



CLINICAL PRACTICE GUIDELINE

Guideline coverage includes NICU KEMH, NICU PCH and NETS WA

Newborn Blood Spot Screening Test (NBST)

This document should be read in conjunction with the [Disclaimer](#)

Newborn screening involves testing infant to enable early detection of treatable metabolic disorders so that infants can be identified and treated before problems occur. The range of diseases which are tested for are not clinically obvious at birth, but unless treated early they can cause damage. Screening is the first step in a two-step process. The first screening test indicates a problem MAY be present, and then a second diagnostic test confirms whether or not the problem or disease is truly present.

The Following Disorders can be Detected by the Newborn Screen:

- Phenylketonuria.
- Congenital Hypothyroidism.
- Galactosaemia.
- Cystic Fibrosis.
- Amino Acid Disorders.
- Fatty Acid Oxidation Disorders.
- Organic Acid Disorders.

Refer to [WA Newborn Screening Program: Your Newborn Baby's Screening Test](#).

Testing all Infants at 48-72 Hours of Age

- All infants that are discharged home prior to 48 hours of age must have follow-up arranged to complete a NBST prior to leaving the nursery with VNS or VMS.
- All infants that require a blood transfusion or exchange transfusion prior to 48 hours of age are to have a NBST collected prior to commencement of the transfusion.
- All deceased infants prior to death if possible.

Repeating Newborn Screening Tests

- VLBW infants' birthweight < 1500 grams require a repeat test on Days 14.
- ELBW infants' birthweight < 1000 grams require a repeat test on Days 14 and 28.
- All infants that receive a blood transfusion or exchange transfusion prior to 48 hours of age require a repeat NBST > 48 hours after the transfusion.

Procedure

1. Identify when the infant is due for the test, and ensure that the timing of collection is appropriate. Refer to the procedure instructions on sample collection.
2. Ensure parents have been provided with information about the NBST prior to collection. Clearly print ALL the required information on the NBST card.

3. Throughout handling of the card, ensure that the collection circles are not touched or contaminated by oils, sweat, and talc from gloves, or Vaseline.
4. Collect sample on the back of the card. Ensure all 3 circles are completely filled, and that blood has penetrated both sides of the card. Requirement for analysis of results. Place infant's addressograph on the back of the NBST card and check against infant's identity band.
5. Check that all required information is correctly documented on NBST card.
6. Place the NBST card on the drying rack and allow to dry for > 4 hours before sending to QEII PathWest Clinical Biochemistry in designated envelopes.

Fig 1: Newborn Screening Card

COMPLETELY FILL ALL CIRCLES WITH BLOOD BY SOAKING THROUGH FROM THE OTHER SIDE

WESTERN AUSTRALIAN
NEWBORN SCREENING PROGRAM

COMPLETE ALL DETAILS BELOW **303231**

HOSPITAL / CENTRE

BABY'S SURNAME

BABY'S FIRST NAME OR ID NUMBER

BIRTH DATE BIRTH TIME (24h) SEX MF

COLLECTION DATE COLLECTION TIME REPEAT TEST Y/N

BIRTH WEIGHT (g) FEED TYPE

Relevant Clinical Information: Breast, Formula Soy-Based, TPN, Other

MOTHER'S SURNAME

MOTHER'S FIRST NAME

MOTHER'S BIRTH DATE

CONTACT PAEDIATRICIAN / DOCTOR-in-Charge

INSTRUCTIONS FOR COLLECTING BLOOD SAMPLES

PROVIDE the information pamphlet ("Your Newborn Baby's Screening Test") to parents prior to collection. Discuss the procedure with parents and complete all relevant documentation.

COLLECT sample from ALL newborns between 48 and 72 hours of age or on discharge, whichever is sooner. If the infant is discharged before 48 hours, another sample will need to be collected later.

1. Warm heel before collection.
2. Clean heel with an alcohol swab and dry completely.
3. Do NOT use vaseline or any cream on the heel.
4. Puncture the heel (use only the inner or outer aspects of the plantar surface) with a sterile disposable lancet or autolet (depth <2.4mm). Wipe away the first drop of blood with cotton wool.
5. Collect blood drops until ALL circles are filled. Blood must soak completely through the card. Do NOT layer blood.
6. Allow blood-spots to air-dry (4 hours) on a non-absorbent surface away from direct sunlight or moisture.
7. Place card in protective cover and envelope provided and mail WITHOUT DELAY to the address below.

MAIL TO: WA NEWBORN SCREENING PROGRAM
DEPARTMENT OF CLINICAL BIOCHEMISTRY
PRINCESS MARGARET HOSPITAL
GPO BOX D184, PERTH WA 6840
ENQUIRIES: (08) 9340 8211

Use before: Dec 2009
S&S 903™ Lot # W-981/961

Documentation

Following sample collection, record the following **on** the card:

- Meconium plug / meconium ileus.
- Family history of cystic fibrosis (siblings).
- Pre/post blood/exchange transfusion.
- TPN and/or type of feed.
- Neonatal death.

Document the NBST **card number** and **sample collection date** in the following places:

- Personal Health Record Book.
- Neonatal Discharge Assessment (MR 430).
- Neonatal Observation Chart and Assessment.

Related WNHS policies, procedures and guidelines

[Department of Health - WA Newborn Screening Program: Your Newborn Baby's Screening Test](#)

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