

References

- Anderson, N., Cook, H. B., and Coates, R., "Colonscopically Detected Colorectal Cancer Missed on Barium Enema," *Gastrointestinal Radiology* 16(2): 123-127, 1991.
- Atkin, W. S., Morson, D. M., and Cuzick, J., "Long-Term Risk of Colorectal Cancer After Excision of Rectosigmoid Adenomas," *New England Journal of Medicine* 326(10):658-662, 1992.
- Bang, K. M., Tillett, S., Hoar, S. et al., "Sensitivity of Fecal Hemoccult Testing and Flexible Sigmoidoscopy for Colorectal Cancer Screening," *J. Occupational Med.* 28(8): 709-713, 1986.
- Beggs, I., and Thomas, B. M., "Diagnosis of Carcinoma of the Colon by Barium Enema," *Clinical Radiology* 34:423-425, 1983.
- Bolin, S., Franzen, L., Nilsson, E., et al., "Carcinoma of the Colon and Rectum. Tumors Missed by Radiologic Examination in 61 Patients," *Cancer* 61(10):1999-2008, 1988.
- Brady, A. P., Stevenson, G. W., and Stevenson, I., "Colorectal Cancer Overlooked at Barium Enema Examination and Colonoscopy: A Continuing Perceptual Problem," *Radiology* 192(2):373-378, 1994.
- Brewster, N. T., and Grieve, D. C., "Double-Contrast Barium Enema and Flexible Sigmoidoscopy for Routine Colonic Investigation," *British Journal of Surgery* 81(3):445-457, 1994.
- Chen, Y. M., Ott, D. J., Wolfman, N. T., et al., "Recurrent Colorectal Carcinoma: Evaluation with Barium Enema Examination and CT," *Radiology* 163(2):307-310, 1987.
- Cutler, C. S., Clark, D. W., Lehman, G. A., et al., "The Colonoscopic Miss Rate for Neoplastic Polyps--A Prospective Study of Back-To-Back Colonoscopies" (abstract), undated.
- Demers, R. Stawick, L. and Demers, P., "Relative Sensitivity of the Fecal Occult Blood Test and Flexible Sigmoidoscopy in Detecting Polyps," *Prev Med* 14:55-62, 1985.
- de Roos, A., Hermans, J., Shaw, P. C., et al., "Colon Polyps and Carcinomas: Prospective Comparison of the Single- and Double-Contrast Examination in the Same Patients," *Radiology* 154:11-13,1985.
- DiSario, J. A., Foutch, P. G., Mai, H. D., et al., "Prevalence and Malignant Potential of Colorectal Polyps in Asymptomatic, Average-Risk Men," *American Journal of Gastroenterology* 86(8):941-945, 1991.
- Durdey, P., Weston, P. M., and Williams, N. S., "Colonoscopy or Barium Enema as Initial Investigation of Colonic Disease," *Lancet* 2(8558):549-551, 1987.
- Evers, K., Laufer, I., Gordon, R. L., et al., "Double-Contrast Enema Examination for Detection of Rectal Carcinoma," *Radiology* 140:635-639, 1981.
- Farrands, P. A., Vellacott, K. D., Amar, S. S., et al., "Flexible Fiberoptic Sigmoidoscopy and Double-Contrast Barium-Enema Examination in the Identification of Adenomas and Carcinoma of the Colon," *Diseases of the Colon and Rectum* 26:725-727, 1983.

- Fork, F.-T., "Reliability of Routine Double Contrast Examination of the Large Bowel: A Prospective Study of 2590 Patients," *Gut* 24:672-677, 1983.
- Fork, F.-T., Lindstrom, C., and Ekelund, G., "Double Contrast Examination in Carcinoma of the Colon and Rectum," *Acta Radiological* 24(3):177-188, 1983.
- Habr-Gama, A., and Whye, J. D., "Complications and Hazards of Gastrointestinal Endoscopy," *World Journal of Surgery* 13:193-201, 1989.
- Hogan, W.J., Stewart, E. T., Geenen, J. E., et al., "'A Prospective Comparison of the Accuracy of Colonoscopy vs Air-Barium Contrast Exam for Detection of Colonic Polypoid Lesions" (abstract), undated.
- Jass, J. R., "Do All Colorectal Carcinomas Arise in Preexisting Adenomas?" *World Journal of Surgery* 13:45-51, 1989.
- Jensen, J., "The Efficiency of Double-Contrast Barium Enema Examination and Rectosigmoidoscopy in the Detection of Colorectal Neoplasms: A Study of the Work-Up of Screened Subjects with a Positive Hemoccult II Test" (abstract), undated.
- Jensen, J., Kewenter, J., Asztely, M., et al., "Double Contrast Barium Enema and Flexible Rectosigmoidoscopy: A Reliable Diagnostic Combination for Detection of Colorectal Neoplasm," *British Journal of Surgery* 77:270-272, 1990.
- Jensen, J., Kewenter, J., Haglind, E., et al., "Diagnostic Accuracy of Double-Contrast Enema and Rectosigmoidoscopy in Connection with Faecal Occult Blood Testing for the Detection of Rectosigmoid Neoplasms," *British Journal of Surgery* 73:961-964, 1986.
- Johnson, C.D., Carlson, H. C., Taylor, W. F., et al., "Barium Enemas of Carcinoma of the Colon: Sensitivity of Double- and Single-Contrast Studies," *American Journal of Roentgenology* 140:1143-1149, 1983.
- Kelvin, F. M., Gardiner, R., Vas, W., et al., "Colorectal Carcinoma Missed on Double Contrast Barium Enema Study," *American Journal of Roentgenology* 137:307-313, 1981.
- Lieberman, D. A., and Smith, F. W., "Screening for Colon Malignancy with Colonoscopy," *American Journal of Gastroenterology* 86(8):946-951, 1991.
- Lindsay, D. C., Freeman, J. G., Cobden, I., et al., "Should Colonoscopy be the First Investigation for Colonic Disease?" *British Medical Journal* 296:167-169, 1988.
- Mandel, J. S., Bond, J. H., Church, T.R., et al., "Reducing Mortality from Colorectal Cancer by Screening for Fecal Occult Blood," *New England Journal of Medicine* 328(19):1365-1371, 1993.
- Myers, R., Hill, J., Aguiar, E. I., et al., "An Economic Assessment of Annual Fecal Occult Blood Testing in Colorectal Cancer Early Detection" (draft), Jun. 7, 1993.
- Norfleet, R. G., Ryan, M.E., Wyman, J. B., et al., "Barium Enema Versus Colonoscopy for Patients with Polyps Found During Flexible Sigmoidoscopy," *Gastrointestinal Endoscopy* 37(5):531-534, 1991.
- Ott, D. J., Ablin, D. S., Gelfand, D. W., et al., "Predictive Value of a Diagnosis of Colonic Polyp on the Double-Contrast Barium Enema," *Gastrointestinal Radiology* 8:75-80, 1983.
- Ott, D. J., Chen, Y. M., Gelfand, D. W., et al., "Single-Contrast vs Double-Contrast Barium Enema in the Detection of Colonic Polyps," *American Journal of Roentgenology* 146:993-996, 1986.

- Ott, D. J., Gelfand, D. W., Wu, W. C., et al., "Sensitivity of Double-Contrast Barium Enema: Emphasis on Polyp Detection," *American Journal of Roentgenology* 135:327-330, 1980.
- Ott, D. J., Scharling, E. S., Chen, Y. M., et al., "Barium Enema Examination: Sensitivity in Detecting Colonic Polyps and Carcinomas," *Southern Medical Journal* 82(2):197-200, 1989.
- Rex, D. K., Lehman, G. A., Hawes, R.H., et al., "Screening Colonoscopy in Asymptomatic Average-Risk Persons with Negative Fecal Occult Blood Tests," *Gastroenterology* 100:64-67, 1991.
- Rex, D. K., Lehman, G. A., Lappas, J. C., et al., "Sensitivity of Double-Contrast Barium Study for Left-Colon-Polyps," *Radiology* 158:69-72, 1986.
- Saito, Y., Slezak, P., and Rubio, C., "The Diagnostic Value of Combining Flexible Sigmoidoscopy and Double-Contrast Barium Enema as a One-Stage Procedure," *Gastrointestinal Radiology* 14:357-359, 1989.
- Selby, J. V., Friedman, G. D., Quesenberry, C. P., et al., "A Case-Control Study of Screening Sigmoidoscopy and Mortality from Colorectal Cancer," *New England Journal of Medicine* 326(10):653-657, 1992.
- Shpitz, B., Medline, A., and Stern, H. S., "The Adenoma-Carcinoma Sequence," as cited in "NCIC Canadian Consensus Workshop for Colorectal Cancer Screening," Quebec City, Quebec, Canada, Mar. 15-17, 1995.
- Steine, S., Stordahl, A., Lunde, O., et al., "Double-Contrast Barium Enema Versus Colonoscopy in the Diagnosis of Neoplastic Disorders: Aspects of Decision-Making in General Practice," *Family Practice* 10(3):288-291, 1993.
- Thoeni, R. F., and Menuck, L., "Comparison of Barium Enema and Colonoscopy in the Detection of Small Colonic Polyps," *Radiology* 124:631-635, 1977.
- Thoeni, R. F., and Petras, A., "Double-Contrast Barium-Enema Examination and Endoscopy in the Detection of Polypoid Lesions in the Cecum and Ascending Colon," *Radiology* 144:257-260, 1982.
- Thoeni, R. F., and Venbrux, A. C., "The Value of Colonoscopy and Double-Contrast Barium-Enema Examinations in the Evaluation of Patients with Subacute and Chronic Lower Intestinal Bleeding," *Radiology* 146:603-607, 1983.
- Tobi, M., Luo, F-C., and Ronai, Z., "Detection of K-Ras Mutation in Colonic Effluent Samples from Patients Without Evidence of Colorectal Carcinoma," *Journal of the National Cancer Institute* 6(13):1007-1010, 1994.
- Toribara, N. W., and Slesinger, M. H., "Screening for Colorectal Cancer" (review), *New England Journal of Medicine* 332(13):861-867, 1995.
- U.S. Congress, Office of Technology Assessment, *Costs and Electiveness of Colorectal Cancer Screening in the Elderly--Background Paper*, -OTA-BP-H-74 (Washington, DC: U.S. Government Printing Office, September 1990).
- Wagner, J. L., Herdman, R. C., and Wadhwa, S., "Cost Effectiveness of Colorectal Cancer Screening in the Elderly," *Annals of Internal Medicine* 115(10):807-817, 1991.
- Whynes, D.J., Chamberlain, J. O., et al., "Screening and the Costs of Treating Colorectal Cancer," *British Journal of Cancer* 68:965-968, 1993.

Williams, C. B., Hunt, R. H., Loose, H., et al., "Colonoscopy in the Management of Colon Polyps," *British Journal of Surgery* 61(9):673-682, 1974.

Williams, C. B., Macrae, F. A., and Bar-tram, C. I., "A Prospective Study of Diagnostic Methods in Adenoma Follow-Up," *Endoscopy* 14:74-78, 1982.

Winawer, S.J., Zauber, A. G., Ho, M.N., et al., "Prevention of Colorectal Cancer by Colonoscopic Polypectomy," *New England Journal of Medicine* 329(27):1977-1981, 1993.

Winawer, S. J., Zauber, A. G., O'Brien, M.J., et al., "Randomized Comparison of Surveillance Intervals After Colonoscopic Removal of Newly Diagnosed Adenomatous Polyps," *New England Journal of Medicine* 328(13):901-906, 1993.

Table Appendix A-1
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RESULTS FOR BASE CASE ANALYSIS: (FIGURE 1-A)

	Five Year Polyp Dwell time Per 100,000 Screeners	Years of Life Saved discounted	Total Discounted discounted	C Cost per Year of Lif discounted
FSIG -3	3,637	54,000	860	14,849
FSIG -5	3,116	41,184	639	13,216
FSIG -10	1,690	39,136	926	23,160
FSIG10/FOBT1	4,642	86,929	372	18,727
FSIG5/FOBT	5,182	89,236	309	17,222
FSIG3/FOBT	5,386	98,703	444	18,326
DCBE -3	5,777	75,841	959	13,129
DCBE -5	4,669	64,643	862	13,844
DCBE -10	2,630	63,113	305	23,998
DCBE5/fobt	5,300	106,349	982	20,067
DCBE10/fobt	4,709	99,347	323	21,096
DCBE3/FOBT	5,883	115,757	634	19,678
FOBT - 1	3,968	72,080	548	18,166
CSCPY -3	4,931	126,387	557	25,632
CSCPY -5	4,728	92,016	472	19,464
CSCPY-10	2,646	84,720	803	32,013

Appendix Table A-2

RESULTS FOR BASE CASE ANALYSIS: (FIGURE 1^B)
Ten Year Polyp Dwell Time
Per 100,000 Screenees

	Years of Life Saved discounted	Total Discounted Co discounted	Cost per Year of Life discounted
FSIG -3	3,721	52,936,451	14,226
FSIG -5	3,334	38,744,480	11,622
FSIG-10	2,916	25,794,441	8,846
FSIG10/FOBT1	5,536	73,943,319	13,358
FSIG5/FOBT	5,743	80,936,550	14,094
FSIG3/FOBT	5,844	91,741,566	15,697
DCBE -3	6,312	68,479,282	10,848
DCBE -5	5,641	53,309,463	9,450
DCBE -10	4,450	42,459,954	9,541
DCBE5/fobt	6,066	95,321,427	15,713
DCBE10/fobt	5,299	91,011,124	17,177
DCBE3/FOBT	6,379	108,507,731	17,010
FOBT - 1	4,792	60,171,093	12,557
CSCPY -3	5,061	124,299,908	24,560
CSCPY -5	5,129	87,177,047	16,996
CSCPY-10	4,898	58,271,024	11,897

Appendix Table A-3
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RESULTS FOR ANALYSIS with FOBT SENSITIVITY = 85% (Figure 6A)

	Five Year Polyp Dwell time Per 100,000 Screenees	Years of Life Saved discounted	Total Discounted C discounted	Cost per Year of Life discounted
FSIG -3	3,637	54,000,		14,849
FSIG -5	3,116	41,184,639		13,216
FSIG-10	1,690	39,136,926		23,160
FSIG10/FOBT	5,540	87,237,461		15,747
FSIG5/FOBT	5,907			15,163
FSIG3/FOBT	5,968	99,1		16,605
DCBE -3	5,777	75,841,959		13,129
DCBE -5	4,669	64,64		13,844
DCBE-10	2,630	63,113,305		23,998
DCBE5/fobt	5,770	106,559,006		18,469
DCBE10/fobt	5,414	99,587,324		18,395
DCBE3/FOBt	6,063	116,067,899		19,144
FOBT - 1	5,170	72,391,502		14,002
CSCPY -3	4,931	26,387,557		25,632
CSCPY-5	4,728	92,016,472		19,464
CSCPY- 0	2,646	84,720,803		32,013

Appendix Table A-4

RESULTS FOR ANALYSIS with FOBT SENSITIVITY = 85% (Figure 6)
Ten Year Polyp Dwell Time
Per 100,000 Screenees

	Years of Life Saved discounted	Total Discounted Co discounted	Cost per Year of Life discounted
FSIG -3	3,721	52,936,451	14,226
FSIG -5	3,334	38,744,480	11,622
FSIG-10	2,916	25,794,441	8,846
FSIG10/FOBT1	6,264	74,415,648	11,880
FSIG5/FOBT	6,370	81,358,575	12,773
FSIG3/FOBt	6,361	92,202,172	14,494
DCBE -3	6,312	68,479,282	10,848
DCBE -5	5,641	53,309,463	9,450
DCBE -10	4,450	42,459,954	9,541
DCBE5/fobt	6,428	95,658,721	14,882
DCBE10/fobt	5,915	91,351,550	15,443
DCBE3/FOBt	6,538	108,903,224	16,656
FOBT - 1	5,824	60,171,093	12,557
CSCPY -3	5,061	124,299,908	24,560
CSCPY -5	5,129	87,177,047	16,996
CSCPY-10	4,898	58,271,024	11,897

