

# Module 14: Blood Collection and Handling

## Dried Blood Spot



# What Is a Dried Blood Spot (DBS)?

- Whole blood collected on filter paper and dried
- Made directly from the client's whole blood
- Used for re-testing at a reference laboratory
  - Testing site results are compared to reference laboratory results.
  - This is part of External Quality Assurance.

# EQA Re-testing

Specimens collected for EQA could be dried blood spots (DBS) or serum/plasma

EQA is a process by which specimens:

- Are randomly selected from the routine workload at a test site
- Are sent to the reference laboratory for validation of results



# Learning Objectives

At the end of this module, you will be able to:

- Collect dried blood spots (DBS)
- Package and store DBS in a way to maintain specimen integrity
- Maintain DBS records
- Distinguish between valid and invalid DBS



# Content Overview

- Required supplies
- How to collect and dry DBS
- How to package and store DBS
- Valid and invalid DBS
- Hands-on practice



# What Are Your Responsibilities?

- Collect valid specimens
- Label and store appropriately until transported for re-testing
- Ensure records are properly maintained
- Avoid transcription errors

**A test result is only as good as the specimen collected**





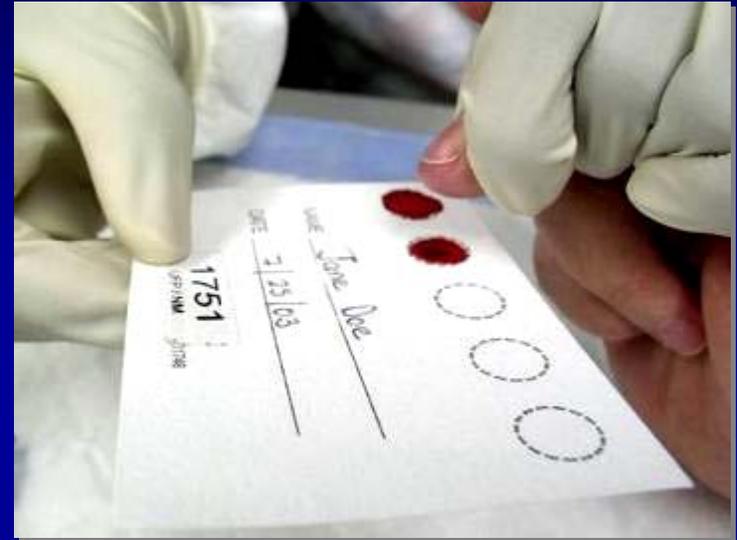
# Required Supplies for DBS

- Blood collection card (filter paper)
- Glycine weighing paper
- Sealable plastic bags
- Humidity cards
- Desiccant packs



# How to Collect DBS

- Use Universal Safety Precautions
- Clearly label card with appropriate identification number
- Follow finger prick procedure
- Uniformly saturate entire circle



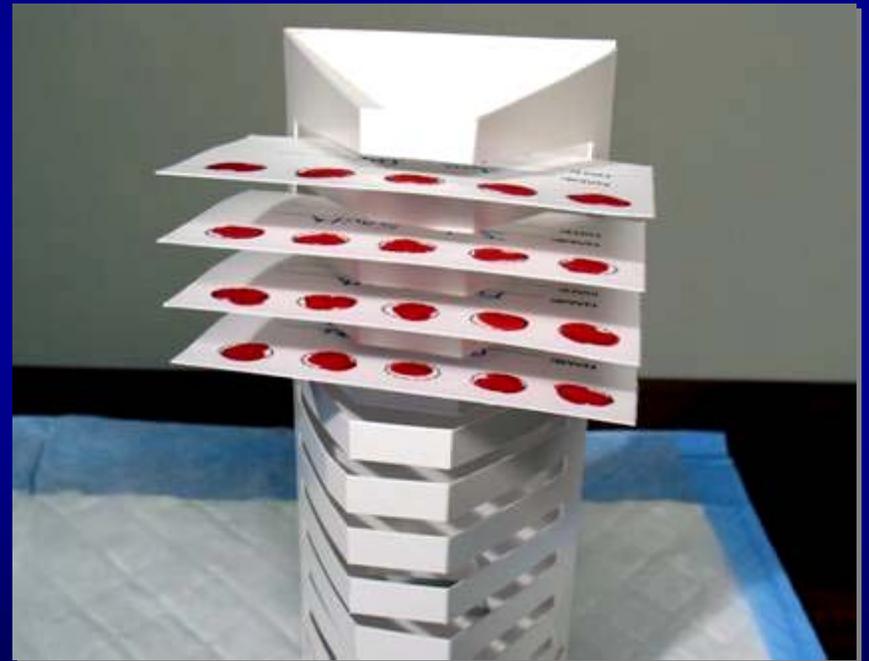
Two complete circles  
are better than five  
incomplete ones!!

# How to Dry DBS

- Avoid touching or smearing the blood spots
- Allow the specimen to fully air dry horizontally (at least 3 hours) at room temperature
- Keep away from direct sunlight
- Do not heat, stack or allow DBS to touch other surfaces during the drying process



# Dry Completely Before Packaging



# How to Package DBS for Storage

1. Appropriately stack DBS
2. Insert into sealable plastic bag
3. Add desiccant packets
4. Add humidity cards
5. Label contents of bag and seal



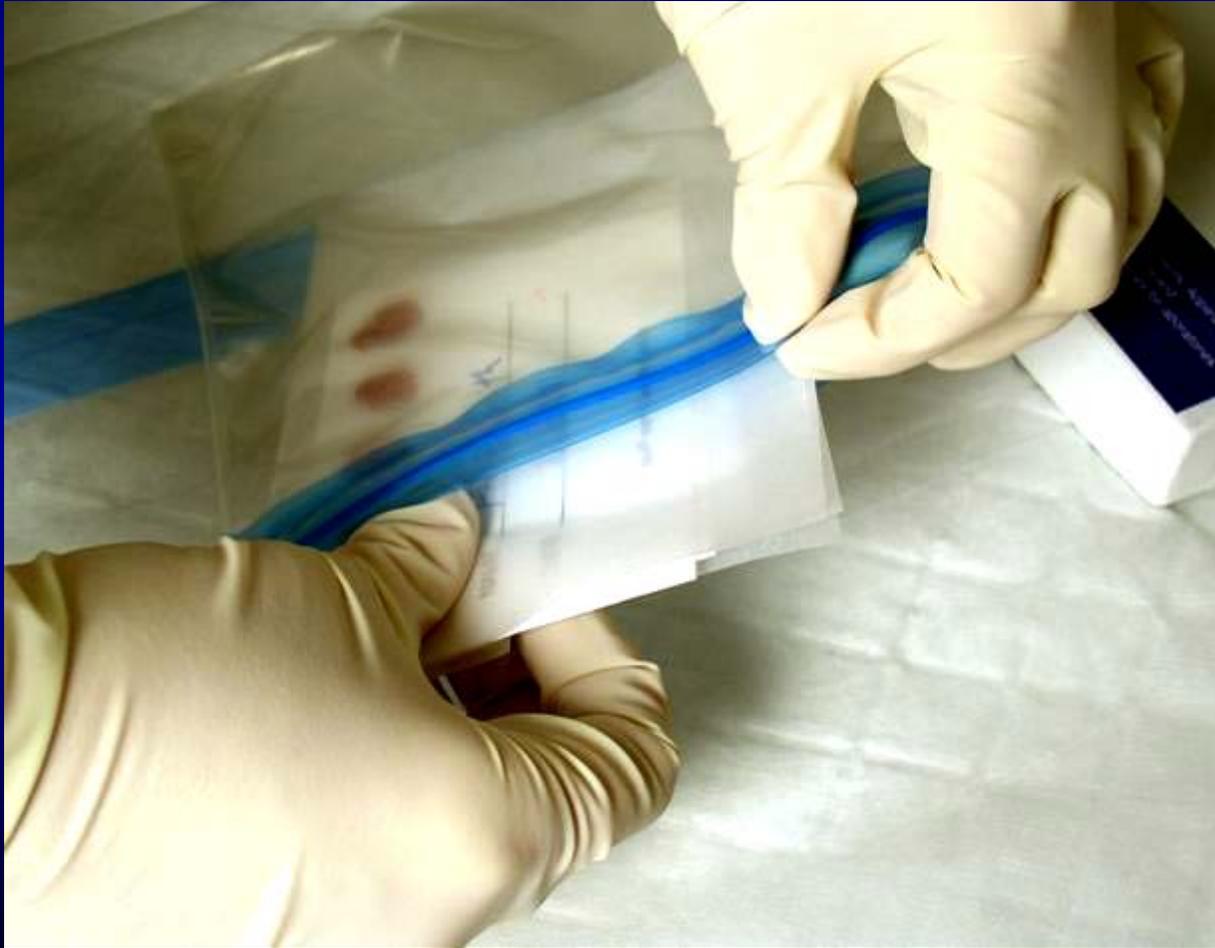
# 1. Stacking DBS

Place filter paper between sheets of weighing paper

Fold weigh ends of weighing paper



## 2. Insert Into Sealable Plastic Bag



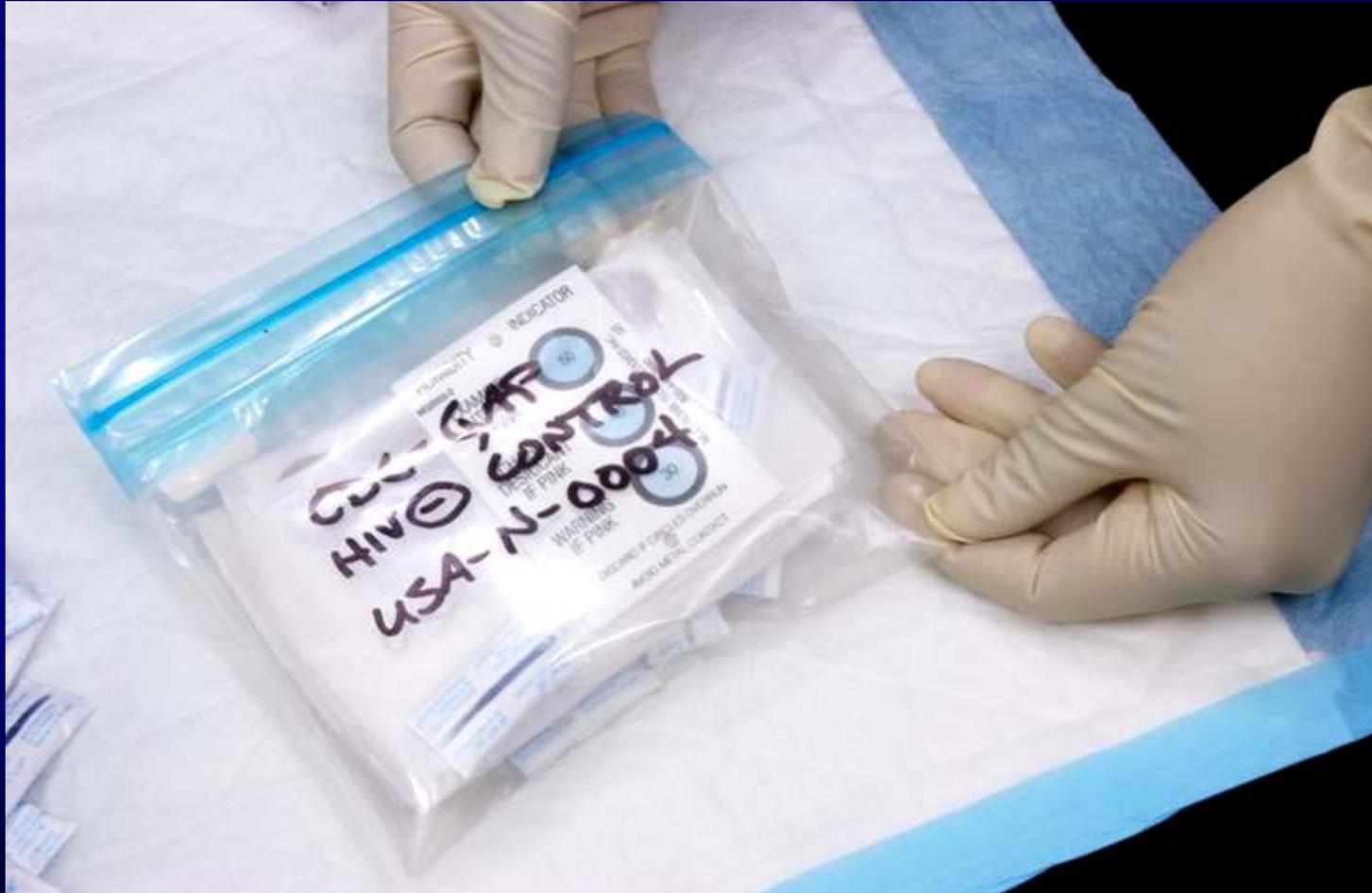
# 3. Add Desiccant Packets



# 4. Add Humidity Cards and Seal Bag



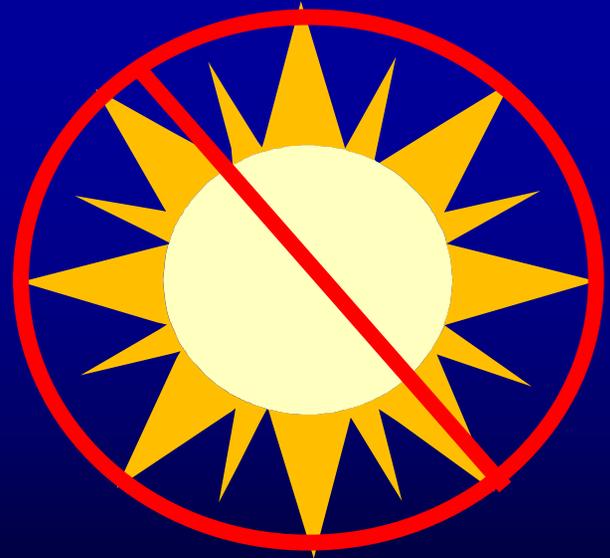
# 5. Label Outside of Plastic Bag with Contents



# How to Store DBS

Keep packaged DBS (in sealable plastic bags) cool and dry until transported to reference laboratory

**Avoid leaving in vehicle, as sun and heat will deteriorate DBS**



# How to Package DBS for Shipping

1. Insert bundled DBS into rip-resistant envelope
2. Include appropriate documentation
3. Insert both into brown envelop and seal for shipment

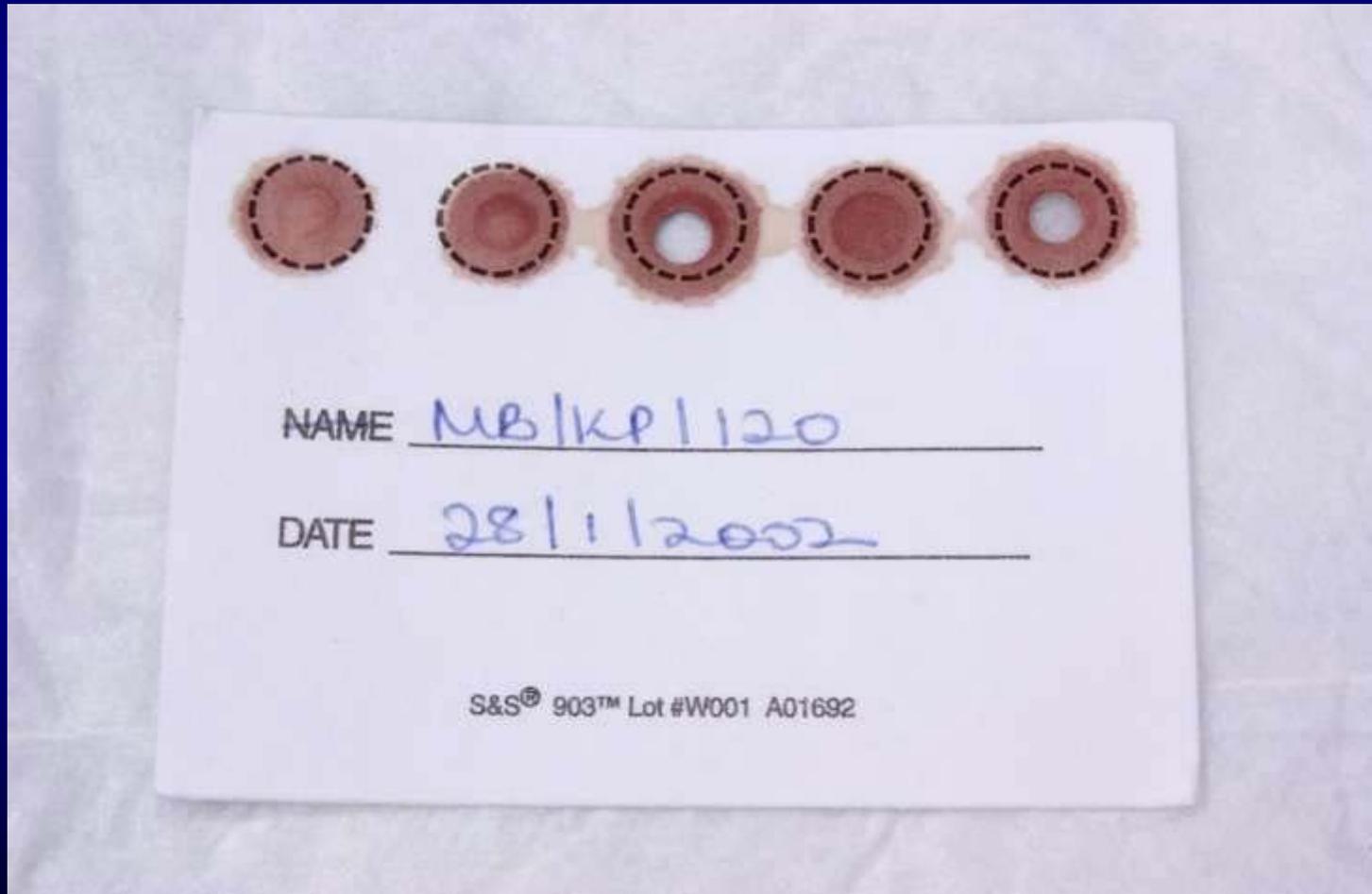




# Valid DBS Specimen



# Valid DBS Specimen

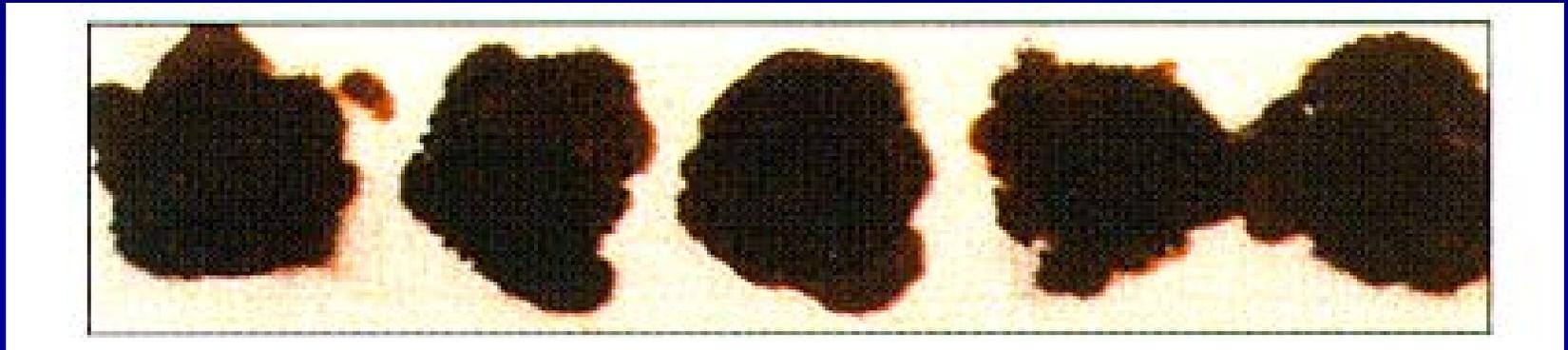


# Invalid DBS Specimen



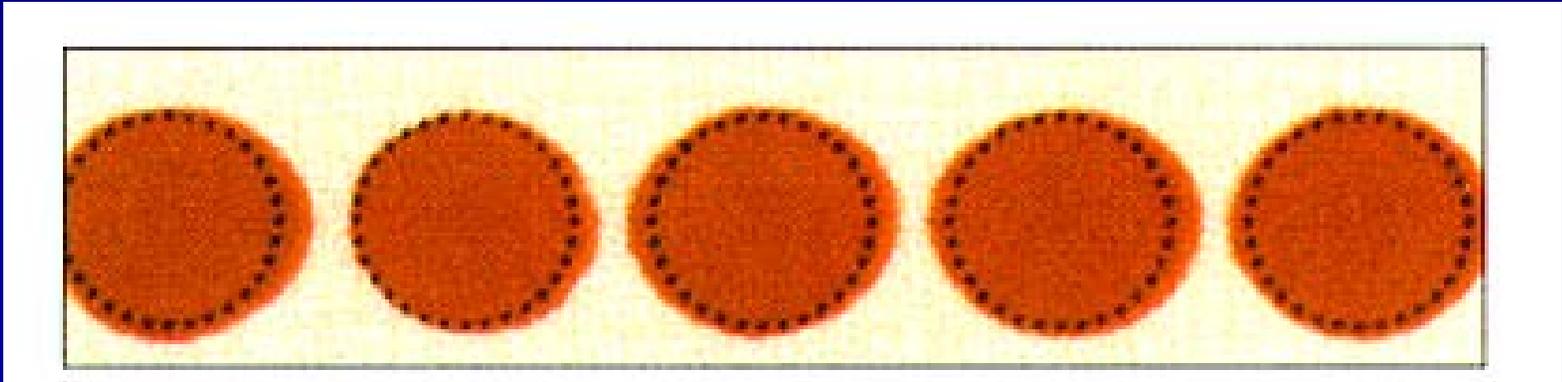
**Specimen quantity insufficient for testing**

# Invalid DBS Specimen



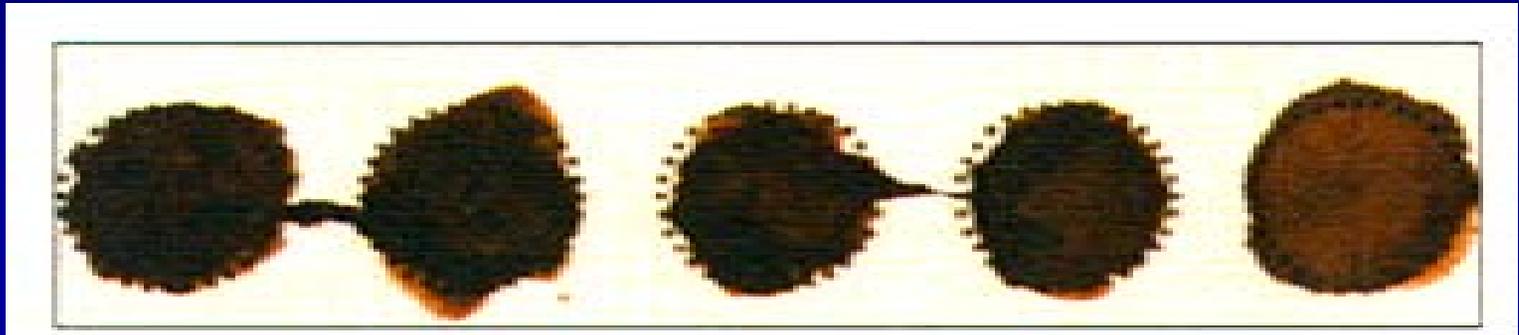
**Specimen appears scratched or abraded**

# Invalid DBS Specimen



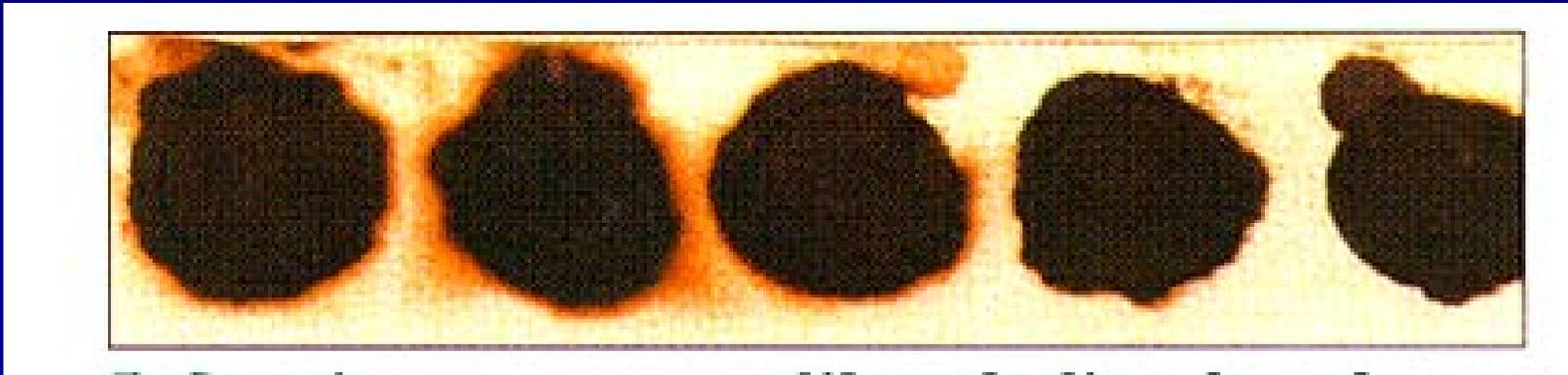
**Specimen not dried sufficiently**

# Invalid DBS Specimen



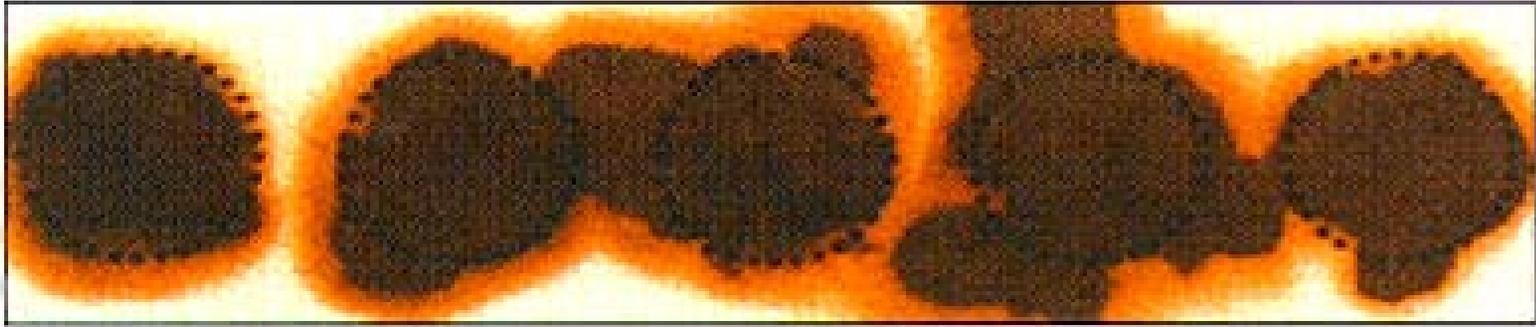
**Specimen appears clotted or layered**

# Invalid DBS Specimen



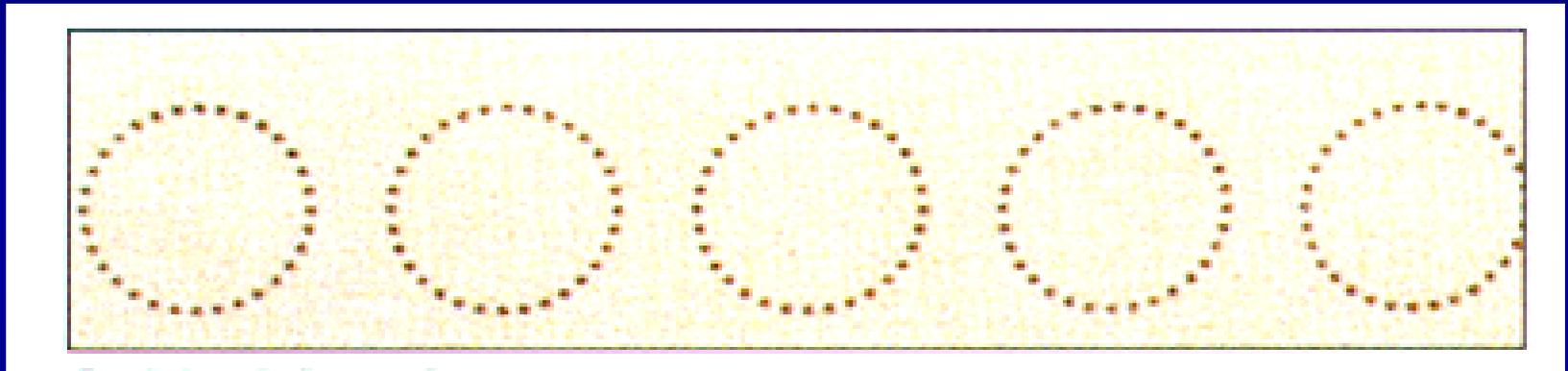
**Specimen appears hemolyzed, discolored, or contaminated**

# Invalid DBS Specimen



**Specimen exhibits serum rings**

# Invalid DBS Specimen



**No Blood**

# DBS Collection: Demonstration

## Procedures

- Fingerprick steps 1-7
- Apply pressure
- Allow a large drop of free-flowing blood to collect
- Quickly and gently touch the card with blood
- Let blood soak through
- Repeat until at least 2 circles are filled
- Fingerprick steps 9-10

## Tips

- Do not press the filter paper against the puncture site.
- Apply blood to only one side of the filter paper.
- Do not apply blood more than once in the same collection circle.
- Do not “milk” the finger.



# DBS Collection: Hands-on Practice

## Purpose

To practice collecting DBS from another person

## Process

- Work in groups of 2
- Take turns practicing collecting DBS from your partner's finger

## Total Time

30 Minutes



# Exercise: Valid vs. Invalid DBS

- **Objective:** To distinguish between valid and invalid DBS specimens
- **Process:** Examine the specimens collected from hands-on practice and determine whether each is valid or not.
- **Total time:** 3 minutes



# Summary

- Describe the procedures for:
  - Collecting DBS
  - Drying DBS
  - Packaging DBS for storage
  - Storing DBS
  - Packaging DBS for shipping
- Describe the criteria for valid DBS samples.
- What may have caused a DBS sample to be invalid?

