



# Screen it! Treat it! Beat it!

## COLORECTAL CANCER: RISK FACTORS -INTRODUCTION-

### Some Helpful Facts.....

1. Being physically inactive is a risk factor for colorectal cancer. A simple walk around the block can help boost your activity level.
2. High intakes of fruits, vegetables and fibre can decrease your risk of developing colorectal cancer. Add colorful veggies and fruits to your diet to help stave off the disease. It's never too late to start!



We don't really know why colorectal cancer develops in some people and not in others. However, the same risk factors have been identified over the years which increase a person's risk of developing colorectal cancer. A risk factor is something which may increase a person's chances of developing a disease or condition.

Risk factors for colorectal cancer can be divided into two main groups: those that you cannot change and those that are lifestyle-related and, therefore, can be changed by you. Please read on to learn more about the risk factors for colorectal cancer.....

### ALL ABOUT COLORECTAL CANCER RISK FACTORS

A risk factor is something that increases a person's chances of developing a disease such as colorectal cancer. Colorectal cancer risk factors can be divided into 2 main categories:

1. Risk factors that you cannot control or change and
2. Lifestyle-related Risk Factors over which you have control and are able to change.

The content appearing below has been organized according to these two categories.

#### Part I: Risk Factors You Cannot Change

- Age

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The older one gets, the greater the risk of developing colorectal cancer. The disease is more common, however, in people over the age of 50, and the chance of developing colorectal cancer increases with each decade. However, colorectal cancer has also been known to develop in younger people as well. (Patel, 2009; Gairdiello, 2008)

There are rising rates in people diagnosed with colorectal cancer under the age of 50 years in Canada. People diagnosed with colorectal cancer under the age of 50 are typically referred to as early age onset colorectal cancer patients and they have unique challenges and issues in respect of their disease and treatments. CCRAN is dedicated to bringing awareness and education to the rise in early age onset colorectal cancer. Stay tuned as we roll out our **Never Too Young (N2Y) Program** in support of the young adult colorectal cancer population!

- **Personal History of Colorectal Polyps & Colorectal Cancer**

A personal history of polyps (non-cancerous growths on the inner wall of the colon or rectum) may increase the risk of developing colorectal cancer. There are different types of polyps, but, one type of polyp, called the adenoma, can increase a person's risk of developing colorectal cancer.

Additionally, a person who developed colorectal cancer particularly under the age of 50 may develop the disease a second time in other areas of the colon or rectum. (Eide et al, 2006) Assuming a healthy lifestyle through the adoption of a plant-based diet and the incorporation of regular exercise as per the recommendations of the World Cancer Research Fund (WCRF) can help to minimize this risk. Always speak to your doctor before incorporating exercise into your routine.

- **Personal History of Inflammatory Bowel Disease (IBD)**

If a person has a long-standing inflammatory disease of the colon, such as **Ulcerative Colitis** and **Crohn's Disease**, it may increase their risk of developing colorectal cancer. Ulcerative colitis and Crohn's are conditions in which the cells in the lining of the colon or rectum become inflamed over a long period of time. The cells may look abnormal but are not true cancer cells. They can, however, change into cancer over time. The risk of developing colorectal cancer, therefore, increases, as does the need to be screened for the disease on a more frequent basis. (S. Itzkowitz et al, 2004)

People often confuse **Inflammatory Bowel Disease (IBD)** with **Irritable Bowel Syndrome (IBS)**. Irritable Bowel Syndrome does not increase one's risk for colorectal cancer. It is a common **disorder** that affects the large intestine. Signs and symptoms include cramping, abdominal pain, bloating, gas, and diarrhea or constipation, or both.

- **Family History of Colorectal Cancer or Adenomatous Polyps (Adenomas)**

First degree relatives (parents, siblings, and children) of a person who has had colorectal cancer are at increased risk of developing colorectal cancer, especially if the relative had the cancer under the age of 50 years.

If multiple family members have had colorectal cancer, the odds are higher of developing the disease. In some cases, cancers within the same family may result from shared exposure to an environmental carcinogen (cancer-causing agent) or from diet or lifestyle factors. It may have little to do with an inherited syndrome. (J. Olsen et al. 2004)

Having first degree family members who have had adenomas (the kind of polyps that become cancerous over time if not removed) is also linked to a higher risk of colorectal cancer.

- **Hereditary Syndromes**

Genetic syndromes passed through generations of one's family can increase a person's risk of developing colorectal cancer. These syndromes cause approximately 5% of colorectal cancers. The two most commonly inherited syndromes linked with colorectal cancers are:

**Familial Adenomatous Polyposis (FAP)**

and

**Hereditary Non-Polyposis Colorectal Cancer (HNPCC).**

**Familial Adenomatous Polyposis (FAP):** FAP is caused by changes (mutations) in a gene called the APC gene. A person will inherit this gene from his or her parents which causes them to develop hundreds to thousands of polyps in the lining of their colon and rectum, usually by early adulthood or even as young as their teens. People with untreated FAP have a greater than 90% chance of developing colorectal cancer in one of those polyps by age 45 and accounts for 1% of all colorectal cancers. The development of colorectal cancer can be avoided by employing preventive surgery (removal of the colon). (A. Kinney et al., 2007)

There are two subtypes of this disorder:

- **Attenuated FAP:** Patients have fewer polyps (less than 100) and colorectal cancer may occur at a later age.
- **Gardner Syndrome:** Patients also have non-cancerous tumours of the skin, soft tissue and bones.

**Hereditary Non-Polyposis Colorectal Cancer (HNPCC):** HNPCC is commonly referred to as Lynch **Syndrome** and it is caused by an inherited mutation in one of two genes: either the MLH1 or MSH2 gene. Changes in other genes can also cause Lynch Syndrome, however. These genes are well known to help repair genetic material (DNA) that has been damaged, much like spellcheckers pick up spelling errors on computers. Colon cancer may develop in people with HNPCC at an early age, though there aren't as many polyps that develop in the colon as there are in FAP. It does, however, account for approximately 3-4% of all colorectal cancers. The lifetime risk of colorectal cancer in people with this condition may be as high as 70-80%. (M. Scheurhen et al., 2001)

**Peutz-Jeghers Syndrome:** Peutz-Jeghers Syndrome is a rare inherited condition characterized by freckles around the mouth (and sometimes on the hands and feet) of those impacted and large polyps in their digestive tracts. People are at greatly increased risk for colorectal cancer; as well as several other cancers, which usually appear at a younger than normal age. (L. Boardman et al., 1998)

**Turcot Syndrome:** This is a rare inherited condition in which people have a higher risk of developing adenomas and colorectal cancer, as well as brain tumours.

**MUTYH-Associated Polyposis:** This inherited syndrome allows for the development of polyps that will likely become cancerous if the patient is not screened closely with regular colonoscopies. These people also have an increased risk of cancers of the small intestine, skin, ovary and bladder. This syndrome is caused by mutations in the MUTYH gene and often leads to cancer at a younger age.

- **Racial & Ethnic Background**

African Americans have the highest colorectal cancer incidence and mortality rates of all racial groups, especially in the U.S. The reason for this is not yet understood. (E. Mitchell, et al., 2009)

Ashkenazi Jews are Jews of Eastern European descent. They have one of the highest colorectal cancer risks of

any ethnic group in the world caused by several gene mutations. (I. Shapira et al., 2002; DS. Weinberg et al., 2006)

- **Personal History of Other Cancers**

Women who have a history of ovarian, uterine, endometrial or breast cancer have a slightly increased risk of developing colorectal cancer. Special screening guidelines should be adhered to for these patients. (M. Manuel et al., 2007)

- **Type II Diabetes**

There is evidence in the literature to support the fact that people with type 2 diabetes (usually non-insulin dependent) may have an increased risk of developing colorectal cancer. Both type 2 diabetes and colorectal cancer share some of the same risk factors (such as excess weight). Regardless, even after taking these into account, people with type 2 diabetes continue to have an increased risk. (Liu et al., 2008)

## **Part II: Lifestyle-Related Risk Factors That You Can Change**

- **Diet**

50% of cancers, including colorectal cancer, can be prevented through the adoption of a healthy lifestyle, which includes a diet high in vegetables, fruits, fibre and regular exercise. Colorectal cancer appears to be associated with diets that are high in fat, red and processed meats and low in fiber, vegetables and fruits. There is a link between cooking meats at very high temperatures and colorectal cancer. The method of cooking may vary (frying, broiling or grilling) but the chemicals created when cooking at high temperatures increases cancer risk just the same in those various methods. (Kouskik, 2008; Langman 2002; Vinikoor 2008) Please visit our Prevention of colorectal cancer Section and Foods For Life Section of our website to learn more about how to prevent colorectal cancer and how to prevent a recurrence.

- **Sedentary Lifestyle/Physical Inactivity**

An inactive lifestyle may lead to colorectal cancer because fecal material has a tendency to stay in the colon longer. Obtaining regular physical activity may reduce your risk by stimulating the movement of your colon and the passage of waste through the colon. (Salz et al., 2006; Giovannucci et al., 2006)

- **Obesity**

People who are obese have an increased risk of colorectal cancer and an increased risk of dying of colorectal cancer when compared with people considered normal weight. (Pasche et al., 2008)

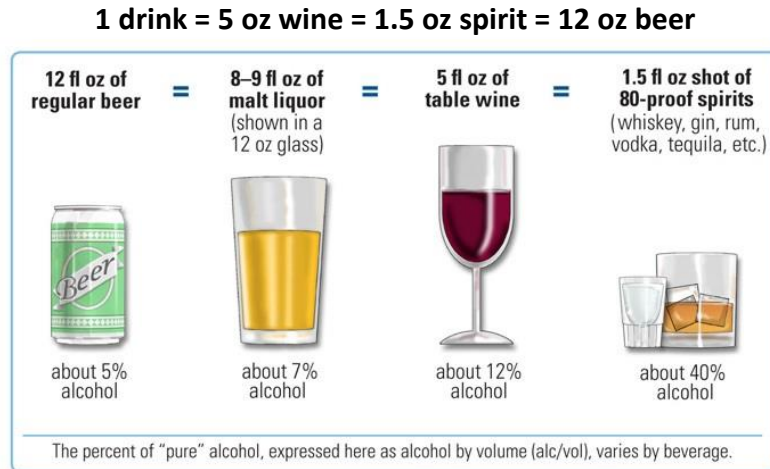
- **Smoking**

Smokers are at increased risk of developing and dying from colorectal cancer. While smoking is a well-known cause of lung cancer, some of the cancer-causing substances (carcinogens) are swallowed and can cause digestive system cancers, such as colorectal cancer. (Botteri et al., 2008)

- **Excessive Alcoholic Consumption**

Colorectal cancer has been linked to excessive alcoholic consumption, partly due to the fact heavy alcohol users tend to have low levels of folic acid in the body. Evidence also shows that the ethanol (a cancer-causing agent) contained in the alcoholic beverage appears to be the most important factor in raising cancer risk. (Bongaerts et al., 2008)

According to the World Cancer Research Fund, alcohol use should be limited to no more than 2 drinks per day for men and 1 drink per day for women. What constitutes one drink?



There has been a great deal of improvement in the way this disease is detected, treated and surveilled. Mortality rates are down due to screening and quality of life has improved significantly for the patients who are diagnosed with the disease. Regardless of your risk factors, adhering to a healthy lifestyle and accessing regular screening can only help to reduce your chances of being diagnosed with colorectal cancer. Prevention is key. Please call us. We are eager to help.

**Sources:**

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**The Cleveland Clinic Taussig Cancer Centre**

[http://my.clevelandclinic.org/disorders/Colorectal\\_Cancer/hic\\_Risk\\_Factors\\_for\\_Colorectal\\_Cancer.aspx](http://my.clevelandclinic.org/disorders/Colorectal_Cancer/hic_Risk_Factors_for_Colorectal_Cancer.aspx)

**Mayo Clinic**

<http://www.mayoclinic.com/health/colon-polyps/DS00511/DSECTION=risk-factors>

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