."

In March 2006, Hoyte underwent extensive medical tests led by Sarah MacKenzie Ross, along with 26 other pilots. "We all had the same result: 100% of us were compromised." The tests showed that all pilots had been exposed to organophosphates, toxic chemicals that can cause neurological damage. "Suddenly everything became clear. I started connecting the dots between what had happened over the past 16 years and my current condition."

The treatment was relatively simple: stop flying, eat well, sleep well, avoid stress, and no medication. "You don't need antidepressants because you're not depressed. You're poisoned. Slowly, over a few years, you recover and return to normal."

Founding the Aerotoxic Association

In 2007, Hoyte founded the Aerotoxic Association. The goal of the organization was simple: raise awareness and help people. Now, eighteen years after founding his organization, Hoyte is still active. Recently, he stood outside the UK Parliament with supporters holding banners to raise awareness of the issue.

"It's a nightmare," he says honestly. "We're still debating whether the syndrome exists. No matter how often it's written about, it seems to make no difference. It's all about money – the industry simply doesn't want to acknowledge it. Understandably so, because if the public knew, they wouldn't fly. Many people would say: 'Okay, I'll take the train or drive, I won't take the risk.'" Despite everything, John still occasionally flies, albeit very selectively. "I'm a risk-taker. I know most flights are okay. Nothing happens. I like flying on a Boeing 787, the Dreamliner, because there's no risk of this specific toxic cabin air problem."

Many of his colleagues are more cautious. "Some refuse to fly anymore. They know what it can do."

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