

Air Travel During Pregnancy

Committee on Obstetric Practice

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ABSTRACT: In the absence of obstetric or medical complications, pregnant women can observe the same precautions for air travel as the general population and can fly safely. Pregnant women should be instructed to continuously use their seat belts while seated, as should all air travelers. Pregnant air travelers may take precautions to ease in-flight discomfort and, although no hard evidence exists, preventive measures can be used to minimize risks of venous thrombosis. For most air travelers, the risks to the fetus from exposure to cosmic radiation are negligible. For pregnant aircrew members and other frequent flyers, this exposure may be higher. Information is available from the FAA to estimate this exposure.

Occasional air travel during pregnancy is generally safe. Recent cohort studies suggest no increase in adverse pregnancy outcomes for occasional air travelers (1, 2). Most commercial airlines allow pregnant women to fly up to 36 weeks of gestation. Some restrict pregnant women from international flights earlier in gestation and some require documentation of gestational age. For specific airline requirements, women should check with the individual carrier. Civilian and military aircrew members who become pregnant should check with their specific agencies for regulations or restrictions to their flying duties.

Air travel is not recommended at any time during pregnancy for women who have medical or obstetric conditions that may be exacerbated by flight or that could require emergency care. The duration of the flight also should be considered when planning travel. Pregnant women should be informed that the most common obstetric emergencies occur in the first and third trimesters.

In-craft environmental conditions, such as changes in cabin pressure and low humidity, coupled with the physiologic changes of pregnancy, do result in adaptations, including increased heart rate and blood pressure, and a significant decrease in aerobic capacity (3, 4). The risks associated with long hours of air travel immobilization and low cabin humidity, such as lower extremity edema and venous thrombotic events, recently have been

the focus of attention for all air travelers. Despite the lack of evidence of such events during pregnancy, certain preventive measures can be used to minimize these risks, eg, use of support stockings and periodic movement of the lower extremities, avoidance of restrictive clothing, occasional ambulation, and maintenance of adequate hydration.

Because severe air turbulence cannot be predicted and the subsequent risk for trauma is significant should this occur, pregnant women should be instructed to use their seatbelts continuously while seated. The seatbelt should be belted low on the hipbones, between the protuberant abdomen and pelvis. Several precautions may ease discomfort for pregnant air travelers. For example, gas-producing foods or drinks should be avoided before scheduled flights because entrapped gases expand at altitude (5). Preventive antiemetic medication should be considered for women with increased nausea.

Available information suggests that noise, vibration, and cosmic radiation present a negligible risk for the occasional pregnant air traveler (6, 7). Both the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection recommend a maximum annual radiation exposure limit of 1 millisievert (mSv) (100 rem) for members of the general public and 1 mSv over the course of a 40-week pregnancy (7). Even the longest available intercontinental flights will expose



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passengers to no more than 15% of this limit (7); therefore, it is unlikely that the occasional traveler will exceed current exposure limits during pregnancy. However, aircrew or frequent flyers may exceed these limits. The Federal Aviation Administration and the International Commission on Radiological Protection consider aircrew to be occupationally exposed to ionizing radiation and recommend that they be informed about radiation exposure and health risks (8, 9). A tool to estimate an individual exposure to cosmic radiation from a specific flight is available from the Federal Aviation Administration on its web site (<http://jag.cami.jccbi.gov/cariprofile.asp>).

In the absence of a reasonable expectation for obstetric or medical complications, occasional air travel is safe for pregnant women. Women should check with specific carriers for airline requirements.

References

1. Chibber R, Al-Sibai MH, Qahtani N. Adverse outcome of pregnancy following air travel: a myth or a concern? *Aust N Z J Obstet Gynaecol* 2006;46:24–8.
2. Freeman M, Ghidini A, Spong CY, Tchabo N, Bannon PZ, Pezzullo JC. Does air travel affect pregnancy outcome? *Arch Gynecol Obstet* 2004;269:274–7.
3. Huch R, Baumann H, Fallenstein F, Schneider KT, Holdener F, Huch A. Physiologic changes in pregnant women and their fetuses during jet air travel. *Am J Obstet Gynecol* 1986; 154:996–1000.
4. Artal R, Fortunato V, Welton A, Constantino N, Khodiguian N, Villalobos L, et al. A comparison of cardiopulmonary adap-

tations to exercise in pregnancy at sea level and altitude. *Am J Obstet Gynecol* 1995;172:1170–8; discussion 1178–80.

5. Bia FJ. Medical considerations for the pregnant traveler. *Infect Dis Clin North Am* 1992;6:371–88.
6. Morrell S, Taylor R, Lyle D. A review of health effects of aircraft noise. *Aust N Z J Public Health* 1997;21:221–36.
7. Barish RJ. In-flight radiation exposure during pregnancy. *Obstet Gynecol* 2004;103:1326–30.
8. Federal Aviation Administration. In-flight radiation exposure. Advisory Circular No. 120-61A Washington, DC: FAA; 2006.
9. The 2007 recommendations of the International Commission on Radiological Protection. International Commission on Radiological Protection. IRCP Publication 103. *Ann IRCP* 2007;37:(2–4);1–332.

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