

COST-EFFECTIVENESS OF RISK-STRATIFIED COLORECTAL CANCER SCREENING BASED ON POLYGENIC RISK FOR DIFFERENT ETHNIC/ RACIAL POPULATIONS

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Presentation

Digestive Oncology

Endoscopy

Neurogastroenterology & Motility

Oesophagus

Stomach & H. Pylori

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Polygenic risk score-guided colorectal cancer screening improved cost-effectiveness across all U.S. racial and ethnic groups, with the greatest gains in Hispanics and Asians.

KEY POINTS

- When constrained to the same cost as uniform screening (ages 45–75, every 10 years), PRS-stratified screening increased quality-adjusted life-years gained by 8–29%, with the largest gains in Hispanics (+29%) and Asians (+13%).
- When constrained to the same quality-adjusted life-years as uniform screening, PRS-stratified screening reduced costs by 6–27%, with the greatest savings in Hispanics (–27%) and Asians (–14%).
- For low-risk groups, optimal strategies ranged from no screening in Whites and Blacks to one-time colonoscopy at age 55 for Asians and age 60 for Hispanics; for high-risk groups, all populations benefited most from colonoscopy every 5 years from ages 40–85.
- Across all groups, PRS-guided screening prevented more colorectal cancer cases and deaths than uniform screening but required higher colonoscopy use and costs.
- The study used PRS data from the Genetics and Epidemiology of Colorectal Cancer Consortium to stratify individuals into 40 risk groups and the MISCAN-Colon microsimulation model to determine optimal strategies for White, Black, Asian, and Hispanic populations.

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