Table 1. Overview of the characteristics of the included studies.

NO.	STUDY (YEAR)	STUDY DESIGN	PARTICIPANTS SIZE	TRIMESTER	OUTCOME MEASURED	MAIN FINDINGS
1.	Petrikovsky, et al. (2018)	Cross-sectional	112	3	Fetal Movement	Increased fetal movement during takeoff was reported by 17 people (15%), no change in fetal movement by 62 people (35%), and decreased fetal movement by 4 people (3.6%). During the flight itself, increased fetal movement was reported by 6 pregnant passengers (5.4%), no change by 70 people (63%), and decreased movement by 8 people (7%). This study shows that although transatlantic flights only cause temporary changes in fetal behavior and appear to be safe for the fetus, these conclusions are limited to third-trimester fetuses.
2.	Grajewski, et al. (2015)	Cohort retrospective	673	1	Pregnancy loss	The risk of first trimester miscarriage was significantly increased among flight attendants who flew ≥15 hours during their sleep period in their home country, with a relative risk (RR) of 1.5 (95% CI: 1.1–2.2), compared to the group of teachers who were not exposed to such flight durations. This finding is new; however, it is consistent with previous findings regarding the adverse effects on reproductive health associated with night work or shift work.
3.	Ram, et al. (2020)	Cohort retrospective	41,677	2	Premature birth and reduced birth weight	Air travel during pregnancy is associated with an increase in birth weight (9 grams; 95% CI: 4.8 to 14.5 grams) and gestational age (0.36 days; 95% CI: 0.24–0.48) that is statistically significant ($p<0.0001$), but not clinically significant. The results of this study do not show any evidence that air travel during pregnancy is associated with adverse effects on gestational age or birth weight. These findings support the current recommendations issued by ACOG.
4.	Ram. et al (2023)	Cohort retrospective	33,674	Not mentioned	Risk of vein thrombosis	There were 6 cases of venous thromboembolism during the 8-week period after the flight, and 285 cases of venous thromboembolism in the control group (0.05% vs. 0.07%; P = 0.158). However, when a Poisson regression analysis was performed with propensity weighting based on daily risk, a significant increase in risk was found between the study group and the control group (0.00031% vs. 0.00022%; hazard ratio 1.406; P = 0.005). Overall, the risk of venous thromboembolism after air travel is low; however, this study shows that air travel during pregnancy increases the risk of venous thromboembolism.

Table 1. Overview of the characteristics of the included studies *(continued)*.

5.	Heidecker, et al. (2017)	Cohort retrospective	145	1	Miscarriage due to exposure to secondhand smoke on an airplane	There were 45 cases of miscarriage (26%) among flight attendants exposed to secondhand smoke during pregnancy, compared with 17.1% in the general population. There was no difference in secondhand smoke exposure between pregnant flight attendants who had miscarriages and those who did not (P = 0.93). This study found an increased incidence of miscarriage among flight attendants, which was not related to exposure to secondhand smoke. Other factors, such as circadian rhythm disturbances and radiation exposure, may play a role in these reproductive health findings and require further research.
6.	Tchirikov, et al. (2024)	Cohort retrospective	16	3	Survival rate of TTTS twins who underwent a 5,668 km long flight for fetoscopic laser coagulation and maternal complications	The post-operative survival rate for a single twin fetus was 100.0% (n=16) in the air transport group and 98.3% in the ground transport group (n=60). The postoperative survival rate for both twins was 81.3% in the flight group (n=13) and 75.4% (n=46) in the ground transportation group. No differences were found in neonatal outcomes or the incidence of side effects between the two groups. There were no pregnancy complications in mothers related to flying. Long-distance air travel to a specialized tertiary medical center has been proven to be sufficiently safe to be recommended for pregnant women with TTTS who require fetoscopic laser coagulation (FLC).