

CLINICIAN'S REFERENCE: FECAL OCCULT BLOOD TESTING (FOBT) FOR COLORECTAL CANCER SCREENING

Guidelines from the American Cancer Society, the US Preventive Services Taskforce, and others recommend high-sensitivity fecal occult blood tests (FOBT) as one option for colorectal cancer screening. This document provides state-of-the-science information about guaiac-based FOBT and fecal immunochemical tests (FIT).

- * Colorectal cancer screening with FOBT has been shown to decrease both incidence and mortality in randomized controlled trials.
- * High-sensitivity FOBT detects colorectal cancer at relatively high rates.
- * Modeling studies suggest that the years of life saved through a high-quality FOBT screening program are essentially the same as with a high-quality colonoscopy-based screening program.
- * Access to colonoscopy and other invasive tests may be limited or non-existent for many patients. In addition, some adults prefer less invasive tests.

All of these elements make FOBT a reasonable choice for patients.

Recent advances in stool blood screening include the emergence of new tests and improved understanding of the impact of quality factors on testing outcomes.

Two main types of FOBT are available – guaiac-based FOBT and FIT

Guaiac-based FOBTs have been the most common form of stool tests used in the US. Modern high-sensitivity forms of the guaiac test (such as Hemoccult Sensa) have much higher cancer and adenoma detection rates* than older tests (Hemoccult II and others).

Guaiac-based FOBT version	Sensitivity for cancer	Sensitivity for adenomas
Hemoccult Sensa (high-sensitivity)	50% – 79%	21% – 35%
Hemoccult II	13% – 50%	8% – 20%

These differences are so significant that screening guidelines now specify that only high-sensitivity forms of guaiac-based tests (like Hemoccult Sensa) should be used for colorectal cancer screening. Hemoccult II and similar older guaiac tests should no longer be used for colorectal cancer screening.

FITs also look for hidden blood in the stool, but these tests are specific for human blood and guaiac tests are not. There are many brands of FIT sold in the US, and there is no consensus that one brand is superior to another. There is evidence that patient adherence with FIT may be higher than with guaiac FOBT; this may be a result of preparation needed by patients (no dietary and medication restrictions, only 1 or 2 specimens required with some brands).

FIT and guaiac-based FOBT	Sensitivity for cancer	Sensitivity for adenomas
Immunochemical tests (FIT)	55% – 100%	15% – 44%
High-sensitivity guaiac-based FOBT (Hemoccult Sensa)	50% – 79%	21% – 35%

When done correctly FIT and high-sensitivity guaiac-based FOBT have similar performance*; both are significantly better than Hemoccult II and similar older tests.

*Sensitivities cited are based on review of studies that used colonoscopy as the reference standard to determine FOBT performance characteristics.

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The American Cancer Society, the US Preventive Services Taskforce, and other organizations endorse the use of either a high-sensitivity guaiac-based fecal occult blood test (FOBT) or a fecal immunochemical test (FIT) for screening, within the context of a high-quality stool-based screening

Characteristics of high-quality stool-based screening programs

<i>High-quality programs</i>	<i>Rationale</i>
Use only high-sensitivity guaiac-based FOBTs (such as Hemoccult Sensa) or fecal immunochemical tests (FIT).	Sensitivity for cancer is 2-3 times higher with FIT or high-sensitivity guaiac tests when compared to older stool guaiac tests (such as Hemoccult II) in most studies.
Eliminate the use of Hemoccult II and other older forms of guaiac-based FOBT.	Sensitivity for cancer is less than 25% in many studies of Hemoccult II (compared to sensitivity of >50% for FIT and highly sensitive guaiac-based tests)
Never use in-office FOBT at the time of digital rectal exam as a screening test for colorectal cancer.	Studies have shown that a guaiac FOBT obtained on a single stool sample obtained at the time of in-office digital rectal exam may miss up to 95% of cancers and significant adenomas. There is no evidence that this would be an appropriate method for collection of stool for FIT either.
Perform tests only on stool specimens collected by patients at their home; the number of specimens to be collected and the collection process should follow manufacturers' recommendations.	Studies that demonstrated decreases in incidence and mortality with FOBT screening utilized home collection and analysis of specimens based on manufacturers' instructions.
Repeat stool tests annually.	One-time FIT or highly sensitive guaiac tests may miss up to 50% of cancers (and a higher proportion of adenomas). Annual testing significantly improves lesion detection over time.
Follow up all patients who have a positive stool test with colonoscopy.	Stool-based screening results in decreased incidence and mortality only when screen-detected abnormalities are assessed and managed appropriately.

For additional information, please visit nccrt.org/about/provider-education/crc-clinician-guide/ and cancer.org/colonmd.