Newborn Tests and Procedures

Routine care of the newborn includes many tests and procedures. These vary somewhat among health care providers and institutions. Try to find out which ones are used by your health care provider at your place of birth. Most of the following tests are routinely performed and a few are only used when medically indicated.

Test or procedure	What it is	Comments
Infant vital signs	Your nurse or midwife will assess your baby's vital signs (temperature, heart rate and respiration) to be sure your baby is adjusting to life as a newborn and to detect any problems with her heart, lungs, or need for warming.	Normal infant heart rate is 90–160 beats per minute, with a regular rate and rhythm and no audible heart murmurs. Infants breathe 30–60 times per minute. The infant should appear pink and breathe easily without grunting, flaring nostrils, or retracting her chest (pulling in her chest under her ribs). If the heart rate or rhythm is cause for concern or if there is a breathing problem, your baby will be assessed by her health-care provider or admitted to the nursery. Normal underarm temperature is between 97.4°F and 99.5°F. If she has a fever, she'll be admitted to the nursery and may have a septic workup (see page 364) and intravenous (IV) antibiotics. If she is too cool, she'll warm up quickly if placed skin-to-skin with you and covered with warmed blankets. If she is still cool after 20 or 30 minutes, she may be wrapped warmly in several blankets and placed under a special radiant warming light or admitted to the nursery and placed in a special bed or isolette for warming.
Vitamin K	Vitamin K is injected into the baby's thigh. Vitamin K given soon after birth enhances blood clotting and may prevent a bleeding disorder of the newborn called hemorrhagic disease.[1]	The AAP recommends the injectable form of vitamin K. The infant receives one shot in the thigh muscle. Oral vitamin K is as effective in preventing early VKDB (vitamin K deficiency bleeding) in the first week of life, but not as effective in preventing VKDB in 2- to 12-week-old babies.[2] Breastfed babies are slower to produce adequate amounts of vitamin K than those fed formula. Formula contains small amounts of vitamin K.[3]
Newborn eye ointment	Erythromycin is placed in the eyes within an hour or so after birth. The intention is to prevent infection and possible blindness if the newborn is exposed (in the birth canal) to the bacteria causing gonorrhea and chlamydia.	Eye prophylaxis can't prevent other possible eye infections, such as those caused by the herpes simplex virus, Group B streptococcus, or Hemophilus influenza biotype IV. It is also not fully effective at preventing complications from chlamydia and gonorrhea. The Canadian Paediatric Society recommends against its routine use, saying that a more effective prevention method would be to screen and treat mothers during pregnancy.[4] If mothers were not screened in pregnancy, they should be screened at delivery and babies treated if gonorrhea or chlamydia is detected. However, eye ointment is currently required in most of the United States. In some states, it is very difficult to opt out. Side effects are fairly minimal: When ointment is given, it causes mild eye irritation, and temporary blurring of vision. Delaying the procedure up to the allowed one hour gives you some time with the baby when she is alert and can see more clearly.
Septic workup (not routinely done—only used when medically indicated)	Blood is drawn and cerebrospinal fluid may be obtained by spinal tap; samples are sent to the laboratory to be tested for bacteria that cause illness. Results are available in about 48 hours.	These are done if baby has a fever or other signs of a possible infection. While awaiting results of testing, baby is admitted to the nursery for IV antibiotics. If the blood and cerebrospinal fluid are found to be normal, antibiotics will be discontinued. If the tests show the presence of bacteria, the baby will stay in the nursery for a full course of antibiotic therapy.
Test for jaundice (not routinely done—only used when there are concerns about jaundice)	Blood taken by pricking the baby's heel is sent to a laboratory, where the bilirubin level is determined. If high, the baby has significant jaundice. Sometimes a special instrument, called a jaundice meter, is used first as a screening tool to estimate the blood levels of bilirubin by flashing a light over the skin of the baby's sternum or forehead.	If the baby's skin and whites of his eyes are yellowish, an elevated bilirubin level is suspected. Most jaundice is mild and disappears with little or no treatment. Jaundice may also result from prematurity, bruising of the baby during labor or birth, blood incompatibilities (Rh and ABO), sepsis (infection), exposure to certain drugs given to the mother in labor, or liver or intestinal problems. (See page 383 for a more detailed discussion of jaundice and its treatment.)

Test or procedure	What it is	Comments
Test for hypoglycemia	Blood obtained by a heel prick is tested for hypoglycemia (low blood sugar).	Hypoglycemia is most common in babies over 8 pounds 13 ounces or under 5 pounds, if the baby is chilled, or the baby is preterm or postterm. Hypoglycemia can lead to respiratory distress, lethargy, slow heart rate, seizures, and (in the most severe cases) death. Treatment includes frequent breastfeeding or formula feeding and/or feedings of sugar water (5 or 10 percent dextrose solution). In more serious cases, the baby may be admitted to the nursery and given IV dextrose. Low blood sugar can occur in babies when the mother is diabetic or when the mother has received large amounts of IV fluids with dextrose and water during labor.
Infant security	Babies are given wrist and ankle bands at birth that match their mothers. All staff providing care for babies should wear easy-to-read identification badges.	Learn about the infant security policy at your hospital or birth center. There should be a written plan for safeguarding against switching babies and kidnapping (both very rare events.) Many facilities have video surveillance and sensors that lock doors and units immediately when a baby is missing. Having your baby in your room with you at the hospital (or birth center) and being sure that you never leave her unattended at the birth facility or after you go home are the best ways to keep your baby safe.
Newborn hearing screening	Newborn hearing is assessed in the first days after birth for a period of about 10 minutes while the infant is sleeping. Typically, headphones are placed on the baby, electrodes are placed on the baby's forehead to monitor the response of auditory nerves, and a probe in baby's ear measures sound waves in the ear.	Three in one thousand babies have hearing loss. Infants who are born prematurely, who have a family history of hearing deficits or deafness, or who have been exposed to pathogens or medications that put them at risk for hearing loss or deafness are tested. Of infants with hearing deficits, 50 percent have no known risk factors. Therefore, universal screening of all newborns is recommended, as the earlier treatment begins, the better for baby's language development.
Pulse oximetry testing	A sensor is placed on baby's skin (usually on the hand or foot) to measure the oxygen levels in his blood. This is done after 24 hours.	This painless screening test takes minutes. Low oxygen levels may indicate congenital heart disease, which can be treated with surgery.
Newborn screening	A sample of baby's blood is taken using a heel prick. (*Tip*: to minimize pain and distress, warm your baby's heel up, nurse your baby just before or during the procedure, and hold him during the procedure.) The sample is sent to a lab for testing. This is a screening test—if any results are concerning, your caregiver or state health department will contact you to advise you on diagnostic testing.	This test screens for rare diseases, including PKU (phenylketonuria), hypothyroidism, galactosemia (an inability to digest breast milk), sickle cell anemia, and thalassemia. The Discretionary Advisory Committee on Heritable Disorders in Newborns and Children recommends 31 core conditions and 26 secondary conditions be tested for. However, states and provinces vary in what they target. (The National Newborn Screening and Genetics Resource Center provides information about commercial and nonprofit organizations offering newborn screening tests that parents may use to test their infants for conditions not targeted by their state or province's testing.[5]) More information can be found at http://www.babysfirsttest.org.

Endnotes

1. Committee on Fetus and Newborn 2002–2003, "Controversies Concerning Vitamin K and the Newborn," *Pediatrics* 112, no. 1 (2003): 191–92, http://pediatrics.aappublications.org/content/112/1/191.full.
2. See note 1 above.
3. See note 1 above; American Academy of Pediatrics, "Policy Statement: Breastfeeding and the Use of Human Milk," *Pediatrics* 129, no. 3 (2012): 827–841.
4. Canadian Paediatric Society, "Preventing Ophthalmia Neonatorum," March 6, 2015, http://www.cps.ca/en/documents/position/ophthalmia-neonatorum.
5. National Newborn Screening & Global Resource Center, "Commercial and Non-Profit Organizations Offering Expanded Newborn Screening Tests," accessed October 20, 2015, http://genes-r-us.uthscsa.edu/commercial.htm.