Table S1. Summary of Literature

Outcome Discussed	Citation (in order presented in text)	Data Collection Period	Findings discussed	Sample size	Type of study	Region	Summary of results
Vertical transmission of SARS-CoV-2 from infected mother to neonate	Jafari et al. [3]	January-October 2020	• 5.3% rate of vertical transmission	10,000 SARS-CoV-2 infected mothers	Systematic review/meta-analysis	N/A	**Vertical transmission of SARS-CoV-2 from infected mother to neonate occurs in 5% or less of cases, and this risk does not seem to be affected when breastfeeding, rooming-in, and skin-to-skin care are practiced.**
	Kotlyar et al. [2]	January - May 2020	• 3.2% rate of vertical transmission	936 SARS-CoV-2 infected mothers	Systematic review/meta-analysis	N/A	
	Mullins et al. [4]	January – July 2020	• 1.8%-2.0% rate of vertical transmission	4,005 SARS-CoV-2 infected mothers	National registry	USA and UK	
	Walker et al. [7]	September 2019-June 2020	• 4.0% rate of vertical transmission overall • 2.7% rate of vertical transmission in vaginal vs. 5.3% in cesarean deliveries • 4.7% rate of vertical transmission in breastfed newborns vs. 5.3% in formula-fed newborns	655 SARS-CoV-2 infected mothers (666 SARS-CoV-2 exposed infants)	Systematic review/meta-analysis	N/A	
	Dumitriu et al. [5]	March-April 2020	• 2.0% rate of vertical transmission with no clinical evidence of neonatal infection • Breastfeeding, rooming-in, and skin-to-skin care were encouraged	100 SARS-CoV-2 infected mothers (101 SARS-CoV-2 exposed infants)	Retrospective cohort study	USA	
	Norman et al. [6]	March 2020 – January 2021	• 0.9% rate of vertical transmission	2,323 SARS-CoV-2 exposed infants	National registry	Sweden	
	Vigil-Vázquez et al. [21]	March-November 2020	• 5.1% rate of vertical transmission in exclusively breastfeeding infants	177 SARS-CoV-2 exposed infants	Prospective cohort study	Spain	
Placental mechanisms involved in maternal SARS-CoV-2 infection	Jafari et al. [3]	January-October 2020	• SARS-CoV-2 viral RNA detected in 12% of placental samples and 4-6% of amniotic fluid, cord blood, and vaginal secretions tested	From SARS-CoV-2 infected mothers: 364 placenta samples, 968 amniotic fluid samples, 324 cord blood samples, and 253 vaginal secretion samples	Systematic review/meta-analysis	N/A	**Placental infection is rare in SARS-CoV-2 infected mothers, but does appear to occur more frequently than infection of**

Kotlyar et al. [2]	January-May 2020	• SARS-CoV-2 viral RNA detected in 7.7% of placental samples, 0% of amniotic fluid samples, and 2.9% of cord blood samples tested	From SARS-CoV-2 infected mothers: 26 placenta samples, 51 amniotic fluid samples, and 34 cord blood samples	Systematic review/meta-analysis	N/A	**other biological samples. Irrespective of placental infection, maternal SARS-CoV-2 infection has been associated in some studies with placental alterations, including maternal vascular malperfusion (MVM).**
Beesley et al. [34]	Pre-pandemic	• Co-expression of ACE2 and TMPRSS2 only occurred in the fetal gastrointestinal tract, and did not occur in the placenta	From uninfected mothers and fetuses: 6 fetal tissue samples, 6 placenta samples	Retrospective analysis of tissue samples	UK	
Shanes, Mithal et al. [9]	March-May 2020	• Maternal vascular malperfusion (MVM) was more common in placentas of women with SARS-CoV-2 infection during pregnancy than historical controls	16 SARS-CoV-2 infected mothers; 17,479 historical controls	Retrospective cohort study	USA	
Shanes, Miller et al. [8]	March 2020-February 2022	• MVM occurred in 63% of women infected with SARS-CoV-2 during pregnancy, vs. 47% of controls • MVM occurred in varying proportions of women infected with SARS-CoV-2 depending on which stage of the pandemic they were infected during, suggesting possible variant-specific effects of infection on placental histopathology: 82% of women infected with SARS-CoV-2 during the Delta era exhibited MVM, vs. 65% of those infected during the Alpha/Gamma era and 55% of those infected during the Omicron era	883 SARS-CoV-2 infected mothers (673 pre-variant of concern era, 90 Alpha/Gamma era, 60 Delta era, 56 Omicron era); 185 uninfected mothers	Prospective cohort study	USA	
Levitan et al. [36]	March-May 2020	• No differences in placental histopathological features were detected between women infected with SARS-CoV-2 during pregnancy and uninfected controls	65 SARS-CoV-2 infected mothers; 85 uninfected mothers	Retrospective cohort study	USA	
Zhang et al. [37]	March-August 2020	• No differences in placental histopathological features were detected between women infected with SARS-CoV-2 during pregnancy and uninfected controls	101 SARS-CoV-2 infected mothers; 121 uninfected mothers	Retrospective cohort study	USA	

	Mourad et al. [10]	March-October 2020	• COVID-19 disease severity did not predict placental histopathological features in women infected with SARS-CoV-2 late in pregnancy • Placental expression of ACE2 and interferon-induced transmembrane antiviral genes was higher in pregnant women with severe COVID-19 disease	66 SARS-CoV-2 infected mothers	Prospective cohort study	USA	
Clinical outcomes in newborns infected with SARS-CoV-2	Gale et al. [46]	March-April 2020	• 0.05-0.06% of the national newborn population was infected with SARS-CoV-2 • 36% of infected newborns required intensive care or respiratory support (but 24% of the infected newborns were born preterm)	66 SARS-CoV-2 infected newborns	National registry	UK	**Overall, newborns infected with SARS-CoV-2 show favorable outcomes and a mild disease course, and rarely require intensive care or respiratory support related to their COVID-19 disease.**
	Dong et al. [47]	January-February. 2020	• 10.7% of infants under one year old who were infected with SARS-CoV-2 had severe COVID-19 disease	376 SARS-CoV-2 infected newborns	National registry	China	
	Norman et al. [6]	March 2020-January 2021	• 0% of 21 infants infected with SARS-CoV-2 during the study period had any morbidity related to COVID-19 disease	21 SARS-CoV-2 infected newborns	National registry	Sweden	
	Mithal et al. [49]	April-May 2020	• 0% of newborns with COVID-19 disease seen in the hospital system reported on required respiratory support	18 SARS-CoV-2 infected newborns	Retrospective cohort study	USA	
	Hassoun et al. [50]	March-April 2020	• 0% of newborns with COVID-19 disease seen in the hospital system reported on required respiratory support	8 SARS-CoV-2 infected newborns	Case series	USA	
	Leibowitz et al. [52]	March-April 2020	• 18 of 20 symptomatic newborns infected with SARS-CoV-2 and seen in the hospital system reported on had a mild disease course	20 SARS-CoV-2 infected newborns	Retrospective cohort study	USA	
	Nanavati et al. [53]	April-July 2020	• 7 of 21 newborns infected with SARS-CoV-2 were symptomatic, and no term infants required respiratory care • 20 of 21 infants were followed up two months after discharge and	21 SARS-CoV-2 infected newborns	Retrospective cohort study	India	

			showed no further symptoms or repeat hospitalizations				
	Bhuiyan et al. [54]	January-June 2020	• Over 90% of the children under five years old and infected with SARS-CoV-2 had asymptomatic, mild, or moderate COVID-19 disease • 43% had asymptomatic disease • 7% had severe disease	1,214 SARS-CoV-2 infected children under age 5	Systematic review/meta-analysis	N/A	
	Brewster et al. [56]	March 2020-January 2022	• Infants and children infected with SARS-CoV-2 during the Omicron wave of the pandemic were more likely to be diagnosed with COVID-19 associated Croup • 0% of infants and children included in the study required invasive ventilation	75 SARS-CoV-2 infected children (14 pre-Omicron era, 61 Omicron era)	Retrospective cohort study	USA	
Clinical outcomes in newborns exposed to SARS-CoV-2 in utero, irrespective of newborn infection status	Sánchez-Luna et al. [11]	March-May 2020	• The preterm birth rate of newborns exposed to SARS-CoV-2 in utero was 15.7%, more than double the national average in Spain of 7.5%	497 SARS-CoV-2 infected mothers (503 SARS-CoV-2 exposed infants)	National registry	Spain	**Newborns exposed to maternal SARS-CoV-2 infection in utero appear to be at increased risk for preterm birth, which may be driven by increased disease severity in pregnant women. Trimester of SARS-CoV-2 infection may also play a role in driving preterm birth, but current data are unclear.**
	Mullins et al. [4]	January-August 2020	• 15.7% preterm birth rate in newborns exposed to SARS-Cov-2 in utero in the US registry, vs. a 10% national average (56) • 12.0% preterm birth rate in newborns exposed to SARS-Cov-2 in utero in the UK registry, vs. a 75% national average (57)	4,005 SARS-CoV-2 infected mothers	National registry	USA and UK	
	Norman et al. [6]	March 2020 – January 2021	• Increased rates of preterm birth mediated increased rates of neonatal respiratory disorders in newborns exposed to SARS-CoV-2 in utero	2,323 SARS-CoV-2 exposed infants	National registry	Sweden	
	Gomez et al. [13]	April 2020-February 2021	• Women with moderate or severe COVID-19 disease were more likely to give birth preterm and have neonates admitted to intensive care	377 SARS-CoV-2 infected mothers; 357 uninfected mothers	Prospective cohort study	Brazil	
	Villar et al. [14]	March-October 2020	• Women with symptomatic COVID-19 disease during pregnancy delivered 0.8 weeks earlier than uninfected women	706 SARS-CoV-2 infected mothers; 1424 uninfected mothers	Prospective cohort study	18 countries (representing South America,	

					North America, Asia, Africa, Eastern and Western Europe)
Gulersen et al. [12]	December 2021-February 2022	• Women infected with SARS-CoV-2 during the Omicron era of the pandemic were significantly more likely than uninfected women to deliver preterm	631 SARS-CoV-2 infected mothers; 4107 uninfected mothers	Retrospective cohort study	USA
Molenaar et al. [62]	April-September 2020	• No difference in rates of preterm delivery was detected between SARS-CoV-2 infected and uninfected women	116 SARS-CoV-2 infected mothers; 591 uninfected mothers	Prospective cohort study	USA
Nachega et al. [63]	March 2020-March 2021	• No difference in rates of preterm delivery was detected between SARS-CoV-2 infected and uninfected women	510 SARS-CoV-2 infected mothers; 402 uninfected mothers	Retrospective cohort study	6 countries in Sub-Saharan Africa
Martinez-Portilla et al. [64]	February-October 2020	• Women infected with SARS-CoV-2 during pregnancy were at higher risk for death, pneumonia, and intensive care unit admission than uninfected women closely matched on demographic variables and risk factors	5183 SARS-CoV-2 infected mothers; 5183 uninfected mothers	National registry	Mexico
Zambrano et al. [65]	January-October 2020	• Compared to non-pregnant women with symptomatic COVID-19 disease, pregnant women with symptomatic COVID-19 disease were at higher risk for receiving invasive ventilation, receiving extracorporeal membrane oxygenation, being admitted to an intensive care unit, and death • Age, race, ethnicity, and underlying conditions were adjusted for	23,434 SARS-CoV-2 infected mothers; 386,028 SARS-CoV-2 infected nonpregnant women	National registry	USA
Allotey et al. [66]	December 2019-October 2020	• Compared to nonpregnant women of reproductive age with COVID-19 disease, pregnant women with COVID-19 disease were more likely to need invasive ventilation and be admitted to an intensive	>100,000 SARS-CoV-2 infected mothers; >2,000,000 SARS-CoV-2 infected nonpregnant women	Systematic review/meta-analysis	N/A

			care unit, and less likely to exhibit mild to moderate symptoms				
	Metz et al. [67]	March-July 2020	• Women with severe or critical COVID-19 disease were at higher risk of preterm delivery than women with asymptomatic COVID-19 disease	1,219 SARS-CoV-2 infected mothers	Retrospective cohort study	USA	
	Newton et al. [68]	January-December 2020	• Women with critical COVID-19 disease were at higher risk of preterm delivery than women with mild COVID-19 disease	6,336 SARS-CoV-2 infected mothers	Retrospective cohort study	USA	
	Piekos et al. [75]	March 2020-July 2021	• Increased risk for preterm delivery and stillbirth in SARS-CoV-2 infected pregnant women were driven by those infected during the first and second trimester of pregnancy • Gestational age at delivery was predicted by gestational age at infection, but not by maternal disease severity	882 SARS-CoV-2 infected mothers (85 first trimester, 226 second trimester, 571 third trimester); 19,769 uninfected mothers	Retrospective cohort study	USA	
	Hughes et al. [76]	March 2020-December 2020	• The 402 SARS-CoV-2 infected women, infected during the first or second trimester of pregnancy, had increased risk of preterm birth below 37 weeks gestation but not below 34 weeks gestation	402 SARS-CoV-2 infected mothers; 11,705 uninfected mothers	Retrospective cohort study	USA	
	Fallach et al. [77]	February 2020-July 2021	• Third trimester SARS-CoV-2 infection, but not first or second trimester infection, predicted increased risk of preterm delivery	2,753 SARS-CoV-2 infected mothers (478 first trimester, 943 second trimester, 1332 third trimester); 2,753 uninfected mothers	Retrospective cohort study	Israel	
	Cosma et al. [78]	April-June 2020	• No differences in pregnancy outcomes were observed between women infected with SARS-CoV-2 during their first trimester of pregnancy and uninfected women	16 SARS-CoV-2 infected mothers; 105 uninfected mothers	Prospective cohort study	Italy	
Long-term outcomes in infants and children	Shuffrey et al. [82]	March-December 2020	• No differences were observed on the 6 month Ages and Stages Questionnaire, Third Edition (ASQ-3) between infants exposed	114 SARS-CoV-2 exposed infants; 141 unexposed infants	Prospective cohort study	USA	**Current data using early developmental timepoints**

exposed to SARS-CoV-2 in utero			to SARS-CoV-2 in utero and unexposed infants				**suggest that infants exposed to maternal SARS-CoV-2 infection in utero do not appear to be at increased risk for long-term adverse developmental outcomes. Additional, longer-term follow-up is needed.**
	Bianco et al. [83]	March-December 2020	• Using the Infant Behavioral Questionnaire, no differences were observed in temperament at 6 months of age between infants exposed to SARS-CoV-2 in utero and unexposed infants	63 SARS-CoV-2 exposed infants; 110 unexposed infants	Prospective cohort study	USA	
	Ayed et al. [84]	April-December 2020	• 10% of infants exposed to maternal SARS-CoV-2 infection in utero showed signs of developmental delay (subdomain scores at least two standard deviations below population mean) on the ASQ-3 at 10-12 months of age, which is lower than the 15% pre-pandemic national average rate of developmental delay on the ASQ-3 in Lebanon, a country with similar geographical and cultural setting as Kuwait (81)	298 SARS-CoV-2 exposed infants	Prospective cohort study	Kuwait	
	Buonsenso, Costa, Giordano et al. [86]	March 2020-April 2021	• No abnormal auxologic or neurologic outcomes have been detected in infants exposed to SARS-CoV-2 in utero at 3, 6, or 9 months of age	199 SARS-CoV-2 exposed infants	Prospective cohort study	Italy	
	Edlow et al. [87]	March-September 2020	• 14 of 222 (6.3%) SARS-CoV-2 exposed infants had received a neurodevelopmental diagnosis on the International Classification of Diseases, 10th Edition (ICD-10) in the first year of life, vs. 227 of 7550 (3.0%) unexposed infants • This difference was not statistically significant when full-term infants were evaluated separately, suggesting that prematurity mediates the observed difference	222 SARS-CoV-2 exposed infants, 7550 unexposed	Retrospective cohort study	USA	