مرکز تحقیقات گوارش و کبد

دانشگاه علوم پزشکی اصفهان

هفته سلامت گوارش

سلامت دستگاه گوارش: روده سالم از ابتدا

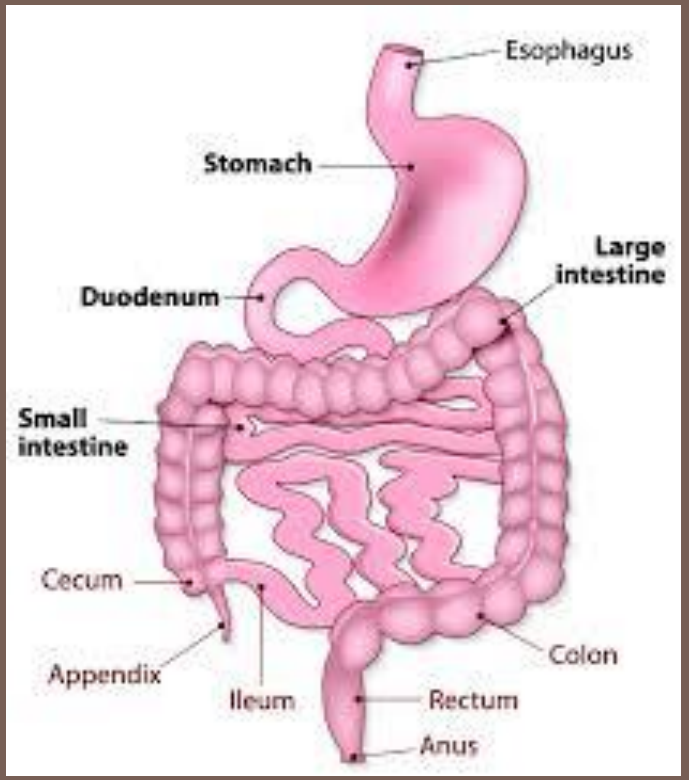
۶ لغایت ۱۲ خرداد ماه ۱۴۰۲

Your digestive Health:
A Heealthy Gut From the start

May 27- June 02, 2023

IN THE NAME OF GOD

The role of screening in the health of GI system



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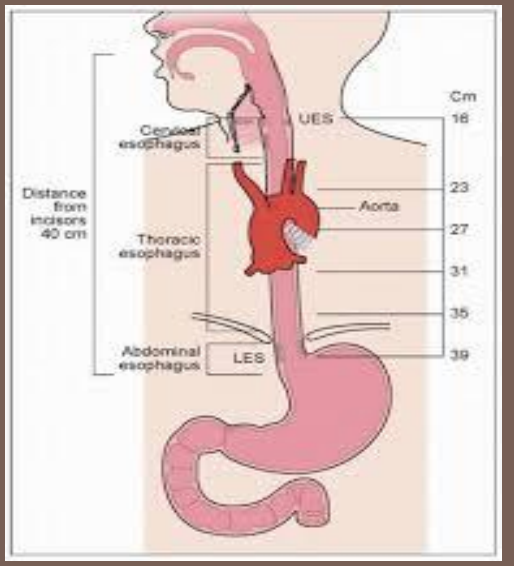
Burden of Gastrointestinal and Liver Diseases in Iran

- >40% of all cancer prevalence and mortality in Iran.
- A major proportion of all deaths due to G.I & Liver Disease.
- Cancers of the GI tract are among **the most common tumors.**
- GI and liver malignancies along with chronic liver disease constitute the **main causes of hospitalization and deaths** in Iran.

ESOPHAGEAL CANCER



Epidemiology and Natural History

- The two types of esophageal cancer are squamous cell and adenocarcinoma.
- Scc are most common in the cervical and thoracic esophagus, and adenocarcinomas commonly occur in the lower esophagus down to the GEJ.

Scc are associated with predisposing factors that include:

- smoking
- caustic injury
- achalasia
- alcohol intake.
- Scc are associated with other tobacco-related cancers in the upper airways and digestive tract.

- The rate of adenocarcinoma is increasing.

This increase is related in part to Barrett esophagus, an adenomatous metaplasia of the distal esophagus often caused by GERD, but other factors are likely.

- The major risk factors for adenocarcinoma of the esophagus are
- Barrett's esophagus
- GERD
- smoking
- high BMI

Symptoms

- The most common symptom of esophageal cancer is dysphagia.

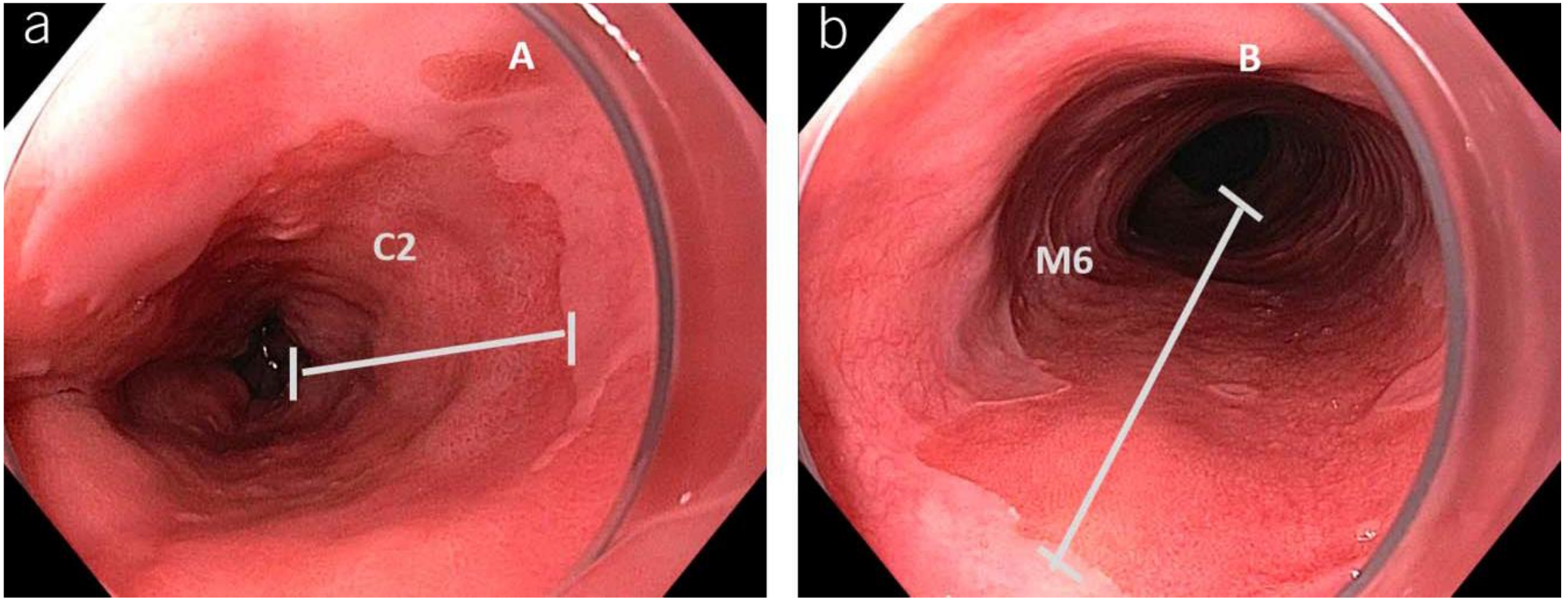
- Patients commonly become afraid to eat because of frequent regurgitation at mealtime, resulting in significant weight loss.

SCREENING FOR BE

We suggest a single screening endoscopy for patients with chronic GERD symptoms and 3 or more additional risk factors for BE, including:

- Male sex
- Age>50 years
- White race
- Tobacco smoking
- Obesity
- FH of BE or EAC in a first-degree relative

(Diagnosis and Management of Barrett's Esophagus:An Updated ACG Guideline2022)


a
A
C2
b
B
M6

In patients with short (1–2 cm) segments of suspected BE at least:

- ✓ 4 biopsies per centimeter of circumferential BE
- ✓ 1 biopsy per centimeter in tongues of BE

should be obtained.

GASTRIC CANCER

- Most northern and northwestern regions of Iran are at a high risk for gastric cancer.
- A strong spatial clustering of gastric cancer in both men and women has been described in Mazandaran and Golestan.
- Ardabil, a northwestern province, has the highest incidence of gastric cancer in Iran.

Risk factors of gastric cancer in Iran

- Gastric cancer is a multi-factorial disease.
- The intestinal histological subtype of gastric adenocarcinoma, as the most common form of gastric cancer, develops in an inflammatory background induced by H.pylori.
- Chronic gastritis and progresses to atrophic gastritis,intestinal metaplasia, glandular dysplasia and eventually adenocarcinoma.

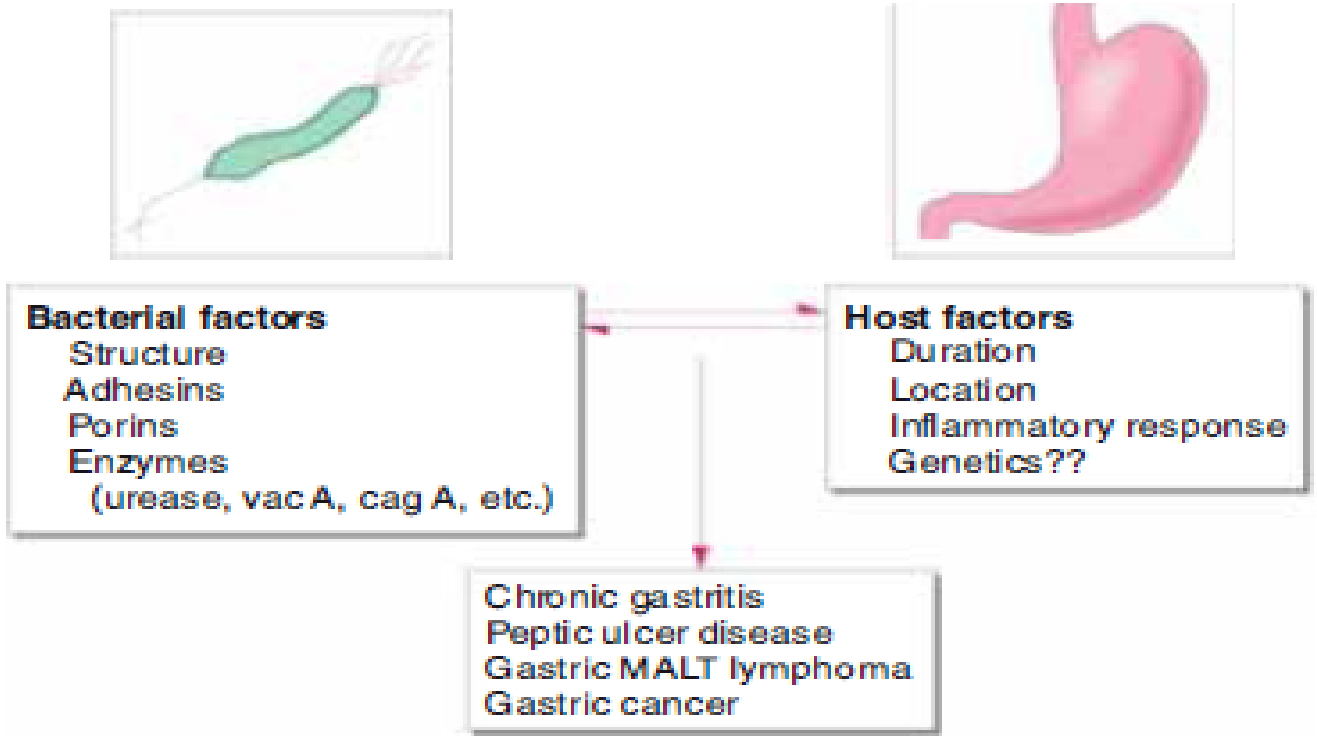


FIGURE 348-6 Outline of the bacterial and host factors important in determining *H. pylori*–induced gastrointestinal disease. MALT, mucosal-associated lymphoid tissue.

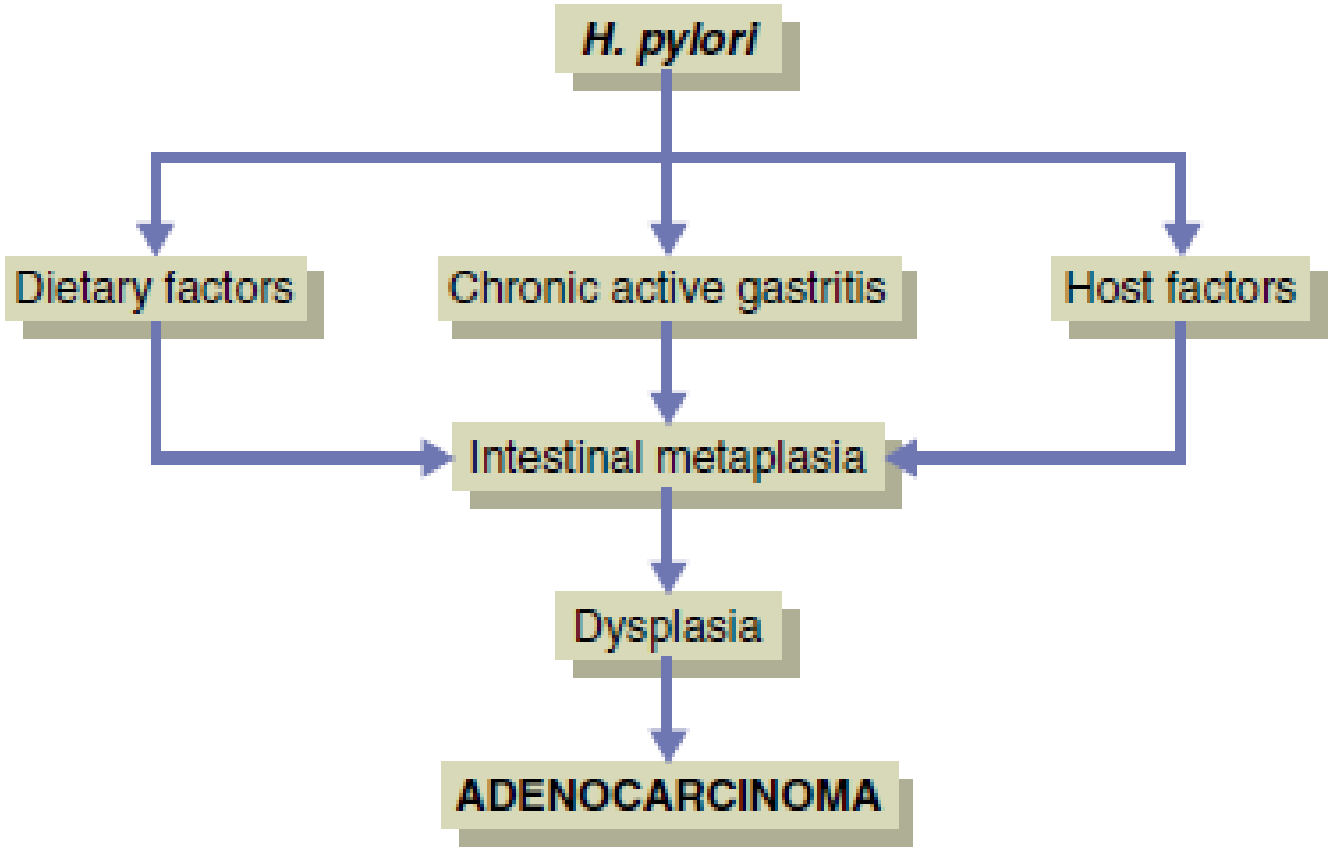

H. pylori
Dietary factors
Chronic active gastritis
Host factors
Intestinal metaplasia
Dysplasia
ADENOCARCINOMA

TABLE 348-2 TESTS FOR DETECTION OF *H. PYLORI*

Test	Sensitivity/ Specificity, %	Comments
Invasive (Endoscopy/Biopsy Required)		
Rapid urease	80–95/95–100	Simple, false negative with recent use of PPIs, antibiotics, or bismuth compounds
Histology	80–90/>95	Requires pathology processing and staining; provides histologic information
Culture	—/—	Time-consuming, expensive, dependent on experience; allows determination of antibiotic susceptibility
Noninvasive		
Serology	>80/>90	Inexpensive, convenient; not useful for early follow-up
Urea breath test	>90/>90	Simple, rapid; useful for early follow-up; false negatives with recent therapy (see rapid urease test); exposure to low-dose radiation with ^{14}C test
Stool antigen	>90/>90	Inexpensive, convenient

Treatment

- Who needs to treat?

- What is your recommendation for H.pylori treatment?

Indications for treatment are:

- *H. pylori*–related duodenal or gastric ulceration
- low-grade gastric B cell lymphoma.
- In uninvestigated simple dyspepsia following noninvasive diagnosis
- Individuals with a strong family history of gastric cancer

The Maastricht IV/Florence Consensus Report recommends that eradication should be considered in :

- first-degree relatives of family members with gastric cancer
- patients with previous gastric neoplasm treated by endoscopic or subtotal resection
- individuals with a risk of gastritis (severe pangastritis or body-predominant gastritis) or severe atrophy

- patients with gastric acid inhibition for more than 1 year.

- *H. pylori–positive* patients with a fear of gastric cancer.

HPYLORI ERADICATION IN IRAN

- Amoxicillin(1gr,BID) + Bismuth subcitrate(250mg BID)+PPI ,(BD) + one of these drugs for 14 days:
- Clarithromycin (500mg ,BD)
- Tetracycline(500mg,QID)
- Furazolidone (200mg BD)

- Many environmental factors including :
- Smoking
- high salt intake
- a diet with an insufficient level of antioxidants
- Endogenous and host factors, including those related to:
- male gender
- several genetic backgrounds

Smoking:

- The risk of gastric cancer in tobacco smokers is almost twice as high as non-smokers.

Salt and salted food:

- High intake of salt is a known risk factor of gastric cancer.

Obesity:

- Excess body weight is associated with an increased risk of gastric cancer.

- Gastric ulcers, adenomatous polyps, and intestinal metaplasia have been associated with an increased risk of gastric cancer.

- The protective effects of fresh fruits and vegetables and their antioxidant contents against gastric cancer have been shown by numerous epidemiological studies.

CLINICAL FEATURES

- Most patients with gastric cancer are symptomatic and already have advanced incurable disease at the time of presentation.

- At diagnosis, approximately 50 % have disease that extends beyond locoregional confines, and only one-half of those who appear to have locoregional tumor involvement can undergo a potentially curative resection.

- Screening is not widely performed, except in countries which have a very high incidence, such as Japan, Venezuela, and Chile.

CLINICAL FEATURES

- When present, abdominal pain tends to be epigastric, vague and mild early in the disease but more severe and constant as the disease progresses.

- Dysphagia is a common presenting symptom in patients with cancers arising in the proximal stomach or at the EGJ.

- Nausea or early satiety from the tumor mass or in cases of an aggressive form of diffuse-type gastric cancer called linitis plastica, from poor distensibility of the stomach.
- Gastric outlet obstruction from an advanced distal tumor.
- Occult GI bleeding with or without iron deficiency anemia is not uncommon, while overt bleeding (ie, melena or hematemesis) is seen in < 20 % of cases.
- Weight loss

- The presence of a palpable abdominal mass is the most common physical finding and generally indicates long-standing, advanced disease.
- Approximately 25 % of patients have a history of gastric ulcer.

- All gastric ulcers should be followed to complete healing, and those that do not heal should undergo resection.

DIAGNOSIS

Endoscopy:

- Tissue diagnosis and anatomic localization of the primary tumor are best obtained by upper gastrointestinal endoscopy.

- Upper endoscopy is also more sensitive and specific for diagnosing a variety of gastric, esophageal and duodenal lesions than alternative diagnostic strategies (such as barium studies).

- The early use of upper endoscopy in patients presenting with gastrointestinal complaints may be associated with a higher rate of detection of early gastric cancers.

- Since up to 5 % of malignant ulcers appear benign grossly, it is imperative that all such lesions be evaluated by biopsy and histologic assessment.

A

Chronic atrophic gastritis (CAG) suspected on white light endoscopy

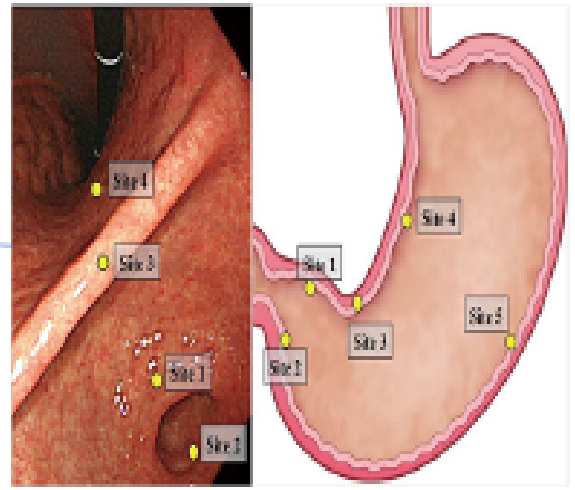
Eradicate H. pylori

Systematic endoscopy with image enhancement

Distal CAG Antrum Incisura	Low risk
Extensive CAG Corpus	High risk

Endoscopic grading of atrophy and intestinal metaplasia with Sydney protocol biopsies directed to areas of GIM or atrophy

Sydney protocol biopsies



1. Antrum 1
2. Antrum 2
3. Incisura
4. Lesser curve
5. Greater curve

CAG with dysplasia
(See guidance)

High risk CAG

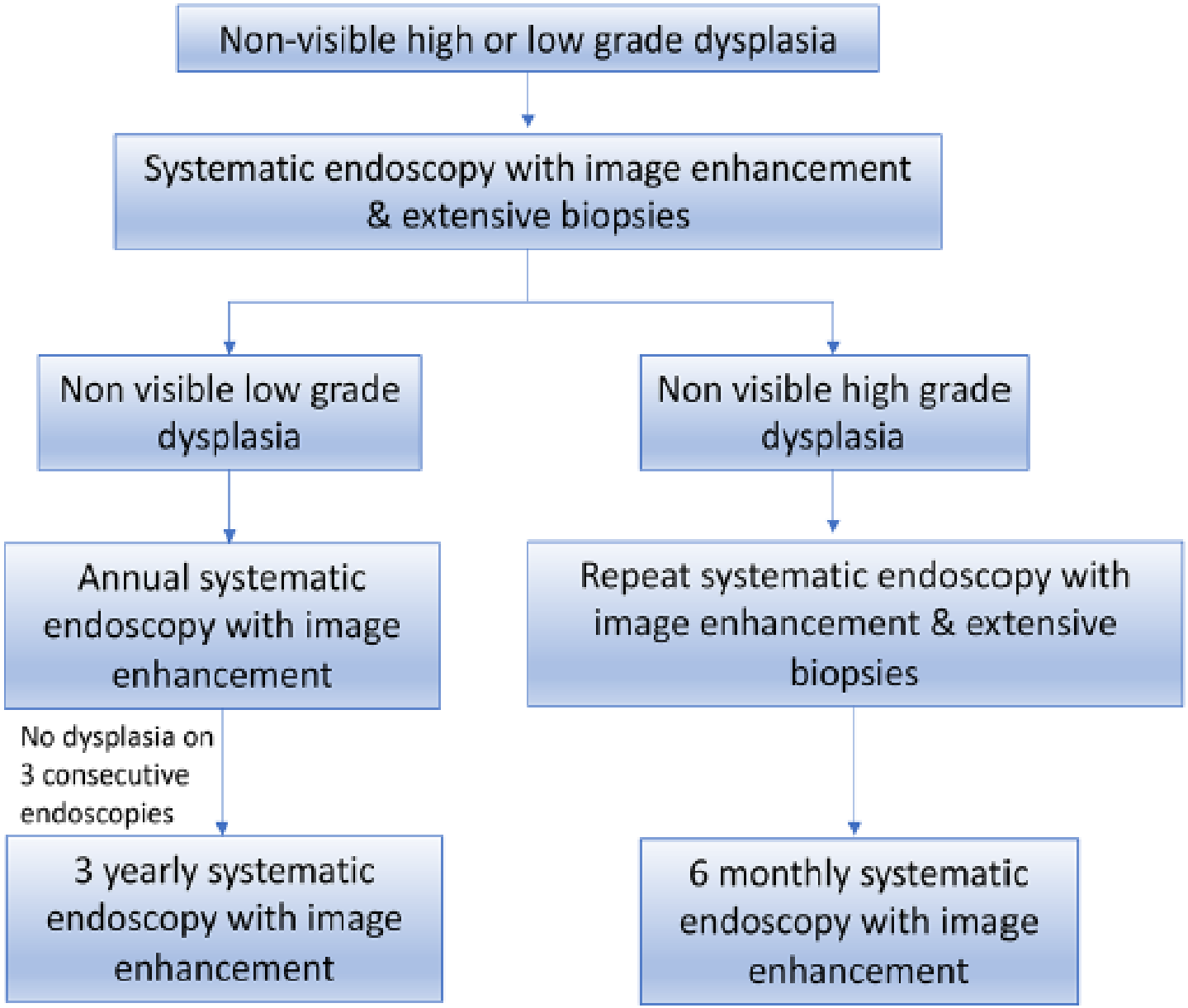
Low risk CAG

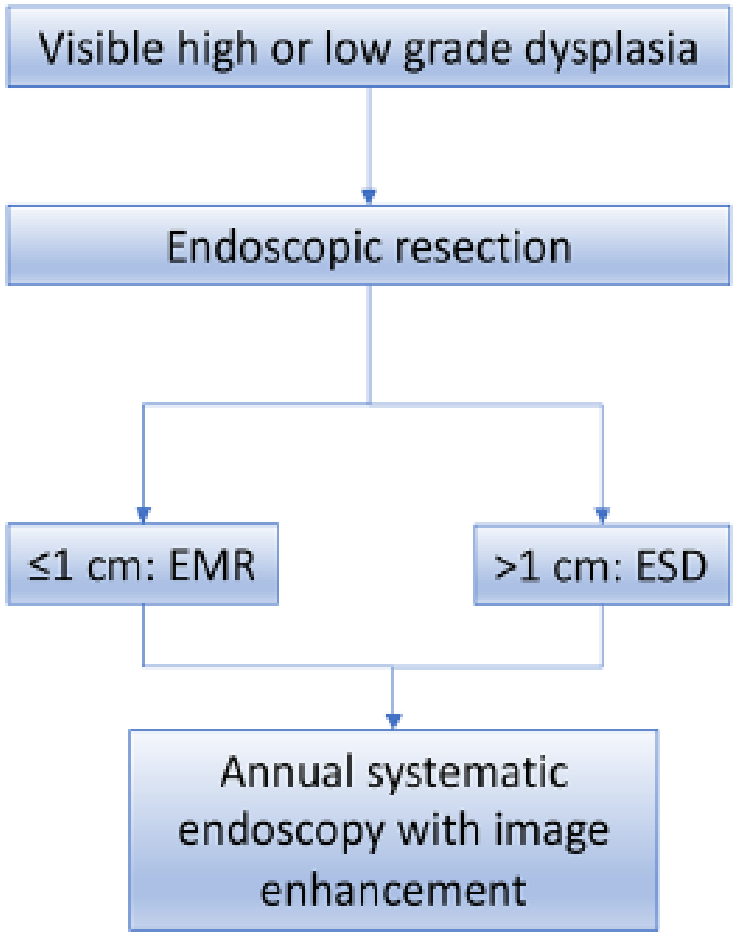
Family history of gastric cancer or persistent *H.pylori* infection

3 yearly endoscopic surveillance
(with image enhancement)

No surveillance

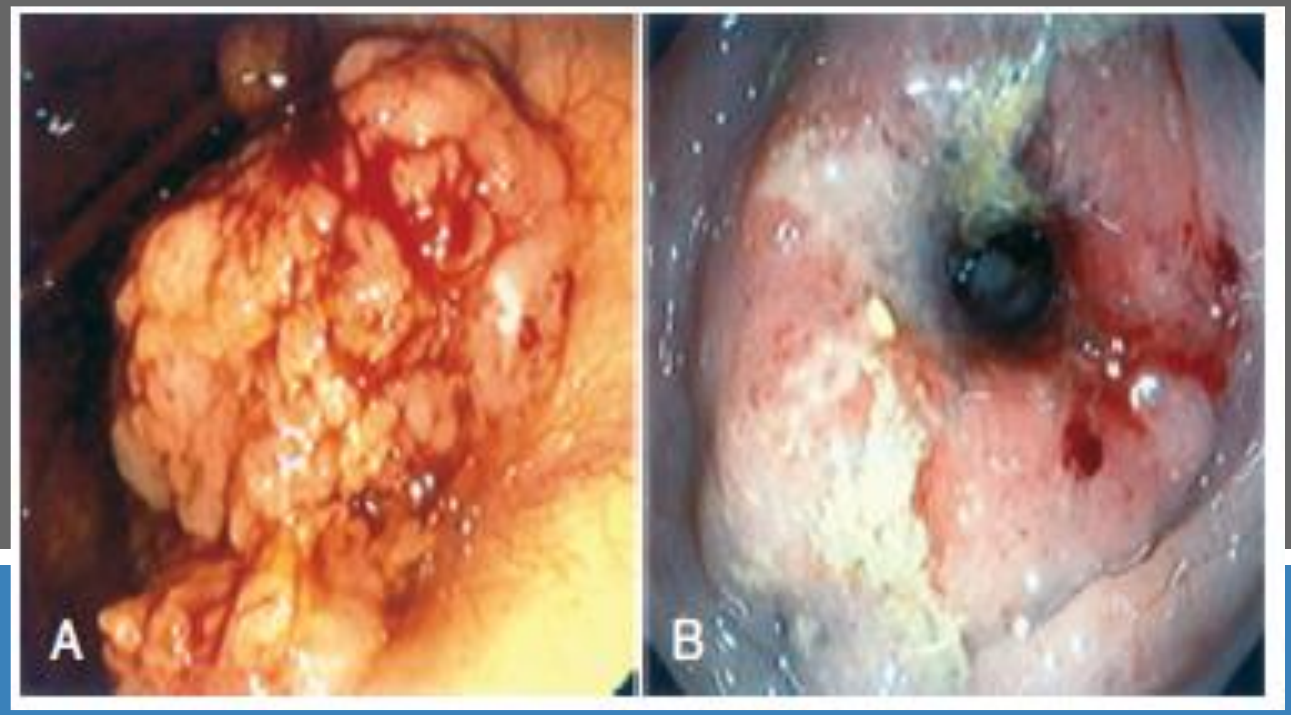
B





EMR: endoscopic mucosal resection
ESD: endoscopic submucosal dissection
NVLGD: non-visible low grade dysplasia
NVHGD: non-visible high grade dysplasia

COLORECTAL CANCER(CRC)

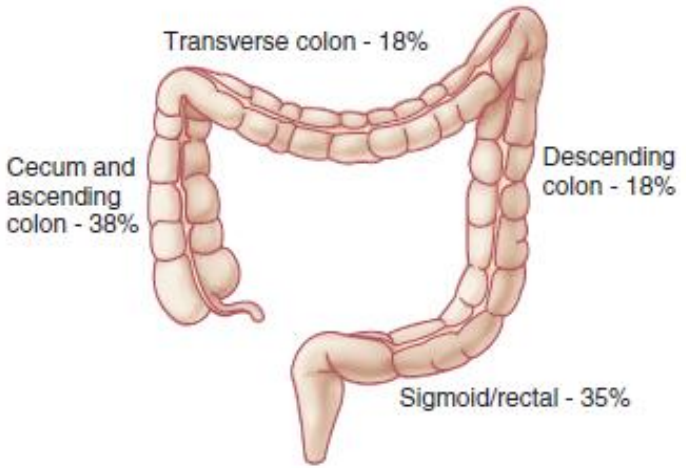


Epidemiology

- CRC was recognized as the third most common cancer in 2020 with 1,931,590 new cases (10% of all new cancers)

- The second most deadly cancer by 935,173 deaths (9.4% of total cancer deaths)

- Globocan, “Colorectal Cancer,” *Glob. Cancer Obs.*, vol. 66, no. 11, pp. 1–9, 2020.

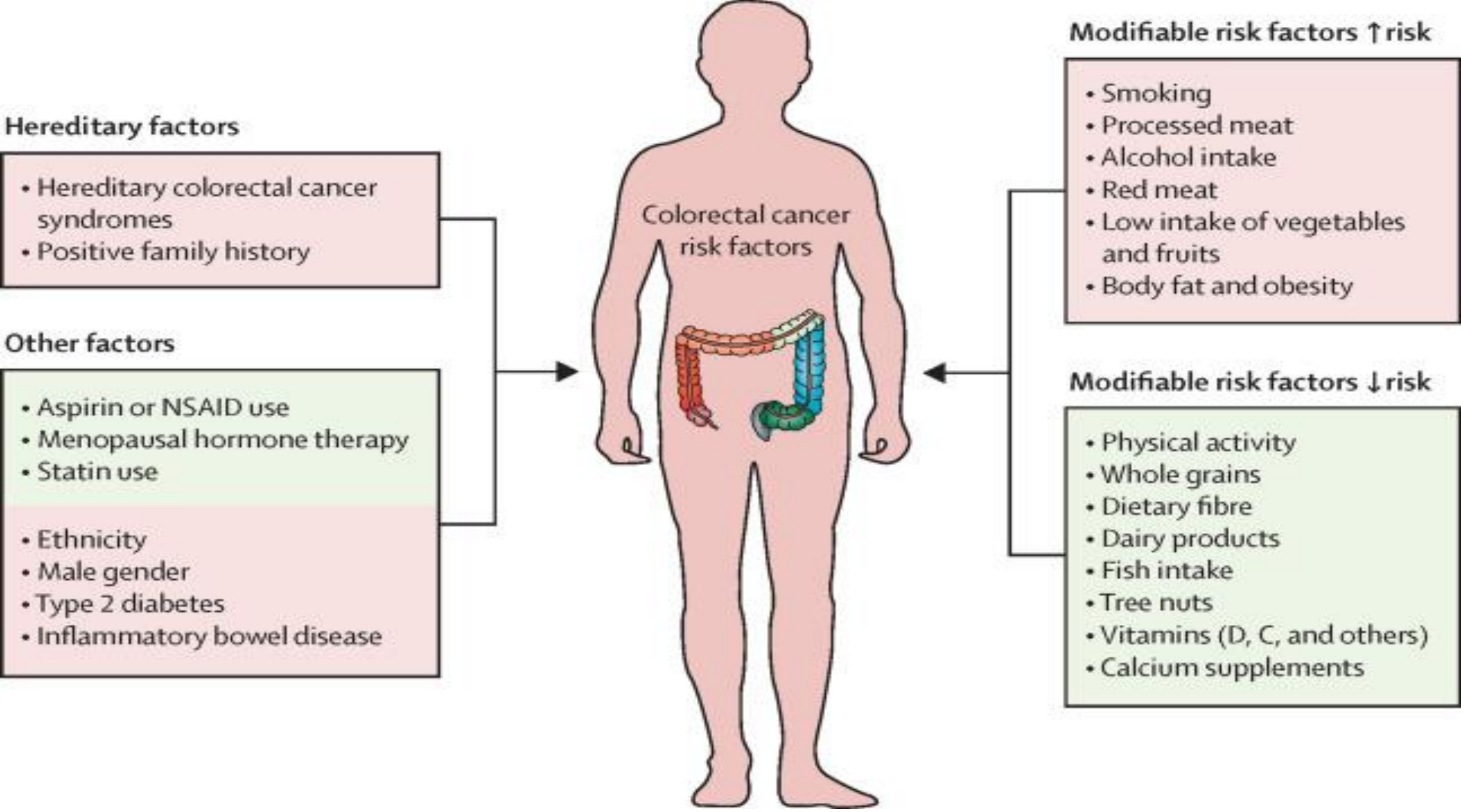


Epidemiology in Iran

- Prevalence of colorectal cancer in Iran is similar to other middle east countries, but is much lower than western countries.
- CRC in Iran takes 7% of all cancer cases and in Iranian men and women is respectively fourth and second most common cancer.

- The majority of CRC occurs in developed countries, but now incidence of CRC is increasing in many medium-to-high human development index countries in
- Asia
- South America
- Eastern Europe.

Clinical Gastroenterology and Hepatology 2020


Hereditary factors
• Hereditary colorectal cancer syndromes
• Positive family history
Other factors
• Aspirin or NSAID use
• Menopausal hormone therapy
• Statin use
• Ethnicity
• Male gender
• Type 2 diabetes
• Inflammatory bowel disease
Colorectal cancer risk factors
Modifiable risk factors ↑ risk
• Smoking
• Processed meat
• Alcohol intake
• Red meat
• Low intake of vegetables and fruits
• Body fat and obesity
Modifiable risk factors ↓ risk
• Physical activity
• Whole grains
• Dietary fibre
• Dairy products
• Fish intake
• Tree nuts
• Vitamins (D, C, and others)
• Calcium supplements

Risk factor

- The major factors that influence screening recommendations are:
  - Hereditary forms of colorectal cancer
  - Age
  - Personal or family history of sporadic colorectal cancer (and possibly large or advanced adenomas)
  - Inflammatory bowel disease
  - History of abdominal irradiation.

Several potentially modifiable factors

- These factors do not alter screening recommendations:
- Obesity
- diabetes
- tobacco use
- excess consumption of alcohol
- excess consumption of processed meat
- lack of physical activity

- Other risk factors including
- black race
- Sex
- acromegaly
- history of renal transplantation

Their influence on screening recommendations has been variable.

protective diet include:

- Avoidance of processed and charred red meat
- Inclusion of vegetables (especially cruciferous) unprocessed forms of wheat bran
- Adequate amount of intake of folate from food
- Limited caloric intake
- Avoidance of excessive alcohol

Clinical presentation

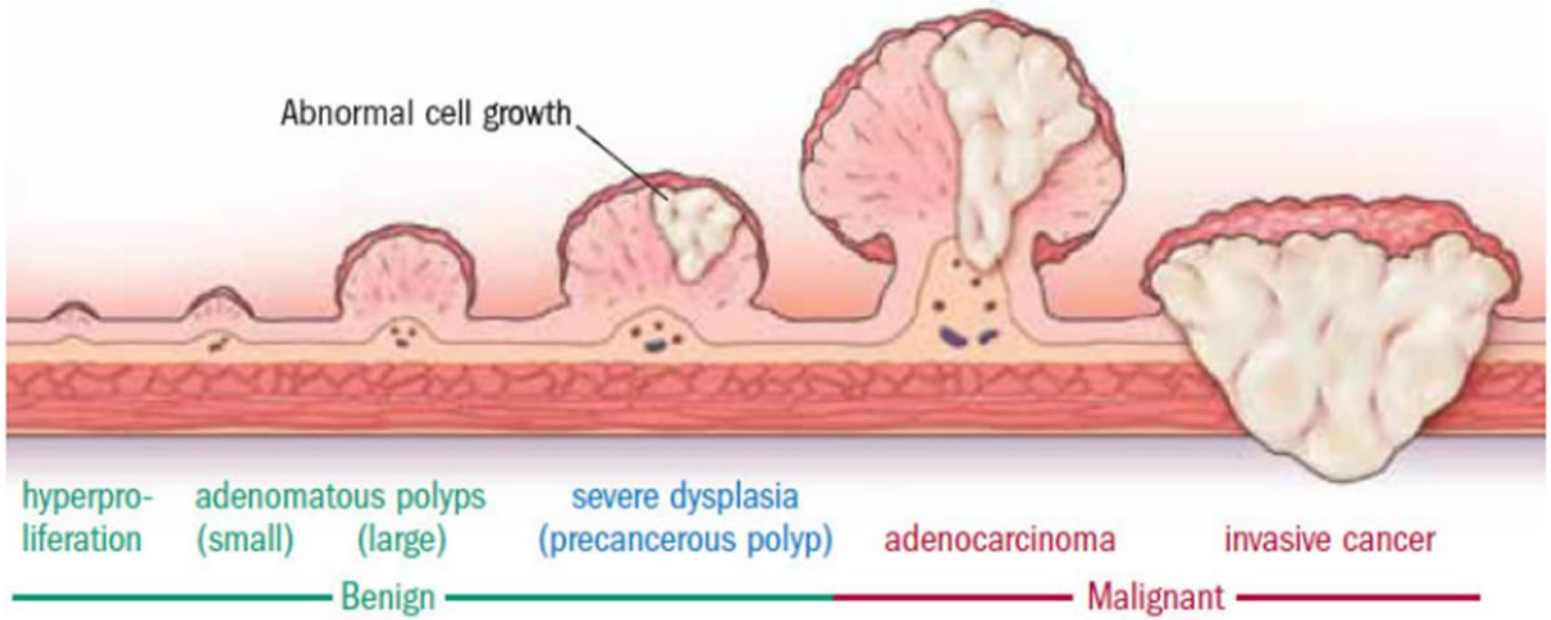
- Patients with CRC may present in three ways:
  - Patients with suspicious symptoms and/or signs
  - Asymptomatic individuals discovered by routine screening
  - Emergency admission with intestinal obstruction, peritonitis, or rarely, an acute GIB

- Although the increasing uptake of CRC screening has led to more cases being diagnosed at an asymptomatic stage, most CRCs are diagnosed after the onset of symptoms.
- Most commonly symptoms are
- rectal bleeding
- abdominal pain
- unexplained iron deficiency anemia
- change in bowel habits.

- A change in bowel habits is a more common presenting symptom for left-sided colon.
- Hematochezia is more likely with rectal than colon cancers.
- Occult bleeding is more common with cecal and ascending colon cancers.
- One in five patients with CRC presents with metastatic disease.

The earlier stage of the diagnosis, the better prognosis

The burden of this malignancy can be decreased by cancer prevention and tumor identification in the early stages.



Screening of colorectal cancer are proper because of:

- ✓ Heavy burden (incidence, impairment, death),
- ✓ Existence of precancerous lesions diagnostic tests
- ✓ Being treatable in the early stages

Colorectal cancer screening

- Prior to initiating a screening program for a patient, it is important to identify patients who may have increased risk factors that would have an impact on:
- what age to initiate screening
- the choice of testing
- the frequency of testing
- the need for genetic testing.

Average risk population

1. Age of 45/50 or more
2. Without personal history of polyp or colorectal cancer
3. Without personal history of IBD
4. Without family history of colorectal cancer which is defined having a first degree relative diagnosed before 60 or in two first degree relatives in any age
5. Without family history of advanced adenomatous polyp in the age of under 60 in a first degree relative (polyp smaller than 1 centimeter without advanced dysplasia and without villous component)

Screening tests:

- stool-based

- Endoscopic

- Radiologic tests:
- capsule endoscopy

- Computed tomographic colonography(CTC).

Fecal immunochemical test(FIT)

- FIT for hemoglobin are more specific than guaiac tests because FIT detects only human globin and therefore does not detect upper GIB (since the globin is digested in transit).

- Foods with peroxidase activity do not produce a positive reaction.

sensitivity of FIT for CRC: 79%

Specificity of 94%

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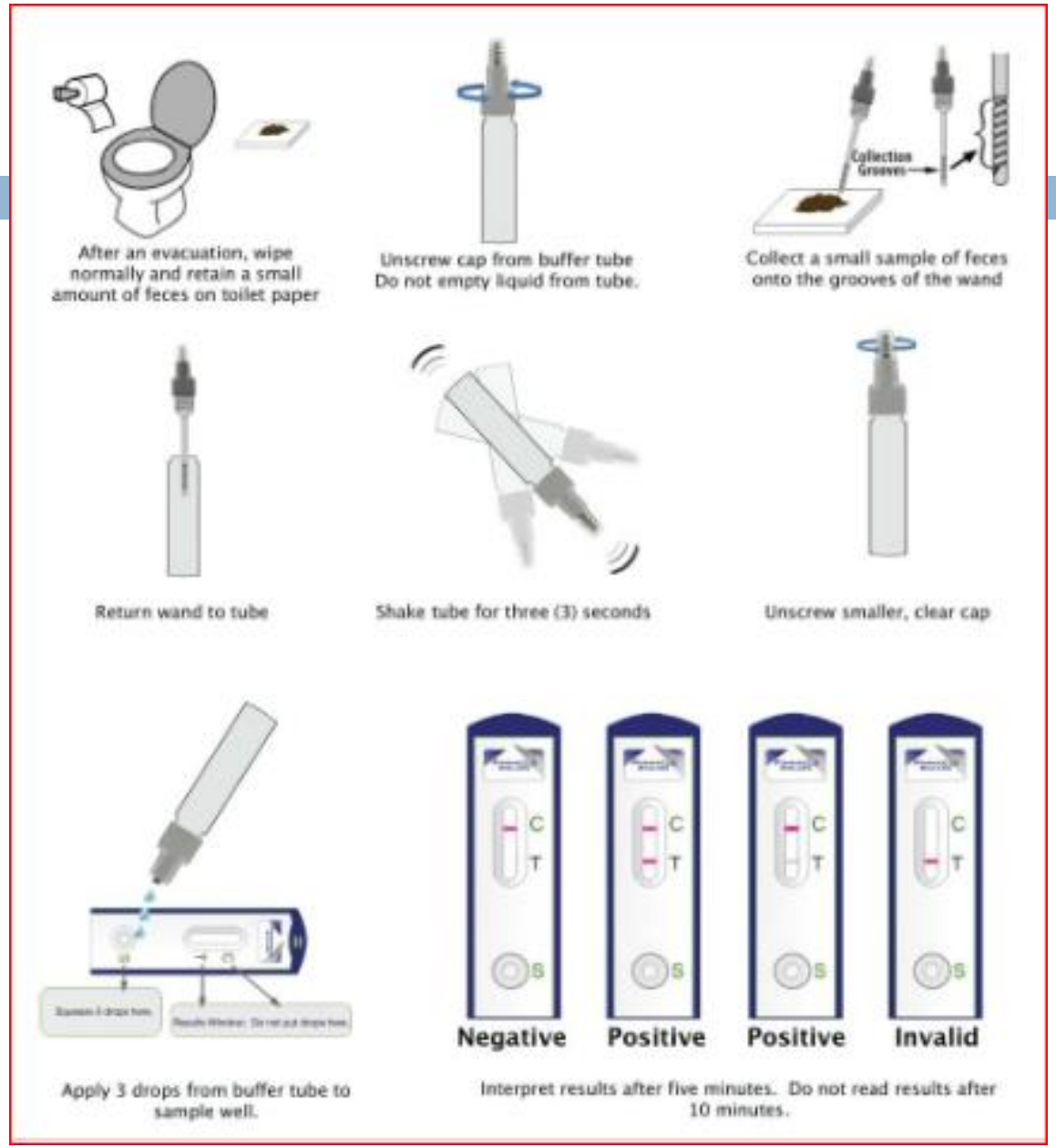

- Patients should be advised to return the sample within 24 hours of collection.
- Although the ideal ambient temperature range is not known, specimens may be refrigerated if return is delayed.
- Performing the colonoscopy within three months is advised.

- Because of the slow rate of progression from adenomas to cancer, screening with tests that identify early-stage disease can prevent CRC death .
- Removal of large adenomatous polyps can prevent transformation to cancer.

Colonoscopy

- The effectiveness of screening colonoscopy in preventing CRC deaths is strongly suggested by long-term follow-up data of patients undergoing polypectomy at colonoscopy and by observational studies.
- A rigorous bowel preparation is required for an optimal procedure
- It provides full bowel visualization; allows for diagnostic procedures, if indicated, in a single step; and is performed at a 10-year screening interval.

Computed tomography colonography(CTC)

- CTC, ("virtual colonoscopy") involves obtaining multiple, thin-slice CT data and using computers to construct images of the bowel mucosa.
- CTC detects large (>1 cm) polyps about as well as colonoscopy but is less sensitive for the detection of smaller polyps.
- Abnormal results need to be followed up by optical colonoscopy .

- The disadvantages of CTC are that it may require a rigorous bowel preparation, and expose patients to radiation.

Adaptation of Clinical Practice Guideline for Colorectal Cancer Screening in People with Average Risk in Isfahan Province

Abstract

Background: Colorectal cancer (CRC) is the third most common cancer among adults in Iran. The aim of colorectal cancer screening is to reduce the cancer burden in the population by diagnosing the disease in its early stages. **Methods:** We adapted this guideline for the moderate CRC risk population for Isfahan to determine how to screen them and when to start and end the CRC screening. This guideline was developed by clinical appraisal and review of the evidence, available clinical guidelines, and in consultation with members of the Isfahan Chamber of Iranian association of gastroenterology and hepatology. **Results:** In screening people with average risk for CRC who use personal resources and personally pay all the costs, colonoscopy is recommended as the first choice to be done every 10 years. In case of negative colonoscopy, we recommend FIT test to prevention of interval cancer every 5 years. In screening of people with average risk of CRC, FIT is suggested to be done every 2 years as a first-choice method test for those who use public resources and do not pay for this service personally. In screening individuals with average risk for CRC, g-FOBT is not recommended as the first method of choice. Repeating positive guaiac test is not recommended and if positive, colonoscopy is suggested.

Keywords: *Colorectal cancer, guideline, practice guideline, screening*

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Table 5: Summary of colorectal cancer's clinical guidelines for people with average risk in Isfahan province

Recommendation	Level of agreement	Level of Evidence
What solutions are recommended for primary prevention of CRC?	Strong	Moderate
For primary prevention of CRC increase in dietary fiber, red meat and processed food intake reduction, calcium, vitamin D and B6 consumption, physical activity, maintaining healthy weight, avoiding smoking and drinking alcohol is recommended.		
How much of red meet intake increases CRC risk?	Strong	Low
Consuming red meat for more than 200 gr per week (average of daily 30 gr) accelerates the colorectal cancer risk		
How many minutes of physical exercise in a week reduces the CRC risk?	Strong	Moderate
Activities of more than 150 minutes per week (indoor/outdoor physical activity) result in protection against CRC		
How much of daily alcohol increases the risk of CRC?	Strong	Moderate
Drinking more than 1 standard dose during per (10 grams daily) increases the risk of colorectal cancer.		
What is the starting and ending age of colorectal screening in those with average risk?		
CRC screening starting age in people with average risk is from 50 years old and in diabetic or overweight people are 45.	Strong	Moderate
Ending age of CRC screening in people with average risk is 75.	Strong	Moderate
In people between 75-85 years, for deciding CRC screening health condition and patient's preference is considered	Strong	Very Low
CRC screening in ages of more than 85 in those with average risk is not recommended.	Strong	Very Low
What is colonoscopy's role in colorectal cancer?		
In screening people with average risk for CRC who use personal resources and personally pay all the costs, colonoscopy is recommended as the first choice to be done every 10 years	Strong	Low
In case of negative colonoscopy, we recommend FIT test to prevention of interval cancer every 5 years.	Strong	Low

Flexible sigmoidoscopy every 5 years is not recommended for colorectal cancer screening.		
What is the part that CT-Colonography plays in colorectal cancer screening?	Strong	Low
In CRC screening in people with average risk, CT-Colonography is not recommended as the first choice except for specific situations and based on patient's preference.		
What is FIT's role in colorectal cancer screening?		
In screening of people with average risk of CRC, FIT is suggested to be done every 2 years as a first-choice method test for those who use public resources and do not pay for this service personally.	Conditional	Low
If a person refuses doing colonoscopy the best replacement would be FIT which should be done every 2 years	Conditional	Low
In condition of positive FIT, repeating the test is not recommended at all.	Strong	High
In condition of positive FIT, for three months after report colonoscopy should be done.	Strong	High
In condition of positive FIT if the colonoscopy is normal, for the next 2 years FIT should be repeated. If repeated FIT is negative too, it should be repeated for the next 6 years and then we will go back to the normal 2-year process.	Strong	Low
In condition of positive FIT if the colonoscopy is normal, history about upper gastrointestinal tract must be taken and endoscopy should be performed if necessary.	Strong	Moderate
What is stool guaiac test's (g-FOBT) role in colorectal cancer screening?		
In screening individuals with average risk for CRC, g-FOBT is not recommended as the first method of choice	Strong	Low
Repeating positive guaiac test is not recommended and if positive, colonoscopy is suggested.	Strong	Moderate
What is the role of fecal DNA test in colorectal cancer's screening?	Strong	Moderate
Fecal DNA test is not recommended in screening of those with average risk for CRC.		


Thank you!


obrigado
Dank U
Merci
mahalo
Köszi
спасибо
Grazie
Thank you
mauruuru
Takk
Gracias
Dziękuję
Děkuju
danke
Kiitos