

FOB V FIT

Feature	gFOBT (Guaiac-based Faecal Occult Blood Test)	FIT (Faecal Immunochemical Test)
Principle	Detects the peroxidase activity of haemoglobin using guaiac reagent.	Uses antibodies to detect the human globin component of haemoglobin.
Blood detected	Human and non-human blood (not specific).	Human blood only (specific).
Detects upper GI bleeding	Yes (haem is stable through the GI tract).	Poorly – globin is degraded during transit, making FIT specific for lower GI bleeding.
Dietary restrictions	Required (avoid red meat, some fruits/vegetables, vitamin C, NSAIDs where possible).	None required.
Medication interference	NSAIDs/aspirin may increase false positives; vitamin C may cause false negatives.	Minimal dietary or medication interference.
Number of stool samples	Usually 2–3 samples from multiple stools.	Usually 1 sample (programme dependent).
Quantitative result	No (qualitative).	Yes (most modern FITs provide faecal Hb concentration in µg Hb/g faeces).
Sensitivity for colorectal cancer	50–65%	73–88% (commonly quoted); >90% in some symptomatic pathways using low cut-offs.
Specificity for colorectal cancer	95–98%	90–96% (depends on Hb cut-off).
Sensitivity for advanced adenomas	10–25%	20–40% (varies with threshold).
False positives	Dietary peroxidases, red meat, upper GI bleeding, some medications.	Haemorrhoids, inflammatory bowel disease, diverticular bleeding, other lower GI bleeding.
False negatives	Intermittent bleeding, low-volume bleeding, vitamin C ingestion.	Intermittent bleeding, lesions not actively bleeding, high Hb cut-off.
Advantages	Inexpensive, historically well validated.	Higher sensitivity, greater specificity for colorectal pathology, no dietary restrictions, easier for patients, quantitative.
Limitations	Lower sensitivity, more false positives, dietary restrictions reduce compliance.	Does not reliably detect upper GI bleeding; performance depends on selected Hb threshold.
Current role	Largely replaced in colorectal cancer screening programmes.	Preferred test for colorectal cancer screening and symptomatic triage in most international guidelines.

Diagnostic performance for colorectal cancer

Test	Sensitivity	Specificity	Comments
gFOBT	50–65%	95–98%	Lower sensitivity means more cancers are missed, although specificity remains high.
FIT (screening populations)	73–88%	90–96%	Higher cancer detection than gFOBT with comparable specificity.
FIT (symptomatic patients; low threshold e.g. 10 µg Hb/g)	90–95%	75–90%	Lower thresholds maximise sensitivity at the expense of specificity.

Key clinical points

- **FIT is a type of FOB test**, but it has largely replaced the traditional **guaiac FOBT (gFOBT)** because it is more accurate and easier for patients to complete.
- **FIT is preferred for colorectal cancer screening** because it:
 - detects **human blood only**,
 - is **more sensitive** for colorectal cancer,
 - requires **no dietary restrictions**,
 - and provides **quantitative results** that allow adjustment of positivity thresholds.
- **gFOBT** may still detect bleeding from the **upper gastrointestinal tract**, whereas **FIT is primarily a test for lower gastrointestinal bleeding**.

References

1. Lin JS, Piper MA, Perdue LA, et al. Screening for Colorectal Cancer: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. *JAMA*. 2021;325(19):1978-1998.
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3. Lee JK, Liles EG, Bent S, Levin TR, Corley DA. Accuracy of fecal immunochemical tests for colorectal cancer: systematic review and meta-analysis. *Ann Intern Med*. 2014;160(3):171-181.
4. Tinmouth J, Lansdorp-Vogelaar I, Allison JE. Faecal immunochemical tests versus guaiac faecal occult blood tests: what clinicians and screening programmes need to know. *Gut*. 2015;64(8):1327-1337.