

Dried Blood Spot Specimen Collection for Newborn Screening

Rev. 5/13/22

A dried bloodspot specimen for newborn screening should be collected from every baby. Send specimens to the New England Newborn Screening Program Laboratory within 24 hours of collection.

Healthy, Full-Term Babies:

- Collect the initial dried bloodspot specimen between 24 and 48 hours of life.
- If the baby will leave the hospital before 24 hours of life, obtain a specimen before discharge and notify the baby's primary care provider and the Vermont Newborn Screening Program. The baby will need a repeat specimen collected ideally between 24 and 48 hours of life but no later than 7 days of life. Early testing can trigger prompt intervention for life-threatening conditions that are part of the screening panel.
- All same-sex multiples should have a repeat specimen collected between 21 and 25 days of life.

III, Preterm, and Low Birth Weight Babies in the Neonatal Intensive Care Unit:

Note: Transfusion of blood products, steroids (e.g., prednisone, betamethasone, dexamethasone), dopamine, parenteral nutrition, carnitine, Medium-Chain Triglyceride oil (MCT) supplementation, extracorporeal life support (ECLS), iodine exposure with povidone-iodine preparations (at birth or postnatally), thoracic surgery with thymectomy, and pivalic acid containing antibiotic therapy are some known factors that can affect newborn screening results.

- Collect the initial specimen between 24 and 48 hours of life.
Exception: Collect the initial specimen before starting any interventions (some possible interventions listed in the note above) even if the baby is younger than 24 hours of age. There may be instances when collecting the initial specimen before starting interventions would be impossible or detrimental to the baby. *Clinical judgment should prevail in such instances.*
- If the initial specimen is collected when the baby is <24 hours old, a repeat should be collected at 48-72 hours of life.
- If the baby receives a transfusion of blood products or extracorporeal life support (ECLS) prior to the collection of the initial specimen at 24-48 hour of life, obtain a repeat 48 hours after the transfusion or ECLS is complete. Another repeat is necessary 120 days after blood products have been discontinued.

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- If the baby receives any other treatments before the initial specimen can be collected, obtain another specimen 48 -72 hours after treatments have been discontinued or prior to discharge, whichever is first.
- Babies with a birth weight of less than 2000 grams, same-sex multiples, and those with a gestational age of less than 34 weeks require a repeat newborn screen at 28 days of life or discharge, whichever comes first.

Transfer from One Hospital to Another:

- When possible, the hospital of birth should obtain the initial specimen prior to transfer, regardless of the baby's age.
- If the transferring hospital is unable to collect the initial specimen prior to transfer, the hospital transferring the baby must notify the receiving hospital. The receiving hospital should then obtain a specimen.
- Be aware that specimens obtained in another state may not be easily available for review in an urgent situation.

Parent and Guardian Education and Refusals:

- The baby's parent(s) or guardian(s) should receive a copy of the Vermont Newborn Screening Program brochure prior to specimen collection. They should have the opportunity to discuss the screening tests with a health care professional.
- If the parent(s) or guardian(s) refuse to have a dried blood spot specimen collected from their baby for newborn screening, a refusal form must be signed and sent to the Vermont Newborn Screening Program.
- The parent(s) or guardian(s) should only sign the form once they have received education on the risks associated with declining the screening tests.

Resources:

Forms, brochures, and educational materials can be found at our website:
www.healthvermont.gov/family/newbornscreening

References:

1. CLSI. Newborn Screening for Preterm, Low Birth Weight, and Sick Newborns. 2nd ed. CLSI guideline NBS03. Wayne, PA: Clinical and Laboratory Standards Institute; 2019.
2. van Trotsenburg P, Stoupa A, Léger J, Rohrer T, et al. Congenital Hypothyroidism: A 2020-2021 Consensus Guidelines Update-An ENDO-European Reference Network Initiative Endorsed by the European Society for Pediatric Endocrinology and the European Society for Endocrinology. *Thyroid*. 2021 Mar;31(3):387-419. doi: 10.1089/thy.2020.0333. PMID: 33272083; PMCID: PMC8001676.