



Antidepressants in Aviation

Australian researchers found that pilots who took prescribed antidepressants were no more likely than others to be involved in accidents and incidents.

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Use of antidepressant medications by pilots and air traffic controllers does not increase the risk of aviation accidents or incidents, according to a study of 10 years of aviation safety data from Australia, where aeromedical authorities have allowed the supervised use of antidepressants since 1987.

The study, published in *Aviation, Space, and Environmental Medicine*, the journal of the Aerospace Medical Association (AsMA), reviewed the cases of 962 pilots and controllers, half of whom were treated with prescribed antidepressants and half of whom were not. There was no statistical difference between the number of accidents and incidents involving members of the two groups.¹

“This study found no evidence of adverse safety outcomes arising from permitting individuals to operate as commercial or private air

crew or air traffic controllers while using antidepressants, provided specific criteria are met and maintained,” the report on the study said.

The criteria include having the pilot or controller interrupt flight or control duties while being introduced to the antidepressant medication and ensuring that the pilot or controller experiences only minimal side effects that do not interfere with flight or control duties, the report said.

The Civil Aviation Safety Authority of Australia (CASA) includes these criteria in assessing pilots and controllers — including those who participated in the study — along with other criteria requiring them to be under the care of a medical practitioner with experience treating depression; to be “stable on an established and appropriate dose of medication for at least four weeks” before resuming flight or control

duties; and to have minimal side effects, no drug interactions and no allergies to the antidepressant medication.

Other CASA requirements call for those taking antidepressants to undergo a clinical review at least once a month and to submit a progress report to CASA every six months for at least the first year of treatment. In addition, CASA requires an absence of other significant psychiatric problems and no use of other psychoactive medications, along with control of all symptoms of depression; an absence of suicidal thoughts and “features of arousal,” such as irritability or rage; and the presence of a normal sleep pattern.

CASA’s decision to allow pilots and controllers taking antidepressants to participate in aviation operations came soon after the introduction of a class of antidepressants called selective serotonin reuptake inhibitors (SSRIs), which had fewer and milder side effects than older antidepressant medications such as monoamine oxidase inhibitors (MAOIs) and tricyclics.²

The side effects associated with SSRIs and a related class of antidepressants known as serotonin-norepinephrine reuptake inhibitors (SNRIs) — most common during the first days or weeks of use — are individualized, but they include decreased appetite, nausea, diarrhea, nervousness, insomnia, headache and sexual dysfunction. Tricyclics may have side effects that include sedation, decreased blood pressure, increased heart rate, dry mouth, blurred vision, constipation, difficulty urinating and confusion. MAOIs — which usually are prescribed in cases in which other classes of antidepressants have not helped — can cause a dramatic increase in blood pressure if they are taken in combination with cold and cough remedies that contain phenylpropanolamine and dextromethorphan.³

CASA guidelines today specify that the authority may “on a case-by-case basis” certificate applicants who are prescribed (and are taking) SSRIs sertraline (brand name Zoloft) and citalopram (brand name Celexa), and venlafaxine (brand name Effexor) — a type of SNRI.⁴

The Australian study included pilots and controllers taking all types of antidepressants and found no difference in accident or incident history based on the type of antidepressant.

Data indicated that a slightly higher number of accidents and incidents occurred among pilots and controllers immediately before the start of antidepressant medication. Although the increase was considered statistically insignificant, the report said that “the data raise the possibility that the earlier use of antidepressants might actually improve safety in a group who subsequently go on to use them. If so, early identification and treatment of this group may improve aviation safety while allowing continued flying or controlling duties.”

The report added, “If there is an excess of accidents in aircrew who would benefit from antidepressants but were not [using] them at the time of the accident, this might provide an argument for wider use of antidepressants than is currently the case in Australia, and has profound implications in those jurisdictions where antidepressant use is prohibited [by] certificate holders.”

Common Condition

Depression within the general population is relatively common. The United Nations World Health Organization (WHO) estimates that it affects 121 million people worldwide; other estimates have been considerably higher.⁵ Symptoms include a depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep, poor appetite, lack of energy and poor concentration — problems that WHO says can lead to “substantial impairments in an individual’s ability to take care of his or her everyday responsibilities.” Depression also can lead to suicide, which claims about 850,000 lives worldwide every year, WHO said.

WHO data show that 60 to 80 percent of people with depression can be effectively treated with antidepressant medications and “brief, structured forms of psychotherapy.”

The Australian study estimated that about 4.5 percent of the adult population uses

“There is a groundswell of opinion that supports the carefully controlled use of antidepressants.”

antidepressant medications, but only about 1 percent of “aviation certificate holders” could be identified as having taken antidepressants while certificated. The study said that the lower rate among pilots and air traffic controllers “may reflect under-reporting of antidepressant use rather than different levels of medication among pilots and air traffic controllers.”

CASA’s requirements differ from those of most other civil aviation authorities, including those in the United States and Europe, which do not currently allow aeromedical certification of pilots taking antidepressants.

In the United States, the Federal Aviation Administration (FAA) policy is that “the medical condition of depression is disqualifying, as well as every medication that is used for the condition,” Dr. Warren S. Silberman, manager of the FAA Civil Aerospace Medical Institute Aerospace Medical Certification Division, wrote in a 2005 *Federal Air Surgeon’s Medical Bulletin*.⁶ He added, however, that an FAA panel has been studying “the feasibility of granting medical certification to individuals that have been stable on SSRIs for the treatment of depression,” provided the depression has not been accompanied by suicidal thoughts.

The FAA allows pilots who have been treated with antidepressants to receive medical certification if they have had no significant symptoms of depression for at least 90 days after stopping the medication. They also must be evaluated by a psychiatrist and a psychologist before issuance of a medical certificate, and reports must be forwarded periodically to the FAA.

In Europe, the Joint Aviation Authorities medical committee has agreed to a proposal that — if it receives final approval — eventually would allow commercial pilots taking “a few specific antidepressants” to continue flying, said Dr. Sally Evans, chief medical officer of the U.K. Civil Aviation Authority and head of the European Aviation Safety Agency Flight Crew Licensing Medical Core Group. The proposal would limit acceptable medications to a few SSRIs, require close monitoring of the pilots and allow medical certification only after the

medication has been “well established and the depression has been fully treated,” Evans said.

If the proposal is adopted, considerable time may be required to establish procedures for monitoring the pilots, she said.

“It is considered that it is safer to know that pilots are being treated for depression and being monitored rather than have pilots fly whilst depressed (not on medication) or fly whilst taking undisclosed treatment,” Evans said.

Canadian Study

Civil aviation authorities in a few countries in addition to Australia already have taken steps to allow some pilots to fly while taking antidepressants.

In Canada, for example, a long-term study is being conducted involving several pilots taking specific types of antidepressants to evaluate their performance while using the medications, and authorities are continuing to review related medical literature, a Transport Canada (TC) spokeswoman said. Each of the pilots is permitted to fly only as part of a two-member crew.

The study began in the mid-1990s, and in 2001, Dr. Hugh O’Neill, then the TC director of civil aviation medicine, said that TC was “proceeding very, very cautiously” with the study while “looking for some consensus of opinion throughout the world.”⁷

TC’s *Handbook for Civil Aviation Medical Examiners* describes requirements similar to those outlined by CASA: Applicants for aeromedical certification “who have been treated for a depressive illness and who are on maintenance or prophylactic therapy with ... SSRIs may be considered for medical certification on an individual basis after review by the CAM [the TC Civil Aviation Medicine Division] Aviation Medicine Review Board.”⁸

Changing Opinions

Worldwide, the opinions of some aeromedical specialists are changing.

“There is a groundswell of opinion that supports the carefully controlled use of antidepressants, this being better than having a policy that



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grounds pilots when they take any antidepressant medication,” said Dr. Anthony Evans, chief of the Aviation Medicine Section at the International Civil Aviation Organization (ICAO) and no relation to the U.K. CAA’s Dr. Sally Evans. “The latter policy results in pilots flying when depressed and untreated, or failing to declare their depression/treatment to an AME [aviation medical examiner] and potentially taking antidepressants that have unacceptable side effects from the flying viewpoint.”

Despite the increasing tendency of specialists to believe that some use of antidepressant medications by pilots would be acceptable, debate continues about precisely what medications are acceptable and what problems should be treated by these medications, which sometimes are administered for conditions other than depression; how long pilots might be required to stop flying before and after they begin using the medications; and how these cases should be monitored. “In other words,” Evans said, “the logistics of introducing such medication into the aviation system without compromising safety is not yet fully harmonized.”

ICAO has begun changing its standards and recommended practices to enable the use of antidepressants by pilots and air traffic controllers if the national licensing authority determines that the medications present no significant risk to flight safety, he said.

In a 2006 preliminary, unedited version of its *Manual of Civil Aviation Medicine*, ICAO said, “In recent years, the use of SSRI ... has become widespread, and there is indication that such treatment, aimed at preventing a new depressive episode, may be compatible with flying duties in carefully selected and monitored cases.”⁹

AsMA has called for an end to “current absolute prohibitions against pilots flying while taking SSRIs and adoption of aeromedical protocols that include carefully controlled follow-up and review.”¹⁰

In 2004, AsMA recommended that “all certification and regulatory authorities ... consider immediately instituting a policy of using study

groups to manage depressed aviators who require SSRI antidepressants. Protocols designed to aggressively manage the full spectrum of adverse possibilities related to SSRI use may enable the safe use of SSRIs in formerly depressed aviators who suffer no aeromedically significant side effects. In these closely managed cases of depressive disorders, special issuances or waivers for SSRI use are justified.” ●

Notes

1. Ross, James; Griffiths, Kathleen; Dear, Keith; Emonson, David; Lambeth, Len. “Antidepressant Use and Safety in Civil Aviation: A Case-Control Study of 10 Years of Australian Data.” *Aviation, Space, and Environmental Medicine* Volume 78 (August 2007): 749–755.
2. MAOIs include phenelzine (brand name Nardil) and tranylcypromine (brand name Parnate). Tricyclics include amitriptyline (brand name Elavil), desipramine (brand name Norpramin), imipramine (brand name Tofranil) and nortriptyline (brand name Pamelor).
3. FSF Editorial Staff. “Regulations Allow Pilots With Depression to Fly After Successful Treatment.” *Human Factors & Aviation Medicine* Volume 48 (January–February 2001).
4. Ross et al.
5. United Nations World Health Organization. *Depression*. <www.who.int/mental_health/management/depression/definition/en>.
6. Silberman, Warren S. “Certification Update: SSRI Policy Reminder.” *Federal Air Surgeon’s Medical Bulletin* Volume 43 (2005–2).
7. FSF Editorial Staff.
8. Transport Canada. *Handbook for Civil Aviation Medical Examiners*. 2004.
9. The 1985 version of the manual had said that pilots typically should not fly while taking antidepressant medication and “ordinarily ... should not be allowed to return to flying unless they have been off medications for at least some months.”
10. Jones, D.R.; Ireland, R.R. “Aeromedical Regulation of Aviators Using Selective Serotonin Reuptake Inhibitors for Depressive Disorders.” *Aviation, Space, and Environmental Medicine* Volume 75 (May 2004): 461–470. Cited in Ross et al.



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