

H04-A6
Vol. 28 No. 25
Replaces H04-A5
Vol. 24 No. 21

Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Sixth Edition

This document provides a technique for the collection of diagnostic capillary blood specimens, including recommendations for collection sites and specimen handling and identification. Specifications for disposable devices used to collect, process, and transfer diagnostic capillary blood specimens are also included.

A standard for global application developed through the Clinical and Laboratory Standards Institute consensus process.



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H04-A6

ISBN 1-56238-677-8

Volume 28 Number 25

ISSN 0273-3099

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Abstract

Clinical and Laboratory Standards Institute document H04-A6—*Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Sixth Edition* provides a technique for the collection of diagnostic capillary blood specimens, including recommendations for collection sites and specimen handling and identification. Specifications for disposable devices used to collect, process, and transfer diagnostic capillary blood specimens are also included.

Clinical and Laboratory Standards Institute (CLSI). *Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Sixth Edition*. CLSI document H04-A6 (ISBN 1-56238-677-8). Clinical and Laboratory Standards Institute, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2008.

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Suggested Citation

(CLSI. *Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Sixth Edition*. CLSI document H04-A6. Wayne, PA: Clinical and Laboratory Standards Institute; 2008.)

Proposed Standard

July 1977

Approved Standard—Third Edition

July 1991

Tentative Standard

February 1979

Approved Standard—Fourth Edition

September 1999

Approved Standard

March 1982

Approved Standard—Fifth Edition

June 2004

Approved Standard—Second Edition

July 1986

Approved Standard—Sixth Edition

September 2008

ISBN 1-56238-677-8

ISSN 0273-3099

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Acknowledgment

CLSI gratefully acknowledges the working group for their help in preparing the approved-level, sixth edition of this standard.

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Foreword

Since this standard was first proposed in 1977, CLSI has periodically assembled working groups and charged them with the responsibility of updating and maintaining a standardized capillary blood collection procedure for all health care professionals who have capillary blood specimen collection responsibilities. Each working group is composed of members representing industry, government, and the professions.

This latest revision builds on the efforts of past working groups in establishing and maintaining the standardized procedure for skin puncture specimen collection for the health care industry. The Working Group on Capillary Blood Collection functions under the CLSI Area Committee on Quality Systems and Laboratory Practices.

In revising this standard, the working group has reviewed the various comments on the previous standard (H4-A5) received by CLSI, and incorporated changes where appropriate based on new information and studies published since the last revision. This version of the document includes recommendations regarding proper patient identification procedures consistent with other pertinent CLSI documents such as H03¹ and was reorganized for clarity.

Key Words

Calcaneus, capillary, first-drop elimination, heelstick, hemolysis, latex allergy, microdilution, microhematocrit, milking, newborn, order of draw, prewarm, scooping, scorers, sealants

Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Sixth Edition

1 Scope

This standard describes general procedures for collecting diagnostic capillary blood specimens. It is intended for phlebotomists or other health care providers responsible for obtaining specimens from patients, as well as for manufacturers of skin puncture and incision devices and microcollection containers.

In addition, this document describes and recommends several disposable devices for collecting, processing, and transferring diagnostic capillary blood specimens. The recommendations are strictly limited to disposable products, which are used once per specimen or as defined by the manufacturer's detailed test technique.

This document does not address skin puncture procedure for self-testing or collection procedures for capillary blood gases. (For information on capillary blood gas collection, see CLSI/NCCLS document H11.²)

2 Introduction

2.1 Pediatric Patients

Blood specimens obtained by skin puncture are especially important in pediatrics, because small but adequate amounts of blood for laboratory tests can be obtained with this technique. Obtaining blood by venipuncture from infants may be difficult and potentially hazardous,³ and obtaining large quantities of blood, especially from premature infants, may result in anemia⁴ (see Figure 1). Puncturing deep veins in children may cause:

- cardiac arrest;
- hemorrhage;
- venous thrombosis;
- reflex arteriospasm and gangrene of an extremity;
- damage to surrounding tissues or organs (eg, puncturing the apex of the lung or piercing the trachea);
- infection; and
- injury from restraining the infant or child during the collection procedure.