

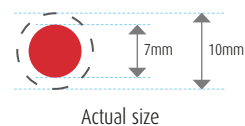
# Quality does count

Following the successful NSPKU Conference earlier this year, where I facilitated a workshop on collecting dried blood spots for Phenylalanine monitoring, I have been invited to explain why good quality blood spots are so important and to give some tips as to how this might be achieved.

I am a Clinical Nurse Specialist for Metabolic Disorders and Newborn Screening and as part of this role I support families in learning to collect the blood sample and I also teach the West Midlands Midwives and support workers how to collect the Newborn Screening heel prick test that babies have at 5 days of age. I am also a member of the Medical Advisory Panel (MAP) for the NSPKU.

In April last year the Screening Laboratories introduced guidelines to standardise the quality of the blood spots that should be taken and accepted by the laboratories across the UK. Previously, there had been variations in the quality

Blood spots should be made from one single drop of blood and the diameter of the spot should be at least 0.7cm. The dotted circles on the card measure 1cm.



of spots that were accepted impacting on the accuracy of the results issued and the necessity to request repeat sampling.

It was felt that in the importance of accuracy the same standards for blood spot quality should be applied to Phenylalanine (Phe) monitoring.

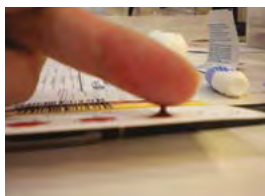
## What do the laboratories check for?

- The correct patient details are completed on the card
- Date of collection and time of collection completed
- The card is not damaged in any way
- That the card has not expired (not out of date)
- That there are at least two good quality blood spots

## Blood spots must be:

- big enough
- soaked through the paper
- no double spotting
- not compressed
- not smeared

When the blood soaks into the card, if done correctly, it will absorb a certain volume of blood. The laboratory then punches out a disk that will be tested on the assumption that it holds the correct amount of blood. If there is not the correct amount of blood in the disks then the levels can appear higher or lower than they really are. This is why they are not accepted if they do not meet the set criteria (see examples right)...



## How to collect the spots

1. Please check that all the patient details have been completed or if you receive pre-labelled cards that the correct details are on the label.
2. Check that the card has not expired.
3. Clean the site.
4. Prick the heel/finger. There are different types of lancets available. You can discuss this with your metabolic nurse.
5. Wait for a hanging drop of blood.
6. Touch the blood spot onto the card. Not the heel/finger.
7. Allow the blood to absorb into the card. Allow the spots to air dry before putting them into the glassine envelope. If they are put into the envelope too wet they can stick to the inside and damage the card. The spots do not need to be completely dry as you will be waiting a long time for this. They just need to lose the initial wet look/shine.
8. Ideally samples should be collected first thing in the morning before substitute and breakfast. Everyone's Phe levels vary during the day and having this information helps you dietitians and doctors interpret the results.

## Tips for getting good blood spots

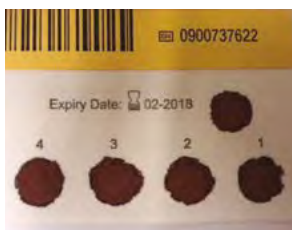
- To encourage blood flow make sure heels, fingers or thumbs are nice and warm
- To encourage blood flow hold the heel, finger or thumb below the level of their heart
- In the West Midlands the policy is to wipe away the first tiny drop of blood before collecting first spot. Although this is not national it helps to provide a more accurate result because the first tiny spot of blood has a very small amount of tissue fluid in that that can dilute the sample a little
- Be patient

If you are collecting your own blood spots I find it easier to stand up when I do mine when I am demonstrating the technique. I place the card on the table with a pen underneath the card just to lift it off the surface slightly. This way I make sure my heart is above the level of my finger or thumb (see pictures left).

If you are having any difficulties collecting blood spots or you want to learn to collect your own spots please contact your Metabolic Nurse Specialist and they will be able to help.

To get the results back quickly, so your dietitians can advise about any changes that need to be made, you should send the cards in by first class post on the day they were collected or as soon as possible. And make sure there is a collection from your postbox on the day of posting.

## The following are examples of blood spots that have been received in our lab



There are too many spots for testing Phe levels but these are good spots. It does not matter that they are not in the circles as long as they do not touch each other, the edge of the card or where you have written your or your child's name.



These are too small, double spotted and when you turn the card over they have not soaked all the way through. They would NOT be accepted.



The middle two spots would be rejected because of double spotting but because there are two good spots it would be accepted for Phe testing.



*Elaine Salmons, Clinical Nurse Specialist for Metabolic Disorders and Newborn Screening, Birmingham Children's Hospital*