

# Paediatric blood collections using the MITRA blood sampler

Georg Lietz, PhD

Professor of International Nutrition

Newcastle University

Human Nutrition Research Centre

Institute of Cellular Medicine

Framlington Place, Leech Building

Newcastle upon Tyne

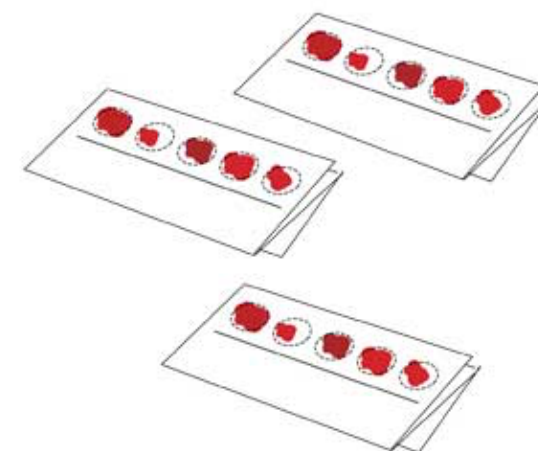
# Overview

- MITRA device
- Ease of blood collection
- Shipping and extraction
- Analysis of micronutrient status using MSD multiplex assays

# Dried blood spots **VERSUS** Mitra device

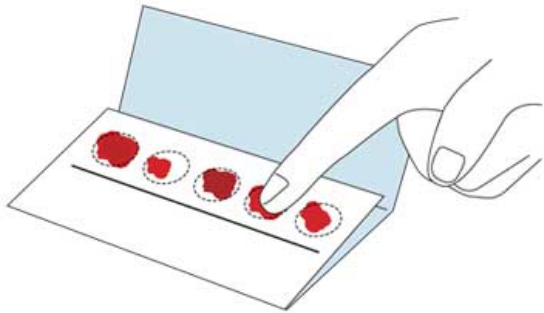


	Mitra Cartridge	Dried Blood Spot	Traditional Wet Sampling
Collects a fixed volume of blood regardless of blood hematocrit	●		●
Can be transported without dry ice or courier cost	●	●	
Native bar coding	●		
Direct sampling approach (e.g. finger or animal tail prick)	●	●	
No pre-extraction sample processing (e.g., centrifugation, isolation, spot punching)	●		
No need to wait. Just sample and ship	●		

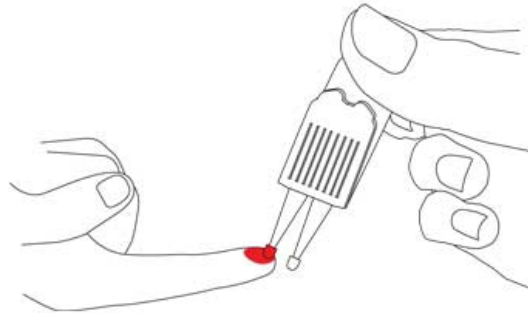


# Sample volume

1



1

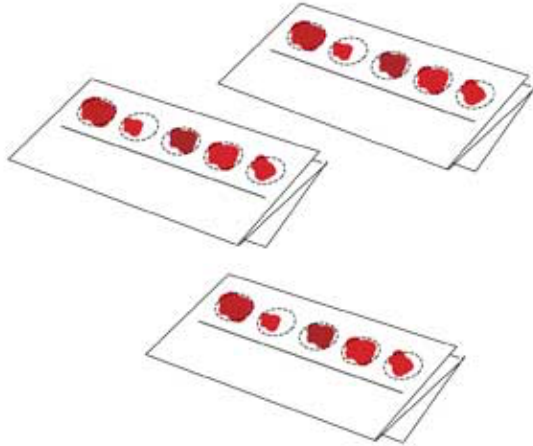


The Mitra device provides the key benefits of working with dried blood, but with a volumetrically accurate, **stable dried blood spot that reduces the incidence of reworks.**

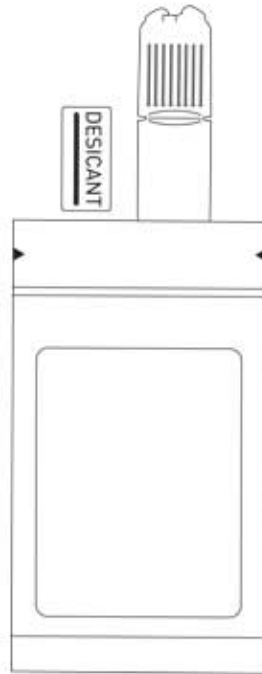
- Gathers a fixed volume (10 or 20  $\mu$ l), every time
- Simple, accurate self-collection with minimal training
- Eliminates unnecessary steps
- Tracks samples with native bar coding
- Can be used as a collection device in at-home sampling kits
- No waiting - just sample and ship

# Drying time

2



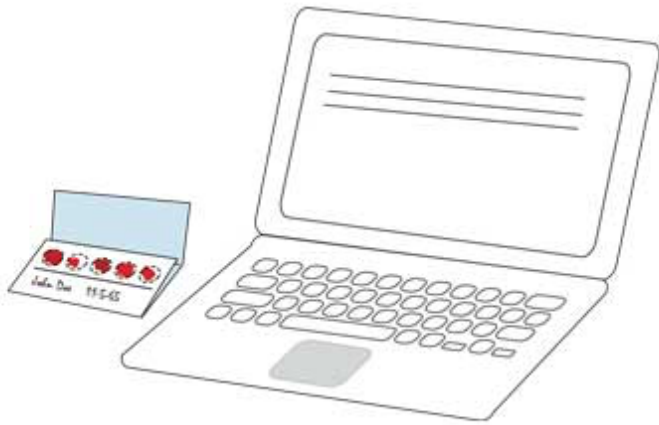
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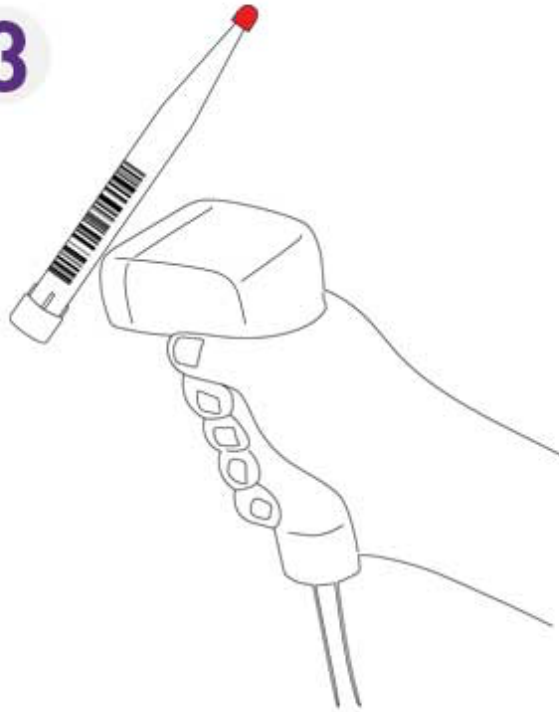
Dried blood spots need time to dry. The MITRA can be shipped immediately.

# Data entry

3



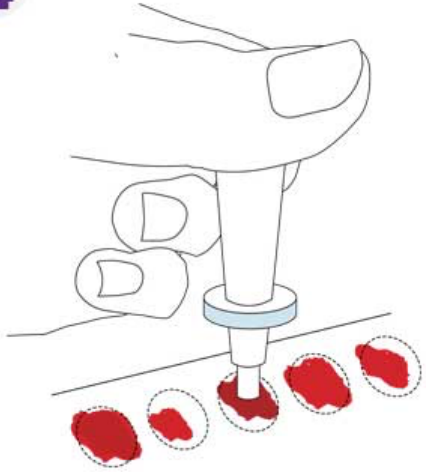
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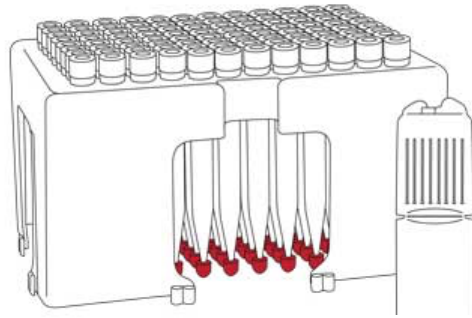
Blood spots need to be entered manually.  
MITRA can be coded and scanned.

# Sample handling

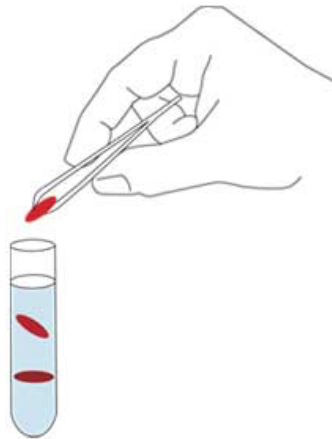
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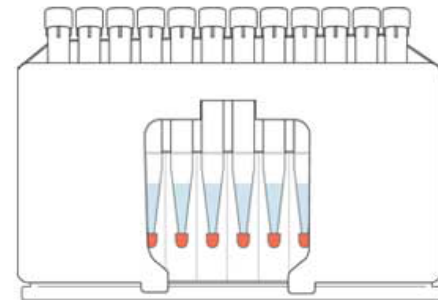
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5



5



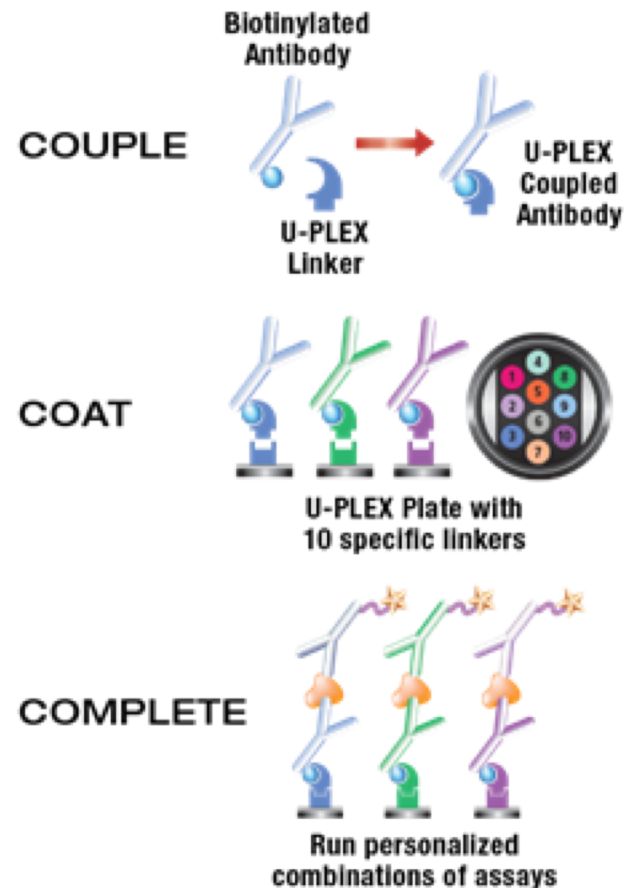
Sample preparation is more streamlined, no need for punching of blood cards



# Micronutrient status detection



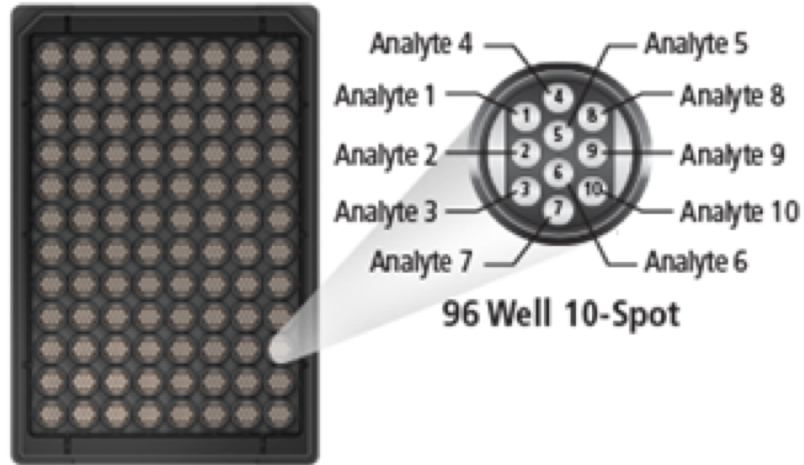
# Design of micronutrient status multiplex assay



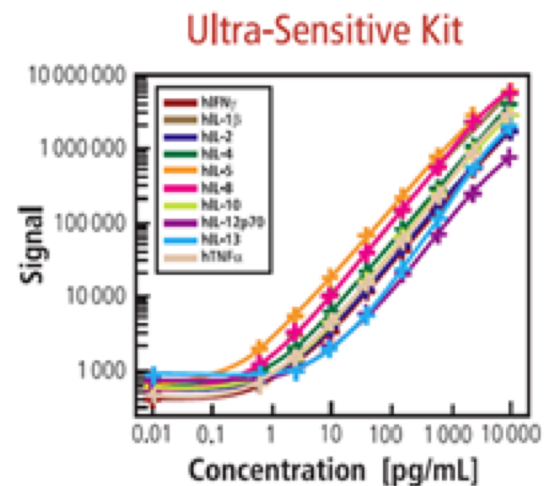
U-PLEX allows us to create the micronutrient multiplex assays using two simple tools:

- a 10-spot U-PLEX plate and
- unique linkers.

# Micronutrient analysis multiplex assay



We will be using the MSD U-Plex platform to develop a micronutrient multiplex assay as it allows us to analyse all micronutrients and inflammation markers at the same time



- CRP, AGP (inflammation)
- RBP4 (retinol status)
- Ferritin, sTfR (iron status)
- Thyroglobulin (iodine status)