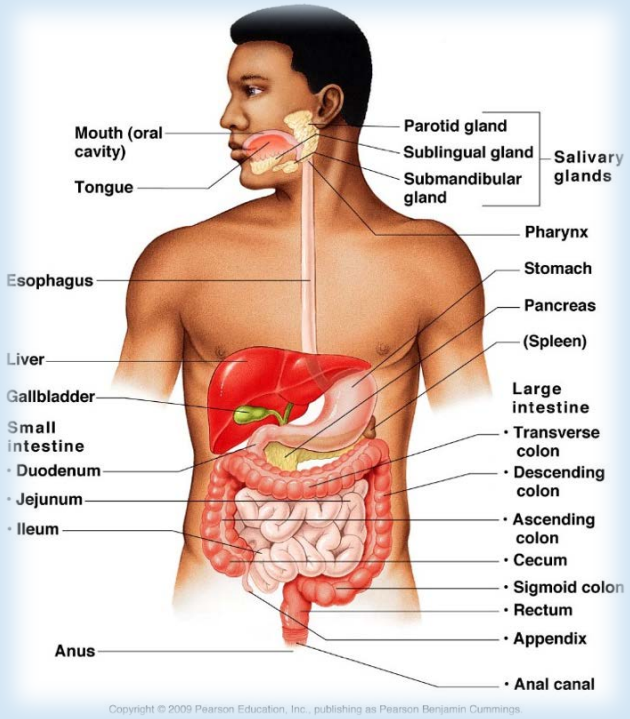
GI CANCER SCREENING- Is It Worth It?



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“Life is a sexually transmitted disease, and the mortality rate is 100%”
-R.D. Laing

- With this sentiment in mind, the purpose of the preventative medicine is to **“delay the inevitable.”**

Topic Question Highlights

- Discussion of GI Cancer Screenings

  (CRC, esophageal, pancreatic, liver)

- For screening to be effective, the purpose must not be to only discover cancer but to PREVENT mortality.

- Do all forms of GI cancer screening provide equal results?

- Is screening for GI cancer “cost effective?”

CRC SCREENING

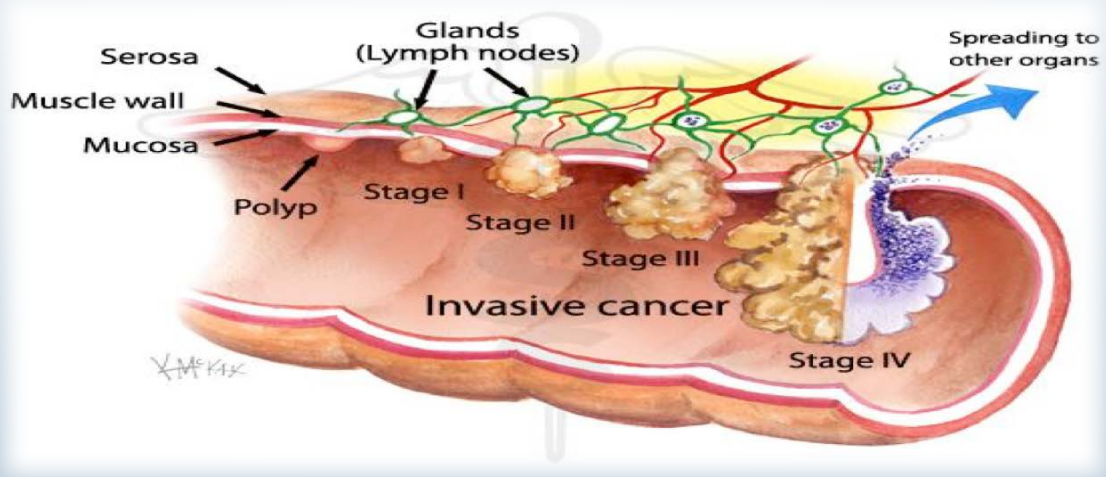
- Imperative in overall cancer screening strategy
  - CRC is the 2nd leading cause of cancer deaths – accounting for 9% of all cancer deaths.
  - 1 in 3 patients who develop CRC will die → overall goal is to perform preventative screening – i.e. lower the incidence of cancer by finding precursor lesions.

- Lifetime incidence for patients at average risk for CRC is 5% with 90% of CRC cases occurring after age 50.

- Begin in the late 1980's
  - In 2010, statistics state that 65% of the population have had "adequate screening" for disease.

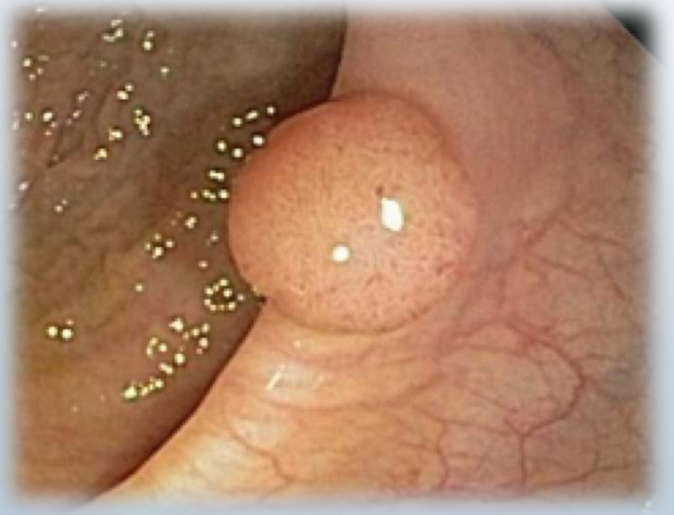
How Can CRC Screening Impact Incidence?

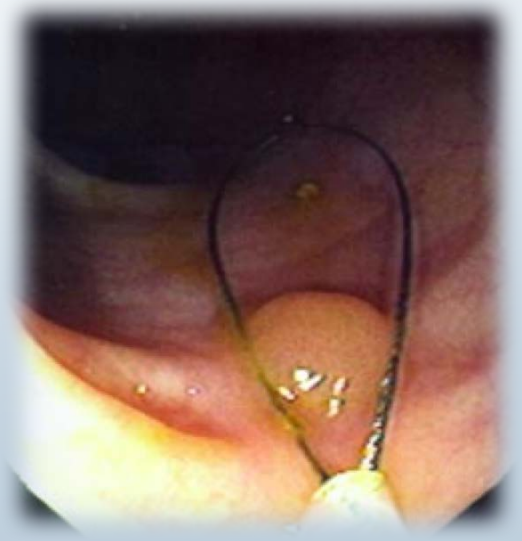
- **Adenoma to Carcinoma Sequence**
  - Nearly all colon cancer starts with an adenomatous polyp as a precursor lesion.
  - Progression from adenoma to carcinoma takes at least 10 years – usually 15 to 20 years.
  - As developing polyps increase in size, the risk of cancer increases.



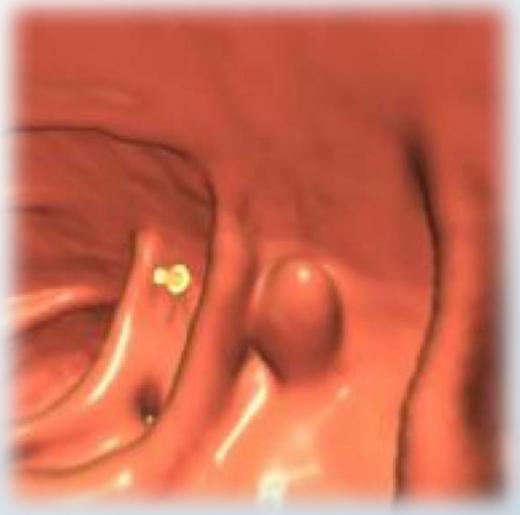
How Can CRC Screening Impact Incidence? (cont.)

- Removal of Colon Polyps will prevent Colon Cancer
  - National polyp study work groups followed 1,416 patients who had polyps removed – incidence of CRC was 90% less than patients who had polyps found but not removed, and 76% less than general population.





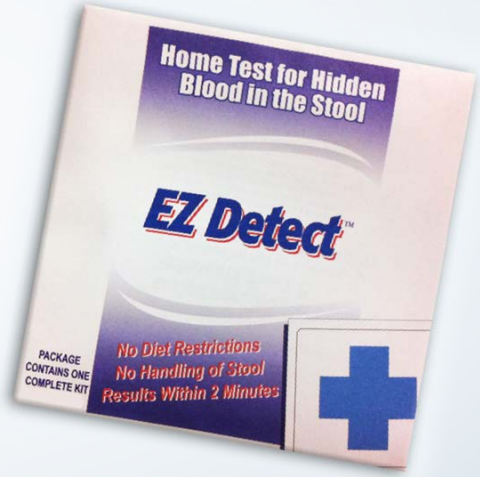
How Can CRC Screening Impact Incidence? (cont.)



- **Detection of Flat Polyps**
  - Subtle lesions, more commonly found in the right colon
  - Account for > 30% of adenomas
  - Historically, colonoscopy has been more effective in detection of left colon polyps, however, better equipment and instruments as well as more training is presently available to aid in detection.

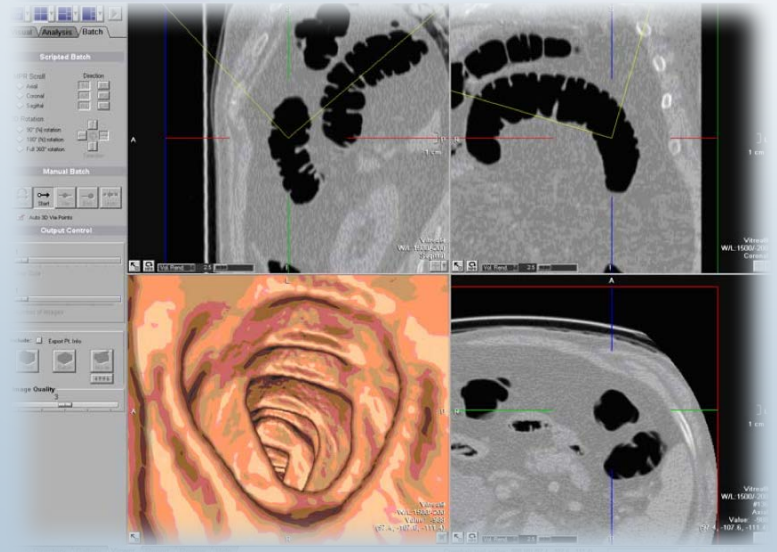
CRC SCREENING TESTS

- ✓ Fecal Occult Blood
  - Allows for the detection of blood in stool
  - 2 Types:
    - Guaic based test = more sensitive
    - Immunohistochemical based test = more specific
  - 15% to 18% mortality reduction
  - Requires colonoscopic follow-up on all positives
- ✓ Stool DNA Testing
  - Involves collection of entire bowel movement
  - Expensive
  - Can give “false positives”
  - Requires colonoscopic follow up on all positives



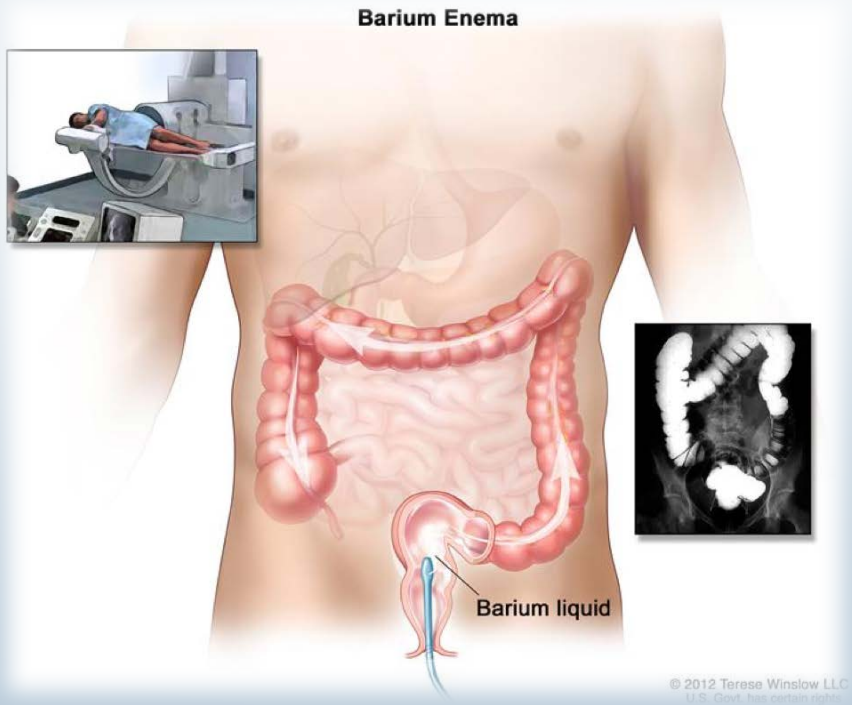
CRC SCREENING TESTS (cont.)

- **CT Colonography** (Virtual Colonoscopy)
  - Studies suggest testing is a sensitive as optimal colonoscopy; however, these studies did not take into account the detection of flat polyps, which are rarely identified by this test.
  - MOST expensive screening method – needs to be repeated at least every 5 years.
  - Raising concern regarding cumulative radiation does with repeated screenings
  - Requires colonoscopic follow up to confirm and remove any polyps/lesions



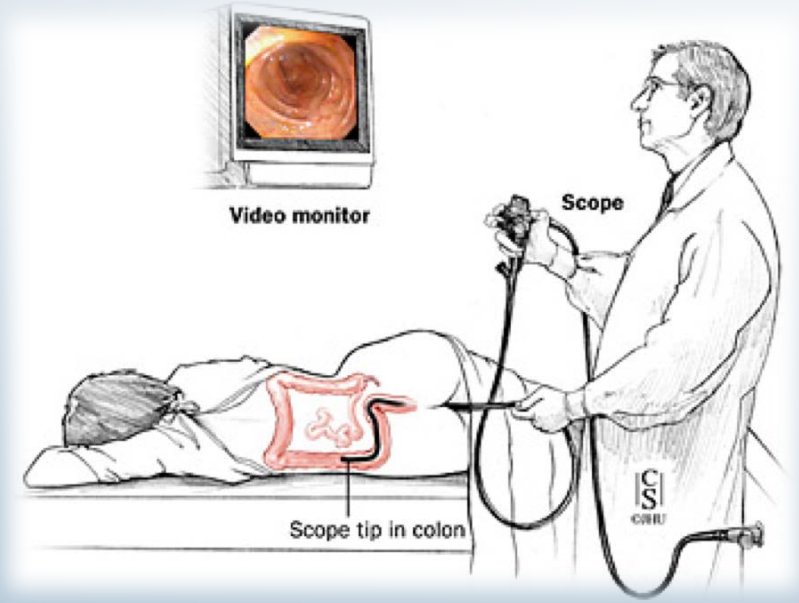
CRC SCREENING TESTS (cont.)

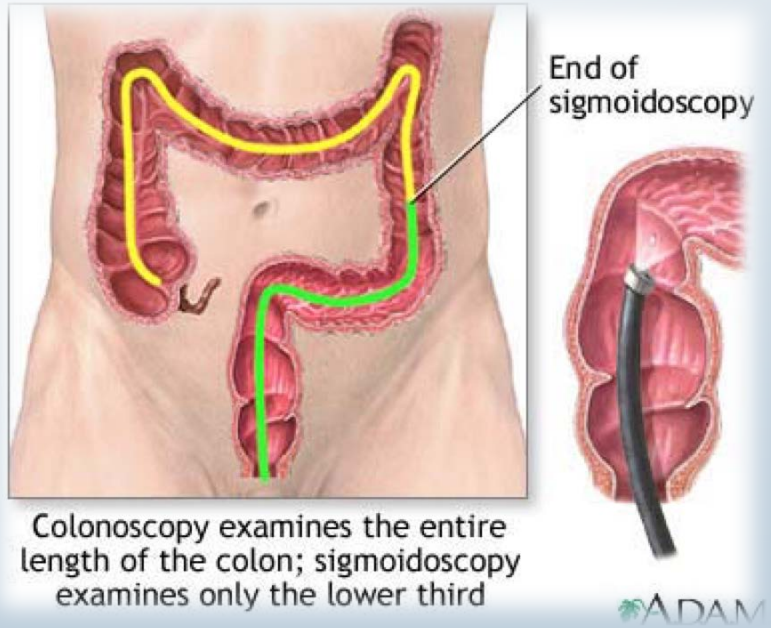
- **Barium Enema**
  - Low outcomes in detection of flat polyps
  - Poor patient acceptance owing to discomfort
  - Requires colonoscopic follow up to confirm and remove any polyps/lesions



CRC SCREENING TESTS (cont.)

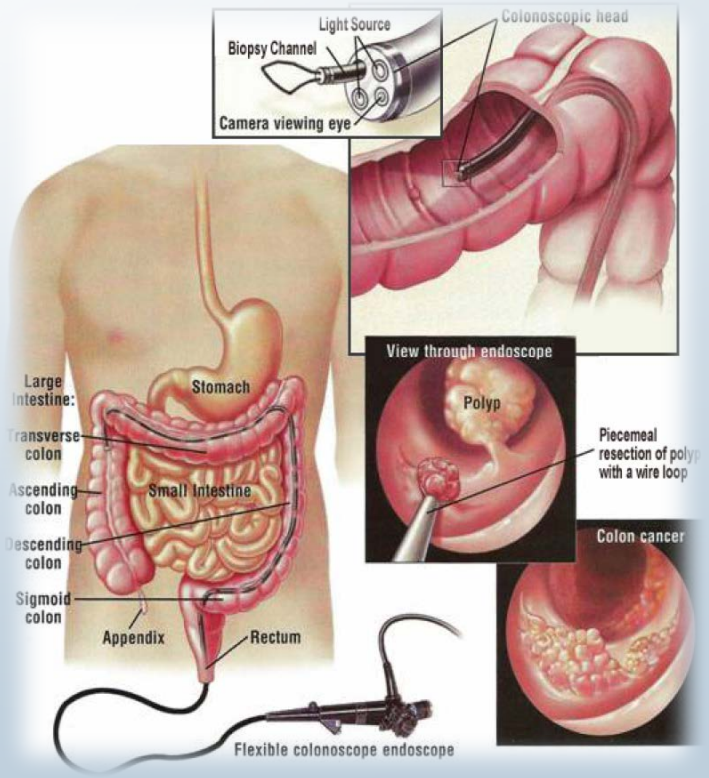
- Flexible Sigmoidoscopy
  - Allows for examination the left colon
  - Less effective in detecting cancer





CRC SCREENING TESTS (cont.)

- **Colonoscopy**
  - Capable of detection and removal at the same time.
  - Longest interval between screening exams – 10 years
  - GREATEST detection sensitivity of all screening options
  - Only test that can interrupt the polyp to cancer sequence
  - Gives > 90% decrease in incidence of colon cancer



Colonoscopy =

- Most sensitive testing form
- Only test that will prevent CRC
- Cost effective
  - Recent studies suggest that CRC screening by colonoscopy is not only cost-effective but provides cost savings from the soaring cost of treatment for advanced CRC with newer targeted therapies
  - CRC screening campaigns seem to be making an impact regarding the importance of colonoscopy in preventing cancer and its cost-effectiveness, i.e. employers are making CRC screening a mandatory park of their HR packages.

2014 Colorectal Cancer Statistics from American Cancer Society

- 30% drop in colorectal cancer incidence rates in adults 50 and older over just one decade.
- Most likely due to increased colonoscopy screening since 2000
- Incidence rates have been decreasing since the mid-1980's.

PATIENT ACCEPTANCE

- "The best CRC screening method is the one that the patient will do"
  - Stool testing is the simplest and most easily acceptable screening method to patients, but it is not sensitive enough detect all colon lesions
  - The variety of screening methods require the clinician to advise the patient of pros and cons of each test so that the patient can make an informed decision
  - In 2012 65.1% of the targeted adult population in the U.S. were up to date with screening.
    - 27.7% of those adults are currently going unscreened.
    - Important to recommend alternative forms of screening to those patients not agreeable to colonoscopy.

CRC SCREENING
MAXIMIZING EFFECT & VALUE

- Stratify Patients
  - Standard Risk vs High Risk
  - Age
  - Gender
  - Family History
- Genetic Risk Factors
- Hx IBD
- Hx Abdominal Radiation
- Miscellaneous
  - Diabetes
  - Obesity
  - Smoker/Alcoholic
  - HIV
  - Renal transplant

CRC SCREENING
MAXIMIZING EFFECT & VALUE

Recommendations for Subsequent Exams:

Patients who have undergone a “high quality” screening colon consisting of high definition endoscopes, adequate prep, an experienced endoscopist, and a dedicated endoscopy unit.

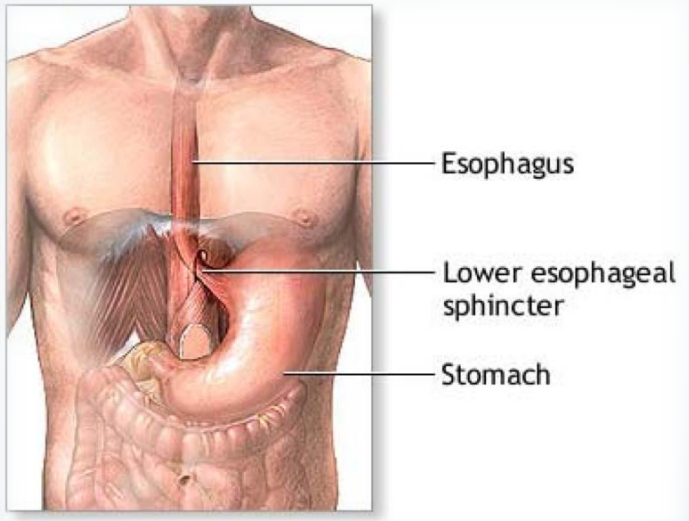
- Standard Risk
  - No polyps – 7 to 10 years
  - Polyps – 3 to 5 years
- High Risk
  - No polyps – 5 years
  - Polyps – 3 years

To Reduce Risk Of Getting Colorectal Cancer:

- Getting screened regularly
- Achieving and maintaining a healthy weight
- Being physically active
- Getting the recommended amount of calcium
- Not smoking and limiting alcohol consumption
- Eating a diet high in fruits, vegetables, and whole grains.

American Cancer Society®

SCREENING FOR ESOPHAGEAL CANCER



- Barrett's Esophagus is a condition for which screening has shown benefit
- 2% of patients diagnosed with Barrett's will develop cancer annually
- Risk of developing esophageal cancer in patient's with Barrett's is increased 30x that of general population
- Studies looking at absolute morality have been skewed since patients were not stratified by age
- Barrett's will have more effect on mortality in younger population as older patients will die of other conditions

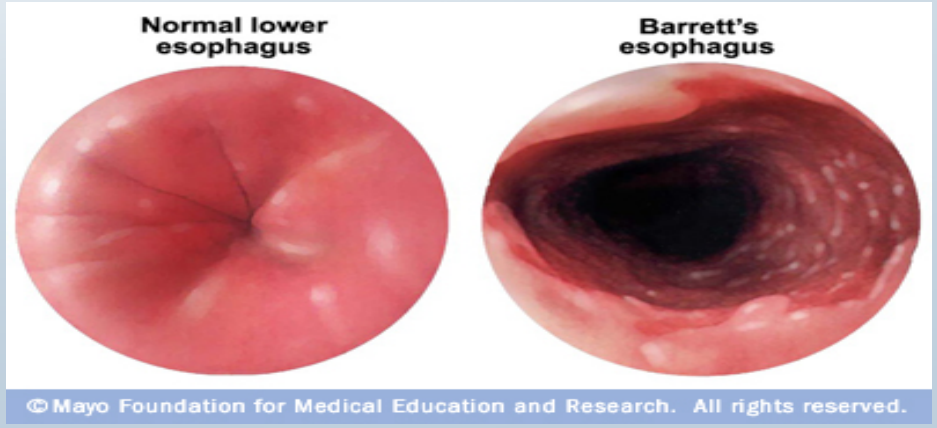
ESOPHAGEAL CANCER SCREENING
Barrett's Esophagus

Who?

- Patients with chronic GERD – experiencing heartburn > 2x weekly over a few years

Screening Methods

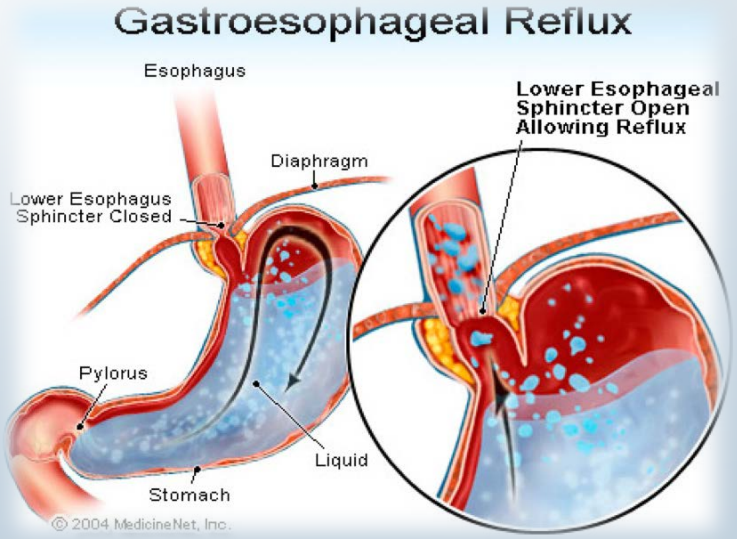
- Main objective is to detect dysplasia
- Endoscopic examination to identify the presence of Barrett's/Dysplasia
  - Multiple biopsies of the abdominal tissue (4 quadrant biopsies – every 2 cm for microscopic evaluation of dysplasia)



Barrett's Esophagus Symptoms:

- Barrett's Esophagus has no unique symptoms. Patients with Barrett's have the symptoms of GERD (Heartburn, Regurgitation, Nausea, Ect.) However, not all patients have marked symptoms of GERD, and some patients are detected accidently with minimal or no symptoms of GERD.

- Heartburn
- Regurgitation (backup)
- New onset adult asthma
- Chronic cough
- Sore throats
- Hoarseness



ESOPHAGEAL CANCER SCREENING
Barrett's Esophagus

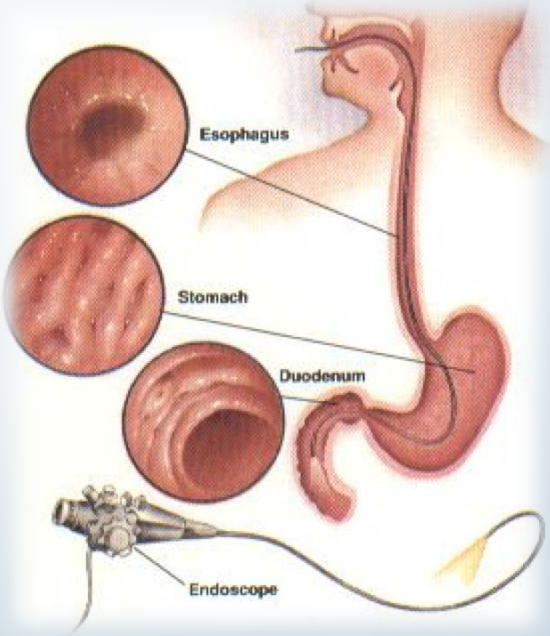
What is Accomplished?

- Identifies patients at increased risk for esophageal cancer
- Classifies tissue specimens as: carcinoma, high-grade dysplasia (HGD), low-grade dysplasia (LGD), indefinite for dysplasia, or dysplasia
- Determines follow-up surveillance interval based on pathology
  - No evidence of dysplasia → 1 to 3 years depending on the length of Barrett's segments
  - LGD → 6 months
  - HGD → referral to surgeon depending on patient's age, contraindications, and willingness
    - Patient's who are not surgical candidates or refuse surgery should have endoscopic surveillance done at frequent intervals with extensive biopsies.

ESOPHAGEAL CANCER SCREENING
Barrett's Esophagus

Treatment:

- Ablation therapy, HALO, cryotherapy, & mucosal resection
- Combination drug therapy
- Surgery



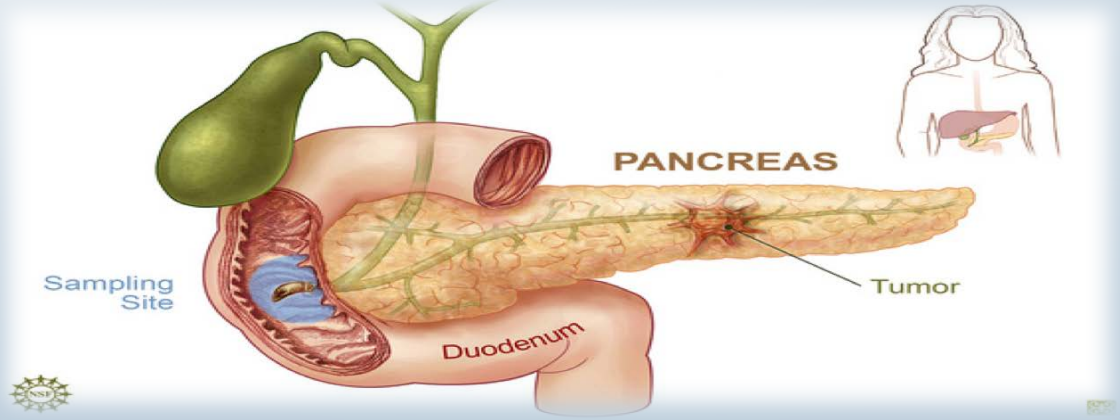
Future Advances:

- enhanced endoscopic imaging
- Better patient stratification
- DNA/molecular markers
  - Enable better identification of patients with increased risk for dysplasia
  - Provide better guidelines for surveillance and treatment modalities

PANCREATIC CANCER SCREENING

- "Routine" screening is of limited value in average-risked individuals.
  - Low incidence – 8.8/100,000
  - No diagnostic test available that is non-invasive, reasonably priced or highly specific and sensitive

- However, if patients have factors that put them at a 10 fold or higher risk for pancreatic cancer, screening should be considered.
  - Hereditary pancreatitis
  - Pancreatic cancer is 1st degree relative < 50 years of age; pancreatic cancer in two 1st degree relatives
  - Hereditary breast and ovarian cancer
  - Peutz-Jeghers syndrome
  - Familial melanoma syndrome
  - HNPCC, FAP



PANCREATIC CANCER SCREENING

- Patients with multiple risk factors (non-familial associated)
  - ABO Blood Group (Type A, AB, & B)
  - Chronic pancreatitis
  - Diabetes – Insulin resistance
  - Cigarette Smoking
  - Obesity – 8MI > 30
  - Partial Gastrectomy

Example patient (high risk):

- 40 y/o black male, blood type A, fly hx pancreatic cancer in brother (45) and mother (50), smoker, diabetic, and obese

PANCREATIC CANCER SCREENING

- Diagnostic/ Labs
  - CA 19-9
  - EUS alternating with MRI

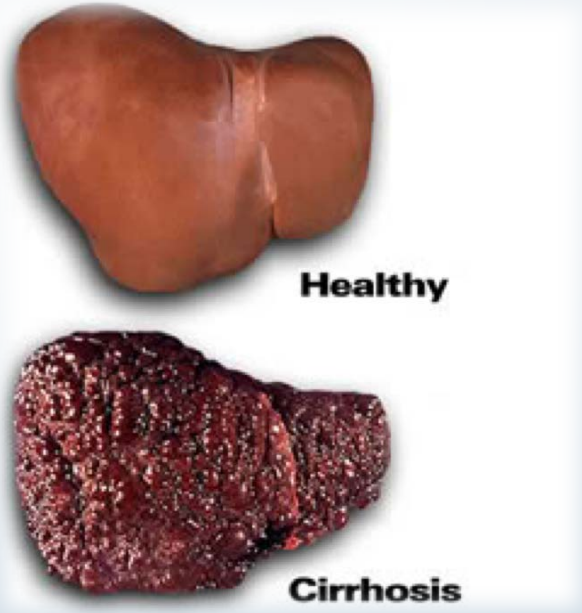
- Screening should begin at 40 years of age or 10 years younger than youngest relative with pancreatic cancer

- Subsequent screening → every 1 to 3 years stratified based on individual risk factors.

SCREENING FOR HEPATOCELLULAR CARCINOMA (HCC)

Who?

- Patients with cirrhosis – regardless of etiology
- Hepatitis B carriers (without cirrhosis)
  - Asian males > 40 y/o
  - Asian Females > 50 y/o
  - Africans & Afro Americans
  - Family History of hepatoma
  - Caucasians with high viral load



Screening Methods:

- Ultrasound of the liver & alpha-fetoprotein – to be done every 6 months
  - ? MRI alternating with ultrasound because ultrasound will miss 40% of early HCC

SCREENING FOR HEPATOCELLULAR CARCINOMA (HCC)

What is accomplished?

- Mortality is decreased by 40% after 5 years in patients undergoing screening
- Screening methods pick up small lesions that are amendable to radiofrequency ablation.

Future Advances

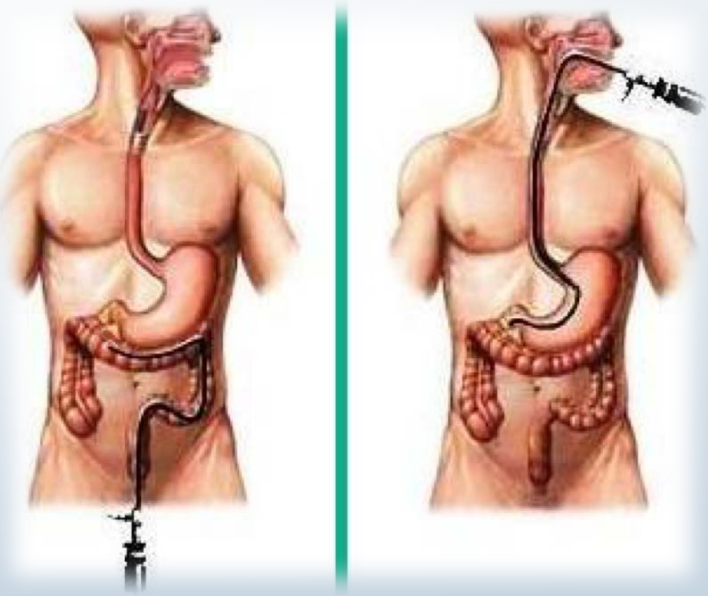
- Risk stratification using Hepatitis B and Hepatitis C genotyping as well as staging of liver disease.

GI CANCER SCREENING- Is It Worth It?

Here's the Wrap Up!!

CRC Screening with Colonoscopy

- Not only discovers but prevents development by interrupting polyp to cancer sequence
- Cost-effective and cost saving when applied appropriately
- Effective screening requires the patient to be correctly stratified taking into account age, personal history, family history
- Needs to be correctly performed and interpreted, i.e. “high quality” for appropriate protection to occur.

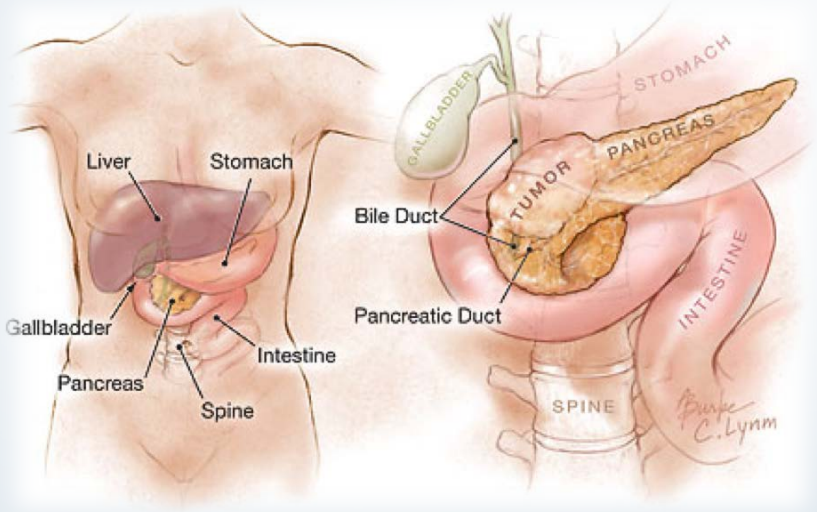


Esophageal Cancer Screening

- Appropriate in Barrett’s Esophagus
- Cost-effective in “high risk” individuals
- Objective is to identify dysplasia and prevent progression to cancer.

Pancreatic Cancer Screening

- Not ready for primetime owing to low incidence and lack of cost-effective, non-invasive screening tools
- Can not be used to screen general population – only “high-risk” individuals



Hepatocellular Carcinoma Screening

- Non-invasive and cost-effective in appropriate population, i.e. cirrhosis and chronic hepatitis.
- Does NOT prevent cancer but can increase survival.


That's all Folks!
SUPERB wallpapers