

OVERVIEW: MEDICAL CONSIDERATIONS WHILE FLYING PREGNANT

(*Refer to full article of same name on WAI app for more information and references)

Nausea/Morning sickness

- Often exacerbated or triggered by motion/odors (fuel, oil, lav, deodorant)
- Many nausea medications not FAA-approved for flying
- May occur throughout the day, making it difficult to bid schedule around it

Dehydration

- Adequate Daily Intake (AI) for water during pregnancy is 3 liters (101 oz)
- Flight segment, length of flight, delays, wx, cabin service affect lav access
- Tendency to limit fluid intake to minimize in-flight bathroom breaks
- “Make up” drinking at night leads to increased nocturia and disrupted sleep
- May lead to low amniotic fluid, neural tube defects, premature labor, and decreased breast milk supply

Size of Abdomen

- Interference with emergency egress, flight control manipulation
- Abnormal flight may require full deflection and impose G-loads
- In third trimester, even relatively mild trauma to abdomen can cause placental abruption

Sleep/Fatigue

- Pregnant women need more sleep due to hormonal changes; hormones affect sleep quality (especially during third trimester)
- 2/3 pregnant women suffer from sleep disorders (including nocturia)
- Performance of pilot awake for 17 hours equates to 0.05 BAC
- Sleep deprivation associated with longer labor, higher Cesarean rates, pre-term labor, and post-partum depression
- Circadian rhythm disruptions (“red eyes” and irregular schedules) contribute to chronic sleep deprivation which may affect long-term health of baby
- Studies on flight attendants link sleep deprivation due to shift work to increased miscarriage rate, menstrual disorders, and cervical erosion

Stress

- Must manage pregnancy-related stressors in addition to airline stressors (new to company or aircraft/type of flying, upgrade, weather, on-time pressure, emergencies, unfamiliar crew)
- Prenatal stress may compromise immune response of offspring and may cause disease
- Linked to premature birth, miscarriage, increased risk of birth defects

Circulation, Edema, Deep Vein Thrombosis, Pulmonary Embolism

- Risk of edema and DVT increased during pregnancy
- DVT and PE account for greatest number of maternal deaths in the US
- Minimize risk by getting up to walk every 1-2 hours

Cosmic Radiation

- Risk is relatively small but real; more studies needed (none on female pilots)
- Due to cumulative, low-dose exposure over many years, recommend having children early in career (applies to both male and female crew members)
- FAA acknowledges increased chance of birth defects/childhood cancer from parental exposure *prior to conception* (due to changes in DNA); cell mutation/changes affect male and female crewmembers
- 1 mSv max limit recommended for pregnant crewmembers once pregnancy is declared (with no more than 0.5 mSv in any given month)
- May exceed limit in 2 months, depending on route and altitude (exposure increases over poles and with altitude, generally <FL250 least risk)
- Gestation weeks 8-15 considered most sensitive to radiation
- In US, National Council on Radiation Protection and Measurement (NCRP) develops philosophies/policies/recommendations for radiological protection; International body is International Commission on Radiological Protection (ICRP)
- NCRP identifies aircrew as most highly exposed to radiation of any work group in the US
- US crews exposure rates not monitored or regulated (despite NCRP/ICRP recommendations); aviation not governed by OSHA (as in other industries)
- EU laws more restrictive than US: requires airlines to provide radiation training, monitoring, and regulation; Germany most conservative
- CDC/NIOSH identifies increased rate of miscarriage among flight attendants working flights versus ground duty; may not be attributed solely to radiation
- Solar flares increase risk; unpredictable, and may occur at solar minimum
- In absence of onboard monitoring equipment, refer to FAA's CARI-6 program to calculate effective dose

Exposure to Viral Infections, Chemicals, Illness

- Fume events, while rare, may cause significant health problems; not known how it affects fetus (no studies); "Aerotoxic Syndrome"
- Recycled cabin air and proximity to others exposes crew to airborne pathogens and viruses

Limited Medical Response/Availability (in Flight and at Destinations)

- Pregnancy-related emergencies most likely during first and third trimesters
- Prompt medical care limited during flight; quality may be a concern

High-Risk Factors

- Age, history of multiple pregnancies, previous pre-term deliveries, cervical incompetence, bleeding, anemia, pre-eclampsia, placenta vasa, placenta previa, chronic hypertension, ovarian cysts, and gestational diabetes