

# CLINICAL PRACTICE GUIDELINE: Prevention of Blood Specimen Hemolysis in Peripherally-Collected Venous Specimens

## Table of Contents

|  |         |
|--|---------|
| Background and Significance .....  | 402.e1  |
| Methodology .....  | 402.e1  |
| Summary of Literature Review .....   | 402.e3  |
| Description of Decision Options/Interventions and the Level of Recommendations ..... | 402.e7  |
| References .....   | 402.e8  |
| Appendix 1: Evidence Table .....   | 402.e10 |
| Appendix 2: Other Resources Table .....  | 402.e18 |
| Appendix 3: Study Selection Flowchart and Inclusion/Exclusion Criteria.....          | 402.e19 |
| Synopsis .....   | 402     |
| Authors .....  | 403     |
| Acknowledgments .....  | 403     |

# CLINICAL PRACTICE GUIDELINE: Prevention of Blood Specimen Hemolysis in Peripherally-Collected Venous Specimens

## Background and Significance

Collection of peripheral venous blood specimens is a daily practice in many healthcare settings. Hemolysis of blood samples can lead to inaccurate results and repeat draws, causing additional pain, delaying treatment decisions, and increasing length of stay (Tanabe, Kyriacou, & Garland, 2003). Hemolysis accounts for 40% to 60% of blood specimen rejections by the laboratory (Söderberg, Jonsson, Wallin, Grankvist, & Hultdin, 2009). Hemolysis rates from 3.3% to 77% have been reported and vary depending on the method of blood sample collection (Halm & Gleaves, 2009). No substantiated benchmark for hemolysis rate was found in the literature. This Clinical Practice Guideline (CPG) evaluates the scientific evidence for the prevention of hemolysis in the preanalytic phase (i.e., prior to laboratory analysis).

## Methodology

This CPG is based on a thorough review and critical analysis of the literature following ENA's "Requirements for the Development of Clinical Practice Guidelines." All articles relevant to the topic were identified via a comprehensive literature search. The following databases were searched: PubMed, Google Scholar, CINAHL, eTBLAST, Ovid, Cochrane Library, Agency for Healthcare Research and Quality (AHRQ; [www.ahrq.gov](http://www.ahrq.gov)), Specimen Care ([www.specimenscare.com](http://www.specimenscare.com)), and the National Guideline Clearinghouse ([www.guidelines.gov](http://www.guidelines.gov)). Searches were conducted using various combinations of key words including hemolysis, phlebotomy technique, and blood samples. Initial searches were limited to English language articles from January 2002 to October 2012. This search limit was found to be inadequate, and the time frame was therefore extended to begin with January 1990. A new search was conducted in 2016, following the guidelines used for the initial search, that included October 2012 to June 2016. In addition, the reference lists in the selected articles were scanned for further pertinent research reports. Research articles from emergency department settings, non-emergency department settings, position statements, and guidelines from other sources were also reviewed.

Articles that met the following criteria were chosen to formulate the CPG: research studies, meta-analyses, systematic reviews, and existing guidelines relevant to the topic of blood specimen hemolysis. Articles cited in meta-analyses or systematic reviews were not considered independently unless they addressed additional factors. Other types of reference articles and textbooks also were reviewed and used to provide additional information. The CPG authors used a standardized reference table to collect information and assist with the preparation of tables of evidence, ranking each article in terms of the level of evidence, quality of evidence, and relevance and applicability to practice. Clinical findings and recommendation levels regarding patient management were made by the ENA 2012 Emergency Nursing Resources Development Committee and revised by the ENA 2016 Clinical Practice Guidelines Committee, following ENA's classification of levels of recommendation for practice. These are: Level A, High; Level B, Moderate; Level C, Weak; and Not recommended for practice (Table 1).

Download English Version:

<https://daneshyari.com/en/article/8557040>

Download Persian Version:

<https://daneshyari.com/article/8557040>

[Daneshyari.com](https://daneshyari.com)