

## Filter Paper Lead Specimen Collection

Collection technique is of primary importance when obtaining samples for blood lead determination. Care must be taken to remove lead from the hands of the patient and collector, and to prevent contamination from the environment.

Using the following technique will produce a sample that is free from contamination and adequate for analysis:

1. Fill out all information indicated on the MedTox Blood Lead Report form.
2. Wash your hands with soap and water and instruct, or assist, the patient in thoroughly washing his/her hands with soap and warm water.
  - a. Once hands have been washed, instruct the patient not to touch anything.
  - b. It is acceptable to dry the patient's fingers with individually wrapped gauze.
  - c. The hands of small children should be held at the wrist to prevent contamination.
3. Open the sample card to expose the filter paper and lay it on a clean, flat surface.
4. Thoroughly scrub tip of finger with an alcohol prep pad.
  - a. Let the finger ***air dry for 30 seconds*** or wipe with sterile gauze.
5. Use a lancet to pierce the skin of the prepped finger.
6. Wipe off the first drop of blood with sterile gauze.
7. Allow a blood drop to accumulate and fall onto one of the circles on the sample card. Collect a second blood drop on the second circle in the same manner.

NOTE: The circles are provided as a guide for the approximate size and location of the blood spots. The sample is acceptable if the blood spots fall outside of the circles as long as they are of adequate size and soak through to the back side of the filter paper.
8. Write patient's name on the sample card or place patient label on backside of sample card. Do not cover the "Place Requisition Number Here" box (Medtox internal use only).
9. ***Allow the blood spots to dry for 2 to 5 minutes*** and tuck in the top flap to create a "matchbook."
10. Place the sample card into a biohazard specimen bag. Place the completed Blood Lead Report Form and Allina Health Laboratory requisition in the outside pouch.
11. Transport to Allina Health Laboratory with your next available courier.

**IMPORTANT:** Immediately discard any collection paper that has been handled on the filter paper section or that has fallen onto an unprotected surface.

## Acceptable and Unacceptable Samples

### How Card Is Used For Testing

F – Front of paper  
B – Back of paper

**Samples Removed from Card for Testing**

- Two punches (5 mm in diameter) are removed by a semi-automated sampler for initial analysis
- Up to six punches may be required for final results
- One punch without blood is used to prime the punch sampler

### Unacceptable Specimens

**Quantity Not Sufficient (QNS) & multiple spots**

**Smears – blood did NOT soak through to back of paper and multiple blood spots applied**

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### Acceptable Specimens

- Even distribution of blood that soaked uniformly through to back of paper
- Two large spots of optimal size (1/2 inch diameter) from SINGLE drops of blood
- Note that the blood does NOT have to be within the black rings
- Black rings are a size guide, minimum amount—2 spots, ~3/8 inch diameter

**Optimal**

**Acceptable**

**Acceptable**

**Acceptable**

**Acceptable**

**Acceptable**

### Non-Homogeneous Samples

- Blood did not evenly saturate the paper. Note the central pallor—the edges of the blood spot are darker than the center, evident on front and back of the paper
- Concentric rings present that indicate multiple drops of blood applied; more evident on back of filter paper
- Sufficient blood that is UNEVENLY distributed and UNACCEPTABLE for testing
- Causes:
  - Blood drops applied on top of another—must use a single, large blood drop
  - Touching the fingertip with blood to the filter paper—a single, large drop must fall freely unto paper; cannot be “touched off”
  - Excess tissue fluid contamination or alcohol residue—1<sup>st</sup> drop of blood not wiped off

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### Unsuitable & Non-Homogeneous

- Surface of filter paper disrupted and wrinkled
- Uneven distribution of blood; note central pallor in blood spot on right

For questions concerning collection, contact MEDTOX Client Services at 1.877.474.5787

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