

Colon Cancer

Is colon cancer a function of race or genetics?

Colon Cancer

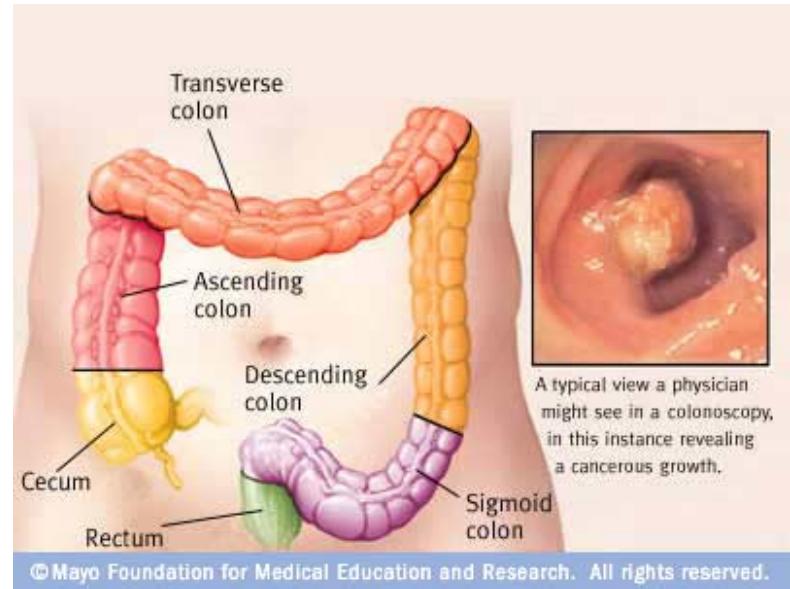
- What is colon cancer?
- What genes are associated with colon cancer?
- What external factors contribute to colon cancer?
- What is done to diagnose colon cancer?
- What is done to treat colon cancer?
- What novel techniques have been developed to diagnose/treat colon cancer?

Colon Cancer

- **Which novel drug is better and why?**
- **Is colon cancer a function of race or genetics?**

Causes

- Polyp
- Nonpolyploid lesion
- Genetic
 - Familial Adenomatous Polyposis (FAP)
 - Hereditary Nonpolyposis Colorectal Cancer (HNPCC aka Lynch Syndrome)



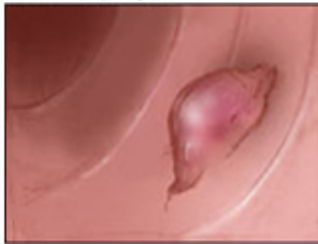
Types of Polyps

Polyps

Pedunculated polyp

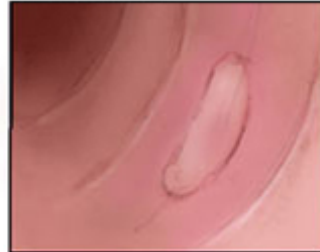


Sessile polyp

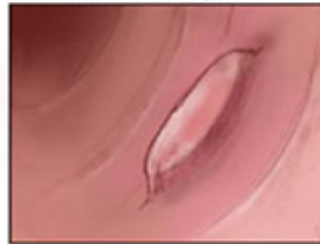


Nonpolyps

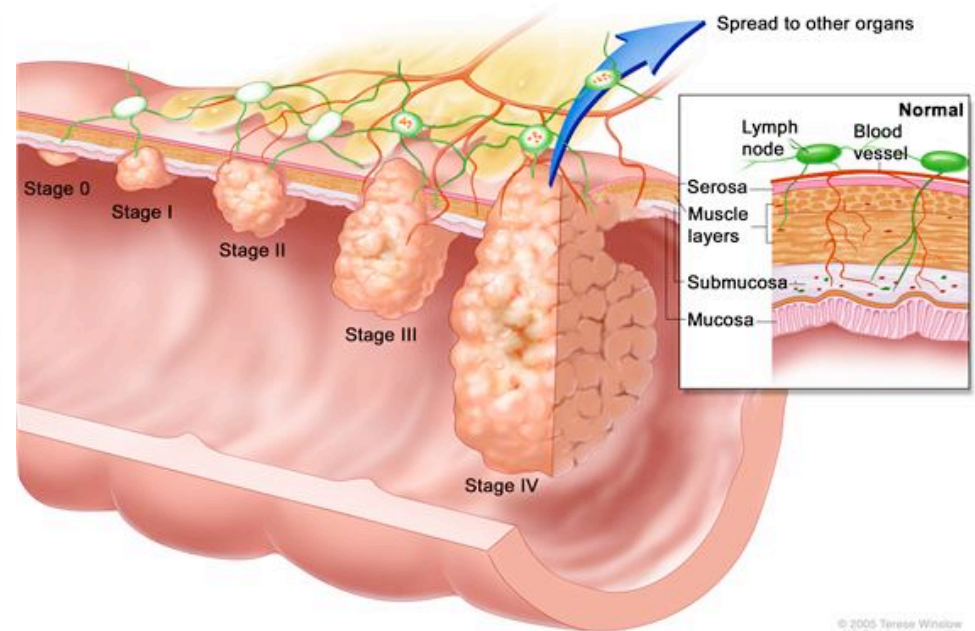
Flat nonpolyp



Elevated nonpolyp

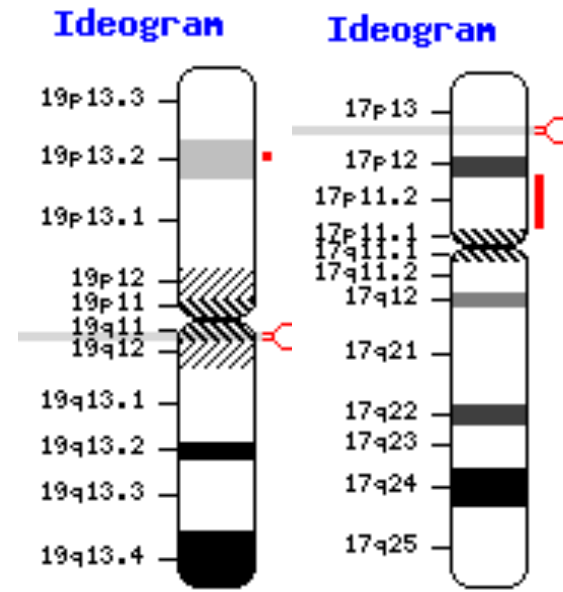


Depressed nonpolyp



Genetic Causes

- DNA Methyltransferase 1 (DMNT1)
 - Elevated expression of this gene is associated with the progression of colon cancer
 - Hypomethylation plays a causal role in tumor formation
- Birt-Hogg-Dube (BHD)
 - Development of colonic polyps



Risk Factors

- Obesity
- Old Age
- Alcoholism
- Sedentary Lifestyle
- Poor Diet
- African American heritage
- Inflammatory intestinal conditions

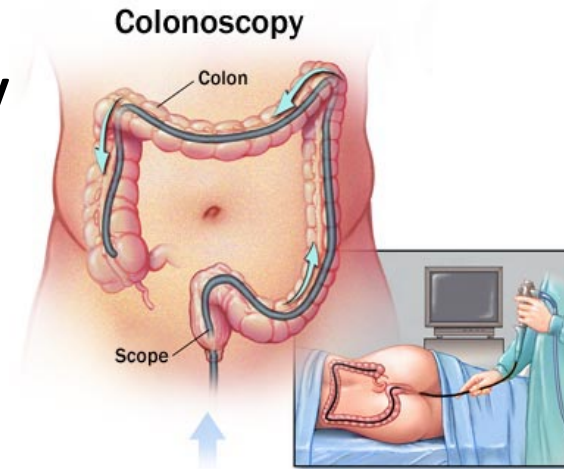
- REMEMBER: The ethical issues question...

Signs of Colon Cancer

- Change in bowel habits
- Blood in the stool
- Feeling that bowels don't empty
- Stool more narrow than usual
- Frequent gas pain, bloating, and cramping
- Weight loss for no known reason
- Feeling very tired
- Vomiting

Diagnosing Colon Cancer

- Colonoscopy
- Blood test
- X-ray
- CT scan
- Fecal Occult Blood Test



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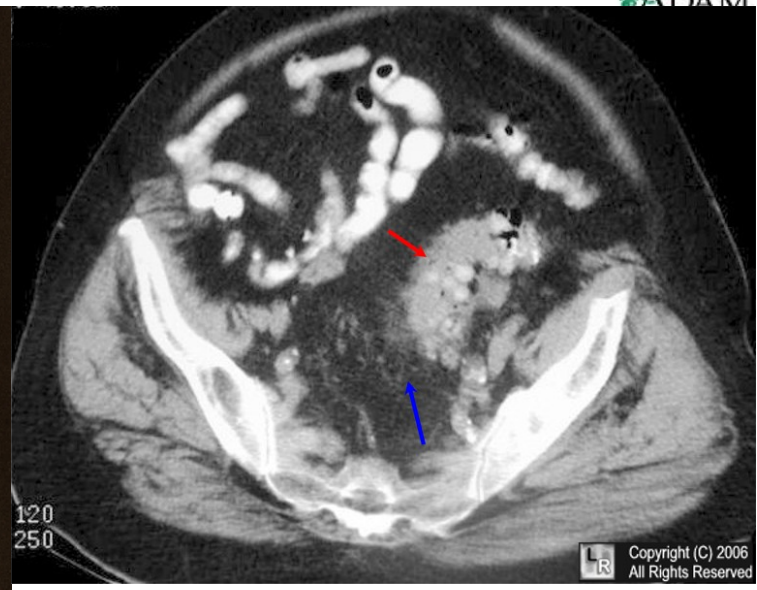
Tourniquet is applied and area is disinfected



Needle is introduced into vein, blood is drawn into vial and analyzed

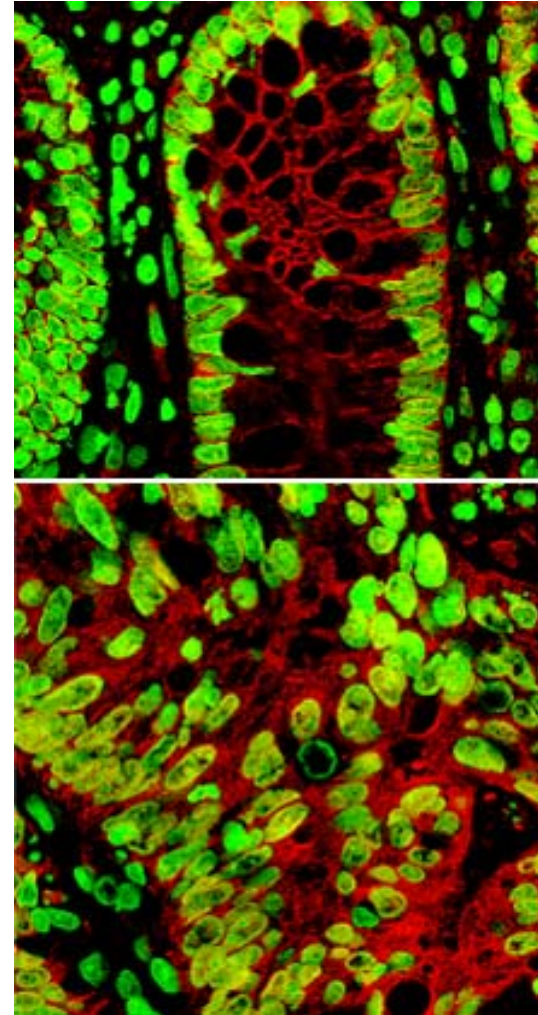


ADAM



Novel Diagnosis

- Noninvasive, accurate blood test
 - Tests for SYNE1 and FOXE1 genes



Treatment

- Surgery
 - early stage v invasive v advanced
- Chemotherapy
 - Used if cancer has spread beyond the wall of the colon
- Radiation
 - Especially used to treat rectal cancer
- Targeted Drug Therapy
 - Targets specific defects that allow cancer cells to proliferate (advanced cancer)

GINA

- What?
 - Act designed to prohibit the improper use of genetic information in health insurance and employment
 - Allows projects like GenBank to get data for researchs
 - Goes into effect Dec 7, 2009

GINA

- Why?
 - Does lifestyle or genetic makeup contribute more to colon cancer?
 - Which groups are more likely to get culturally influenced colon cancer and which are more likely to get the one caused by genetic mutations?

The Great Debate

- Colon cancer is the third leading cause of death in African Americans
 - AA are less likely to be screened for colon cancer
 - Lifestyle plays a huge role
- The SNPs are extremely common in Canadians
- People who are genetically predisposed to having colon cancer should not be afraid to be tested under penalty of the insurance companies

	People with HNPCC	The General Population
Percent who will develop colon cancer	80*	4
Average age that colon cancer develops	44	65
*Without early and regular screening		

Who is more AT RISK TO THE INSURANCE COMPANY?

Sources

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