Aviation Medicine

Fitness to travel by air

II: Specific medical considerations

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Several specific medical conditions have to be carefully assessed before a decision may be taken on whether it is in the interests of either the patient or the airline for a particular passenger to fly.

Psychiatric disorders

Flying often provokes anxiety and presents a person with several unusual stimuli including noise, vibration, disruption of sleep, the proximity of strangers, and a change of location. Unexpected delays, often during transit stops in foreign countries, may cause further disturbances both mental and physical. For these reasons patients with psychiatric disorders, who may have been living a regular undisturbed routine for many years in a sheltered environment, need careful consideration before being allowed to fly. Also, because of the need to ensure the comfort and safety of other passengers, airlines usually expect a psychiatric patient to be escorted, either by a relative or a qualified mental nurse, the level of expertise depending on the severity of the illness. At worst the patient may require constant sedation, but the agent should be carefully chosen. For example, drugs with anticholinergic activity may predispose to increased intestinal gas, which—when aggravated by altitude—may reduce the mobility of the diaphragm and impair respiration.¹ Sedated patients are also more likely to develop barotrauma and, because of the risk of deep vein thrombosis and nerve palsy due to prolonged sitting, they should be restrained in a supine position on long journeys. For this purpose an aircraft stretcher can be provided after consultation with the airline's medical department. Several hundred stretcher cases are carried by British Airways each year, usually for reasons other than chemical sedation, but the extra room needed to accommodate a stretcher has to be paid for by the passenger; usually he is expected to pay for a maximum of four seats though up to nine may have to be occupied.²

Terminal illnesses

Terminally ill patients often wish to travel by air either to spend their last days at a specific location or to visit relatives

living abroad. The airlines consider such requests with compassion but have to refuse patients who may die during flight. Of over 700 passengers examined by the medical department of Air France over two years, 17 were not permitted to embark; nine of these had an illness which was likely to result in death during flight.³ Such an incident may cause great difficulties for the bereaved family, who have not only to arrange for the return of the body from a foreign country but also to deal with subtle legal questions. For example, which country has to be satisfied as to the cause of death when an American citizen dies while overflying French airspace in a British aircraft that later lands in Bahrain?

Diabetes

Diabetic patients often ask their doctors for advice on air travel, particularly when undertaking long journeys through several time zones. Such passengers should remain on home time throughout their journey for both meals and medication and adjust to local time only after arrival at their final destination. As with any other patient taking regular medication they should be reminded to carry it in their hand luggage rather than to be embarrassed in flight by realising that it is secured in the cargo hold. Diabetics who are prone to airsickness should be given appropriate prophylactic medication such as hyoscine 0.6 mg.

Other conditions

In fact, airsickness is rarely a problem because commercial aircraft fly at altitudes above the worst turbulence. Nevertheless, patients with permanent wiring of the jaws after faciomaxillary surgery should not be allowed to travel unless the fixation has a quick release mechanism. The patient should be familiar with the mechanism and realise the dangers of aspirating vomit.

Though flying is unlikely to be harmful to a normal pregnancy, an aircraft is not an ideal delivery suite. Most airlines will therefore not carry passengers after 35 weeks of pregnancy or, in the case of domestic flights, after 36 weeks. Some countries refuse entry to passengers in advanced stages of pregnancy, so pregnant women should check the immigration rules of the country to be visited.

Babies should not fly during the first 48 hours of life since some alveoli will not have expanded and a degree of ventilation-perfusion inequality will result. Even a healthy neonate may have an arterial oxygen partial pressure of 8.7–10.7 kPa (65–80 mm Hg) that would be worsened by increasing altitude.⁴

There are few other contraindications to air travel, but infectious disease of any kind is an absolute one for obvious reasons.

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Aeromedical evacuation

So far the contraindications to patients flying by civil airlines have largely been determined by commercial considerations as much as by medical ones. For example, patients with air in the cranium may not fly in commercial aircraft since the cabin altitude is unlikely to be lower than 6000 ft (1829 m) and decompression to higher altitude is always a risk. If geography permits, such a patient may be carried on an aircraft flying at a guaranteed maximum ambient altitude of 4000 ft (1219 m), an uneconomic altitude for airline operations. If treatment is urgent, however, agencies experienced in aeromedical transport will have to be used.

The armed forces have a wide experience of evacuating patients based on removing seriously ill casualties from distant war zones. For example, the United States Pacific Air Force carried out 200 000 patient movements from 1965 to 1968 during the Vietnam War.⁵ Military expertise is, however, available to civilians only under certain circumstances—for example, after national disasters. In larger countries such as Canada, where patients may live in a remote area, the government may sponsor aeromedical services.⁴ Within the United Kingdom air ambulances are run by specialised commercial companies, and the costs of the journey have to be borne by the patient. Since these are high (about £450 per flying hour),⁶ commercial aeromedical

evacuation is available only to the rich or the well insured. Perhaps the most important advice that a doctor can give to a patient travelling abroad is to take out a comprehensive insurance policy that will cover him should the need arise to be repatriated by air.

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Letters to a Young Doctor

Publication

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With your ideas under your control and your hypothesis in more or less manageable form, write down the protocol in some detail as to how you intend to proceed. Try to imagine what the finished article will look like. It will have an introduction explaining the problem as you see it and why you think it is worth some solution. The next section will be on the methods that you have used. This is what must go into the protocol. It wonderfully concentrates the mind on just what you are going to do. It may throw up inconsistencies that you had not seen before, and you will have to think again.

You must begin sometime even if things seem incomplete. But all the preliminary work will be well worth while. It will prevent you undertaking work that turns out to be not worth while some long time after you have been doing it. This is disheartening and is to be avoided at the outset, if at all possible. Just get cracking and do something. You will quickly learn the errors in your protocol and think up ways to correct them.

You will appreciate from this that it takes quite a time to set up any research however simple it may at first seem. Therefore you can scarcely begin too soon to think about it and prepare for it. You can get your first ideas while reading and working for

examinations and keep them in cold storage until you are ready to use them later. When you have obtained your higher diploma you must start straightaway to set up your research. It is all too easy to settle back after achieving your fellowship or membership, feeling exhausted by the effort, and then become drowned in a welter of clinical work.

A great clinical workload is often used as an excuse to avoid the much harder work of thinking, and the research that flows from it, and for not teaching and taking part in other educational activities. These too demand effort. There are four facets to the work of any rounded doctor: service to patients, research, teaching and education, and administration. None of these develops satisfactorily without the others. Research and teaching enliven clinical practice, making it more critical and more effective, and administration is needed to harmonise them all. Any doctor who does not recognise the interrelatedness of all these things functions at half cock and has not understood his place within medicine and the duties he owes to it.

Research is an attitude of mind

There is no necessity for research to be separated from everyday practice. Research is an attitude of mind linked to intellectual and practical energy. There is no wonder that it is prized when found and why those who have these qualities obtain some of the best jobs. Some people, however, prefer to take a little time away from everyday practice to do research more or less full time. This is the purpose of research fellowships,

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