A baby born before 37 weeks gestation is considered premature (1). These premature babies are often referred to as “preemies.” Roughly 1 in 8 babies in the U.S., and 15 million babies worldwide annually, are born prematurely (1, 2).

Is premature birth dangerous?

Yes, premature birth is the leading cause of neonatal death worldwide (2). Preemies often have underdeveloped lungs, immune systems, digestive systems, and skin. This puts them at a much higher risk for experiencing short and long-term complications than babies that are born at term (3). Preemies are also far more prone to having brain bleeds and blood flow issues to their brain (4). These problems can lead to serious injuries like hypoxic-ischemic encephalopathy (HIE) and cerebral palsy (CP).

Preventing premature birth can help prevent HIE

One of the key ways that medical professionals can reduce the risk of hypoxic-ischemic encephalopathy (HIE) in their patients is by taking all appropriate actions to prevent a baby from being born prematurely. Doctors can help decrease the risk of a baby being born prematurely by
Monitoring the pregnancy very closely and

Taking steps to prevent the baby from being born early if they suspect prematurity is a possibility

An HIE diagnosis can be difficult, but our team is here to help. Call us when you're ready.

What preventative measures are available?

There are several procedures that medical practitioners can do when there are indications that a woman may give birth prematurely, or if she has a history of preterm birth/other risk factors. Preventative measures can include, but are not limited to:

Cervical cerclage

One of the factors that can cause premature birth is cervical insufficiency (sometimes referred to as ‘incompetent cervix’). The cervix is a narrow passage forming the lower end of the uterus. At the beginning of pregnancy, the cervix is long and closed. It remains this way until labor and delivery. In some pregnancies, the cervix begins to soften, shorten, or open up prematurely. This is called cervical insufficiency (5). This can allow the fetal membranes to go through the opening and break, which can trigger early onset of labor and premature birth or miscarriage.

Cervical cerclage is a procedure in which a stitch is placed into the cervix to help keep it long and closed and to prevent premature birth. It is usually done between 14 and 16 weeks of pregnancy. Later in pregnancy, usually between 36 and 38 weeks, the stitch is removed so that the baby can be born. It has been found to significantly reduce the risk of preterm birth (2). In cases when true cervical incompetence exists, cerclage has been found to be 85-90% effective (6). To learn more about cerclage and which women may require one, click here.

Progesterone

Progesterone is a naturally occurring hormone produced in the ovaries. Among other roles, progesterone thickens the uterine lining to help avert preterm delivery and protect a growing baby (1). Women with cervical issues, as well as those who have a prior history of preterm birth or preterm premature rupture of membranes (PPROM) are often given progesterone in order to prevent their babies from being born early. In studies of women with a history of preterm birth, progesterone has been shown to significantly reduce the risk of (2):

- Preterm birth prior to 34 weeks
- Preterm birth prior to 37 weeks
- The need for assisted ventilation
- Necrotizing enterocolitis
- Admission into the NICU
- Perinatal death

Because of such findings, The American College of Obstetricians and Gynecologists (ACOG) recommends that progesterone be offered to women with singleton pregnancies and prior spontaneous preterm birth due to premature rupture of membranes or spontaneous labor (2). Progesterone is given either as an injection or a vaginal suppository. To learn more about the uses for progesterone, click here.

Magnesium sulfate

Magnesium sulfate, an organic salt, has many medical applications. One major application is in the treatment of preterm labor. Magnesium sulfate works by slowing or inhibiting uterine contractions in order to delay preterm birth for several days or longer. The treatment is usually given to women who (7):

- Are less than 32 weeks pregnant with active preterm labor

- Have been diagnosed with premature rupture of membranes (PROM)
- Have exhibited signs of premature birth within the last 24 hours

This delay of several days or longer allows the baby more time to develop and allows medical professionals the time they need to devise the best method of delivery.

Magnesium sulfate has also been proven to act as a neuroprotective agent, reducing the likelihood of cerebral palsy and other developmental disabilities (8). Doctors may use the time gained with magnesium sulfate to also administer prenatal steroids such as betamethasone, which serve as additional neuroprotectors and prepare the lungs for life outside the womb. To learn more about the use of magnesium sulfate, click here.

Medical negligence can cause HIE. Do you have a case?
Call us today for a free legal consultation.

Closely monitoring pregnancies

It is critical that physicians closely monitor their patients for high-risk pregnancy conditions that can lead to preterm birth or HIE. Once a pregnancy has been identified as high-risk, doctors must provide more extensive prenatal care and testing. Having more information about the state of the pregnancy can help them determine which measures may be necessary to prevent preterm birth.

Minimizing harm in preterm babies

In some cases, it may be impossible to prevent preterm birth from occurring. However, there are still treatments that may help to minimize the risk of lasting damage to the baby. Two common options are antenatal steroids (betamethasone) and magnesium sulfate. Magnesium sulfate can be used to inhibit uterine contractions but is also used to protect the baby's brain and reduce the risk of cerebral palsy (CP) and other conditions (7).

Antenatal steroids (betamethasone)

One of the most important things a doctor can do if they suspect a baby will be born prematurely is to administer corticosteroids. According to the American College of Obstetricians and Gynecologists (ACOG), a single dose of antenatal corticosteroids, betamethasone, should be given to women — if they are 24-34 weeks pregnant — suspected of experiencing preterm labor within seven days (9).

Antenatal steroids can help the lungs develop faster, which decreases the risk of respiratory distress syndrome (RDS) (9). Treatment with antenatal steroids can also provide benefits such as:

- Accelerated lung maturity
- Shortened preemie hospital stays
- Decreased instances of intraventricular hemorrhage (IVH)
- Decreased risk of brain bleeds
- Decreased risk of white matter injury (periventricular leukomalacia, or PVL)
- Decreased inflammation

Sources:

Norwitz, E. (2023, October 16). Progesterone supplementation to reduce the risk of spontaneous preterm birth. Retrieved June 17, 2024, from https://www.uptodate.com/contents/progesterone-supplementation-to-reduce-the-risk-of-spontaneous-preterm-labor-and-birth.

Newnham, J. P., Dickinson, J. E., Hart, R. J., Pennell, C. E., Arrese, C. A., & Keelan, J. A. (2014). Strategies to prevent preterm birth. *Frontiers in immunology*, *5*, 584. doi:10.3389/fimmu.2014.00584

Care for the Premature Baby. (2019, July 16). Retrieved June 17, 2024, from https://americanpregnancy.org/healthy-pregnancy/labor-and-birth/premature-care/.

Premature birth. (2024, March 22). Retrieved June 17, 2024, from https://www.mayoclinic.org/diseases-conditions/premature-birth/symptoms-causes/syc-20376730.
Incompetent Cervix : Weakened Cervix. (2019, July 16). Retrieved June 17, 2024, from https://americanpregnancy.org/getting-pregnant/incompetent-cervix/.
Cervical Cerclage: Benefits and Risks. (2019, October 11). Retrieved June 17, 2024, from https://americanpregnancy.org/healthy-pregnancy/pregnancy-complications/cervical-cerclage/.
Costantine, M. M., Weiner, S. J., & Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network (2009). Effects of antenatal exposure to magnesium sulfate on neuroprotection and mortality in preterm infants: a meta-analysis. Obstetrics and gynecology, 114(2 Pt 1), 354–364. doi:10.1097/AOG.0b013e3181ae98c2
De Silva, D. A., Synnes, A. R., von Dadelszen, P., Lee, T., Bone, J. N., MAG-CP, CPN and CNN collaborative groups, & Magee, L. A. (2018). MAGnesium sulphate for fetal neuroprotection to prevent Cerebral Palsy (MAG-CP)-implementation of a national guideline in Canada. *Implementation science : IS*, *13*(1), 8. doi:10.1186/s13012-017-0702-9
Antenatal Corticosteroid Therapy for Fetal Maturation. (2017, August). Retrieved June 17, 2024, from https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/08/antenatal-corticosteroid-therapy-for-fetal-maturation.