

# Managing passengers with respiratory disease planning air travel: British Thoracic Society recommendations

## Summary for primary care

British Thoracic Society Standards of Care Committee

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Over one billion people are estimated to undertake air travel each year. For the vast majority commercial flights are safe, but an increasing proportion are at risk of respiratory complications triggered by hypoxaemia, immobility, and dehydration. The risk of hypoxaemia is partially limited by cabin pressurisation to 2438 m (8000 ft), but is still equivalent to breathing 15.1% oxygen at sea level.

Patients with severe asthma, severe COPD, fibrosing alveolitis, cystic fibrosis, neuromuscular disease and kyphoscoliosis, those recently hospitalised for acute respiratory illness (<6 weeks), a history of air travel intolerance with respiratory symptoms (dyspnoea, chest pain, confusion or syncope), or a co-morbid condition worsened by hypoxaemia (cerebrovascular disease, coronary artery disease, heart failure) require assessment before flying.

### GENERAL RECOMMENDATIONS

- Preventative and relieving inhalers should be carried in hand luggage.
- Nebulisers may be used at airline's discretion, but spacers are as effective.
- Many airports can provide wheelchairs for transport to and from the aircraft.
- Individuals not receiving oxygen should remain mobile during the flight.
- The most compromised should use oxygen at all times when travelling including in airports.

### Recommended assessment

- Cardiorespiratory history, examination, and record of previous flying experience.
- Spirometric tests (in non-tuberculous patients only).
- Oximetry; if SpO<sub>2</sub> <95% recommend further testing which may include:
  - ability to walk 50 metres without distress (a traditional but not complete guarantee);
  - regression equations predicting PaO<sub>2</sub> or SpO<sub>2</sub> from sea level measurements;
  - hypoxic challenge test simulates cabin conditions using 15% oxygen.

### SPECIFIC RECOMMENDATIONS

Specific recommendations for the following groups of patients:

#### COPD

- Patients requiring in-flight oxygen should also receive it at high altitude destinations.

#### Cystic fibrosis

- Assessment by the CF physician is recommended.
- Medications to be divided between hand and hold baggage to allow for delays.
- In-flight nebulised antibiotics and DNase should not be required.
- Check with pharmacist whether medicines affected by temperatures in the hold.

#### Infections

- Infectious tuberculosis patients must not use public air transport until non-infectious.

#### Oxygen and ventilator dependent and obstructive sleep apnoea patients

All patients

- Airline to be consulted before reservation and require doctor's letter outlining diagnosis, equipment and settings, blood gas tensions, and that equipment must travel as hand luggage.
- Short haul flights are preferred.
- Dual 110/240 volt function so equipment compatible with voltage at destination.
- Dry cell battery pack for back-up and on long haul flights (wet cell prohibited).

Patients on permanent (24 hour) ventilation

- Medical escort able to change tube, operate suction, and ambubag the patient.

Patients with obstructive sleep apnoea

- Patients should avoid alcohol immediately before and during the flight.
- Patients with mild snoring/hypersomnolence unlikely to need CPAP during flight.
- Those with significant desaturation intending to sleep during the flight should consider using CPAP and it should also be used during sleep at high altitude destinations.

### Previous pneumothorax

- Patients should be able to fly 6 weeks after definitive surgical intervention.
- Patients who have not had surgery must have a chest radiograph confirming resolution.
- Although recurrence is unlikely during flight, consequences may be serious and passengers may wish to consider alternative transport within 1 year of pneumothorax.

### Venous thromboembolic disease (VTE)

See table 1.

### Fitness to fly in childhood

- Children's lung physiology differs from that of adults, especially in the very young. In normal term infants the BTS recommend waiting 1 week after birth to ensure the infant is healthy.
- Because of the risk of apnoeic episodes, ex-premature infants who have had complications should probably not fly under the age of 6 months after the expected date of delivery.
- Infants with any history of neonatal respiratory illness and children with hypoxia due to chronic lung disease who must fly should undergo pre-flight assessment.

**Table 1** Risk factors and advice for patients with venous thromboembolic disease

Risk status	Risk factors	Advice
All passengers	Low	<ul style="list-style-type: none"><li>• Avoid excess alcohol and caffeine-containing drinks</li><li>• Remain mobile/exercise legs</li></ul>
Slightly increased	Aged over 40 Extensive varicose veins Polycythaemia Within 72 hours of minor surgery	<ul style="list-style-type: none"><li>• Avoid alcohol and caffeine-containing drinks</li><li>• Take short periods of sleep</li><li>• Consider support hosiery</li></ul>
Moderately increased	Family history of VTE Recent MI Pregnancy or early postnatal Oestrogen therapy Limb trauma or paralysis	Above plus consider: <ul style="list-style-type: none"><li>• Pre-flight aspirin</li><li>• Graduating compression stockings</li></ul>
High risk	Previous VTE Thrombophilia Within 6 weeks of major surgery Previous stroke Current malignancy	<ul style="list-style-type: none"><li>• Avoid flying or recommend low molecular weight heparin or formal anticoagulation (including return journey)</li></ul>