

## USING RISK FOR ADVANCED PROXIMAL COLONIC NEOPLASIA TO TAILOR ENDOSCOPIC SCREENING FOR COLORECTAL CANCER

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**Background.** Colonoscopic screening for colorectal cancer has been suggested because sigmoidoscopy misses nearly half of persons with advanced proximal neoplasia (APN).

**Objective.** To create a clinical index to stratify risk for APN and to identify a subgroup with very low risk in which screening sigmoidoscopy alone might suffice.

**Design.** Cross-sectional study.

**Setting.:** A company-based program of screening colonoscopy for colorectal cancer prevention.

**Patients.** Consecutive persons 50 years of age or older undergoing first-time screening colonoscopy between September 1995 and June 2001.

**Methods.** A clinical index with three variables was created from information on the first 1,994 persons (*N Engl J Med*, 2000). Points were assigned to categories of age, sex, and distal findings. Risk for APN (defined as an adenoma 1 cm or larger, a polyp with villous histology, severe dysplasia, or cancer) was measured for each score. Based on comparable magnitudes of risk, scores were collapsed into risk categories of low, intermediate, and high. The index was then tested on the next 1,031 persons from the same screening program.

**Results.** Of 1,994 persons in the derivation group, 67 (3.4%) had APN. A low-risk subgroup comprising 37% of the cohort had scores of 0 or 1 and a risk of 0.68% (95% CI, 0.22% to 1.57%). Risk for APN in the intermediate- and high-risk subgroups were 2.1% and 10%[, respectively]. The receiver-operating-characteristics (ROC) curve area was 0.81. Among the validation group of 1,031 persons, risk for APN in the low-risk subgroup (comprising 47% of the cohort) was 0.4% (upper CL of 1.49%). Risk for APN in the intermediate- and high-risk groups was 1.9% and 3.8%[, respectively]. The ROC curve area was 0.74, which does not differ statistically from that of the derivation group ( $P=0.15$ ). Application of this index detected 92% of persons with APN and, if applied following screening sigmoidoscopy, could reduce the need for screening colonoscopy by 40%. The marginal benefit of colonoscopy among low-risk persons was small; to detect 7 additional persons with APN, 1,217 additional colonoscopies would be required.

**Conclusions.** This clinical index stratifies the risk for APN and identifies a subgroup at very low risk. If it is validated in other cohorts or groups, the index could be used to tailor endoscopic screening for colorectal cancer.

**Future directions.** (1) Test the index on different patient cohorts; and (2) obtain more extensive epidemiological data on risk factors for colorectal neoplasia to determine if refinement of the index is possible.