

AI does not improve advanced colorectal neoplasia detection rate

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Computer-aided detection (CADe) during colonoscopy to identify

advanced colorectal neoplasias and adenomas and the benefits and harms of CADe were explored in both a randomized trial and systematic review, both published online Aug. 28 in the *Annals of Internal Medicine*.

Carolina Mangas-Sanjuan, M.D., Ph.D., from the Hospital General Universitario Dr. Balmis in Spain, and colleagues examined the contribution of CADe to colonoscopic detection of advanced colorectal neoplasias as well as other lesions in a [randomized controlled trial](#). A total of 3,213 people with a positive fecal immunochemical test were randomly assigned to colonoscopy with or without computer-aided detection.

The researchers found no significant difference in the detection rate of advanced colorectal neoplasia (34.8 versus 34.6 percent for intervention versus controls) or in the mean number of advanced colorectal neoplasias detected per colonoscopy (0.54 versus 0.52, respectively) in the colonoscopy plus CADe versus colonoscopy without CADe groups. There was also no difference in the adenoma detection rate.

Cesare Hassan, M.D., Ph.D., from Humanitas University in Italy, and colleagues quantified the [benefits](#) and harms of artificial intelligence CADe across 21 randomized trials in a [systematic review](#) and meta-analysis. The analysis included 18,232 patients.

The researchers found that the adenoma detection rate was higher in the CADe versus standard colonoscopy group (44.0 versus 35.9 percent; relative risk, 1.24), corresponding to a 55 percent relative reduction in the miss rate. Compared with the standard group, more nonneoplastic polyps were removed in the CADe group (0.52 versus 0.34 per [colonoscopy](#)).

"This recent evidence suggests that CADe systems do not meaningfully

improve the detection of larger (≥ 10 mm) clinically significant polyps. This tempers enthusiasm for CADe but does not negate the clear performance benefit for detecting adenomas of all sizes," write the authors of an accompanying editorial.

More information: Carolina Mangas-Sanjuan et al, Role of Artificial Intelligence in Colonoscopy Detection of Advanced Neoplasias, *Annals of Internal Medicine* (2023). [DOI: 10.7326/M22-2619](https://doi.org/10.7326/M22-2619)

Cesare Hassan et al, Real-Time Computer-Aided Detection of Colorectal Neoplasia During Colonoscopy, *Annals of Internal Medicine* (2023). [DOI: 10.7326/M22-3678](https://doi.org/10.7326/M22-3678)

Dennis L. Shung, From Tool to Team Member: A Second Set of Eyes for Polyp Detection, *Annals of Internal Medicine* (2023). [DOI: 10.7326/M23-2022](https://doi.org/10.7326/M23-2022)

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