

# Risks of Advanced Adenomas and Colorectal Cancers in Patients With Negative Versus Positive Fecal Immunochemical Tests and Implications in Clinical Practice: Real-World Experience From Urban Public Hospitals

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## INTRODUCTION

- Recent lowering of the starting age to 45 years for colorectal cancer screening has greatly increased the waiting time for colonoscopy.
- In New York City public hospitals where we practice, the waiting time for a screening colonoscopy is frequently over one year. Primary care providers may send a fecal immunochemical test (FIT) while waiting for screening colonoscopy.
- The recommended testing frequency for FIT is set at once a year by the above guidelines, but some studies have suggested that a lower frequency, such as every other year, also might be acceptable.

## Objectives

- To examine the yield of colonoscopy in FIT-negative and FIT-positive patients who subsequently completed colonoscopy.
- To address the effects of FIT-to-colonoscopy interval on colonoscopy findings

## METHODS

This is a retrospective study based on electronic medical records.

Inclusion criteria:

- Patients who were seen in primary care clinics in Jacobi Medical Center or North Central Bronx Hospital;
- Patients who completed both FIT and colonoscopy between March 2022 and October 2024.

Exclusion criteria:

- Patients who completed FIT testing after colonoscopy;
- Patients younger than 45 years old or older than 75 years old at the time of FIT.

Patients were divided into 2 groups based on FIT results. Colonoscopy yield between groups, particularly detection rates of advanced adenoma and cancer were compared.

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## RESULTS

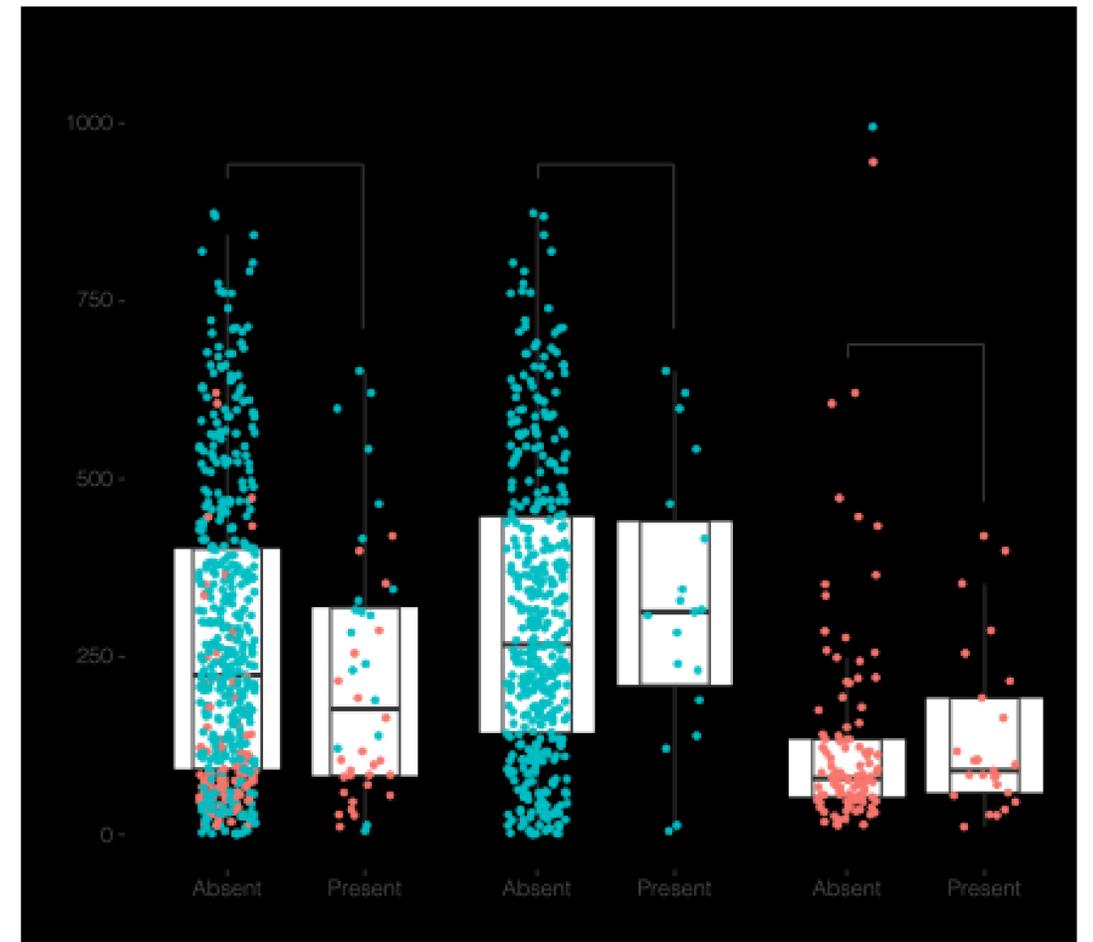
**Table 1.** Performance of FIT in predicting polyps, adenomas, and cancers.

	FIT negatives	FIT positives	RR	P value
<b>Overall</b>				
Number of patients	439	137		
Any polyp or mass	222 (50.6%)	90 (65.7%)	1.3	0.002*
Unable to collect	2 (0.5%)	1 (0.7%)	1.6	0.558
Hyperplastic polyps	52 (16.7%)	8 (12.5%)	0.74	0.386
Any adenoma	127 (29.2%)	65 (50.4%)	1.73	< 0.001*
Nonadvanced	108 (26%)	40 (38.5%)	1.48	0.012*
Advanced	19 (4.4%)	25 (19.4%)	4.44	< 0.001*
>=3 any adenomas	29 (6.7%)	26 (20.2%)	3.02	< 0.001*
>=5 any adenomas	10 (2.3%)	8 (6.2%)	2.7	0.054
Advanced or >=3	39 (9%)	36 (27.9%)	3.11	< 0.001*
Cancers	2 (0.5%)	7 (5.1%)	11.2	0.001*
<b>Patients without lower GI symptoms/weight loss/anemia</b>				
Number of patients	265	98		
Any polyp or mass	129 (48.7%)	67 (68.4%)	1.4	0.001*
Unable to collect	0	1 (1%)	--	0.27
Hyperplastic polyps	32 (16.6%)	8 (17.4%)	1.05	0.895
Any adenoma	72 (27.2%)	48 (51.1%)	1.88	< 0.001*
Nonadvanced	61 (24%)	28 (37.8%)	1.58	0.019*
Advanced	11 (4.2%)	20 (21.3%)	5.13	< 0.001*
>=3 any adenomas	16 (6%)	21 (22.3%)	3.7	< 0.001*
>=5 any adenomas	7 (2.6%)	7 (7.4%)	2.82	0.079
Advanced or >=3	21 (7.9%)	28 (29.8%)	3.76	< 0.001*
Cancers	0	3 (3.1%)	--	0.019*

**Table 2.** FIT-to-colonoscopy interval and colonoscopy yield in FIT-negatives.

	<= 1 year	1-2 years	RR	P value
<b>Overall</b>				
Number of patients	282	144		
Any adenoma	92 (32.9%)	30 (21%)	0.64	0.011*
Nonadvanced	79 (29.6%)	24 (17.5%)	0.59	0.008*
Advanced	13 (4.6%)	6 (4.2%)	0.9	0.83
Cancers	1 (0.4%)	0	--	1.00
<b>Patients without lower GI symptoms/weight loss/anemia</b>				
Number of patients	162	94		
Any adenoma	48 (29.6%)	20 (21.3%)	0.72	0.145
Nonadvanced	41 (26.5%)	16 (17.8%)	0.67	0.121
Advanced	7 (4.3%)	4 (4.3%)	0.98	1
Cancers	0	0	--	--

- A total of 439 FIT-negative and 137 FIT-positive patients were included.
- Significantly lower detection rates of advanced adenoma (4.4% vs 19.4%, P < 0.001) and colorectal cancer (0.5% vs 5.1%, P = 0.001) were found in FIT-negatives. The two FIT-negative patients with cancer both had significant anemia. The apparent negative predictive values for advanced adenoma and cancer were over 95% and 99%, respectively.
- Among patients without symptoms or anemia, cancer was detected in 3 patients, all tested positive for FIT, and 21.3% of FIT-positive patients as well as 4.2% of FIT-negative patients were found to have advanced adenoma (P < 0.001).
- No significant difference was found in advanced adenoma detection rate (both 4.3%) in FIT-negatives with a FIT-to-colonoscopy of < 1 year vs 1-2 years.



**Figure.** FIT-to-colonoscopy interval in patients with and without advanced adenoma.

## CONCLUSION

- The high negative predictive value of FIT results for advanced adenoma supports its role as an effective alternative to colonoscopy in hospitals with limited colonoscopy availability.
- FIT-to-colonoscopy interval (< 1 vs 1-2 years) did not affect the risk of advanced adenoma, suggesting that routine FIT frequency can safely be reduced to every 2 years.
- Dual testing of FIT and colonoscopy is unnecessary