JOHN H. STROGER HOSPITAL OF COOK COUNTY
ANNUAL TRAINING

HEMOCCULT

Syn: Fecal Occult Blood Test, Guiac Test
PURPOSE:

• Hemoccult Test is a **qualitative** screening method for detecting fecal occult blood which may indicate Gastrointestinal Disease.

• It is not a test for Colorectal Cancer or any other specific disease.
INTENDED USE

• Hemoccult test must be performed only by health care professionals who have been formally trained to perform the test.

• Hemoccult test is not recommended for use with Gastric Specimens.
PRINCIPLE

- Hemoccult testing is based on the oxidation of Guaiac by Hydrogen Peroxide to form a Blue-colored compound.

- Guaiac paper of the Hemoccult slide contains Alpha Guaiaconic Acid.

- When Heme from Hemoglobin is present in the Fecal specimen it has peroxidase activity.

- Heme catalyzes a reaction between Hydrogen Peroxide in the developer and the acid in the paper to form a Blue Quinone Compound.
REAGENT / MATERIALS REQUIRED

- Hemoccult test consists of 2 main components:
  - 1) Hemoccult slides or test cards (*Guaiac paper*).
  - 2) Hemoccult Developer (*Aqueous solution with hydrogen peroxide*).

- Use Hemoccult with yellow and green stripes.

- Do not interchange Hemoccult (*green/yellow striped*) with Hemoccult Sensa (*blue/green striped*) packaging.
REAGENT STORAGE / STABILITY

- Store Hemoccult Slides and Developer at room temperature.
- Protect from heat and light.
- Do not store near radiators or windows.
- Do not store with volatile chemicals such as: Iodine, Chlorine, Bromine, or Ammonia.
- Do not refrigerate or freeze.

- Hemoccult Slides will remain stable until the manufacturer’s expiration date as printed on each slide.
- Hemoccult Developer is stable until the manufacturer’s date as printed on the bottle, if it remains unopened.
- Once opened the Developer is stable for 90 days. The open and 90 days expiration date must be written on the bottle.
PATIENT PREPARATION - 1

- For home specimen collection, instruct the patient on how to collect and store the specimen.

- For all patients: roughage in the diet can increase test accuracy by helping to uncover “silent” lesions which bleed intermittently. Seven days before testing begins, ask the patient to eat a balanced diet which includes fiber, fruits and vegetables.
PATIENT PREPARATION - 2

- Avoid Non-Steroidal Anti-inflammatory drugs such as Ibuprofen and Naproxen or Aspirin more than one daily.

- Acetaminophen (Tylenol) can be taken as needed.

- Avoid Vitamin C over 250 mg, citrus fruits and juices.

- Avoid horseradish which has peroxidase activity.

- Avoid red meats such as beef, lamb, and liver. **NB: Some iron supplements contain vitamin C over 250 mg.**
SPECIMEN COLLECTION

• Do not collect sample if blood is visible in the stool or urine e.g. menstruation, active hemorrhoids or hematuria.

• Test requires a small amount of specimen.

• Separate specimens should be taken from two different sections of fecal specimen.

• For home specimen collection, instruct patient as necessary.
TEST PROCEDURE
MUST BE FOLLOWED EXACTLY AS OUTLINED BY THE MANUFACTURER

- *Treat all materials as potentially infectious.*

- Follow Universal Precaution Guidelines when performing test and disposing of contaminated materials.

- With a gloved finger or with the applicator stick provided, collect a small Fecal Sample.

- Open the slide front window, apply and spread a thin smear, covering box A.
TEST PROCEDURE
MUST BE FOLLOWED EXACTLY AS OUTLINED BY THE MANUFACTURER

• Obtain a second sample from a different part of the stool specimen, apply and spread a thin smear, covering box B.

• Close the cover flap and wait 3 to 5 minutes if testing immediately; otherwise, slide can be stored for up to 14 days before testing.
• Check the expiration dates on the Developer Bottle to ensure it is current.

• After 3 to 5 minutes wait (or anytime within the 14 days)

• Open the back window of the slide.

• Apply **2 drops** of Hemoccult Developer to Guaiac paper directly over each smear (box A and box B).

• Read results within **60 seconds**.
DEVELOPING / INTERPRETATION - 2

- Any trace of blue or blue/green color on or at the edge of the smear is **positive** for occult blood.

- Specimen with a high bile content can cause the feces to appear green.

- A distinct green color with no blue on or at the edge of the smear (within 60 seconds) after developing is negative.

- *Always develop the test, read and interpret the results, then decide whether the fecal specimen is positive or negative for occult blood, before developing the performance monitor feature.*
QUALITY CONTROL
(PERFORMANCE MONITOR PROCEDURE)

- The performance monitor (QC) must be developed on every slide tested.
- From the back side of the slide. Apply (1) **ONE DROP** of Hemoccult Developer **between** the +VE and –VE (orange color) of the Performance Monitor test feature.
- Read results immediately; **within 10 seconds**.
QUALITY CONTROL-2

(PERFORMANCE MONITOR PROCEDURE)

- If the slide and developer are functional, a **BLUE** color will appear in the Positive QC Monitor and **no blue** will appear in the Negative area.

- **Neither the intensity nor the shade of the blue from the positive QC should be used as a reference for the appearance of positive test results.**

- Any blue originating from the positive QC should be ignored when reading the sample test results.
  - *This is the one test where the QC is performed after the sample test to prevent contamination of the test.*
Results

negative

positive
QUALITY CONTROL FAILURE
(Performance Monitor Failure)

Corrective Action

• In the event that the Positive and Negative QC do not react as expected after applying the developer, the patient test result should be regarded as INVALID.

• Do not report patient result!

• DO THE FOLLOWING:

  • Check the expiration dates and or storage condition of the hemoccult slide and developer, if compromised
  • Repeat the test with new components
  • If QC is acceptable report patient result
  • If QC remains invalid, call the POCT office at 864-7084 for assistance.
The patient result and the QC result must be written in the patient’s chart or flow sheet.

RESULTS ARE DOCUMENTED AS FOLLOWS:

HEMOCCULT TEST:
QC negative = NEG
QC positive = POS

Patient Result: Hemoccult NEG or POS (whichever applies)
LIMITATIONS

HEMOCCULT TEST IS AN AID TO DIAGNOSIS BUT IT IS NOT INTENDED TO REPLACE OTHER DIAGNOSTIC PROCEDURES, SUCH AS SIGMOIDOSCOPY, COLONOSCOPY, BARIUM ENEMA OR OTHER X-RAY STUDIES.

• **FALSE NEGATIVES**
  - Bowel lesions including some polyps and colorectal cancer may not bleed at all or may bleed intermittently.
  - Blood if present, may not be uniformly distributed in the fecal specimen.
  - Ascorbic Acid (Vitamin C) over 250 mg / day.
  - Iron supplements containing Vitamin C over 250 mg / day.
  - Excessive amount of citrus fruits and juices.

• **FALSE POSITIVES**
  - Interfering substances in healthy adults due to diet or medications.
  - Low but detectable blood loss which is common in both healthy adults and patients with gastrointestinal disease.
  - Red meats. Aspirin over 325 mg/day, reserpine, alcohol, corticosteroids and chemotherapeutic drugs, preparations with iodine and phenylobutazone.