

# A machine learning model to assess colorectal cancer risk using whole blood samples

## Unmet Need

Colorectal cancer is the third most commonly occurring cancer in men and the second in women. Early detection and treatment have contributed to an overall dropping of the death rate for several decades, but the death rate has been steadily increasing for those younger than 55. Screening with a colonoscopy remains the gold standard for early detection, but this is an invasive procedure typically only recommended to those 55 and older who are at higher risk. The patient adherence to colonoscopy for those older than 55 is also estimated to be only 60%. Adherence with stool-based screening methods is also reported to be less than 50%. There is a need for non-invasive screening methods that improve the utilization of colorectal cancer screening.

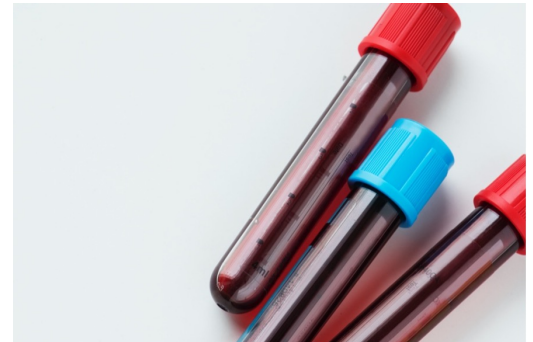
## Technology

Duke inventors have reported a machine learning model to assess colorectal cancer risk using a single whole blood sample. This is intended to be integrated into clinical workflow, used to screen patients, and inform decisions about the need for more invasive treatment or screening strategies. This algorithm operates using information about age, gender, hemoglobin, hematocrit, white blood count, and platelets. These analytes are routinely collected as part of a complete blood count. This technology has been demonstrated to perform competitively against EarlySign's ColonFlag using 550,000 complete blood counts from a cohort of 50,000 patients.

## Advantages

- Very simple to run
- Can be integrated into electronic health records or lab information systems
- Data quality and approach to data curation differentiates technology from those currently available

Duke  
LICENSING  
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### Duke File (IDF) #

T-006525

### Inventor(s)

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### Links

- [From inventors at the Duke Institute of Health Innovation](#)

### College

School of Medicine (SOM)

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