One of the common risk factors for hypoxic-ischemic encephalopathy is mothers who are high-risk not being treated like they are high-risk. Physician guidelines for high-risk pregnancies differ between non-high-risk and high-risk pregnancies – high-risk pregnancies are usually monitored differently, with a greater number of appointments and ultrasounds to ensure the pregnancy is going smoothly. Other common testing includes non-stress tests (NSTs), a kind of test that ensures that the baby’s heart rate is reacting normally to their movement, and a biophysical profile (BPP), which includes a non-stress test and a fetal ultrasound.

What Makes a Pregnancy High-Risk?

A high-risk pregnancy is any pregnancy that has risk factors for the mother or baby developing a serious health issue. This includes a very broad range of health concerns, including hypoxic-ischemic encephalopathy (HIE). There are many factors that can make a pregnancy high-risk, and these can include (but are not limited to):

- Maternal Obesity and High BMI
- Diabetes in the mother (especially if undetected or improperly treated)
- High Blood pressure
  - Preeclampsia
- Multiple gestations, including twins, triplets or more children at once
- Maternal immune system disorders (HIV/AIDS)
- Maternal use of alcohol or tobacco during pregnancy
- Intrauterine growth restriction (IUGR)
- History of prior abruption, IUGR, or preterm birth
Just because a pregnancy can be classified as high-risk does not necessarily mean that the child will have a birth injury like hypoxic-ischemic encephalopathy. Often, the risk stems from medical staff not recognizing a high-risk pregnancy when they should have, and not taking the proper steps to properly inform mothers or conduct tests and monitoring. High-risk pregnancies must be properly monitored to allow the parents and doctors to work together to mitigate the risks of this kind of pregnancy.

Maternal Obesity and High BMI

High body weight can be a delicate subject because weight loss can be difficult for patients. Sometimes physicians can gloss over the health risks related to obesity because the topic is a difficult one to broach, but it is a necessary one. Some mothers are not aware of the health risks related to high BMI, which can include birth complications and restricted growth in the baby. Women who have a very high BMI have a bigger risk of having gestational diabetes, hypertension (high blood pressure), preeclampsia, and premature birth. There is also a risk that babies can be macrosomic (far larger than expected), which can make labor difficult. Alternatively, there are also cases where the babies of women with a very high BMI have had a condition called intrauterine growth restriction (IUGR), which means that the baby is not the size expected for their gestational age. Babies with IUGR tend to tolerate labor poorly and are at a higher risk of brain bleeds.

Diabetes and Gestational Diabetes

Diabetes is a condition that should be properly controlled and monitored for both the health of mother and child. In some cases, diabetes can be first diagnosed during a pregnancy. This kind of diabetes is called gestational diabetes. Uncontrolled or poorly managed diabetes can cause health problems in the mother, but also poses a health risk for the child, because these babies can become macrosomic (very large), prolonging labor. It is also more likely that macrosomic babies’ shoulders will get stuck on the mother’s pelvis due to their size, increasing their risk of a condition called Erb’s palsy, which is damage to the brachial plexus nerves. When a baby gets stuck in the birth canal, this is a direct factor that influences the baby’s risk of hypoxic-ischemic encephalopathy.
High Blood Pressure

Mothers and babies are connected to each other via the placenta and umbilical cord, which provide a constant flow of nutrients and oxygen to the baby. These nutrients and oxygen are carried to the baby through the blood. Blood flow is regulated by numerous factors, but one of the most important factors is blood pressure. Very low or very high blood pressure can compromise the free flow of blood between the two, which can be a risk for the oxygen deprivation injuries of hypoxic-ischemic encephalopathy. High blood pressure can also damage the mother’s kidneys, which can cause low birth weight in the baby/ intrauterine growth restriction. Typically, babies with IUGR need to be delivered via C-section before term, because they cannot tolerate labor as well as a normal-sized baby.

Preeclampsia

Preeclampsia is a subtype of high blood pressure, but it is specifically high blood pressure that is first diagnosed during a pregnancy. This is a particularly severe form of high blood pressure because there's no way to ‘cure’ the preeclampsia other than delivering the baby. Preeclampsia can cause end-stage organ failure in the mother, and – if it is severe – can cause the mother to have seizures during birth and delivery, which can result in the death of both the mother and baby if improperly managed. Because preeclampsia is an exceptionally risky condition (and because it can progress from mild to severe very quickly), physicians deliver babies prior to term to protect both the mother and the baby. Preeclampsia is also a risk factor for IUGR.

Multiparous Births (Multiple Births)

Having multiples is a joyous occasion, but also requires some additional monitoring on the part of doctors. These births often occur when women have had fertility treatments or have a baby after age 30. These babies are at a greater risk for premature birth for several reasons, but the precise mechanisms of why are currently under investigation. Multiple births are a significant contributor to preterm births (more than half of women with twin pregnancies deliver at 37 weeks or earlier), which are associated with poorer outcomes including HIE.
Immune Disorders (HIV/AIDS)

Mothers with immune system disorders are considered to be high-risk, as this population must be monitored and treated properly to reduce the risk of transmitting HIV to their child. Medical staff must inform mothers with HIV of advised steps, such as taking ART (antiretroviral therapy) and having a C-section rather than a vaginal birth. After birth, there are certain steps that doctors will carry out, such as advising mothers not to breastfeed and to follow treatment plans closely.

Alcohol and Tobacco Use During Pregnancy

It is the responsibility of medical staff to inform mothers who use alcohol and tobacco about the risks of substance use during pregnancy, as this can negatively affect the baby’s growth and development. With alcohol especially, infants are at risk for fetal alcohol syndrome (FASD), which is known to cause intellectual disabilities and developmental delays. Smoking is associated with IUGR and other long-term health difficulties. Physicians must inform pregnant patients who smoke of smoking cessation programs. Smoking cessation programs have been proven to help patients quit smoking.