

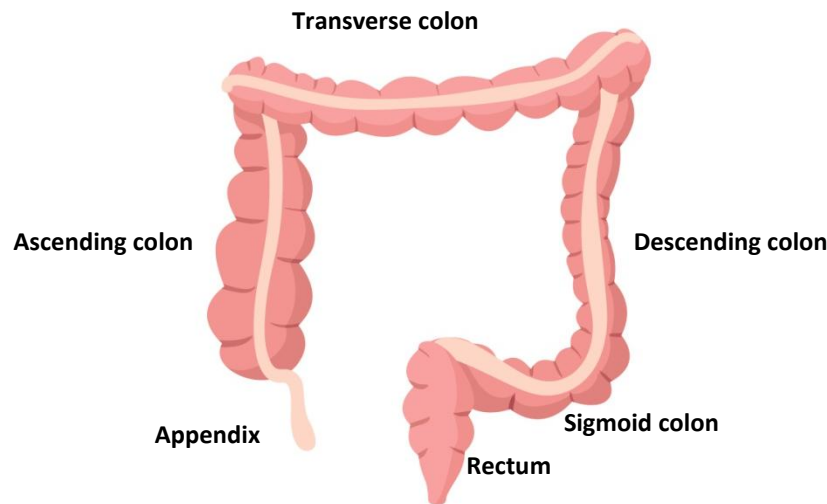
# Colorectal Cancer in Younger Adults

## Update

November 2018

Colorectal cancer (CRC) is the second most commonly diagnosed cancer in Canada and PEI. Recent reports show the incidence of CRC in North America has been decreasing for the last two decades except those younger than 50 years old<sup>1-3</sup>. In addition, the mortality due to CRC has been decreasing in the last two decades, but it is still the second most common cause of cancer mortality<sup>4</sup>. Colorectal cancers are a group of cancers confined to the large intestine (colon and rectum) excluding the anus. Most CRC are adenocarcinomas indicating that they started in the glandular tissue of the colon<sup>5</sup>. Figure 1 describes the anatomical parts of the large intestine.

**Figure 1 Anatomical parts of the large intestine**



A small proportion of adenomatous polyps in the colon and rectum may become cancerous, but the developmental process from polyp to cancer usually takes longer than ten years<sup>5,6</sup>. Because of the slow process, identifying polyps and early cancers with CRC screening and then removing them is an effective cancer control. In 2016, the Canadian Task Force on Preventive Health Care published guidelines for colorectal screening for average risk adults<sup>7</sup>. PEI follows these guidelines. Fecal test screening has been available to all Islanders age 50 to 74 years old as of 2009. Since that time, the number of early non-invasive cancers (stage 0, CRC that has not moved beyond the inner layer of the colon or rectum) has increased by eight times. Removing early cancers and polyps will eventually improve mortality and survival rates.

The number of CRC cases in PEI has been rising (Figure 1); however, the majority of the increase has been due to the increase in population and increasing age. This increasing number of cases is important when we are projecting health care needs such as utilization of testing, treatment, equipment, aftercare, palliative needs, etc. The age-standardized incidence rate has not significantly changed in the last 35 years; however, in the past 20 years, the rate has been decreasing mostly due to a decreasing trend in CRC rates in women.

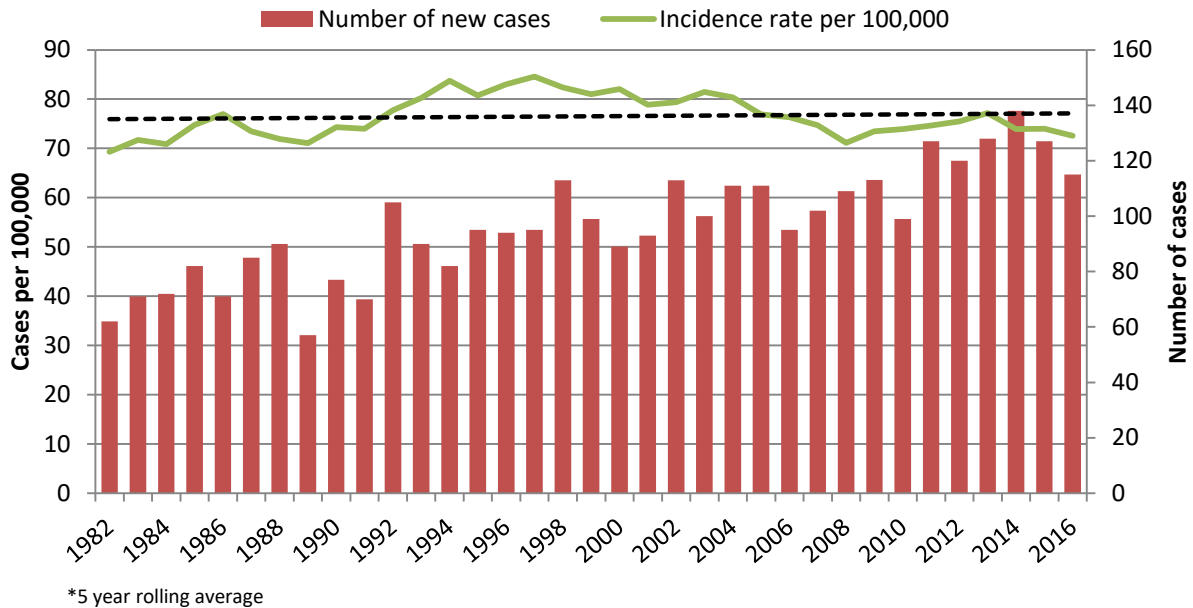


Figure 1 Number of new cases and age-standardized incidence rate\* from colorectal cancer, 1992-2016, PEI

Although the CRC rates are decreasing in PEI, there is a difference by age group. All Islanders greater than or equal to 50 years old have a decreasing rate of CRC while those less than 50 years of age have an increasing trend in new cases (Figure 2). Overall, the crude CRC incidence in younger adult Islanders significantly increased by 1.3% per year between the years 1983 through 2016. At the same time, the crude incidence rate in older adult Islanders decreased significantly by 0.75% per year. These changes in PEI rates are similar to what is seen in CRC rates in Canada<sup>2</sup>.

In the last decade, there have been more cases identified in younger adult women compared to younger adult men.

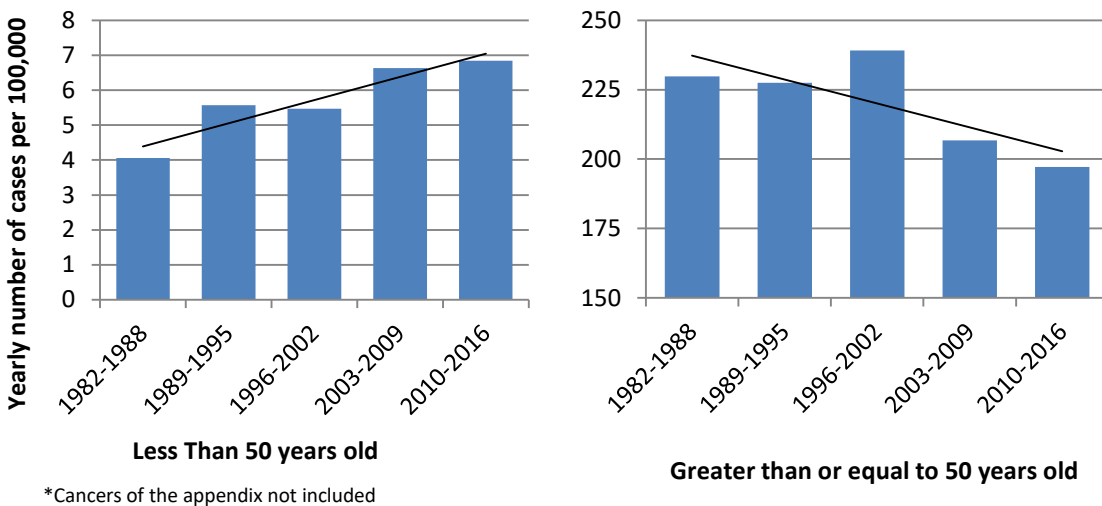
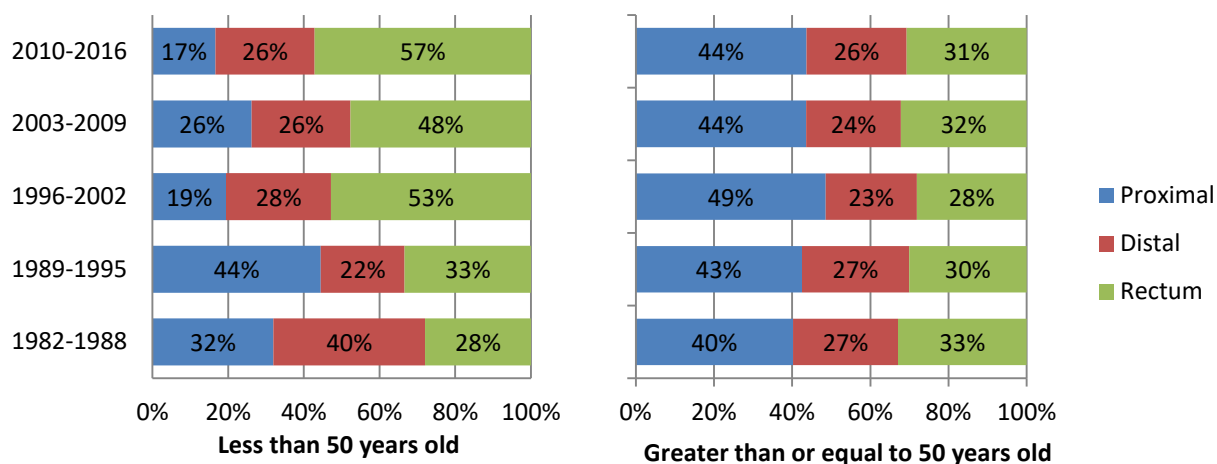


Figure 2 Crude incidence rate for colorectal cancer\* by age group for 7-year time periods, PEI

Incidence rates in older adults are expected to decrease as more Islanders get screened for CRC. PEI is not currently screening average risk adults younger than 50. The increasing rates in young adults may be associated with increased time and exposure of risk factors for CRC including obesity, red meat consumption, processed meat consumption, physical inactivity, diabetes mellitus type 2, alcohol consumption, smoking, and low fruit and vegetable consumption<sup>1-3</sup>.

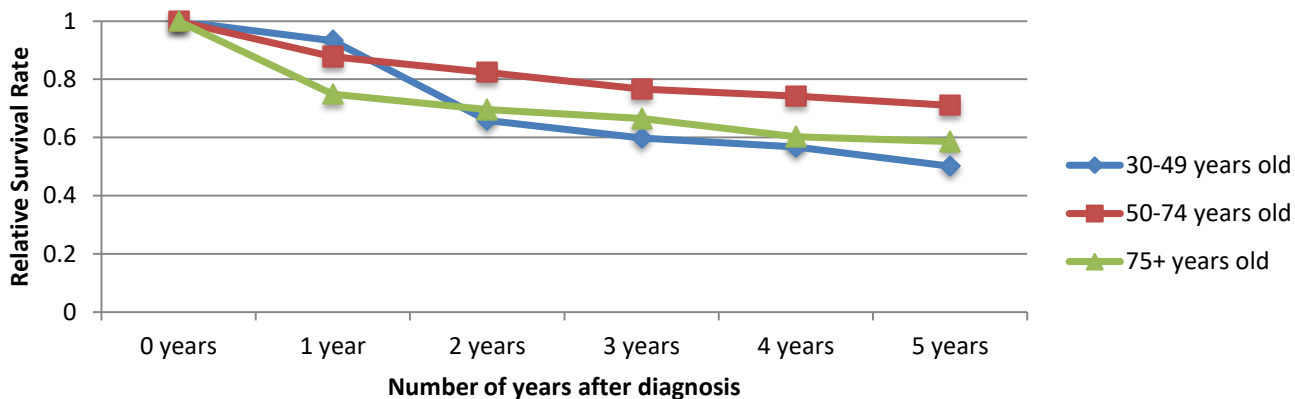
In addition to increasing CRC rates in younger adults, the locations of the tumors have changed. Figure 3 displays the proportion of CRC cancers by subsite for the younger and older adults in PEI. Over the years, the proportion of CRC in younger adults that are in the rectum have been increasing while the proportion that are in the proximal and distal colon are decreasing. The proportion of CRC in the rectum of older adults does not seem to change over the passing decades. The reason for increasing proportion of rectal cancers younger adults is not known, but may be linked to specific risk factors<sup>2</sup>.



\*Cancers of the appendix not included

Figure 3 Proportion of subsite for colorectal cancer\* by age group for 7-year time periods, PEI

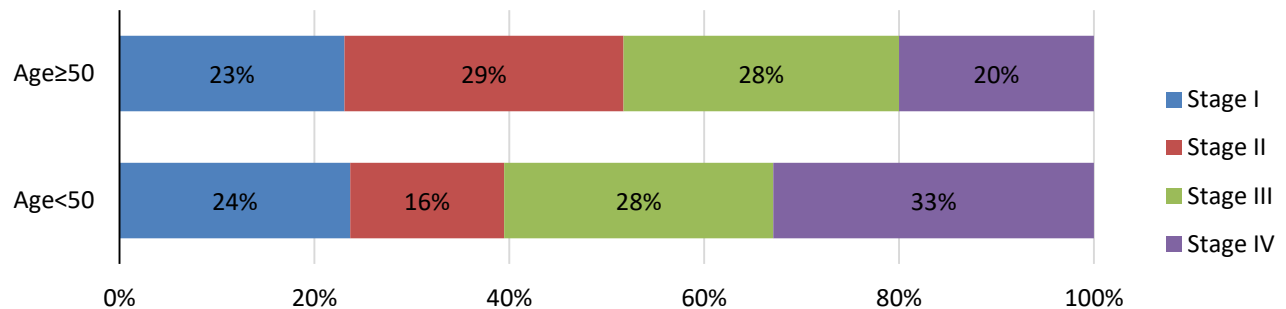
In addition to increasing rate of new cases of CRC in younger adults, the 5-year relative survival rate has a surprising pattern (Figure 4). For most cancers, the survival rate is better in younger adults compared to older adults. The 5-year survival in younger adults (30-49 years old) with CRC was 50% while in older adults (age 50-74 years old), it was 71%.



\*Cancers of the appendix not included

Figure 4 Five-year Relative Survival Rate for Colorectal Cancer\* by Age Group, diagnosed 2012-2016, PEI

The stage at diagnosis affects the relative survival rate. Younger adults were diagnosed in later stage (Stage III and Stage IV) 61% of the time from 2005 through 2016 (Figure 5). Older adults were diagnosed in similar stages 48% of the time. In addition the proportion diagnosed in the metastatic stage (Stage IV) was 33% in younger adults compared to 20% in older adults. Because CRC is more common in older adults, delays in younger adult patients seeking care or delays in testing by physicians may result in a later stage at diagnosis<sup>3</sup>.



\*Cancers of the appendix not included

Figure 5 Colorectal Cancer Incident Cases\* by Stage and age group, 2005-2016, PEI

Another possible reason for the surprising survival rate in younger adults is a change in the type of cancer<sup>3</sup>. A detailed analysis has not been completed due to a small number of patients and a large number of possible cell types.

Because the rate of CRC in younger adults has been increasing, screening this age group may become an important step in reducing this trend. Although the rate is increasing, it is still very low compared to CRC incidence in older adults. Studies are necessary to evaluate if the benefit of identifying a cancer in an average risk younger adult by screening outweighs the risks from a false positive screen. Additionally, health care systems must be able to accommodate and pay for more screeners<sup>3</sup>. Moreover, patients and health care providers should be aware of the risk factors and symptoms of CRC to promote an earlier diagnosis.

*This update was written by Dr. Carol McClure, PEI Cancer Surveillance Epidemiologist. If you have any questions, please contact Dr. McClure at 902-894-0173 or [cmclure@ihis.org](mailto:cmclure@ihis.org).*

1. Siegel RL, Jemal A, Ward EM. Increase in incidence of colorectal cancer among young men and women in the United States. *Cancer Epidemiol Biomarkers Prev.* 2009;18(6):1695–8.
2. Inra JA, Syngal S. Colorectal Cancer in Young Adults. *Dig Dis Sci N Y.* 2015 Mar;60(3):722–33.
3. Patel P, De P. Trends in colorectal cancer incidence and related lifestyle risk factors in 15-49-year-olds in Canada, 1969-2010. *Cancer Epidemiol.* 2016 Jun 1;42:90–100.
4. Canadian Cancer Statistics 2017-EN.pdf [Internet]. [cited 2017 Oct 5]. Available from: <http://www.cancer.ca/~media/cancer.ca/CW/publications/Canadian%20Cancer%20Statistics/Canadian-Cancer-Statistics-2017-EN.pdf>
5. Ponz de Leon M, Percesepe A. Clinical review: Pathogenesis of colorectal cancer. *Dig Liver Dis.* 2000 Jan 1;32:807–21.
6. Oines M, Helsingen LM, Bretthauer M, Emilsson L. Epidemiology and risk factors of colorectal polyps. *Best Pract Res Clin Gastroenterol.* 2017;(4):419.
7. Bacchus CM, Dunfield L, Connor Gorber S, Holmes NM, Birtwhistle R, Dickinson JA, et al. Recommendations on screening for colorectal cancer in primary care. *CMAJ Can Med Assoc J.* 2016 Mar 15;188(5):340.