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# Association of small versus diminutive adenomas and the risk for metachronous advanced adenomas: Data from the New Hampshire Colonoscopy Registry

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Abstract

### Background and Aims

Limited data are available to investigate the impact of index adenoma size on the risk of metachronous advanced adenomas. Our goal was to examine the impact of having small (5-9 mm) versus diminutive (<5 mm) adenomas on the future risk of advanced adenomas within the categories for polyps <1cm currently used in the United States: 1 to 2 and 3 or more tubular adenomas.

### Methods

We included data from individuals participating in the statewide, population-based New Hampshire Colonoscopy Registry (NHCR). Groups were based on index findings: (1) 1 to 2 adenomas <5 mm (both diminutive), (2) 1 to 2 adenomas <1 cm (one or both small), (3) 3 to 10 adenomas <5 mm (all diminutive), (4) 3 to 10 adenomas <1 cm (one or more small), and (5) advanced adenomas (AA). AAs were defined as adenomas ≥1cm or those with villous elements or high-grade dysplasia and colorectal cancer (CRC). Outcomes were the absolute and adjusted risk of metachronous advanced adenomas. Covariates included age, sex, body mass index, family history of CRC, lifestyle factors, presence of serrated polyps, and time since the index examination.

## Results

After adjusting for the covariates, we observed that having 1 to 2 adenomas with at least one 5 to 9 mm adenoma (adjusted odds ratio [AOR], 1.54; 95% CI, 1.12-2.11), 3 to 10 diminutive adenomas (AOR, 1.75; 95% CI, 1.03-2.95), 3 to 10 adenomas <1 cm (1 or more small) (AOR, 2.14; 95% CI, 1.39-3.29) or advanced adenomas (AOR, 2.77; 95% CI, 2.05-3.74) were associated with an increased risk for metachronous AA as compared with having 1 to 2 diminutive adenomas. A further stratification of Group 2 observed that those with exactly 2 small adenomas had an absolute risk of future AA of 7.6% (11/144) (95% CI, 4.3%-13.2%), higher than the absolute risk in the 1 to 2 diminutive polyp group, and similar to the risk for 3 to 10 adenomas 8.2 (95% CI, 5.4-11.9).

## Conclusions

For individuals with 1 to 2 adenomas <1 cm, having at least 1 small adenoma increased the metachronous risk of AA compared to having only diminutive adenomas. Furthermore, the subset with 2 small adenomas had a risk of future AA similar to the risk for 3 to 10 adenomas. These data suggest that individuals with at least 1 small adenoma may be at higher risk for future advanced adenomas and thus require closer follow-up than those with only diminutive adenomas. These data may be valuable to guideline committees for the creation of future surveillance recommendations.

## Abbreviations and Acronyms:

[Adenoma detection rate \(ADR\)](#), [Serrated polyp detection rate \(SDR\)](#), [Sessile serrated adenomas/polyps \(SSA/P\)](#), [Traditional serrated adenomas \(TSA\)](#), [Hyperplastic polyps \(HP\)](#), [New Hampshire Colonoscopy Registry \(NHCR\)](#), [American College of Gastroenterology \(ACG\)](#), [American Society for Gastrointestinal Endoscopy \(ASGE\)](#), [Colorectal Cancer \(CRC\)](#), [Body Mass Index \(BMI\)](#), [Inflammatory bowel disease \(IBD\)](#), [Low risk adenoma \(LRA\)](#), [High risk adenoma \(HRA\)](#), [US Multi Society Task Force Clinically significant serrated polyps \(CSSPs\)](#), [High grade dysplasia \(HGD\)](#), [High school \(HS\)](#)

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\*Dr. Lynn Butterly is the senior author on the paper and the Director of the New Hampshire Colonoscopy Registry

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## Specific Author Contributions

Conception and design: Anderson, Joseph C.; Douglas K. Rex; Robinson, Christina M.; Butterly, Lynn, Analysis and interpretation of the data Anderson, Joseph C.; Robinson, Christina M.; Butterly, Lynn, Drafting of article Anderson, Joseph C.; Douglas K. Rex; Robinson, Christina M.; Butterly, Lynn, Critical revision of the article for important intellectual content; Anderson, Joseph C.; Douglas K. Rex; Robinson, Christina M.; Butterly, Lynn, Final approval of the article Anderson, Joseph C.; Rex, Douglas K.; Robinson, Christina M.; Butterly, Lynn

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