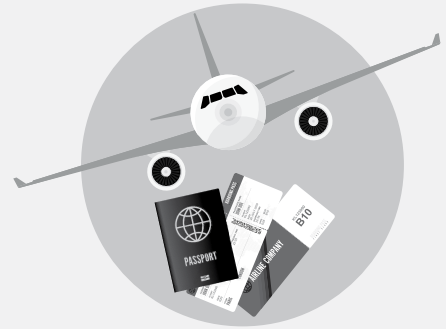


# LIVING WITH LAM:

## LAM AND AIR TRAVEL



Women with LAM may wish to travel by air for holidays or work. However, air travel poses small but real risks for women with LAM, due to the changes in air pressure that occur in the cabin during flight, the lower levels of oxygen in the cabin, and the risk of picking up an infection.

These risks will vary according to the individual circumstances of each woman and the extent to which LAM has affected their health; this includes their lung function, history of pneumothoraces (collapsed lung), history of procedures to prevent pneumothoraces (such as a pleurodesis), exercise tolerance and general health. For women with milder LAM who have not had repeated pneumothoraces, the risk is low. Conversely, for women whose lung function and exercise tolerance is poorer, and in those with repeated pneumothoraces, flying needs more careful planning.

Here we discuss the effects of air travel on the lungs and oxygen levels in the blood. We also provide some practical points to consider when planning any journey by air to ensure that your journey is as safe, comfortable and risk-free as possible.

### EFFECTS OF AIR TRAVEL ON THE LUNGS AND OXYGEN LEVELS IN THE BLOOD

Air pressure falls fairly rapidly as a plane lifts off and this is true for the air in the airways and lungs. However any air that is trapped and not in communication with the air in the cabin will remain at the higher pressure and will therefore expand as the plane rises. The reverse happens as the plane descends. This is relevant to LAM in several ways:

#### Pneumothorax (Collapsed Lung)

- **Existing pneumothorax** - If someone boards a plane with a small pneumothorax, then air is locked in the pleural space between the lung and the chest wall. This air will expand as the plane takes off thus increasing breathlessness; although this is usually minor, it is occasionally more severe.
- **Development of a new pneumothorax** - In women with LAM a cyst will very occasionally burst as the cabin pressure falls, thus causing a new pneumothorax. This is more likely to occur in women who have had a pneumothorax previously, but it has occurred in women with no such history. Surveys that have been carried out amongst women with LAM found that it occurred in just over 1% of flights. However, the incidence is probably under 1% for women who are well and have no new symptoms before the flight. Women who have had a pleurodesis (when the outside of the lung is stuck to the chest wall) can still have a pneumothorax during flight but the extent to which it expands should be limited.

Therefore, there are **TWO IMPORTANT RECOMMENDATIONS**:

1. If you have had a pneumothorax, **DO NOT FLY** until at least two weeks after it has resolved fully. For the few woman who have a chronic persistent pneumothorax, discussion with a respiratory physician is recommended before considering flying.
2. If you have unexplained chest pain, shortness of breath, or symptoms suggestive of a new pneumothorax, **DO NOT FLY** until or unless a pneumothorax has been excluded by a doctor, with a chest X-ray or a CT scan.

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## Blood oxygen levels

Blood oxygen levels fall in all passengers, as a result of lower levels of oxygen in the cabin during flight. For women with LAM this may cause or increase breathlessness, particularly for those in whom oxygen levels fall on mild exertion at ground level. Using additional oxygen onboard should help.

## Increased risk of colds and chest infections

The increased risk of colds and chest infections associated with air travel is a potential hazard for women with LAM. Wearing a mask, and using a saline nasal spray and anti-microbial wipes may be prudent.

## Other symptoms

Although air travel is generally well tolerated by most patients with LAM, some women have reported anxiety and chest pain in addition to breathlessness as described above.

## USING OXYGEN WHILST TRAVELLING

Since oxygen levels in the blood fall during the flight it's important to establish whether you need to take oxygen during the flight or, for some women, for the whole journey. This should be done long before you travel since making arrangements may take time. If you normally use oxygen you will need it at the airport as well as during the flight. If you don't normally use oxygen you may still need it during the flight when cabin pressures are low. This is something to discuss with your respiratory doctor who may wish to carry out tests before you travel to establish what your blood oxygen levels will be when subjected to the lower cabin pressure.

## Practical arrangements for provision of oxygen during the flight and at your destination

Passengers are not allowed to fly with their own oxygen tanks or liquid oxygen. However, many airlines will supply oxygen and/or allow travellers to use their own (or a rented) Portable Oxygen Concentrator (POC) onboard. In all cases, airlines require advance notice and a doctor's certificate. Oxygen supplied onboard tends to be limited to a maximum flow rate of 2 litres per minute, whereas POCs can provide higher flow rates. Spare batteries for the POC should be brought into the cabin to ensure sufficient power for the flight and any delays.

It is important to check the airline's policies well in advance, as these differ between airlines, and can differ between long and short haul flights. The website [www.europeanlung.org/airtravel](http://www.europeanlung.org/airtravel) lists different airlines and their policies, but check with the airline that this advice is up-to-date. It also lists oxygen providers in different European countries for people needing to find an oxygen supplier at their destination. In addition, LAM patient Sarah Poitras has useful tips on [flying with oxygen](#) on her blog, Travel Breathe Repeat.

## PRACTICAL TIPS TO CONSIDER BEFORE TRAVELLING

1. Consider whether the climate and altitude will suit you before deciding on a holiday destination. Also consider how flat or hilly it is. If you find stairs difficult, apply similar criteria to your accommodation.
2. Make sure you have adequate travel insurance that covers pre-existing conditions. This can take time and can be expensive, particularly if you use or have used oxygen. Shopping around should help to get the best deal, and discussing it with other women on LAM social media may be helpful.
3. Travelling through airports is tiring for fit people so consider asking for special assistance at the airport for both legs and for both ends of the journey, such as a buggy or wheelchair. This can usually be done when you buy your ticket, and should be done well in advance of travel. The system usually works well but you need to get to the airport early.
4. Pack your medication in your hand luggage and take care of it.
5. Consider having a letter or note detailing your condition and the medication you are taking, in case of emergency.
6. Leave plenty of time at the airport to minimize stress and drink plenty of water.
7. Carry out seat-based exercises and/or standing at intervals, if allowed, during the flight.

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*This leaflet was prepared by LAM Action and approved by Prof. Simon Johnson, Director of the UK National Centre for LAM, in February 2021.*

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