جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

Biological Reproductive Hazards Fact Sheet

Exposure to certain biological agents while you are trying to get pregnant and during pregnancy can cause infertility, miscarriage, birth defects and other adverse effects to the developing fetus. It is important for personnel working with biological agents to understand the risks of reproductive hazards and take steps to prevent exposures, this is important for both male and female staff. If you are pregnant or planning to become pregnant, you are highly encouraged to contact your healthcare provider and/or OB/GYN to discuss your personal health risks when working with hazardous agents. Refer to the KAUST Reproductive Hazard Guidelines for detailed information and questions to share with your healthcare provider. Occupational Health is also available to review reproductive hazards and mitigation strategies; our occupational health specialist can advise on safe practices to prevent exposure. Personal medical information shared with Occupational Health is strictly confidential.

KNOWN BIOLOGICAL REPRODUCTIVE HAZARDS

The following table includes biological agents used in research that are known to cause adverse effects to the developing fetus; however, this list is by no means all-inclusive. If you have questions or concerns about a specific biological agent, please reach out to your healthcare provider or to the Employee Health Center

BIOLOGICAL AGENT POTENTIAL ADVERSE EFFECTS	POTENTIAL ADVERSE EFFECTS
Campylobacter species	Infection during pregnancy can lead to intrauterine infection of the fetus resulting in abortion, stillbirth, or early neonatal death.
Chlamydia trachomatis	Can result in preterm labor, premature rupture of membranes, and low birth weight. Infection can be passed to the newborn during delivery resulting in eye and lung infections.
Coxiella burnetti (Q fever)	Can cause spontaneous abortion, intrauterine growth retardation, intrauterine fetal death and premature delivery.
Cytomegalovirus (CMV)	Can cause birth defects, cerebral palsy, epilepsy, vision and hearing problems especially during the first 20 weeks of fetal development.
SARS-CoV-2 (COVID-19)	Infection with COVID-19 during pregnancy can cause an increased risk of abortion/stillbirth. Pregnant women are at an increased risk for morbidity and mortality if infected during pregnancy.
HIV-1 and HIV-2	An active HIV infection during pregnancy can result in an increased risk of maternal transmission to the unborn child.
Lymphocytic choriomeningitis virus (LCMV)	Infections in the first trimester can result in fetal death and pregnancy termination. In the second and third trimesters, LCMV can cause birth defects and permanent problems with vision,

	mental retardation, and hydrocephaly. Pregnant women may have only a mild illness and may not recall being ill.
Listeria monocytogenes	Exposure during the first trimester can result in abortion, stillbirth, meningitis, endocarditis, or septicemia. Mothers are more at risk for adverse outcomes during the third trimester. Pregnant women are 10 times more likely to get listeriosis than other healthy adults.
Oropouche virus	Oropouche virus can be passed from the mother to the fetus and may cause severe fetal brain defects including microcephaly.
Paramyxovirus (mumps)	During the first trimester, infection can cause spontaneous abortion. Congenitally acquired mumps may lead to respiratory distress in newborn.
Human parvovirus (fifth disease)	Many women are immune, but a small number (
Plasmodium falciparum (malaria)	Infection during pregnancy can cause anemia, low birth weight and abortions.
Rubella virus (German measles)	Infection during first 12 weeks causes the most damage to the unborn child. Rubella can cause miscarriage or stillbirth, and developing babies are at risk for developing Congenital Rubella Syndrome (CRS) with severe birth defects, deafness, cataracts, heart defects, intellectual disabilities, and brain damage
Rubeola virus (measles)	Exposure during pregnancy can increase the risk of miscarriage and preterm birth, and infected women and newborns are at higher risk of developing complications from infection, such as pneumonia.
Toxoplasma gondii (toxoplasmosis)	T. gondii can be passed onto the unborn child if the mother is infected just before pregnancy or during pregnancy. Infected newborns may have serious eye or brain damage or may develop serious symptoms later, including blindness and mental disabilities.
Treponema pallidum (syphilis)	Syphilis in pregnancy can cause miscarriage, stillbirth, or the baby's death soon after birth. Infected babies may have congenital syphilis which includes bone damage, severe anemia, jaundice, blindness, deafness, and meningitis.
Trypanosoma cruzi	Serious pregnancy hazards, including congenital transmission (at the time of birth) to the fetus, as well as low birth weight and premature birth.

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

Biological Reproductive Hazards Fact Sheet

Zika virus	Zika virus can be passed from the mother to the fetus and cause severe fetal brain defects including microcephaly.

Contact Occupational Health at occupational.health@kaust.edu.sa for more information.

ADDITIONAL RESOURCES

KAUST Reproductive Hazard Guidelines

NIOSH The Effects of Workplace Hazards on Female Reproductive Health: www.cdc.gov/niosh/docs/99-104/pdfs/99-104.pdf?id=10.26616/NIOSHPUB99104

The National Toxicology Program Center for the Evaluation of Risks to Human

Reproduction: ntp.niehs.nih.gov/pubhealth/hat/index.html

CDC's Reproductive Health Information Source: www.cdc.gov/reproductivehealth/index.html

August 6, 2025
HSE-RST-OH019G