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Staying Healthy On Long-Haul Commercial Flights: Guidelines

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ABSTRACT: To complex the problem of healthy flight, commercial aircrafts are an easy place to get sick, hundreds of persons sitting very close to each other, fresh off of trips to the mall and time expended with sniffling family members.Being sick on the plane is the last thing air passenger need. Passengers can spend hours not moving at all whilst consuming an unhealthy cocktail of processed food, alcohol, caffeine and sugar. And as you pass through several time zones your body clock gets turned upside down. This is the truth for millions of air passengers worldwide.In this study we gave an overview of some simple tips to help keep air passengers in better form for planning the flight, preparations before the flight and staying healthy during the flight.

Keywords: Airplane, aircraft ventilation systems, severe acute respiratory syndrome (SARS), Travel Medicine

I. INTRODUCTION

Flying in a commercial aircraft cabin can affect passenger energy, dry passenger skin and make numerous body parts feel different. The pressure, temperature and oxygen (O_2) levels in the aircraft cabin change and the humidity level are lower than there are at sea level. All of those things can mess with some of your body normal roles. There is the actual procedure of traveling, which could include exchanging time zones and coming in contact with hundreds of other people. In latest years, a varied series of signs and infectious illnesses due to poor air quality, ineffective ventilation systems, and unsuitable contaminant control methods have been described during aircraft flights. The symptoms and illnesses vary from nausea, dizziness, headaches, and fatigue[1] to extremely contagious epidemics such as influenza, severe acute respiratory syndrome (SARS), and tuberculosis. These diseases have been in charge for contaminating large quantities of persons, either on-board or off-board of aircraft cabin and are the key reason of several death cases in the past few years[2-3-4-5].

It is rather simple to fight dry air in a home or office using a humidifier. But it is not so easy during airplane flight, where humidity levels can fall as low as 10-20%. Those are not good numbers when for healthy airplane flightand the disagreeable environment is affected, in part, by the aircraft air filtration system. To change the carbon dioxide (CO_2) produced by the passengers, crew members, and machinery, the aircraft cycles in air from outside the aircraft.At high altitudes, the air is very thin and very dry. Hence that means the oxygen (O_2) coming into the aircraft cabin to preserve the air breathable is also causing the passenger sinuses and skin to dry up. Therefore in our study we discussed some simple tips to help keep air passengers in better shape for planning the flight, preparations before the flight, stay healthy during the flight.

II. PLANNING THE FLIGHT

For some persons, flying is a chance to see other regions and to do so in style but for others the chance to sit for hours in close proximity to hundreds of other persons is not one that is enjoyed. Whatever the viewpoint on this form of transportation, it truly is a new travel spectacle. On some ways the simple reality of aviation has almost excluded all substitute styles of travel,

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particularly ocean liners and thus some terminuses are not feasibly accessible any other way.

2.1. Time of departure and arrival

While preparinga flight, passengers have to think about flying at the most suitable time possible; 3a.m or 4a.m departures or arrivals can be very exhausting indeed. Occasionally comfort wants to be arranged even if that means spending a little bit more on the flight.If the flight date is flexible, and neither departure nor destination is in the middle of nowhere, passenger can often select between daily flights. When booking flights, keep in mind that as far as flight scheduling is concerned, a new day starts at 12 midnight. For example, if the flight is arranged to depart at 00:05 on 1st November, passenger needs to be at the airport by 22:05 31st October to check in. Several passengers have missed flights due to this mistake by turning up to check in at 22:05 on 1st November instead.While a business or weekend passenger might have few selections, a patient passengermay typically find an inexpensive flight. As a rule of thumb, Monday mornings, Friday evenings and major holidays and events tend to be overbooked; these times are not only more expensive, but also less enjoyable on board, at the airport, and in airport transfer. Time of departure and arrival affect the availability of airport transfer and amenities. If the passengers depart or arrive in the middle of the night, the passengers might find themselves stranded at either airport for hours, with few shops and restaurants open.

2.2. Aircraft models

Commercial aircrafts are able to cruise at altitudes considerably higher than the summit of Mount Everest. When someone is up at altitude the atmospheric pressure becomes much lower.Hence for passenger comfort aircraft cabins need to be pressurised , not to ground level but typically at an altitude comparable range of between 5,000 and 8,000 feet.The newest generation of aircraft such as Airbus A380-800 (figure.1) [6] , Boeing 787-9(figure.2)[7] and Airbus A350 (figure.3)[8] have cabin pressure altitudes at the lower end of that scale. If available on the flight route then consider about flying on one of these new aircraft styles. As well as moderating altitude properties, they have significantly silentengines and several passengers feel more comfortable on board.If someone has settled for a route, there is typically not much choice between different aircraft models, since aircraft size generally depends on distance voyaged, and traffic volumes. Smaller and noiseless routes incline to use narrow body aircraft with a single aisle and up to 6 seats abreast but longer and busier routes tent to use wide body aircraft with two aisles and 7 to 10 seats abreast.

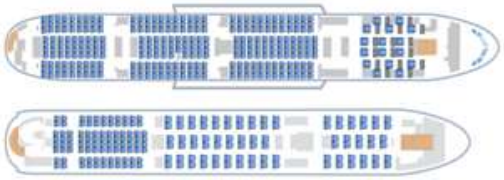

Figure 1: Layout of A380-800, 519 seat configuration (331 lower, 188 upper)

Figure 2: cabin layout of Boeing 787-9

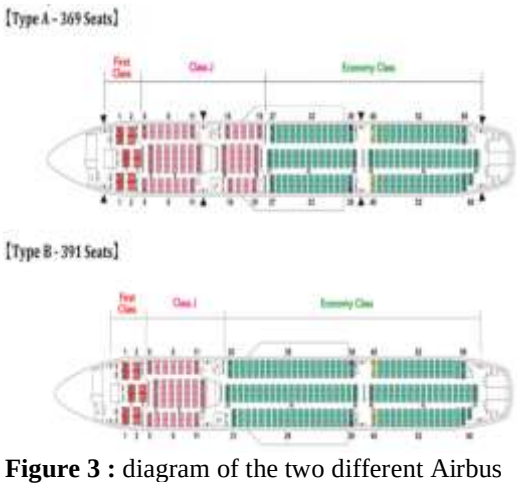

Figure 3 : diagram of the two different Airbus A350 cabin configurations

The larger aircraft tend to be more comfortable, with wider seats, on-board amusement and even meals. Frequently taking a larger aircraft is not more costly than a smaller one on the same airline, but it is not all the time the inexpensive option.Currently, commercial airline companies hardly advertise their models, except it is

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stateoftheart, example the Boeing 787 or the Airbus A350. However currentcommercial aircrafts are mostly a bit more comfortable and noiseless, few passengers but the enthusiasts will announce the dissimilarity between mainstream airliners.There are only two main companies in the large commercial aircraft market: Airbus, based in Europe with its A3xx line (A320, A330, A350 and A380), and Boeing, based in the United States with its 7x7 line (737, 747, 777, 787). We will find other manufacturers such as ATR, Bombardier and Embraer[9]

2.3. Cost

If the traveler can have the funds for it or have a stash of frequent flier miles then flying first or business class will give more comfort and space on a long flight with better sleep occasion. Conversely some quality passengers have an attitude to ravine on food and alcohol to maximise the business class experience. If the passengers want to stay healthy that is possibly not the best way to go.Apparently, riding first and business class is expensive, but even economy class on the same route can vary. Passenger could face trade-offs, including:

- Meals, drinks, and service on board
- Check-through services, or baggage checking to final destination
- Flight distance or point accrual
- Chances for rearrangement or refunding
- Baggage allowances
- Seating within a cabin class

Even legacy carriers can control for other comforts and services, even if you bought a full price economy ticket. Pre-booking these services or comforts on-line where existing can be cheaper. Unless an on-line promotion or point-of-sale is based in the European Union or United States of America, the advertised price may not comprise taxes and other prices. Those prices can come with prices for baggage, meals, and other things. In general "extras" such as seat booking, meals, luggage, and priority boarding are inexpensive when booked together with the ticket and more costly when booked later on or at the gate.

III. BEFORE THE FLIGHT

3.1. Healthy habits before the flight

The important to staying healthy throughout a trip is to support the immune system with healthy food, exercise and high quality supplements before the flight.Stay well hydrated in the two days earlier to fly by drinking sufficient water.Continuously try to get a good night sleep the day before the flight. That means switching off phones/TV and going to bed at a reasonable hour.Better to get some exercise before a long flight, if possible outdoors rather than in the gym. Go for a walk and get some fresh air and sunshine which will give your vitamin D levels a boost.Prior to flying, make sure you're up-to-date on all of your vaccines. It often takes time to build immunity after vaccines are administered, so check with a medical doctor to see if any recommended or required vaccines for international travel are needed.

3.2. Selection of the passenger seat

It can be possible to pre-buy an additional legroom seat before the flight. Otherwise, in the days leading up to the flight select a moment to get an online check-in done and select the seat. Passenger can want to enquiry the best airline seat options for the class of flight. Several airline companies currently offer economyclass seats with additional legroom for an extra fee. This entitles the passenger to a few extra inches of seat pitch toward the front of the coach cabin.Many airline websites and booking engines allow you to select a seat when purchasing the flight ticket, or to return to the reservation after the initial purchase and choose a seat later. In several cases, this method is free, but some airline companies have added fees for advance seats. If passengers do not see a preferred seat, it is better to return to the reservation as the flight date approaches to see if anything has opened up in the meantime. If passengers do not like the online options, they can try again at the airport, either at check-in or at the gate.If passengers try to choose the seat once the flight is booked, they might only see the more costly premium economy seats are offered. That does not mean passengers will not get a seat eventually. In fact, passengers can get the premium economy seat anyhow when they check in onlinewithout having to pay extra.

3.3. Stay relaxed at the airport

If passenger check in too late or arrive too late at the gate, the airline can give away the seat. Passenger should follow the airline company guidelines about how far in advance passengers must arrive for domestic and international flights.Stay calm during the check-in and security processes. When airsides do try and take a walk around the terminal to stretch the legs directly prior to flying.Do notforget to keep any important medication inthe hand luggage rather than in checked bags.If a passenger is a nervous flier, the best anxiety-inducing moment of a flightmay be the minutes before the aircraft takes off.Whether the

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passenger worried about turbulence or landing without harm, once stress puts the passenger body into fight-or-flight mode, passengers can find it hard to calm down and look forward to the flight. Fortunately it takes just one minute to calm down.

IV. DURING THE FLIGHT

4.1. Comfy clothing

It better to wear loose fitting clothing made from natural breathable fibers and dress in layers so that travelers can adjust to the varying temperature. Loosen or take off shoes on longer flights as ankles generally swell up a bit.Except if the passenger is walking off the aircraft right into a business meeting, a long-haul flight is not the time to arrange style over comfort. Passengers want breathable, loose-fitting clothes that let them move easily, shoes that can be easily slipped off, and an extra layer in case the aircraft is chilly.Outside baggage allowance, passengers can dress as much as they wish, including heavy outdoor clotheswithin reasonable limits. Aircraft Cabin temperature may vary on-board, mainly when flying overnight. It has been said that passengers who fly in a business suit collect better service. While dressing a suit instead of packing it may save baggage space. Commercial Aircraft interiors can be dirty, particularly on budget airlines. Consider dressinga cloth on-board thatcan be remove soon after landing to wash it later. Ifflying, put at least one business outfit in the hand baggage. When leaving a cold province for a warm one, traveler can leave winter wear at home if air transit is short. Consider leaving winter clothes with friends or family members if they take you to the airport and pick you up on return.Travelling from a warm region to a coldregion, better to use layers and bring at least a lined jacket.

4.2. Hydration

Dehydration is common while flying, and can disturb the sleep cycle, degrade the physical symptoms of jet interval, and deteriorate the passenger immune system.When on board, rule number one is to keep hydrated. Commercial aircraft cabins can be very dry with humidity levels well under 20 percent, approximately equal to a tropical desert. Dehydration causes the mucus membranes to dry out which will make the passenger more disposed to bacteria and viruses.If possible bring your own water in-flight either by buying at the terminal or carrying an empty refillable bottle through security and refilling at an airport water fountain. Try to drink water frequently during the entire flight, preferably about one liter every four hours. Avoid any drinks that can dehydrate. That means no carbonated sodas, no alcohol and no caffeine. If passenger badly wants caffeine shot then better to try green tea instead.

4.3. Drink herbal tea

There are several herbal teas considered to support the body for napping. The components of these typically are camomile, lavender and valerian. Sample a few different products at a health shop and see which one works the best. If it helps to sleep better when regulating to a new time zone, then be sure to pack and bring it during the flight. Consider bringing your own herbal tea bags in-flight and asking the flight crew for some hot water. It is better to carry an empty container and fill up at an airport cafe earlier to the flight.Peppermint tea and Fennel tea are good for digestion;chamomile tea will help to rest and relax, redbush tea is good for movement; Passengers have to know that some nations have strict import rules so it may not be possible to bring unused tea bags through taxes.

4.4. Moisturize

Passenger may keep the face moisturized by using a mist sprayer or a high quality natural face cream. Lip balm may also keep lips moist. If traveler has sinus problems then it is better to bring a nasal saline spray.Remember, liquids are permitted on board if in containers of less than 100ml.

4.5. Eat lightly on board

Do not overeat and avoid any sugary and starchy foods. If passengers are not keen on managed airline meals which habitually contain flavors and preservatives then better to bring their own food or at least some fresh fruit.It is also better to eat a healthy, light meal on the ground before the flight. Avoid garbage food or any foods that give gas such as, corn, beans, cabbage, onions or lentils.

4.6. Move during the flight

During the flight walk up and down the aisle even one time every hour if possible. Having an aisle seat cam make this technique more suitable. By drinking water frequently, passenger will need to get up to go to the bathroom anyhow. Several commercial aircrafts have a range of exercises to follow which can help the passenger blood circulation. Check the in-flight magazine or entertainment structure to find them. Helpful exercises include lifting the calf, rotating the ankles, tensing and relaxing various muscles and doing

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gentle stretches. Avoid crossing the legs for long periods during the flight.

4.7. Flight stockings

Passenger may also choose to wear special compression stockings to further decrease the chance of emerging deep-vein thrombosis (DVT) and blood clots.Blood clots and deep vein thrombosis are situations that can develop during long, overseas flights. Walk up and down the aisles, or stretch to boost blood flow. Passengers are required to ask a physician about compression socks to help with blood circulation and to prevent swelling.

4.8. Keep hands clean

Microorganisms are often passed through passenger's hands. Be sure to keep the hands away from the face and to use hand sanitizer with 60% alcohol after touching any surface on the aircraft cabin and before eating or drinking. Continuously use it after cleaningthe hands in the aircraft lavatory. Be aware that viruses and bacteria are present on several surfaces in a commercial aircraft cabin where persons frequently touch. This clearly comprises the lavatory and lavatory door handles but also seats, armrests, seat trays, seat pockets, entertainment screens and controls, on-board magazines etc. It could even contain the airline blankets and pillows which are enveloped in plastic.Use a paper towel or tissue to turn off taps and open door handles after using the lavatory. Some persons may need to carry antibacterial wipes to clean surfaces around their seats. You could consider carrying your own lightweight blanket and pillow.

4.9. Turn on the air vent

Air travel has become one of the key supports of the current globalized economy. It is expected that more than 3.6 billon persons used air travel as their incomes of long-range transport in 2015 supporting about 9.9 million job occasions in the aviation area alone, with estimated further annual growths [10]. The environment inside an airline aircraft cabin affords a fruitful ground for corrosion of air quality, disease spread, and infection spreading among travelers if suitable measures are not taken. This is qualified to the high occupant density, wide variety of passenger action, and the incapability of travelers to leave this closed space for long periods of time[11]. On the other hand, illness transmission from a traveler or group of travelers to others can also happen off-board of commercial aircraft, either before or after flights. This further confuses the duty to measure aircraft cabin started contaminations and air quality matters[12]. Persons infected with colds and viruses can spread germs on the aircraft cabin, mainly around nearby passenger seats. To help deflect germs, turn on the overhead air vents to a medium flow and point the air to just in front of your face. However,several newer commercial aircraft no longer have air vents fitted.Wearing a surgical mask to avoid contamination is also possible.

4.10. Radiation problems

Flying may give the passenger connection to slightly higher levels of solar and cosmic radiation than normal. Solar radiation special effects can be condensed slightly by flying at night.An additional provocative subject is the procedure of body scanner machines at airports. Some reviewers and specialists consider them as risky.Lastly, the long-term health special effects of WiFi are not well known at this point. Several commercial airlines have on-board WiFi as normal these days, so it is hard to escape it.

V. CONCLUSION

Ten hours in a stuffy aircraft cabin might sound like the most horrible nightmare, but flying long-haul can be a dream with a little planning and a few home comforts. This review discussed some simple tips to help keep air passengers in better shape for planning the flight, preparations before the flight and stay healthy during the flight. Flying can be also traumatic, but if passengers are organized to follow the air travel tips discussed in this study, they can not only make thejourney easier, they can have fun at the airport and relax the minute they leave home. Therefore, this study recommends all travelers to follow the tips discussed in this review, so they can have an amazing and healthy flight.

Conflict of interest statement

Authors declare that they have no conflict of interest

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