



**The Point of 0K
Colorectal Cancer
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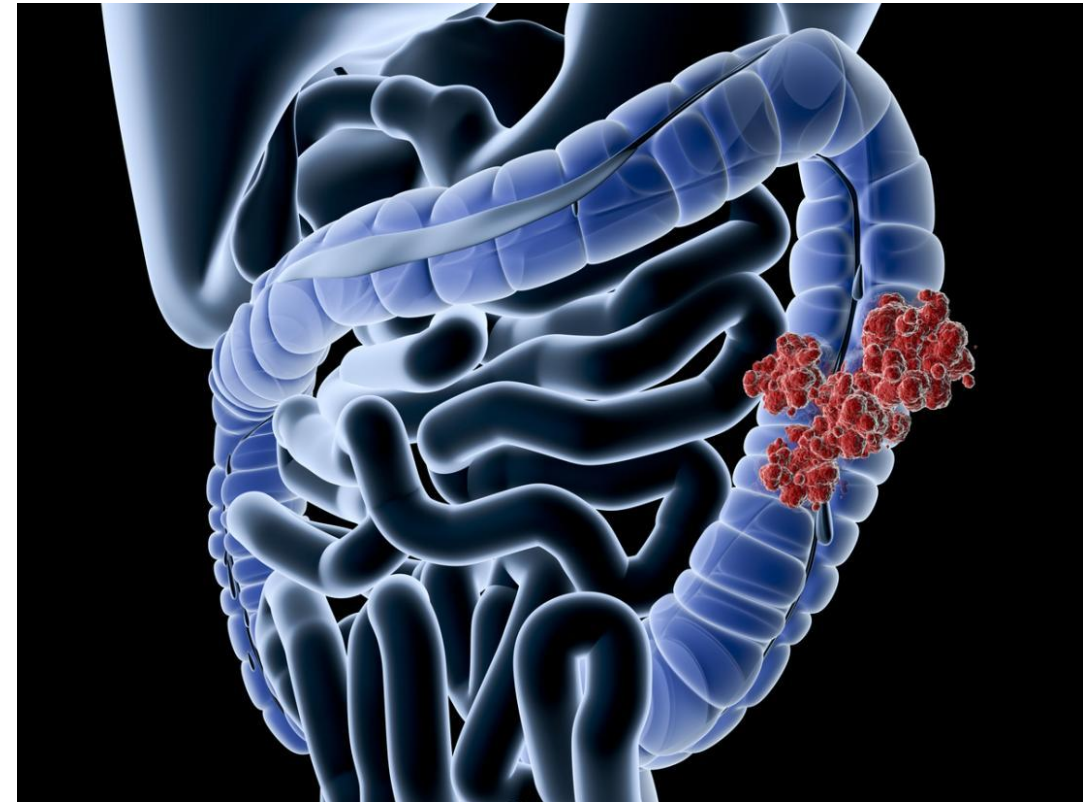
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Abstract

- Colorectal cancer is affecting a widespread amount of people every year. According to the American Cancer Society, the lifetime risk of being affected by colon cancer is 1/22 [1]. This number is largely growing due to the unawareness of many people on the types of prevention efforts. We hope with the recurrent ideal changes within society, and the use of awareness. People will see the everlasting ideas and treatments that colon cancer patients may choose from and the effects they play on a patient. With the use of ablation, embolization, radiation, chemotherapy, immunotherapy, or targeted therapy (or a combination of different types). Resources were gathered from institutes like the American Cancer Society, the CDC and Mayo clinic ensuring that the information provided is accurate. Colon cancer has a substantial remission cycle. Although there is are many ways to become cancer free after gaining the cancer, all of this can be mitigated by simple measures such as cancer screening.

What is Colorectal Cancer? [2]

- Colon cancer is the buildup of polyps (abnormal tissue that looks like bumps) which leads to the formation of either benign (non-invasive) or cancerous cells.
- It affects not only your digestive track but also ways in excreting waste
- 90 percent of people who found the cancer early succeeded with treatment; becoming cancer free, but only 40 percent are identified at an early stage



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Causes of Colorectal Cancer [4]

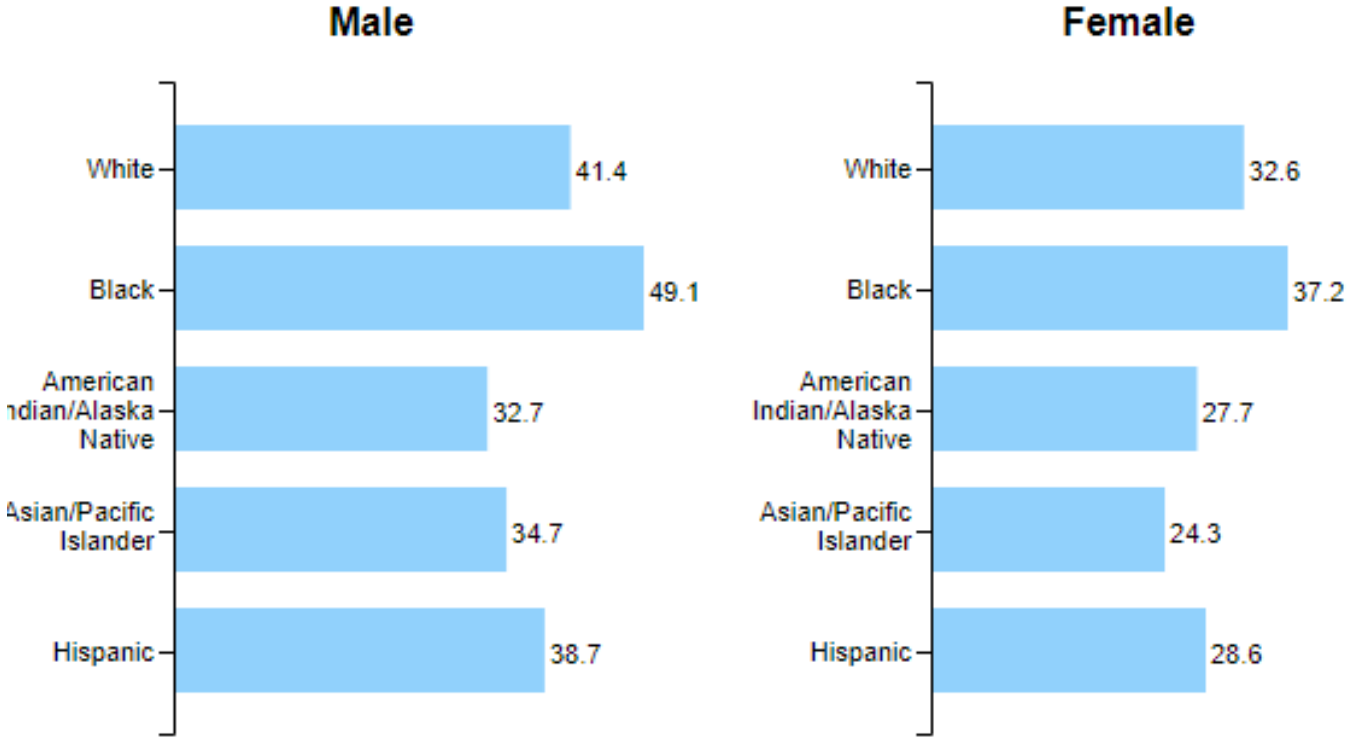
Risk

- Older age (doctors are unsure why)
- Genetics/History – MLH1, MSH2, MLH3, MSH6, PMS1, and PMS2 are all DNA repair enzyme genes which can be mutated to allow DNA errors to go unchecked [5]
- Intestinal conditions
- African-American (higher risk due to difference in colon from different accustomed foods (non-western)).
- Diabetes/obesity
- Alcohol/smoking
- Radiation therapy (radiation can change a cells structure forming cancerous cells).

[4] Source located on works cited page

[5] Source located on works cited page

Women vs Men Frequency (Comparative by Race)



[6]

- 101,420 cases of colon cancer expected in 2019
- Expected to have 51,020 deaths during 2019
- 44,180 cases of rectal cancer
- Men are more likely to get colorectal cancer (4.49%) than women (4.15%).
- African Americans are most likely to get colon cancer (42.2% of patients) that any other race. White people being 2nd (36.7 % of patients) [1]

[1] Source located on works cited page

[6] graph source located on works cited page

Environmental Impacts of Colon Cancer [11]

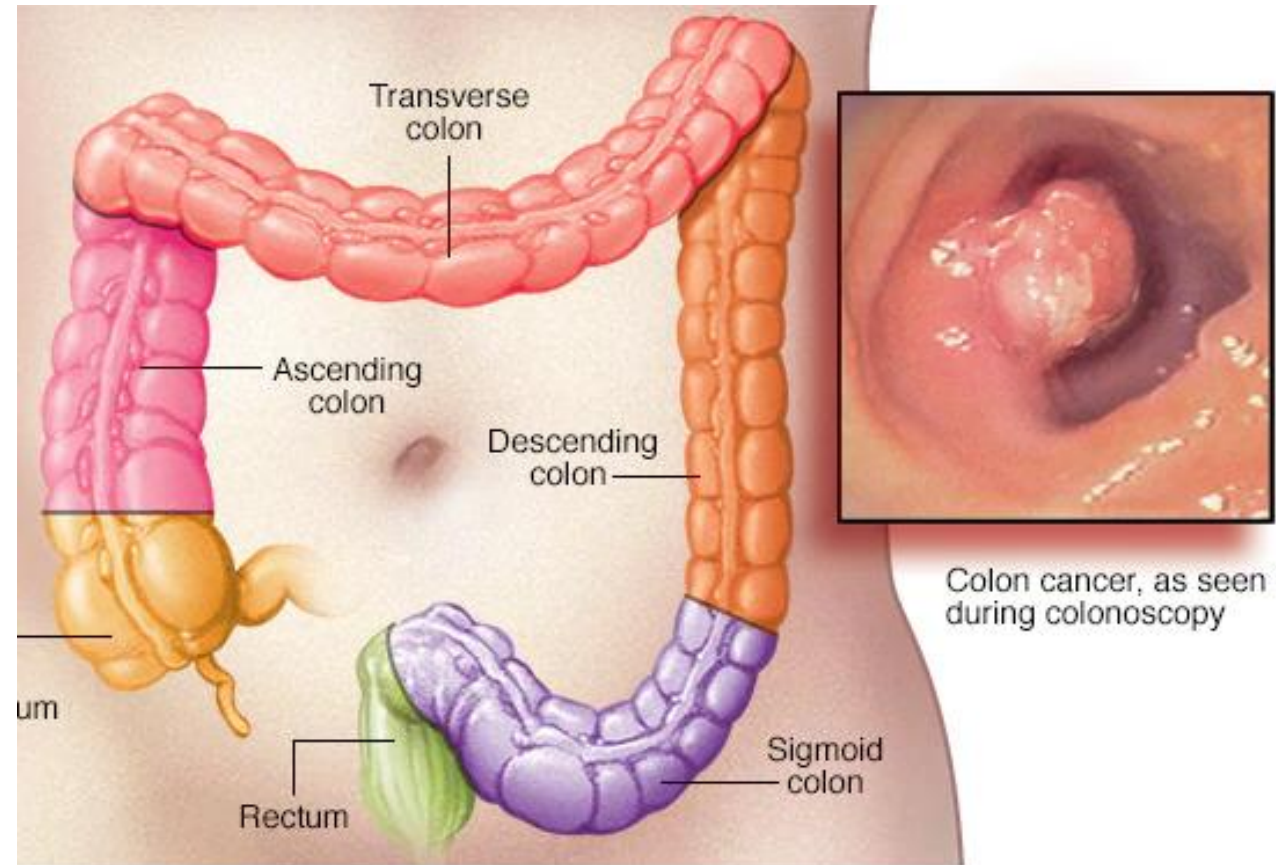
- When we don't eat a sufficient amount of vegetables, fruits, whole grains, chances of colon cancer increase.
- Diets that are high in animal fat have an increased chance of causing Colon Cancer
- Regular consumption of large amounts of alcohol may lead to increased chances of getting colon cancer at a younger age
- Smoking also causes colon cancer. If you don't smoke and, in your environment, people smoke a lot then the smoke that smokers release enters your lungs.
- Few studies suggest that a low consumption rate of fruits and vegetables may have a higher risk for colon cancer and geographic differences in countries may cause incidence cases for colon cancer to go up or down
 - For example places high in vegetation and fruits may cause the amount of cases with colon cancer to decrease

Treatments and Remission [7]

- Treatment of colorectal cancer is a long process that can take you into the direction of remission or mitigation from further damage in your bowel. The most common being surgery, is performed to completely remove cancerous tissues. More difficult roads are present for more difficult cases....
 - Ablation
 - Embolization
 - Radiation
 - Chemotherapy
 - immunotherapy
 - Targeted therapy

Surgery [8]

- Surgery is the most common course of treatment, but other treatments can . The surgeon will perform a colonoscopy and a polypectomy. The colonoscopy helps the surgeon see inside of the bowel while the polypectomy removes the polyp. For larger polyps, an excision is made to remove cancerous cells.



Colon cancer, as seen during colonoscopy

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Radiation Therapy or Chemotherapy

- In Colorectal cancer, Radiation therapy is a common treatment and is often used alongside chemotherapy. Radiation is given to the patient in order to lessen the size of the polyp. This makes it easier to remove if the surgeon chooses to do so [10].
- Chemotherapy is given to people before and after surgery using multiple different types of drugs for example Fluorouracil, and a specific dosage of chemotherapy. A person's body will be able to resist an ongoing formation of polyps (spread). Chemo is again given after surgery to kill any remaining cancerous cells [9].

[9] Source location on works cited page

[10] Source location on works cited page

Immuno-Checkpoint Inhibitors

Checkpoint inhibitors reroute the T-cells (cells that attack foreign substances entering the body) and force them to attack the tumor/polyp. Researchers do this using the drug, (Yervoy®) which blocks a protein (CTLA-4) alongside help from 2 other drugs. Your immune system recognizes that it can now target harsher substances in the body without being stopped by the body itself. This is an experimental resort but there have been many successes with this. [12]

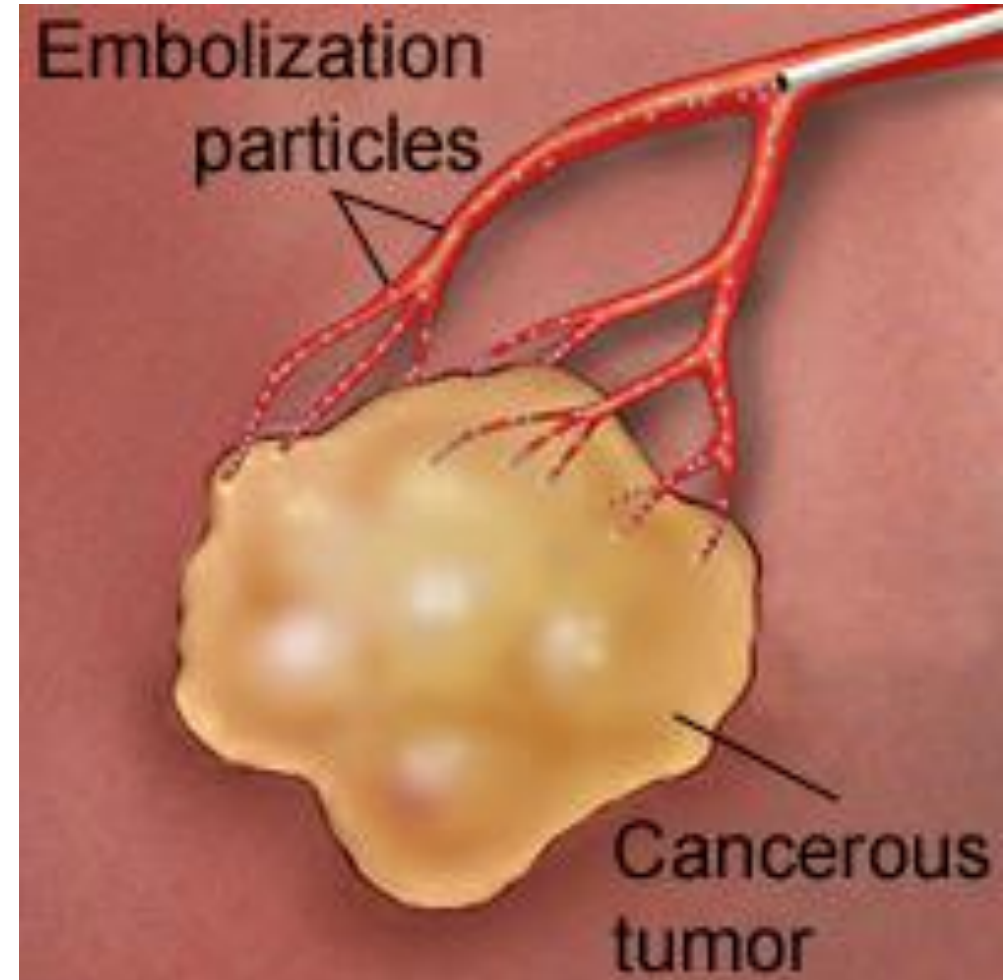
Yerov® is reported to have high levels of toxicity. According to the FDA, the drug should only be taken within specified dosages in small quantities. It is under trial to be completely removed from the research program and replaced by other supplemental drugs [13].

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Ablation or Embolization [14]

- Ablation is the process of using radio waves to kill the tumor. An electric current is sent to the tumor/polyp using a probe. This in turn heats the tumor and begins to destroy the cancer cells. This is a less invasive approach but will only destroy tumors less than 4cm in size.
- Embolization is when your doctor will inject a substance into your blood vessels to restrict blood flow to your tumor. This slowly kills the tumor/polyp but can be risky for patients with liver problems. Embolization is only used on polyps/tumors that are 5cm+ in size.



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Targeted Therapy [16]

- Targeted therapy is a choice of treatment that stops growth of the tumor. The vascular endothelial growth factor (VEGF) protein gives tumors blood vessels (angiogenesis) in order to grow. The drugs, Bevacizumab, Ramucirumab or Ziv-aflibercept are given to stop this angio-genesis (eventually limiting growth of the tumor and killing it).
- Many research organizations are branching away from VEGF into anti-VEGF. In the past, the protein has been associated with phenomena's not sustainable for the general public. Although the FDA did not ban VEGF, there are similar alternatives that do the same thing (anti-VEGFs).

Prevention and Early Detection

- To prevent Colon Cancer, the best way is to get screened. Screening is effortless and will provide you with ways to better limit your chances of contracting such an illness.

ex. Maintaining a healthy lifestyle and proper digestion efforts

- It is severely recommended for people above the age of 50 and recommended to take yearly for people in the age of 70-85.
- A colonoscopy is a procedure when a doctor takes a scope and puts it in your rectum to get to your colon
- Screening is by far the best way in order to prevent spread or development of a polyp. It is proven that it is the number one way to reduce the risk of the cancer. With the on press of such (being that it is the 3rd most contacted cancer). Doing this will likely help you or someone around you (remember 1 in 22 people develop colorectal cancer in [1]).

Colon Cance Advocates – Our inspiration for the Mankind



Mrs. Ravina Kashyap, Stage IV colon cancer advocate. Hats off to Mrs. Kashyap, an inspiration to the society! So proud of Mrs. Ravina Kashyap for coming forward, sharing her story, and providing her valuable insights on early symptoms and screening processes [17].



Colon Cancer Advocate: Dr. Vasudev Chaturvedi, Founder Secretary, Swastava Cancer Care, Cancer Care India.

Dr. Chaturvedi is a Stage IIIB Colon cancer survivor, diagnosed in 2016. He made his mission to help with Cancer Care and screening.

(Interview on 28th June in Hyderabad by Dr. Das Roy)

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