# Gastroccult

RC.CH.UA.MT.PR.027r03

## Principle

When a gastric specimen containing blood is applied to Gastroccult test paper, the hemoglobin from lysed blood cells in the sample comes in contact with the guaiac. Application of Gastroccult Developer (a buffered stabilized hydrogen peroxide solution) creates a guaiac/peroxidase-like reaction, which turns the test paper blue if blood is present. Hemoglobin exerts a peroxidase like activity and facilitates the oxidation of alpha guaiaconic acid, a phenolic compound, to a blue quinone structure.

## Clinical Significance

The Gastroccult Slide Test is used as an aid in the diagnosis and management of various gastric conditions, which may be encountered in intensive care areas, the emergency room, surgical recovery rooms, and other clinical settings. The identification of occult blood can be useful in the early detection of gastric trauma or deteriorating gastric condition. Standard fecal occult blood tests lose sensitivity at low pH and may be unsuitable for use with gastric samples. Gastroccult test is not recommended for use with fecal samples. As with any occult blood test, results with the Gastroccult test cannot be considered conclusive evidence of the presence or absence of upper gastrointestinal bleeding or pathology. The Gastroccult test is designed for use as a preliminary screening aid and is not intended to replace other diagnostic procedures such as gastroscopic examination or X-ray studies.

## Specimen Collection and Handling

Either gastric aspirate obtained by nasogastric intubation or vomitus is an appropriate sample for use with Gastroccult. No special patient preparation is necessary.
The optimum volume for Gastroccult is 200 uL. The minimum volume is 100 uL.

## Reagents

Gastroccult slides and developer are purchased separately. Do not use either after the manufacturer's expiration date.

1. Slides consist of high-quality filter paper treated with natural guaiac resin. Protect from open air.
2. Developing solution contains a stabilized mixture of less than 2.9% hydrogen peroxide and 30% denatured ethyl alcohol in a citrate-buffered aqueous solution. Protect from heat and keep tightly capped when not in use. It is flammable and subject to evaporation.

Follow manufacturer instructions for handling and storing reagents.

- Do not refrigerate or freeze
- Store box containing slides at room temperature 15 – 30 C
- Do not store slides and developer near volatile chemicals
- Protect from heat and light

## Quality Control

A positive and a negative performance monitor are incorporated in the Gastroccult slide. The positive monitor contains a hemoglobin-derived catalyst, which upon application of Developer will turn blue within 10 seconds. The color will remain stable for at least 60 seconds. The negative monitor contains no catalyst and should not turn blue upon application of the developer. If the monitors do not react as expected, the test results should be regarded as invalid.

## Special Safety Precautions

Gastroccult developer is an irritant. Avoid contact with skin. Should contact occur, rinse promptly with water.

## Procedure

1. Open slide.
   **NOTE:** Only use the Gastroccult Test Area. Do not use the pH Test Area.
2. Apply one drop of gastric sample to Gastroccult Test Area.
3. Apply two drops of Gastroccult Developer directly over the sample and add one drop between the positive and negative monitors.
4. Read occult blood results **within 60 seconds**. The development of any blue color in the occult blood test area is regarded as a positive result. **Note**: Occasional gastric samples may be highly colored and appear as blue or green on the test area. Test results should only be regarded as positive if additional blue is formed after developer is added.
5. Any trace of blue color in the Gastroccult Test Area is considered a positive result
6. Interpret the positive and negative performance monitors. The positive will develop a blue color in 10 seconds and remain for at least 60 seconds. No blue color should appear in the negative area.
7. Use the pH test strips to test for pH on all gastric pH's.

## Expected Values

Negative. Some normal individuals may give a very faint positive result.

## Reportable Range

The test will reliably detect hemoglobin levels equal to or greater than 50 mcg/mL in gastric juice at pH of 1 through pH of 9.

## Limitations/Interfering Substances

Many food components (incompletely cooked meat, raw fruits, and vegetables, etc. have peroxidase activity, which can produce a positive Gastroccult test. Thus a positive result does not always indicate the presence of human blood. However, Gastroccult has less interference from plant peroxidases than the fecal occult blood tests.

## References

Layne, E. A., Mellow, M.H., and Lipman, T.O., Insensitivity of Guaiac Slide Tests for Detection of Blood in Gastric Juice. Ann. Int. Med. 94:774-776, 1981.

Rosenthal, P., Thompson, J., and Sign, M., Detection of Occult Blood in Gastric Juice. J Clin Gastroenterol. 6:119-121, 1984

## Authorized Reviewers

Section Medical or Technical Director

**Gastroccult**

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**Document History**

| Signature | | Revision # | | Related Documents Reviewed/ Updated |
|---|---|---|---|---|
| Prepared by: V. Peterson MT(ASCP) SC | 10/16/2003 | | | |
| Approved by: Raymond Karcher, PhD | 10/16/2003 | | | |
| | | | | |
| **Reviewed by: (Signature)** | **Date** | **Revision #** | **Modification** | **Related Documents Reviewed/ Updated** |
| | | | | |
| Raymond Karcher, PhD | 05/25/2005 | 00 | document control format | |
| Raymond Karcher | 12/09/2005 | | | |
| Raymond Karcher | 12/20/2006 | | | |
| Raymond Karcher | 12/08/2007 | 01 | new doc control format | |
| Raymond Karcher | 12/04/2008 | | | |
| Raymond Karcher | 11/10/2009 | | | |
| Dr. Elizabeth Sykes & Dr. John Wilson | 01/04/2011 | | | |
| Elizabeth Sykes, MD | 04/26/2012 | | | |
| Elizabeth Sykes, MD | 04/21/2014 | | | |
| Kenneth Simkowski, PhD | 06/23/2017 | 02 | Changed pH meter to pH test strips | |
| Elizabeth Sykes, MD | 02/13/2018 | | | |
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