

1. INTRODUCTION

Airline travel is fast, convenient and safe, with the vast majority of passengers reaching their destinations safely and without harmful health effects. However, the aircraft environment and travel-related factors can cause certain stresses on travelers.

The Aerospace Medical Association has prepared this brochure for passengers, with the hope that the following useful air travel tips and general health information will make your travels more enjoyable.

1.1 GENERAL TIPS

1.1.1 Plan ahead

- Research the health-related conditions in the country you are visiting.
- Be sure your immunizations are current.
- Allow ample time to check in and reach your departure gate.
- Carry your medication with you in your carry-on luggage.
- Wear loose, comfortable clothing and comfortable shoes that have been worn previously.
- Delay your trip if you are not well.
- Seek the Advice of your physician if you have any questions.

2. IN-FLIGHT

2.1 CABIN ENVIRONMENT

2.1.1 Pressurization

In order to allow for flying at high altitudes where oxygen concentration is lower, aircraft cabins are pressurized. This pressure, called barometric pressure, is lower than at sea level. For most flights the cabin pressure is similar to the pressure on a peak of a small mountain that is at 5,000 - 8,000 feet.

This has two effects:

1. Less oxygen is available because the pressure of oxygen becomes lower, and
2. Gas within our body cavities expands.

Both of these phenomena are usually well-tolerated by healthy passengers.

2.1.2 Effects of altitude

2.1.2.1 Oxygen

With increased cabin altitude comes a decrease in oxygen absorbed into the blood and circulated throughout the body, as compared to ground level. As long as you are in reasonably good health, your body has mechanisms that compensate for this decreased quantity of oxygen.

On the other hand, passengers with significant heart, lung, and blood diseases may not tolerate lower amounts of oxygen well. Therefore, they should consult their physician before air travel to evaluate their capability to travel and to determine if there is a need for medical oxygen or other special assistance.

- Medical oxygen can be arranged with most airlines. Check with your carrier several days in advance of the flight.
- The combination of low oxygen, alcohol, inactivity and sleep can generate unpleasant side effects like dizziness and/or fainting if one stands up too fast after awakening. Arm and leg exercises before standing up will usually prevent this.

2.1.2.2 Gas expansion

The body contains air in the middle ear (inside of the ear drum) and sinuses. As the aircraft ascends, the air in these cavities will expand but the excess pressure will be released outside via tubes connecting them to the nose. On descent the reverse occurs, with air flowing from outside to these cavities via the same tubes. This is well-tolerated as long as the air can flow into and out of these cavities freely. To facilitate the free flow of air, particularly on descent, it is helpful to periodically swallow, chew or yawn. (This is why it is important that passengers stay awake during descent.) Give something to drink to young children or a pacifier to infants.

- Avoid flying if you have an ear, nose or sinus infection. Congestion prevents the air from flowing freely in and out of these cavities which could result in pain, bleeding and even a ruptured ear drum.
- Don't fly if you are not able to clear your ears.
- Eat slowly and avoid eating gas-forming foods (peanuts, cabbage, etc.) or carbonated liquids shortly before a flight. The swallowed air or gas formed through digestion will expand and can cause discomfort.

2.1.2.3 The Effects of Diving on air travel

Diving – particularly deep diving using SCUBA devices – exposes the individual to higher pressures. The effects of altitude change and the consequent drop in pressure are greater if one flies shortly after engaging in diving activities.

- Wait for at least 24 hours before flying after diving.

2.2 COMFORT

2.2.1.1 Humidity

Humidity in the cabin is usually low: in the range of 20%. There is no specific risk to your health, but low humidity can cause mild discomfort, particularly dry skin and eye irritation for sensitive people.

- Drink about 8 ounces of water each hour and use a hydrating nasal spray.
- Limit consumption of alcohol, tea, coffee and caffeinated drinks because they cause you to lose fluids.
- Wear glasses instead of contact lenses.
- Apply a skin moisturizer.
- Consider using eye drops.

2.2.1.2 Motion

Some people are sensitive to the motion of the aircraft and develop nausea and dizziness. Known as motion sickness, this is more common in smaller aircraft and when facing some level of turbulence along the flight.

- Request a seat over the wings and/or request a window seat.
- Schedule flights on larger airplanes.
- Avoid alcohol for the 24 hours prior to flight and in-flight.

- Consult your physician about motion sickness medication if necessary.

2.2.1.3 Sitting Space

On long flights we tend to remain seated for extended periods of time. In susceptible individuals, prolonged periods of immobility can slow down blood flow in the leg veins. This can lead to ankle swelling and, in predisposed individuals, increase the risk of blood clots to form inside the veins, known as Traveler's Thrombosis.

Traveler's Thrombosis manifests as pain and/or swelling in the legs during travel or even several days or weeks afterwards. It can be a serious and, on occasion, a life-threatening situation if a clot breaks off and travels to the lungs causing what is called a pulmonary embolism.

Also, staying seated for prolonged periods of time can cause muscle stiffness and pain.

- Wear loose clothing (conversely, avoid tight, restrictive garments).
- Place nothing under the seat in front of you, for more leg space.
- Stretch and periodically exercise your feet and ankles while seated.
- Keep yourself hydrated by drinking water while minimizing alcohol, sugary and caffeinated beverages.
- Consult your physician if you have underlying illness such as recent surgery, cancer, blood clotting disorder or deep vein thrombosis (DVT).

3. FLYING WITH A HEALTH CONDITION

There is no place like home. It is understandable that when we fall ill we try to get back to our hometown as soon as possible. All airlines will carry limited medical equipment and medication, and many of them contract with providers of remote medical advice. Still, an airplane is far from being a good place to handle a medical event.

When you are ill or have a chronic health condition it is wise to have medical clearance before you travel.

Although modern aircraft are equipped with sophisticated systems to guarantee air quality, communicable diseases could spread from person to person because of the close proximity of passengers in-flight, before boarding and while waiting in airport lounges. Certain communicable diseases could imply international public health concerns leading to quarantine and other public health protection measures upon arrival. Minor respiratory infections e.g. head colds, are not normally of concern from the public health viewpoint, but can cause adverse effects to the individual (see 2.1.2.2).

- Don't fly if suffering from an active or suspected communicable disease. Contact your doctor if you are unsure.
- Get clearance from your doctor, or with the airline, if flying to obtain health care, particularly if the condition is not stable.
- Get clearance from your doctor before flying shortly after surgery or other medical procedures.
- Carry your usual medication with you at all times in your carry-on luggage.
- Keep a copy of your prescriptions with you. Some medications are restricted in certain countries and you'll need to prove they are intended for your personal utilization.
- Bring a summary of your health situation or a medical report to the airport even if not requested by the airline.

3.1 FLYING WHILE PREGNANT

Flying doesn't cause any harm to the fetus or mother, but an aircraft is never a good place to deliver a baby. Generally airlines restrict pregnant passengers beyond 36 weeks (check with the airline) of gestation. Also, complicated pregnancies could impose a risk of premature labor.

- Bring a medical certificate stating the estimated delivery date, as well as a copy of your latest ultrasound exam report to the airport.

3.2 INFANTS

Air travel is not recommended for babies less than seven days old. The circulatory and respiratory systems are still maturing at this early age. The same advice applies to some premature babies older than seven days.

- Obtain medical clearance if the travel is absolutely necessary for your baby.
- Offering your baby a bottle or pacifier during takeoff and landing will help equalize the pressure in their ears.

4. FLYING WITH A DISABILITY

Most countries have legislation in place to guarantee access to air travel for passengers with all sort of disabilities.

- Check with your airline about flying with a disability.

5. CROSSING TIME-ZONES / JET LAG

Long flights enable us to move to a new place before our internal system can adjust to the local time-zone. This is most noticeable in flights crossing 4 or more time-zones. This abrupt change of our body clock, known as Jet Lag, leads to symptoms of fatigue, sleep and digestive disturbances.

5.1.1 General strategies

Mitigating the effects of Jet Lag depends primarily on your trip objectives. You could benefit from strategies to promote or avoid the adaptation to a new time-zone.

- Sunlight exposure is the most powerful tool to expedite adaptation to a new time zone.
- Try to keep your home local time during short layover trips (less than 24 hours).
- Try to adjust quickly in long stays abroad (more than 48 hours) by exercising and exposing yourself to sunlight.
- In eastbound flights try to adjust to the new time zone even before departure, by waking up and going to bed earlier. In westbound flights adjust before departure by waking up and going to bed later.
- Talk to your doctor about the need to readjust your usual medication schedule.

6. TRAVEL HEALTH

When travelling abroad, be aware of local health concerns at the destination and plan accordingly. Communicable diseases might affect specific locations, requiring preventative measures to be considered, such as pre-travel vaccination.

Information about travel-related health topics can be found at:

- The World Health Organization (<http://www.who.int/topics/travel/en/>)
- U.S. Centers for Disease Control and Prevention (<http://wwwnc.cdc.gov/travel/>)
- European Centre for Disease Prevention and Control (www.ecdc.europa.eu)

Air travel, whether for business or pleasure, whether short or long, is safe and should be enjoyable. Understanding the aircraft cabin environment and planning ahead can make your journey more comfortable for the healthy traveler as well as the traveler with medical conditions or special needs. If in doubt, check with your physician or your airline.

The Aerospace Medical Association is pleased to provide these air travel tips and hopes that they will help you have a more pleasant trip.

About the AEROSPACE MEDICAL ASSOCIATION:

Founded in 1929, The Aerospace Medical Association (AsMA) is the world's leading organization in aviation, space, and environmental medicine. A non-profit professional organization of physicians, physiologists, human factors specialists, engineers, research scientists and others, AsMA is dedicated to enhancing health, promoting safety, and improving the performance of all who travel or work in the air, beneath the sea, and in outer space. If you are interested in learning more about us, please check out our web site at www.asma.org or contact us at the address on the cover of this brochure.



HEALTH TIPS FOR AIRLINE TRAVEL

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