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Lancets for Point of Care and Capillary Blood Testing: Guidelines

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Research Questions

1. What are the evidence-based guidelines regarding choice of lancet (gauge and length) for capillary blood sampling in pediatric and adult populations?
2. What are the evidence-based guidelines regarding lancet choice for point-of-care testing in neonatal populations?

Key Findings

No relevant literature was identified regarding choice of lancet for capillary blood sampling in pediatric and adult populations or choice of lancet for point-of-care testing in neonatal populations.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concept for Q1 was capillary blood collection; the main search concepts for Q2 were blood collection, neonates and point-of-care testing. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and December 19, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	
	<p>Q1: Pediatric (≥ 1 year of age) and adult populations</p> <ul style="list-style-type: none"> • Subgroups of interest: <ul style="list-style-type: none"> ○ Pediatric patients (1 year to 18 years) ○ Geriatric patients (> 65 years) ○ Bariatric patients (≥ 400 pounds, or ≥ 35 body mass index) <p>Q2: Neonates (< 1 year of age)</p>

Intervention	Q1: Lancets for fingertip capillary blood testing (capillary blood sampling) Q2: Lancets for point of care testing (either heel or fingertip, e.g., retractable incision device, blade device, incision-type needle, Tenderfoot incision device)
Comparator	No comparator
Outcomes	Guidelines (e.g., recommendations on type of needle or blade to use, gauge and length of needle, recommendations on volume of blood taken)
Study Designs	Health technology assessments, systematic reviews, evidence-based guidelines.

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first, followed by evidence-based guidelines.

No relevant literature was identified regarding choice of lancet for capillary blood sampling in pediatric and adult populations or choice of lancet for point-of-care testing in neonatal populations.

References of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Clinical Practice Guidelines

Pediatric Population

1. Performing a capillary puncture. Akron (OH): Akron Children's Hospital. 2019: https://www.akronchildrens.org/lab_test_specimen_procedures/PERFORMING_A_CAPILLARY_PUNCTURE.html
See: "Procedure for Capillary Puncture of the Finger" and "Procedure for Capillary Puncture of the Heel".
2. Blood collection from neonates in GCNC-CHW. (Guideline no: 2012-6006 v2). Sydney (AU): The Sydney Children's Hospital Network; 2017: <http://www.schn.health.nsw.gov.au/policies/pdf/2012-6006.pdf>
See: Heel Prick, p 5 and 6; Methods 11b. p 10.

Neonatal Population

3. Capillary blood sampling in the infant / child. Dublin (IE): Children's Health Ireland at Crumlin; 2018: <https://www.olchc.ie/Healthcare-Professionals/Nursing-Practice-Guidelines/Capillary-Gas-Sampling-2018.pdf>
See: RATIONALE EVIDENCE and REFERENCE, p 7.
4. Micropuncture – Central Zone. Edmonton (AB): Alberta Health Services; 2014: <https://www.albertahealthservices.ca/assets/wf/lab/wf-lab-micropuncture-cz.pdf>
See: Procedure, p 3.