

 **QUICK GUIDE**

NBS01-Ed7-QG



How to Collect and Identify a Good-Quality Dried Blood Spot Specimen

Good-Quality Specimen^a



Allow a large drop of blood to form at the puncture site on the heel. Gently bring the blood collection (specified filter paper) section of the specimen collection device in contact with the blood drop and allow a sufficient quantity of blood to absorb into and through the filter paper. Do not touch the filter paper to the heel. Do not apply blood to both sides of the filter paper.

Poor-Quality Specimens

Example	Comments
 Specimen quantity insufficient for testing (small volume)^a	If preprinted circles exist on the blood collection (specified filter paper) section of the specimen collection device, fill the entire circle using a single drop of blood. Incompletely filled circles may adversely affect NBS results.
 Specimen quantity insufficient for testing (incomplete saturation)^a	Check that the blood applied to one side of the blood collection (specified filter paper) section of the specimen collection device has completely and uniformly penetrated to the other side of the filter paper. ^b Contact between the heel and the filter paper can contaminate or prevent blood from uniformly soaking through the filter paper.
 Specimen overfilled^a	Do not apply excessive amounts of blood to a preprinted circle. Depending on local rules and regulations, overfilling the preprinted circle may result in an unacceptable DBS specimen.
 Specimen appears supersaturated^c	Do not apply excessive amounts of blood to a preprinted circle through repeated applications at the same location. Supersaturation can cause wrinkling and compromise the NBS results.
 Specimen layered^a	Allow only a single large drop of blood to come in contact with one side of the blood collection (specified filter paper) section of the specimen collection device. Layering occurs when successive drops of blood are applied to the same location. This nonuniform saturation of blood can also result when blood is applied to both sides of the filter paper.
 Specimen appears diluted, discolored, or contaminated^a	Avoid contaminating or diluting the DBS specimen. Ensure that the heel is clean and dry before applying the blood drop to the blood collection (specified filter paper) section of the specimen collection device. The presence of alcohol or water can result in dilution or hemolysis of the specimen. Other contaminants may also cause interference during analysis.
 Specimen inadequately dried before mailing^a	Allow the blood spots to dry completely for a minimum of 3 hours. Incomplete drying can adversely affect NBS results.
 Specimen inadequately dried before mailing (blood-contaminated protective flap)^d	Allow the blood spots to dry completely for a minimum of 3 hours before folding the protective flap over the blood collection (specified filter paper) section to prevent blood from adhering to the flap. ^b Incomplete or uneven drying can adversely affect NBS results.
 Specimen dried in contact with a solid surface^a	Do not allow the specimen to come in contact with any surface after collection and during the drying process. Uneven drying will compromise the NBS results.
 Specimen exhibits serum rings^a	Allow the blood spots to dry before placing in an approved container for transport. Improper drying may cause serum to separate from red blood cells, creating "serum rings."
 Multispotted layered specimen^a	If preprinted circles exist, fill the entire circle using a single drop of blood. Do not use multiple smaller drop volumes in an attempt to make one spot. If preprinted circles do not exist, refer to local NBS program rules for the acceptable blood spot size.
 Specimen appears scratched or abraded^a	If a capillary tube is necessary for blood collection, care must be taken to keep the capillary tip away from the surface of the blood collection (specified filter paper) section of the specimen collection device. Scratching the filter paper surface compromises the NBS result.
 Specimen appears multispotted^a	In rare instances when a capillary tube is necessary for blood collection, multiple applications of blood drops should be avoided. The blood should be expelled from the capillary tube in a single action.
 Specimen clotted^a	Blood must be absorbed into the blood collection (specified filter paper) section of the specimen collection device quickly to avoid clotting. Increased clots may be observed when capillary tubes are used for DBS specimen collection; therefore, they are not recommended.

Abbreviations: DBS, dried blood spot(s); NBS, newborn screening.

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^b The protective flap must never be used to compress the filter paper to force an insufficient quantity of blood through to the reverse side of the filter paper.

^c Photo reprinted with permission from Newborn Screening Ontario.

^d Photo reprinted with permission from the Wisconsin State Laboratory of Hygiene.

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