

Preemie Common Problems/Diseases

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Jaundice (Bilirubin)

Jaundice is the yellow color to the skin that is often seen in the first few days after birth. The yellow color is due to bilirubin.

Bilirubin is produced when red blood cells get old and are broken down by the body. Normally it is processed in the liver and then deposited in the intestine so it can come out in the stool.

The red blood cells of babies have shorter lives than adult red blood cells; bruising at birth may cause a larger number of red cells to be broken down. All of the bilirubin from these cells needs to be processed by the baby's liver.

Premature babies do not have fully developed organs. Their livers cannot process bilirubin rapidly. Their intestines may not move much in the first few days especially if they are sick and not being fed.

Small or moderate increases in bilirubin are not harmful. Extremely high levels of bilirubin can be harmful, causing brain damage. Your baby's bilirubin will be measured if s/he becomes jaundiced to be sure that s/he does not come close to having harmful levels.

If the level of bilirubin is high enough to need treatment, it is usually treated with PHOTOTHERAPY. This means the undressed baby is placed under special lights. The lights may be white, blue, or green. Or, the baby can be placed on a light producing blanket. The light helps break down the bilirubin in the skin. It may cause the baby to have runny stools.

It may not be good for babies to have bright light continuously shining in their eyes. The eyes are covered to protect them from so much light. If a baby has only the phototherapy blanket, the eyes do not need to be covered.

The duration of jaundice varies greatly from baby to baby. Bilirubin levels increase over the first several days and then fall slowly. Phototherapy is usually needed for a few days, but occasionally for more than a week. Babies receiving breast milk may remain yellow longer than those receiving formula, but usually these low levels are not harmful.

It is very uncommon for premature infants to need any treatment other than phototherapy. However, if a baby's bilirubin gets close to harmful levels, the doctor can do an EXCHANGE TRANSFUSION, a procedure where the baby's blood containing the bilirubin is replaced with blood from the blood bank. Also, this can be done if a baby's mother has made antibodies against the baby's blood and the antibodies are destroying the baby's red blood cells. This, too, is uncommon in premature infants.

Apnea of Prematurity

Apnea is a pause in breathing that has one or more of the following characteristics: lasts more than 15-20 seconds; is associated with the baby's color changing to pale, purplish or blue; is associated with bradycardia or a slowing of the heart rate.

Bradycardia is a slowing of the heart rate, usually to less than 80 beats per minute for a premature baby. Bradycardia often follows apnea or periods of very shallow breathing. Sometimes it is due to a reflex, especially with the placing of a feeding tube or when the baby is trying to have a stool.

Premature babies have immature respiratory centers in the brain. Premies normally have bursts of big breaths followed by periods of shallow breathing or pauses. Apnea is most common when the baby is sleeping.

As your baby gets older, his/her breathing will become more regular. The time course is variable. Usually apnea of prematurity markedly improves or goes away by the time the baby nears his/her due date.

Several treatments are possible. Your baby may be treated with one or more of the following: Medications that stimulate breathing. Commonly used drugs include theophylline, aminophylline, or caffeine; CPAP or continuous positive airway pressure. This is air or oxygen delivered under pressure through little tubes into the baby's nose; Mechanical ventilation (breathing machine). If the apnea is severe, the baby may need a few breaths from the ventilator every minute. These might be given at regular intervals or only if apnea occurs; A rocking bed or periodic stimulation

Most infants are over their apnea completely when they go home; however, some babies reach all other criteria for discharge before their apnea is completely gone. Some babies are candidates for home apnea monitoring. Your baby may be a candidate for home apnea monitoring if: s/he has apnea that is short and s/he recovers without any stimulation; s/he has no color change or bradycardia with the apnea; the apnea is not expected to go away in the next several days; your nursery has a home apnea program; you have a phone and live near emergency help (if you would need it); you, and usually a second person, have completed home apnea training and a course in cardiopulmonary resuscitation of a baby; your baby's doctor feels this is a good idea for your particular baby.

Apnea of prematurity is a result of immaturity. Once a baby matures and the apnea resolves, it will not return. If a baby should have breathing pauses after apnea goes away, it is not apnea of prematurity. It is due to some other problem and needs to be discussed with your baby's physician. This is not common.

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Feeding & Nutrition

If your baby is sick or very tiny, your baby will receive nourishment by vein. At first your baby will receive mainly sugar water for calories. However if it appears that your baby will not tolerate feedings within a few days, he/she may be started on total parenteral nutrition (TPN). With TPN, protein, fat, sugar, vitamins and minerals are added to the fluids that the baby receives by vein. Your baby can receive complete nutrition and grow on TPN alone. As your baby tolerates other feedings, the TPN will be decreased.

Your baby may be started on tube feedings. A tube is passed through the mouth or the nose into your baby's stomach. Milk is put through the tube. This may be as a constant slow drip, called continuous infusion or drip feeds, or as prescribed amounts given every few hours, called gavage feeding. Either way, the amounts will be very small at first and gradually increase. There is often a transition period between TPN and tube feedings where the amount of nutrition from TPN slowly decreases as the amount from tube feeding increases.

Occasionally drip feedings are given into the intestine instead of the stomach. In this case the end of the tube is passed beyond the stomach into the intestine.

Almost all babies lose weight before they begin to gain weight. This weight loss typically is 5-15% of the baby's birth weight. Much of the weight loss is loss of water because the baby is no longer surrounded by fluid. Sometimes very sick babies gain weight the first few days. This is not real weight gain; it is retention of water. As the baby's condition improves, the baby will lose weight. Usually a baby does not regain his/her birth weight until two or more weeks of age.

When babies are born prematurely their sucking is not well coordinated with their breathing. This suck-swallow-breathe pattern usually becomes coordinated enough to safely breast or bottle feed at about 34 weeks of gestation. However, there are big differences among babies. Your baby's doctors and nurses will determine when to start. Because nipple and breast feeding requires more work, babies who have had severe respiratory problems may be slower to start and slower to advance on feedings. Before your baby is ready to feed by breast or bottle, s/he may enjoy sucking. A pacifier may be used to encourage sucking. When the baby is being tube fed, s/he may like to suck on a pacifier or the breast that is empty of milk. This is called non-nutritive sucking. Sucking on the empty breast or nuzzling the breast during tube feeding can be combined with kangaroo care. This helps the mother with milk production and readies the baby for future breast feeding. In addition, babies stay warm while held.

Breast vs. Bottle Feeding

Just because your baby is premature does NOT mean s/he must have formula. In fact, there are many advantages to mother's breast milk over formula. These advantages include: Fewer infections, Less risk for Necrotizing Enterocolitis (NEC), Better tolerance of feeds, Less risk of allergy, Enhanced development.

Early breast milk, called colostrum, is especially rich in antibodies and cells that help fight infection. Babies who are too young to suckle at the breast can get your milk in their tube feedings. Even if you planned to bottle feed or cannot breast feed long term, you might consider providing breast milk for your preemie while s/he is in the hospital. It is something special that only you can do for your baby.

Very few mothers can't or shouldn't breast feed. Most drugs do not get to the baby in large enough amounts to prevent breast feeding. **Be sure you let your baby's doctor know ALL medicines, herbs or other drugs that you are taking.** The following mothers usually should not breast feed: Mothers getting chemotherapy and/or radiation for cancer, Mothers with HIV or AIDS, Mothers on medicines that collect in breast milk in large amounts or are dangerous to the baby.

If you have had surgery or radiation to your breasts (especially near the nipple), it may be difficult to lactate (produce milk). If only one breast has had surgery or radiation, the other should be able to produce enough milk for your baby.

Babies can and do develop normally when fed only formula. Although encouraged, breast feeding is a personal choice. You and your baby can still benefit from close skin to skin contact.

It is best to start pumping as soon after delivery as you can, within the first 6 hours is best, but definitely within the first 24 hours. Early pumping is very important for establishing a milk supply. Even if your baby is very sick and not being fed, you need to pump your breast regularly so there will be milk when your baby is ready. Electric breast pumps are the best. Ask your nurse or a lactation consultant for assistance in learning to use one and in preparing to rent one when you are out of the hospital.

You should pump at least five times a day and for a total time of at least 100 minutes a day. Ideally increase this to 8 to 12 times a day for 10 minutes per side. Frequent pumping signals your body to keep making milk. At first you may get very little milk, sometimes just a few drops. But, it is important to save all that you get of this early milk for your baby. About the third day your breasts will become full and swollen. This is your milk coming in. At this time your milk supply will increase. With frequent pumping you will produce more than your baby can use, but don't decrease the amount of pumping. It is important to build a good supply early.

Pumped milk can be frozen for later use. Unless told otherwise, the milk from an entire pumping should be pooled and then divided into containers for freezing. The nutrients of milk are not changed by freezing, but frozen milk does not protect against infection. Your baby's doctor may want to use fresh milk when the baby starts to feed. Fresh milk is milk that has not been frozen, but it can be refrigerated for 24-48 hours. Ask your baby's nurse about the guidelines for your nursery.

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Anemia

Anemia is having too few red blood cells. Red blood cells carry oxygen to the body. Two laboratory tests, HEMATOCRIT and HEMOGLOBIN, are used to determine red blood cells in blood. The value for the hematocrit is usually about three times larger than the hemoglobin. A blood test called the RETICULOCYTE COUNT measures the percent of newly made red blood cells. Anemia is usually treated by transfusions of red blood cells obtained from the blood bank. This is the only way to increase the number of red blood cells rapidly. Anemia can also be treated by erythropoietin. This is a drug similar to the substance the body normally produces to increase the number of red blood cells. It works slowly over days to weeks. It is not useful if the anemia needs to be treated more rapidly. Anemia does not always need to be treated if it is not severe and if the baby is not sick or having frequent laboratory tests. Eventually the baby will make more red blood cells. Later, as the baby grows, s/he may need an additional source of iron. This may be an iron fortified formula, vitamins with iron, or iron drops. Iron is needed by the body to make red blood cells.

Low Blood Pressure

Babies can have low blood pressure for many reasons. It is especially common in preemie babies just after birth. Reasons for low blood pressure include: blood loss before or during delivery, fluid loss after delivery, infection, medications given to the mother before delivery. Sometimes it is not known why a baby's blood pressure is low. Low blood pressure is seen often in babies who have Respiratory Distress Syndrome. Low blood pressure may be treated in a variety of ways: a baby may be given extra fluid, often containing albumin, by vein; a baby can be placed on a medication to increase blood pressure. These drugs are referred to as "pressors"; a baby may be transfused with blood from the blood bank. This is most often done if the suspected cause of low blood pressure is blood loss.

Blood Sugar

Blood sugar may be either too low or too high. Low blood sugar is common soon after birth. High blood sugar is more common in babies who are getting most or all of their nutrition by vein. Sugar problems in a preemie do not relate to whether s/he will develop diabetes later on in life. But, infants of mothers who have had diabetes in pregnancy are more likely to have low blood sugar in the newborn period. Once a baby is feeding regularly, blood sugar problems seldom recur.

Respiratory Distress Syndrome

Respiratory Distress Syndrome is the most common lung disease of premature infants. RDS occurs in babies with incomplete lung development. The more premature the infant, the greater likelihood of RDS. RDS is due to insufficient SURFACTANT in the lungs. Surfactant is a material normally produced by the lung that spreads like a film over the tiny air sacs allowing them to stay open. Open air sacs are essential for oxygen to enter the blood from the lung and for carbon dioxide to be released from the blood into the lung for exhalation. Your baby will need extra oxygen. Room air is 21% oxygen. Your baby needs higher oxygen to stay pink. The added oxygen might be given by placing a plastic hood over the baby's head. Your baby may need CPAP (Continuous Positive Airway Pressure). This is oxygen delivered under a small amount of pressure usually through little tubes that fit into the nostrils of the nose. Delivering oxygen under pressure helps keep the air sacs open. If the RDS is moderate or severe, your baby may need to have a breathing tube inserted into his/her wind pipe. This is necessary if your baby needs help with breathing or if your baby is to receive surfactant as a medication. Inserting the tube is called intubation. Once intubated, your baby may be placed on a breathing machine (respirator or ventilator) to help him/her breathe. Your baby may be given **surfactant**, a drug which replaces the substance that your baby's lungs lack. This is given directly down the breathing tube. A baby must be intubated to receive surfactant. Your baby may have an **umbilical arterial catheter** (UAC) and/or an **umbilical venous catheter** (UVC) placed. This consists of placing a very small piece of tubing (catheter) into one or two of the blood vessels in the baby's umbilical cord stump. RDS does not cause abnormal development. However, babies who are sick with RDS may have other problems that are associated with abnormal development.

Transient Tachypnea

Transient tachypnea is fast breathing that gradually gets better. It is thought to be due to slow reabsorption of fetal lung fluid. Before birth the lungs continuously make fluid. Some of this fluid is squeezed out as the baby comes down the birth canal. The rest must be absorbed by the baby during the first minutes to hours of life. In babies with TTNB this process may last hours to days. TTNB is more common in babies delivered by cesarean section because they did not have fluid squeezed out with delivery. The baby will have some difficulty with breathing. S/he may: breathe rapidly; make the "ugh" sound with each breath, called grunting; have a widening of the nostrils with each breath, called flaring; need extra oxygen. Room air is 21% oxygen. The baby needs higher oxygen to stay pink. Your baby will have his/ her respirations, heart rate, and blood oxygenation monitored. In addition your baby may need one of the following: Oxygen. This can be given through a plastic hood placed over the baby's head or by oxygen into the isolette; CPAP (Continuous Positive Airway Pressure). This is oxygen delivered under a small amount of pressure usually through little tubes that fit into the nostrils of the nose. Delivering oxygen under pressure helps keep the fluid out of the air sacs and speeds up its reabsorption); The time course is variable. It may last hours or days. Gradually the baby's need for oxygen will decrease. Then, respiratory rate will slowly come down to normal. Some babies have fast respirations for several days.

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Ductus Arteriosis

Before birth, the mother and placenta take care of the oxygen needs of the fetus (baby before birth). The fetus does not need to use his/her lungs. Therefore, very little blood needs to go to the lungs to help them grow. The ductus arteriosus allows most of the blood to bypass the lungs and go the rest of the body. After birth, the baby must use his/her lungs to take in oxygen and get rid of carbon dioxide. Now, the blood from the pulmonary artery needs to go to the lungs to pick up oxygen instead of going through the ductus arteriosus. Normally after birth the ductus gradually narrows and then closes in the first few hours to days. In premature infants, especially those who have had respiratory distress syndrome, this blood vessel may stay open. Blood goes in the opposite direction through this vessel than it would in the fetus. It goes from the aorta to the lungs. In addition, there is normal blood flow from the heart to the lungs. This is too much blood into the baby's lung. Fluid in the lung increases and it makes it harder for the baby to breathe. The PDA increases the work of the heart and the baby can develop heart failure if the amount of blood flowing through the PDA is large. How will doctors know if my baby has a PDA? Your doctors may suspect your baby has a PDA if: s/he needs more oxygen or help breathing when s/he should be needing less; his/ her breathing is more difficult or there is much more apnea; the doctor or nurse hears a murmur (an abnormal noise over the heart); the baby's heart rate increases and/or the pulse changes; If a PDA is suspected, your baby will probably have an ECHOCARDIOGRAM. In this test sound waves are used to give a picture of the baby's heart and determine the amount of blood flow through the PDA. It is painless and is similar in principle to the ultrasound that many women have when they are pregnant. If the ductus is very small and there is only a tiny amount of blood flowing through it, your baby's doctors may wait to see if it closes on its own. The most common drug used to treat a PDA is indomethacin. It causes the ductus to narrow. As the ductus narrows, less blood flow can go through it. Indomethacin may also cause your baby to make less urine. Sometimes more than one course of indomethacin is needed to close a ductus. Some physicians use ibuprofen instead of indomethacin. Your doctor might also decide to decrease the amount of fluid that your baby is receiving while the PDA is open. Occasionally another drug called a diuretic is given to decrease the fluid in the lungs and increase the amount of urine that your baby makes.

Retinopathy of Prematurity

Retinopathy of Prematurity (ROP) is abnormal growth of blood vessels in the baby's eye. It is most common in babies who are very premature, more than 12 weeks early. In development, blood vessels grow from the back central part of the eye out toward the edges. This process is completed just a few weeks before the normal time of delivery. In premature babies this process is not complete. If blood vessel growth proceeds normally, the baby does not develop ROP. If the vessels grow and branch abnormally the baby has ROP. If your baby is at risk for ROP, your baby's eyes will be checked by an ophthalmologist, a doctor specializing in eye problems. These exams start at about 4-6 weeks of age and occur regularly until the eye vessels have grown to the edges. the ophthalmologist sees any abnormal growth of blood vessels, s/he will record the extent of ROP, called Staging. Infants who have ROP are followed with more frequent eye exams to watch for any progression. Stage I and early Stage II do not usually need any treatment. These stages may resolve on their own without further progression. Infants with Stage III may require treatment to stop the progression of the abnormal vessels. With treatment, the inner lining of the eye at the ends of these vessels is killed to prevent further abnormal growth of the blood vessels. This helps prevent the inner lining (retina) from being pulled away (detached) from the outer lining by the abnormal vessels.

Infection

Babies can get many kinds of infections. Generalized infection or infection of the blood stream is referred to as sepsis; infection of the lungs, pneumonia; infection of the fluid that surrounds the brain, meningitis; infection of the urine, urinary tract infection or UTI. Babies can also get localized infections under the skin called abscesses or infections of the skin. Infections in babies can be caused by bacteria (most common), viruses, or fungi. Infections can start before birth, near the time of birth, or while the baby is in the nursery. Bacterial infections are treated with drugs called antibiotics. There are several different antibiotics. Your baby may be on more than one at a time because no single antibiotic controls all infections. Your baby's doctor will select the ones to control the germs that are most likely causing your baby's infection. Different drugs are used when the infection is caused by a virus or a fungus. Most of the time the baby's infection responds rapidly to antibiotics. Usually there are no permanent problems from infection. Permanent problems are most likely if the baby has meningitis, or if there has been severe low blood pressure for a long period of time.

Pneumothorax

Normally the air that we breathe goes down the trachea (windpipe) to a series of branches of the windpipe called bronchi. The air then goes to the air sacs where oxygen is delivered to the blood and carbon dioxide is released. If the air sacs become overfilled with air, the air can break out of the air sacs and get into spaces where it should not be. This condition is sometimes referred to as AIR LEAK and includes the following: PNEUMOTHORAX where the air is trapped inside the chest between the chest wall and the lung, causing the lung to collapse; PNEUMOMEDIASTINUM where air is trapped in the middle part of the chest; PULMONARY INTERSTITIAL EMPHYSEMA (PIE) where air is trapped between the tiny air sacs, encircling the smallest blood vessels and bronchi. Less commonly, air can encircle the heart, (Pneumopericardium), get under the skin, (Subcutaneous Emphysema), leak into the abdomen (Pneumoperitoneum) or surround the kidneys (Pneumoretroperitoneum). A baby often has more than one form of air leak. For example, PIE can progress to pneumomediastinum and/or pneumothorax. Some forms of air leak are more easily treated than others. Approaches to treatment include: If the air leak is small, not increasing, and not causing significant problems, it may not need to be treated. The air gradually reabsorbs into the body; Occasionally a pneumothorax can be treated by inserting a needle into the chest and sucking out the air with a syringe. Often, however, the air will recollect; If a tube can be placed in the area where air is collecting, continuous suction on the tube can remove the air until the leak seals over. This is the most common treatment. In a pneumothorax a chest tube is placed between two ribs and into the chest cavity between the lungs and the chest wall. In a pneumopericardium a tube is placed between the heart and its covering, called a pericardial tube. In interstitial emphysema and in pneumomediastinum, the spaces containing the air are sponge-like and cannot be treated with tubes. If your baby has interstitial emphysema and is on a ventilator (breathing machine), your baby's doctor may change to a different pattern of ventilation (breathing). This may mean giving more rapid, but smaller breaths or changing to a form of ventilation called high frequency ventilation. Depending on the amount of air and the space where it is located, the symptoms and seriousness of air leak may vary from mild to catastrophic. A large pneumothorax or a pneumopericardium usually causes sudden and rapid deterioration. Interstitial emphysema usually occurs more gradually.

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Necrotizing Enterocolitis

"Necrotizing" means causing death to tissue, "entero" refers to the small intestine, "colo" refers to large intestine, "itis" is inflammation. Necrotizing enterocolitis is an inflammation causing destruction of part of the bowel. NEC may involve only the innermost lining or the entire thickness of the bowel and variable amounts of the bowel. Premature infants have immature and fragile bowels. They are sensitive to changes in blood flow and to infection. We often do not know why an individual baby develops NEC. Your baby may show any or all of the following: general signs of being "sick": less active, more apnea, increased respiratory problems, difficulty keeping his/her body temperature normal; poor tolerance to feedings, vomiting or not putting through the milk placed in the stomach (called aspirates or residuals). These may be greenish in color; increased size of the tummy; redness or abnormal color to the tummy; blood in the stool. If your baby's doctor thinks that s/he might be developing NEC any or all of the following might be done: All regular feedings stopped. This is called NPO. The baby will have an IV started so s/he can be fed by vein; A tube placed into the stomach either from the mouth or nose. The tube removes air and fluids from the baby's stomach and intestine; The tummy size measured with a tape measure and watched carefully; X-rays of the tummy; A sample of the blood sent to the laboratory to see if it contains bacteria; Antibiotics started; More frequent blood tests to look for signs of infection and imbalances in the body's chemistry; The stools are checked for blood. Most babies who recover from NEC do not have further problems; but, future problems are possible. These include: scarring and narrowing of the bowel causing "obstruction" or blockage of the bowel; and "malabsorption" or inability of the bowel to absorb nutrients normally.

Bronchopulmonary Dysplasia

Bronchopulmonary dysplasia (BPD) is a form of longer lasting lung disease. It occurs in infants who have had severe RDS, lung infection or were extremely premature at birth. BPD is a reaction of the premature lung to its disease and to the oxygen and mechanical ventilation that were needed to treat the infants lung disease. Occasionally very premature infants get BPD even if they did not need mechanical ventilation or much extra oxygen after birth. BPD is usually diagnosed if a baby continues to have an abnormal chest x-ray and still needs oxygen by the time a baby is 36 weeks of gestation (a month before the due date). However, your baby's doctor may be concerned enough to treat your baby's continuing lung disease long before this date. A baby with BPD may also have one or more of the following: rapid breathing; more difficult breathing; wheezing or noisy breathing; wet or crackling sound to the lungs heard with a stethoscope; more difficult time growing; A baby with BPD needs extra oxygen for a long period of time. This may be several weeks or months, occasionally for more than a year. Babies with BPD may be discharged on home oxygen. Some babies are treated with other medications. These might include: Steroids - drugs to decrease the body's reaction to oxygen and disease; Diuretics - drugs to help the body to get rid of extra water; Drugs to decrease wheezing.

Intraventricular Hemorrhage

Intraventricular hemorrhage (IVH) means bleeding into the normal fluid spaces (ventricles) within the brain. IVH is also used to refer to bleeding in areas near the ventricles even if the blood is not within them. The extent of IVH is graded: Grade I- bleeding confined to the tiny area where it first begins; Grade II- blood is also within the ventricles; Grade III - more blood in the ventricles, usually with the ventricles increasing in size; Grade IV - a collection of blood within the brain tissue, also called INTRAPARENCHYMAL ECHODENSITIES because of its appearance on the ultrasound picture. This can be seen with Gr. I, II, or III IVH. It reflects brain injury. Most of the time there are no outward signs that the bleeding has occurred; occasionally babies have seizures or sudden anemia. Babies at risk for IVH usually have an ultrasound of the head in the first 3-10 days of life. This painless test, performed in the isolette or bed, uses sound waves to give a picture of the baby's brain. If IVH is present, the baby may have this test repeated at regular intervals to see if the hemorrhage or the size of the ventricles are increasing. There is no specific treatment for IVH. Surgery will not prevent or cure the bleeding. Improved overall care and monitoring of premature babies has decreased the rate of IVH, but some babies still get it. Complications are most common with grades III and IV IVH. The most frequent complication of IVH is HYDROCEPHALUS or too much fluid collecting in the ventricles. This extra fluid may cause: the baby's head to grow more rapidly than normal; pressure on the baby's brain. Grades I and II IVH are most common. They usually do not cause identifiable brain injury. The blood is slowly absorbed by the body. Babies with Grade III IVH are at increased risk of brain damage, but most are normal or near normal. Babies who have needed treatment for hydrocephalus and those with grade IV IVH are at very high risk for permanent brain injury.

Periventricular Leukomalacia

"Peri" means near; "ventricular" refers to the ventricles or fluid spaces of the brain, "leukomalacia" is softening of the white matter of the brain. Periventricular leukomalacia is softening of the brain near the ventricles. The softening occurs because brain tissue in this area has died. PVL is thought to be due to too little blood flow to that part of the brain either when the baby is a fetus in the womb, at delivery, or after delivery during the first days of life. Usually doctors do not know exactly when this occurred. Most often the baby has no signs or symptoms. PVL is diagnosed by a test called a cranial (head) ultrasound. It is a painless test, performed at the bedside, in which sound waves are used to give a picture of the baby's brain. Because PVL usually takes a few weeks to become detectable, babies at risk for PVL are tested 4 to 8 weeks after birth. Sometimes this test will first show a suspicious area which may or may not turn out to be PVL. With serial tests it will become more clear. There is no specific treatment for PVL. Because PVL results from loss of brain tissue, babies with PVL are at very high risk for abnormal development later on. The more severe the PVL, the more likely a baby will develop mental or motor (movement) problems. Even babies who just had suspicious areas need to have their development followed closely.