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Head, Shoulders, Heels and TOES: Are toes an appropriate option for capillary blood sampling

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Head, Shoulders, Heels and TOES: Are toes an appropriate option for capillary blood sampling?

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Background

Blood sampling is an essential practice in patient care. In the ICU, blood analysis can be emergent and provide crucial information for clinical decision making at the bedside. Typical blood sampling sites include fingers, heels, venipuncture or drawing from existing access. Capillary blood sampling from the toe is an existing practice in the hospital setting however, this practice is NOT supported by Children's Health policy.

Clinical Question

The purpose of this evidence-based practice project is to assess the validity of toe sticks for lab draws in the pediatric intensive care unit to facilitate blood sampling.

Literature Review

- Not much research/literature available, only 8 articles addressed using toes as an alternative collection site ^{1,2,3,4,5,6,8}
- No literature specifically states it is safe to use the toes
- One piece of literature suggests toes should not be used because of risk of bone damage ⁷
- Suggested mainly for infants if necessary ^{2,3,8}

7

Mentioned toe as option ^{1,2,3,4,5,6,8}

1

Toes should not be used ⁷

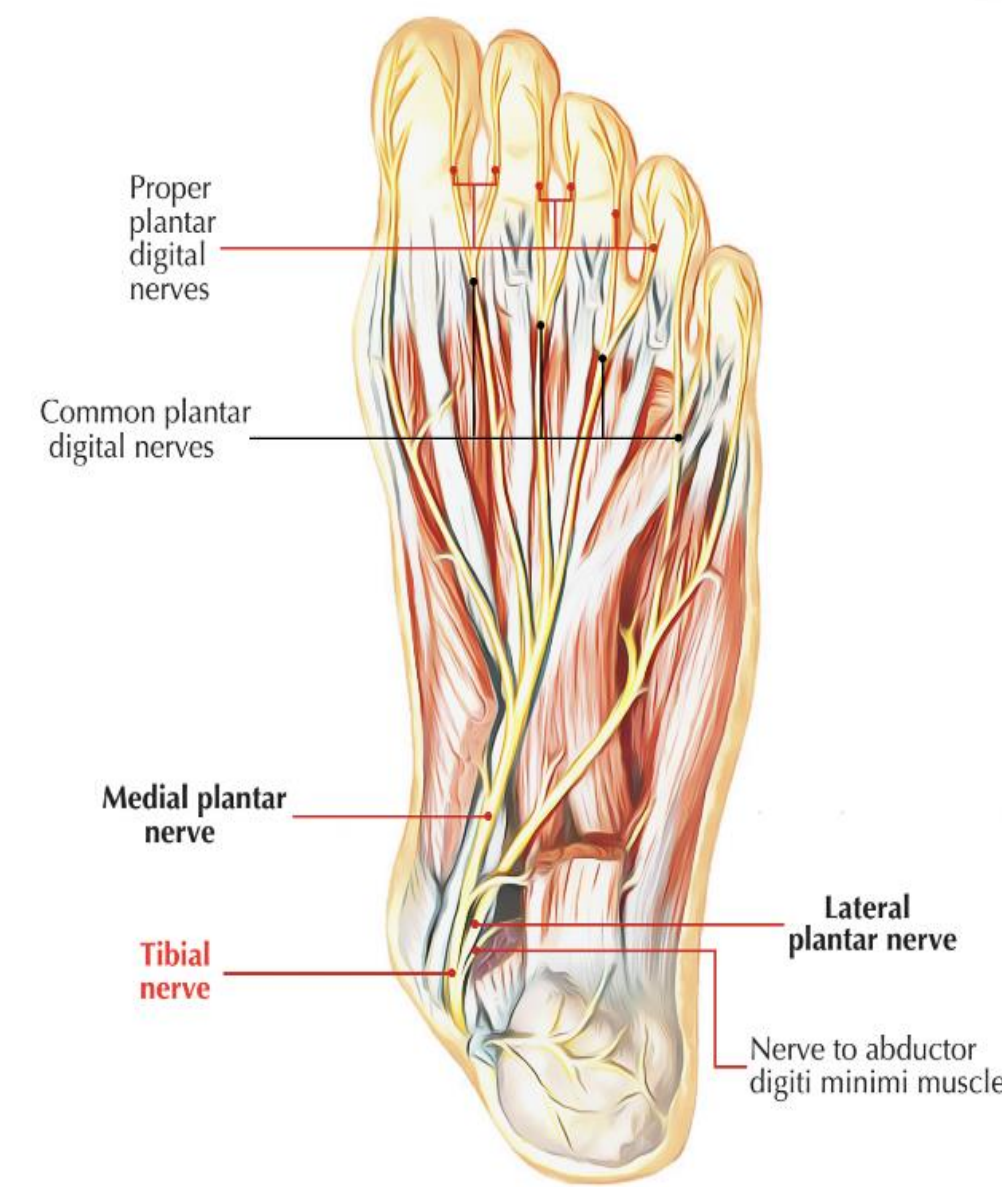
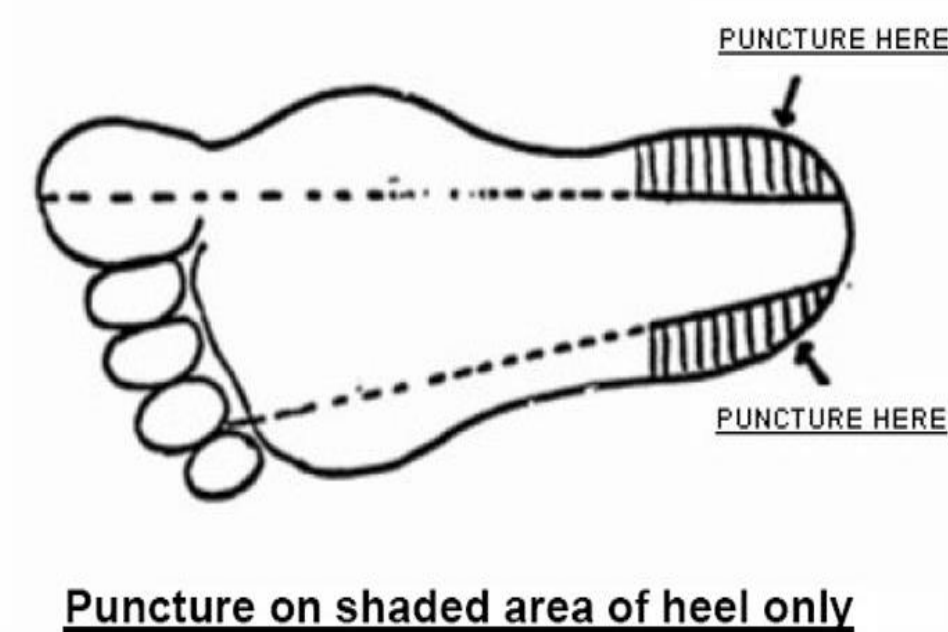


Figure 1



Figure 2



Puncture on shaded area of heel only

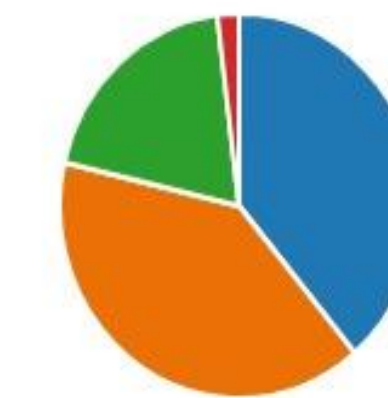
Figure 3

Survey

What sites do you use for blood collection

[More Details](#)

Finger	40
Heel	41
Toe	20
Other	2



On average, how often do you perform toe sticks?

[More Details](#)

[Insights](#)

Never	13
Not often	19
Often	11
Always	1



- 44 of ~300 nurses participated
- 45% respondents say they use the toe for blood collection
- 25% responded they perform toe sticks often
- Common age range for toe stick utilization were infants and toddlers
- Reasons for toe sticks include:
 - Heels/fingers too scarred/bruised from previous sticks
 - Chronic kids/kids with poor perfusion/access
 - Infusing IVs on hands
 - Pt too small for finger poke but heels not available

Limitations

- Limited information/research on toe blood sampling
- Reluctance/limitation of research volunteers to obtain information
- Unknown outcomes of normal development of children with toe sticks in clinical practice

Clinical Practice Recommendations:

- Re-education and explanation of Children's Health policy which only states heels and fingers as acceptable collection sites
- Re-evaluation of Children's Health policy to potentially include toe sticks as a valid option in specific patient populations

Evidence Table QR Code:



References QR Code:



Survey Results QR Code:



Children's Policy:

CP 2.11 Blood Specimen Collection – Excluding Blood Cultures/Gases

Capillary Blood Specimen Collection Tips QRG