

Guidance for Participants

Colorectal cancer (CRC) stands as one of the most prevalent malignancies globally, occupying the third position in incidence and the second in mortality among all malignancies. Colorectal adenoma (CRA) is recognized as a precancerous lesion that precedes colorectal cancer. Without appropriate prevention and management, CRA may undergo malignant transformation into CRC over a period spanning several years to several decades. Indeed, an estimated 85% to 90% of CRC cases originate through this "adenoma-to-carcinoma" pathway. Consequently, the effective management and prevention of CRA represent a vital strategy in controlling the incidence of CRC. Nonetheless, the onset of CRA is covert, exhibiting non-specific clinical manifestations. To address this, our predictive model APP leverages lifestyle habits and basic demographic information to provide a non-invasive prediction of CRA occurrence, thereby facilitating early warning and prevention measures against CRC.

Interpretation of Results from the Predictive Model APP:

The absolute risk of CRA (Colorectal Adenoma) is a comprehensive risk index that integrates both age and lifestyle factors to evaluate one's predisposition to CRA. Notably, age stands as a

pivotal risk factor in the onset of colorectal adenoma, with an inevitable escalation in CRA risk as individuals advance in years.

In contrast, the relative risk of CRA represents a risk index that focuses solely on lifestyle habits in predicting CRA risk, while adjusting for the impact of age. A high-risk prediction indicates suboptimal lifestyle habits, prompting the recommendation to initiate colonoscopy screening at an earlier age of 42. Conversely, a low-risk prediction signifies favorable lifestyle habits, allowing for a later initiation of colonoscopy screening at age 53.

Recommendations for Healthy Lifestyle Habits:

1. Consume a high-fiber diet (including fruits, vegetables, and whole grains).
2. Reduce intake of processed meat.
3. Limit consumption of sugar-sweetened beverages.
4. Quit smoking.
5. Restrict alcohol intake.
6. Engage in regular physical activity and minimize sedentary behavior.
7. Actively manage chronic conditions such as hypertension and hyperlipidemia.