

سَلَامٌ عَلَى الْمُرْسَلِينَ
الْمُرْسَلِينَ



روز جهانی گوارش
پیشگیری از سرطان روده بزرگ



Colorectal Cancer Prevention: Getting Back on Track

World Digestive Health Day | 29 May 2022

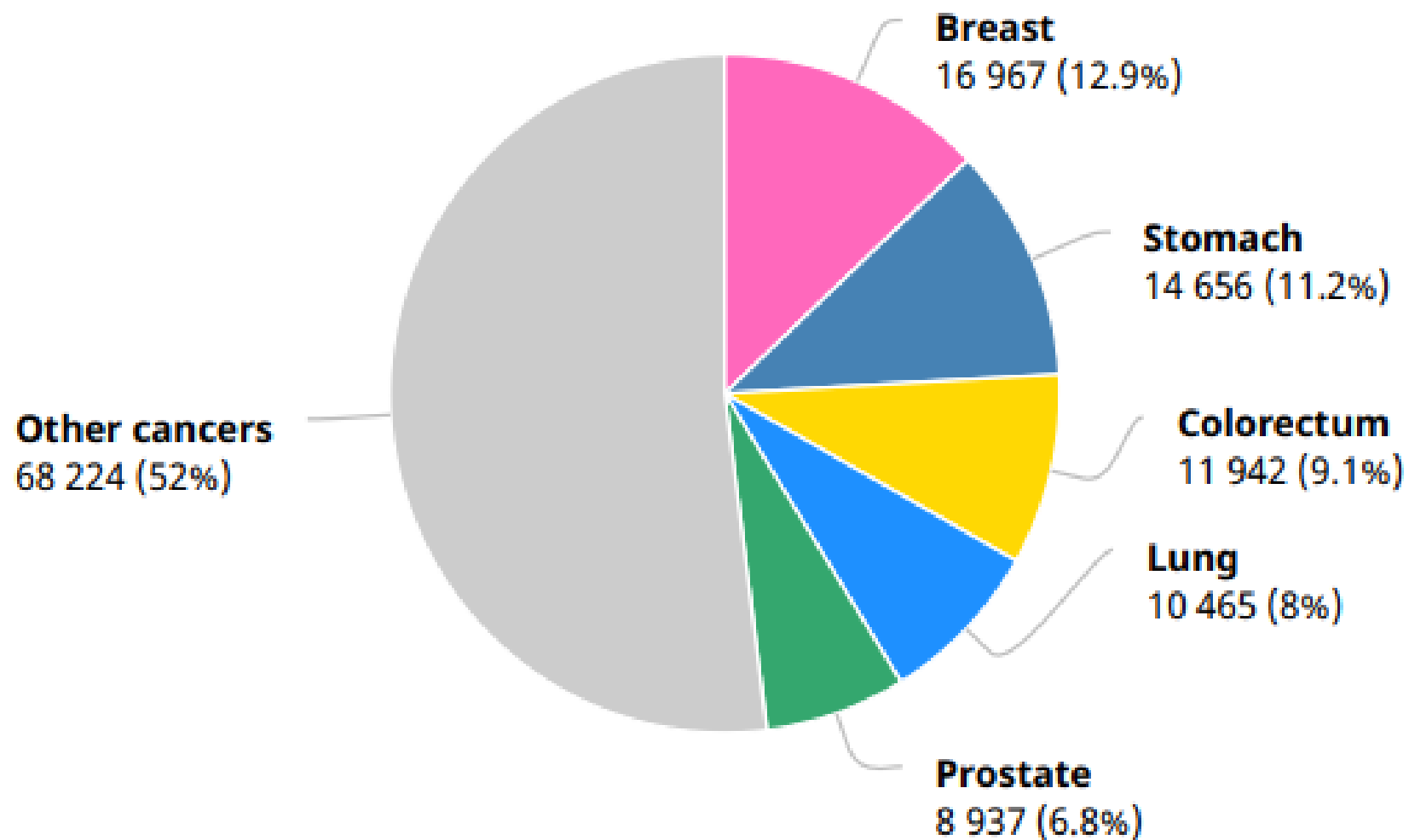


- **Epidemiology and trends**
- **Influencers**
- **How to prevent**
- **How to screen**
- **Interpreting the screening results and long term management**



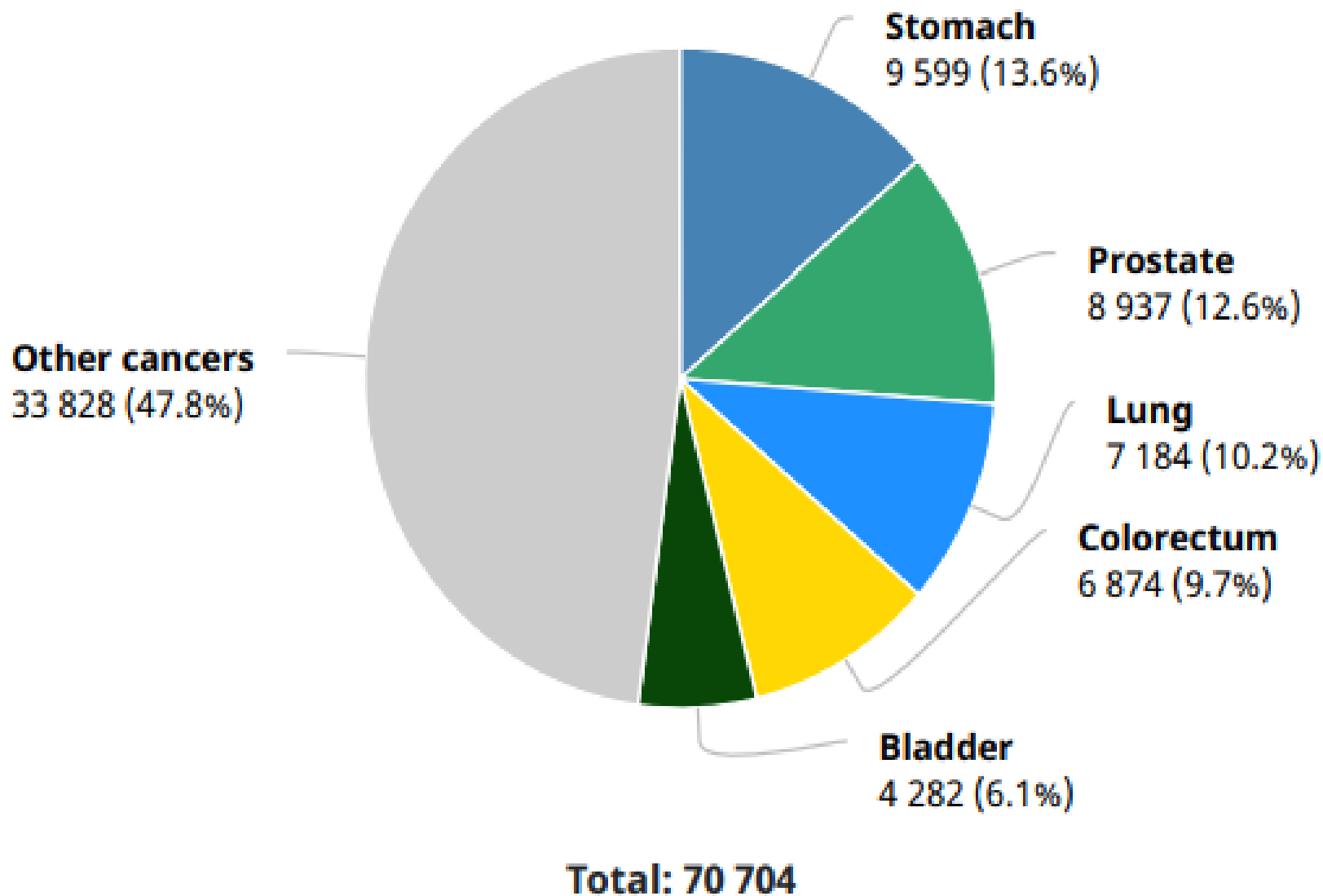
Agenda

Number of new cases in 2020, both sexes, all ages

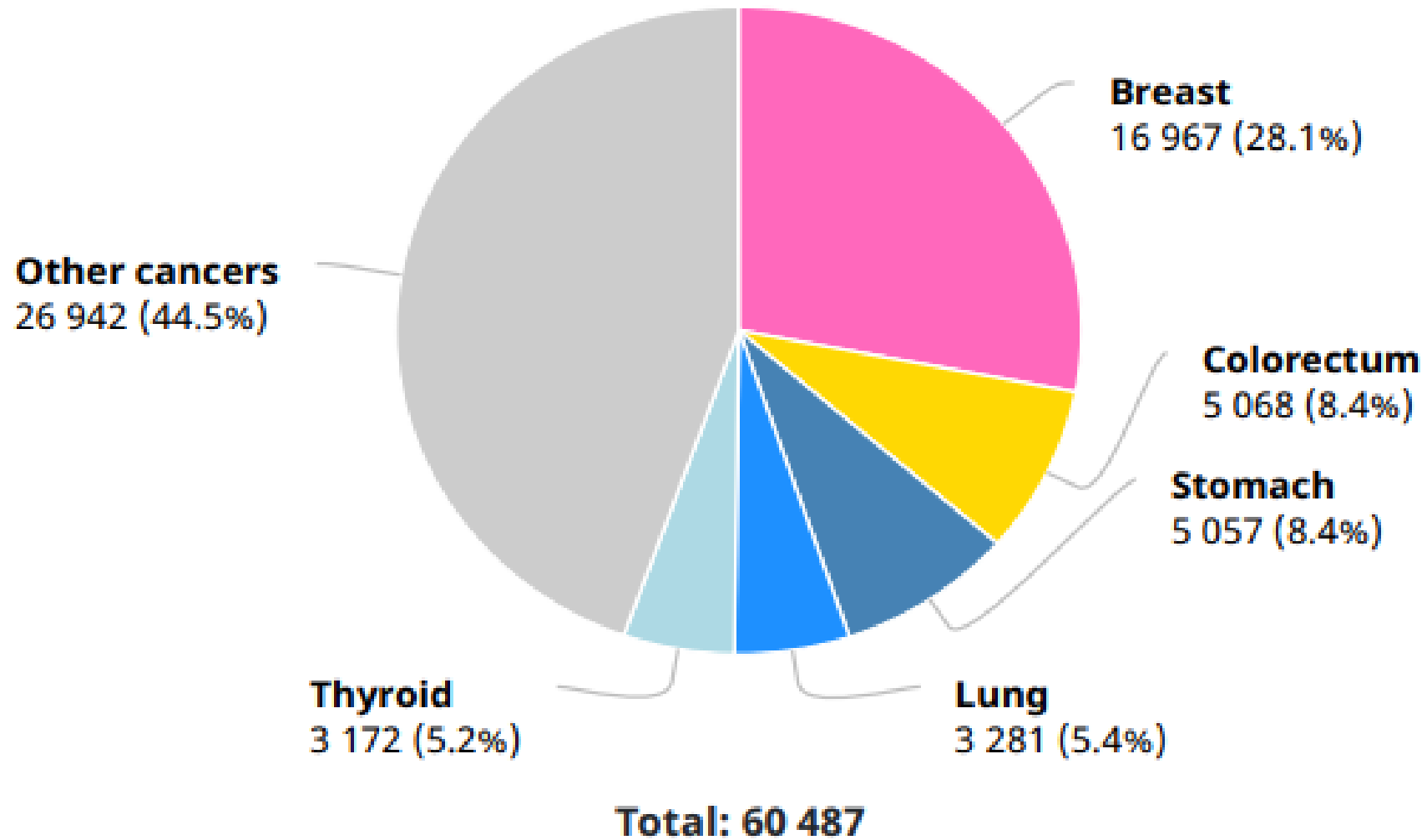


Total: 131 191

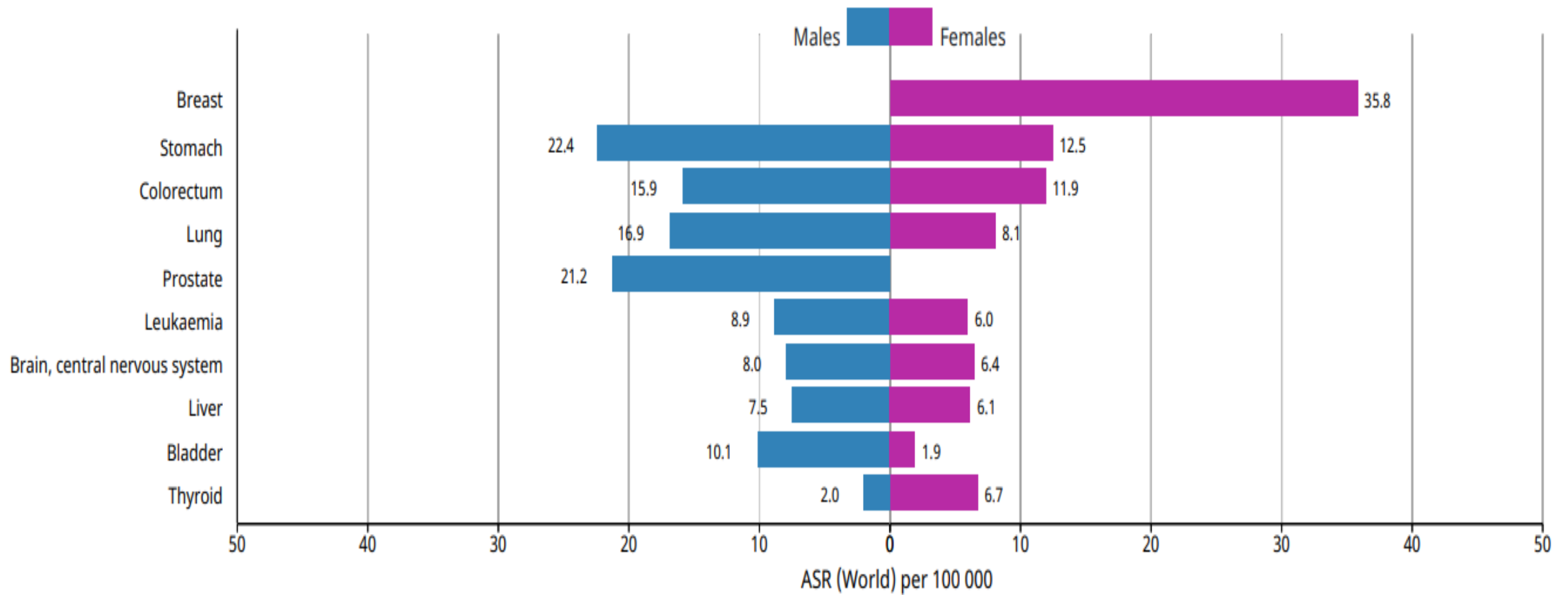
Number of new cases in 2020, males, all ages



Number of new cases in 2020, females, all ages



Age-standardized (World) incidence rates per sex, top 10 cancers



FIVE MOST COMMON CANCERS IN IR IRAN

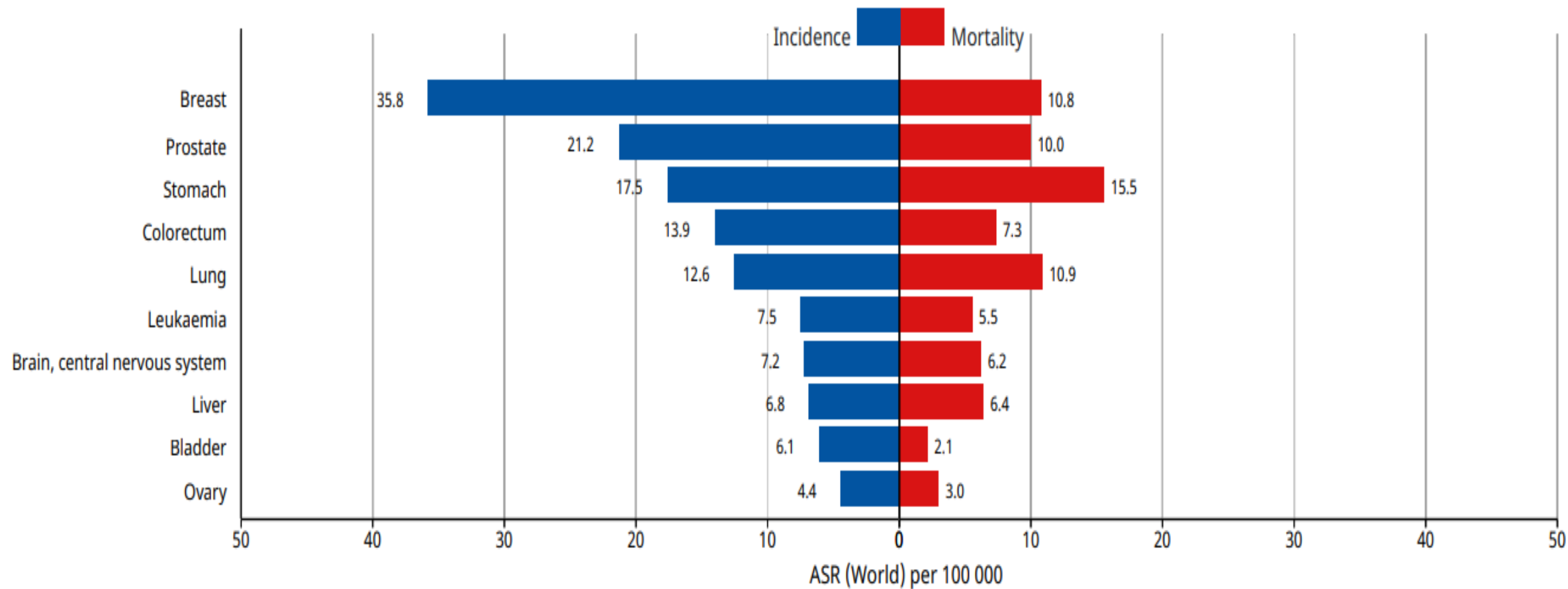
MALE

- **Stomach**
- **Prostate**
- **Lung**
- **Colorectum**
- **Bladder**

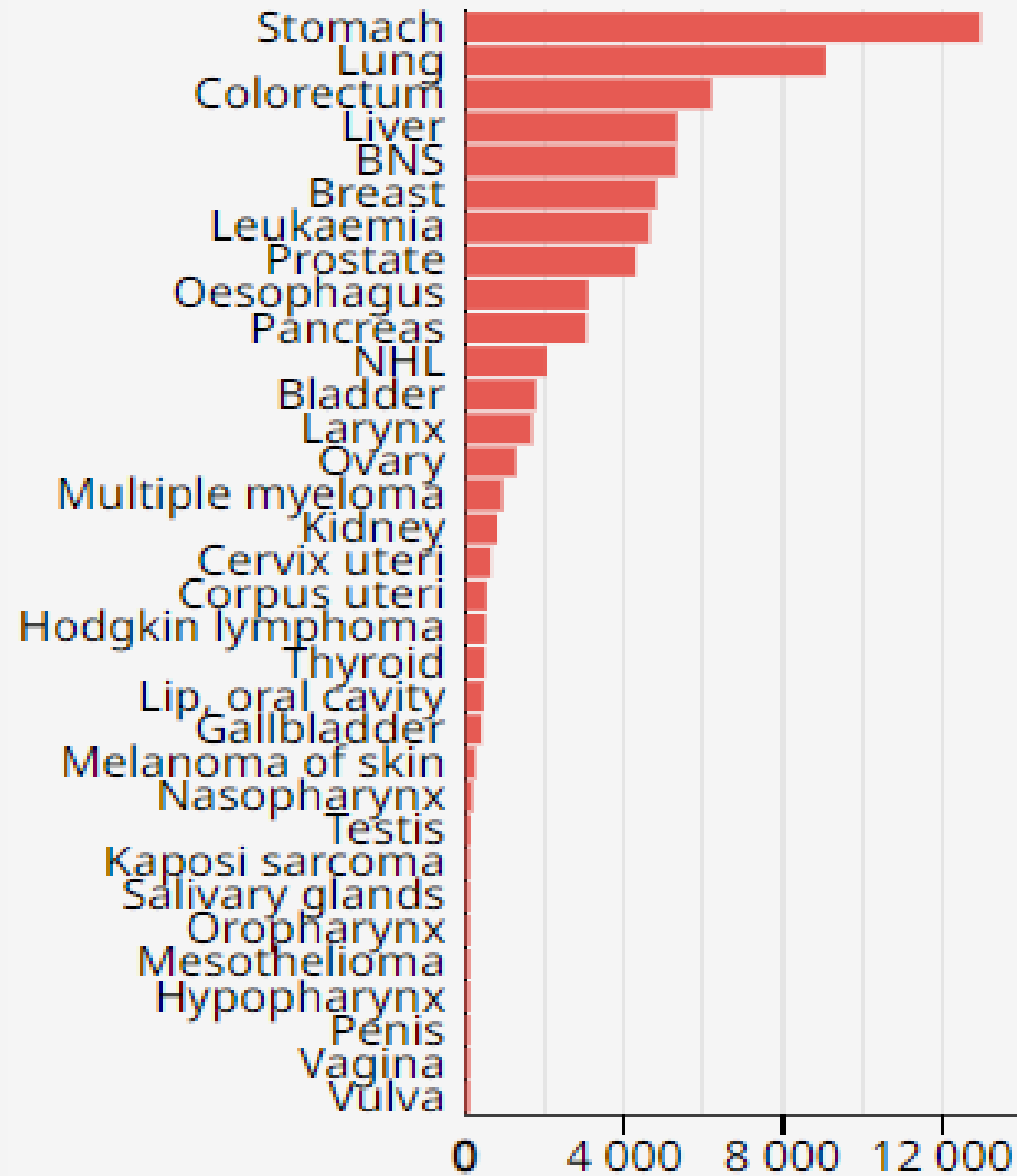
FEMALE

- **Breast**
- **Colorectum**
- **Stomach**
- **Lung**
- **Thyroid**

Age-standardized (World) incidence and mortality rates, top 10 cancers



Number of deaths, both sexes, all ages



— USA, SEER (9 registries)

- - - India, Chennai

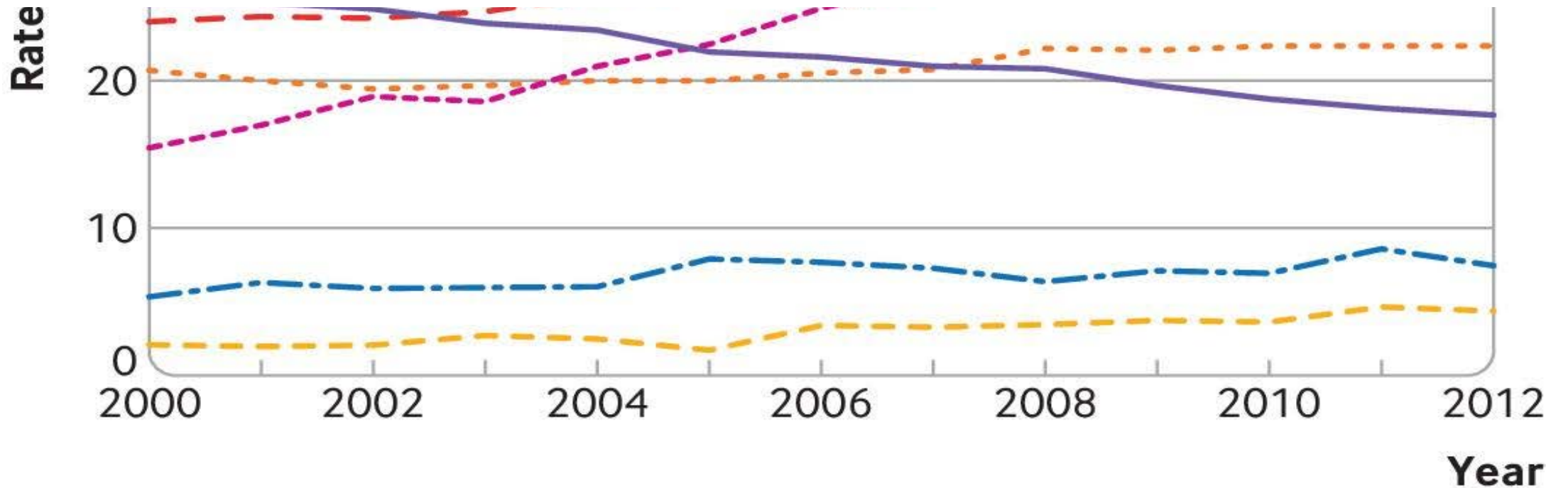
- - - Netherlands

India and Thailand low incidence but Increasing trend

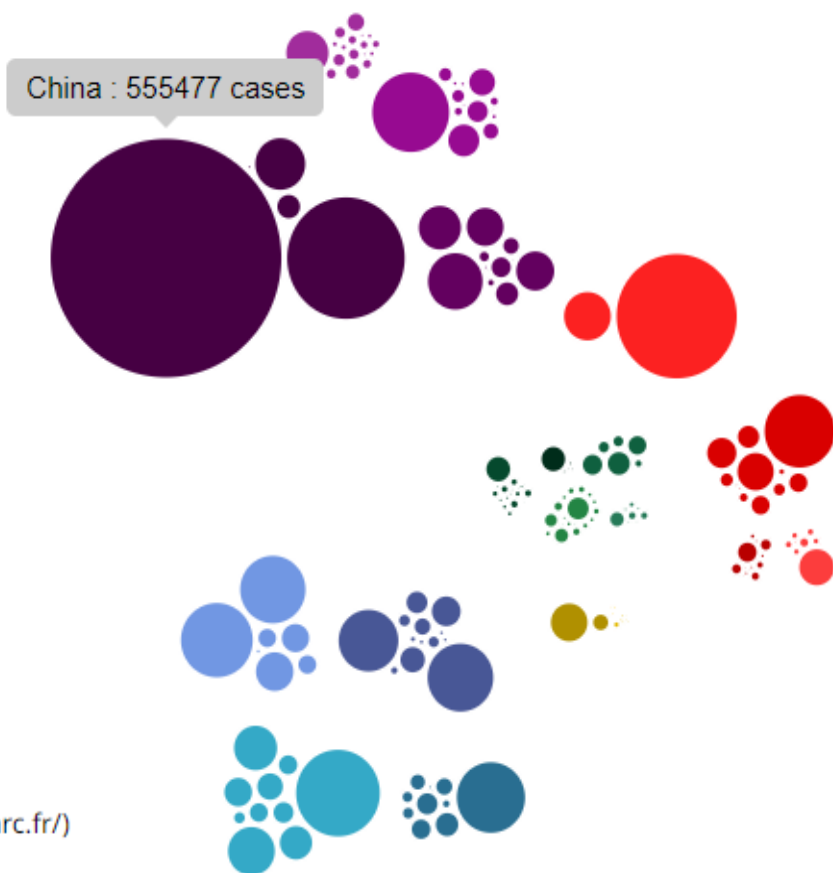
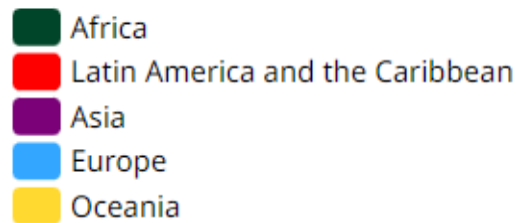
USA decreasing trend

Netherlands and UK steady

Korea high and increasing



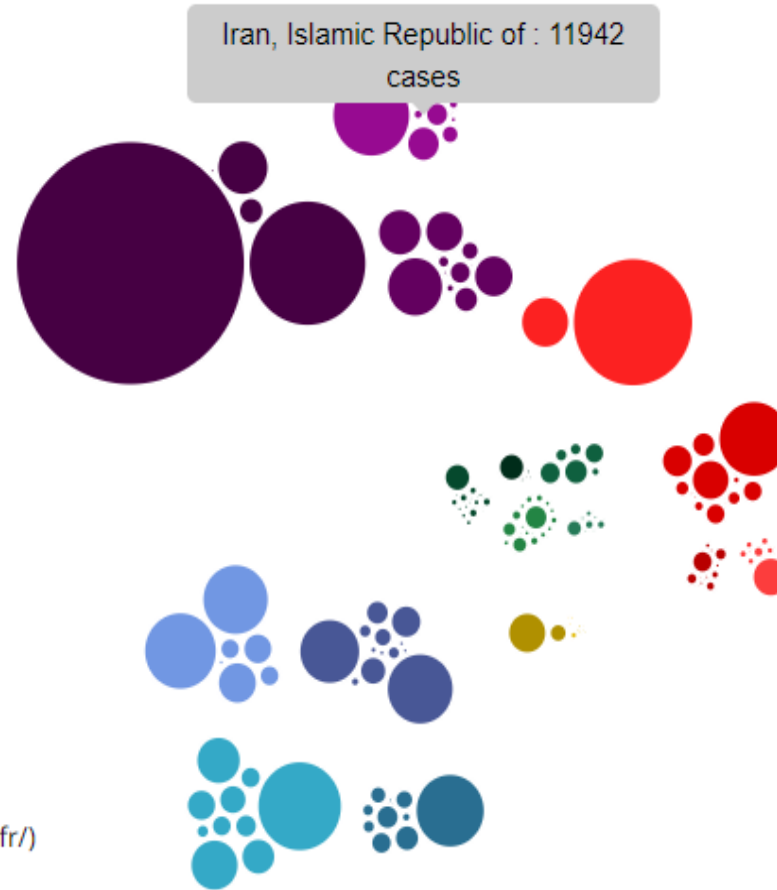
Estimated number of new cases in 2020, Colorectum, both sexes, all ages



Data source: GLOBOCAN 2020
Graph production: Global Cancer Observatory (<http://gco.iarc.fr/>)
© International Agency for Research on Cancer 2022

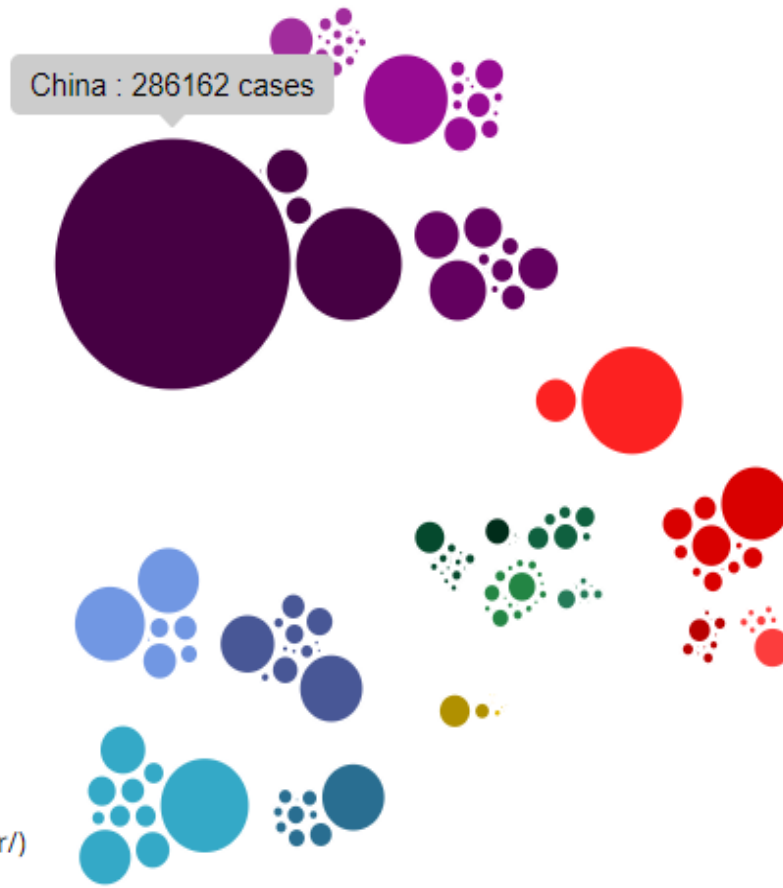
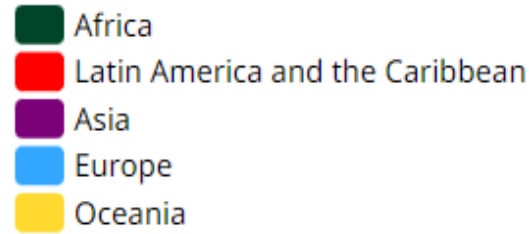
Estimated number of new cases in 2020, Colorectum, both sexes, all ages

- Africa
- Latin America and the Caribbean
- Asia
- Europe
- Oceania



Data source: GLOBOCAN 2020
Graph production: Global Cancer Observatory (<http://gco.iarc.fr/>)
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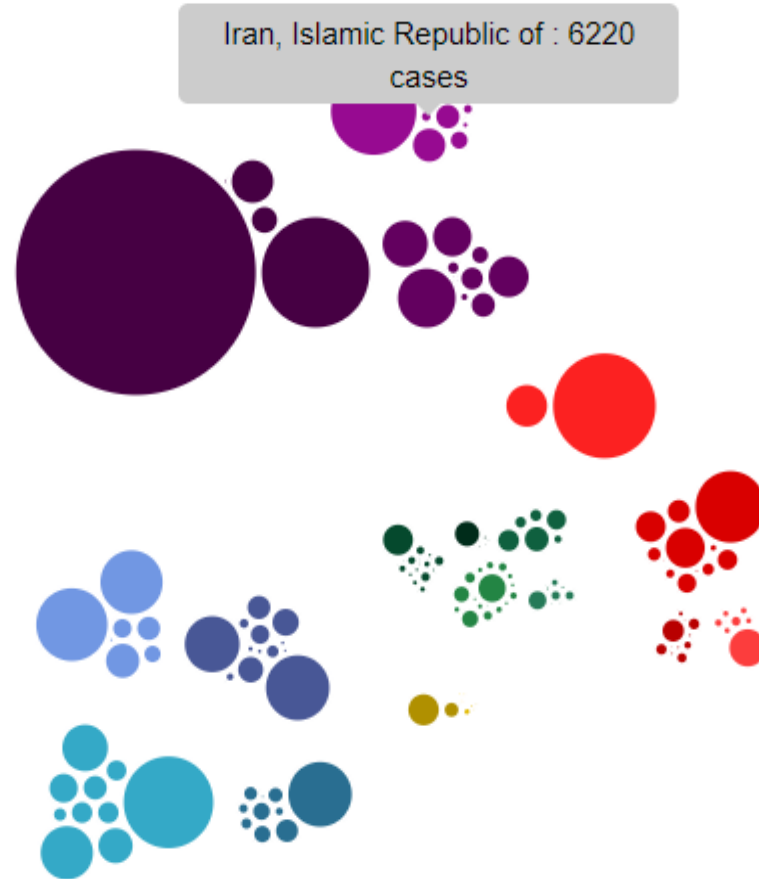
Estimated number of deaths in 2020, Colorectum, both sexes, all ages



Data source: GLOBOCAN 2020
Graph production: Global Cancer Observatory (<http://gco.iarc.fr/>)
© International Agency for Research on Cancer 2022

Estimated number of deaths in 2020, Colorectum, both sexes, all ages

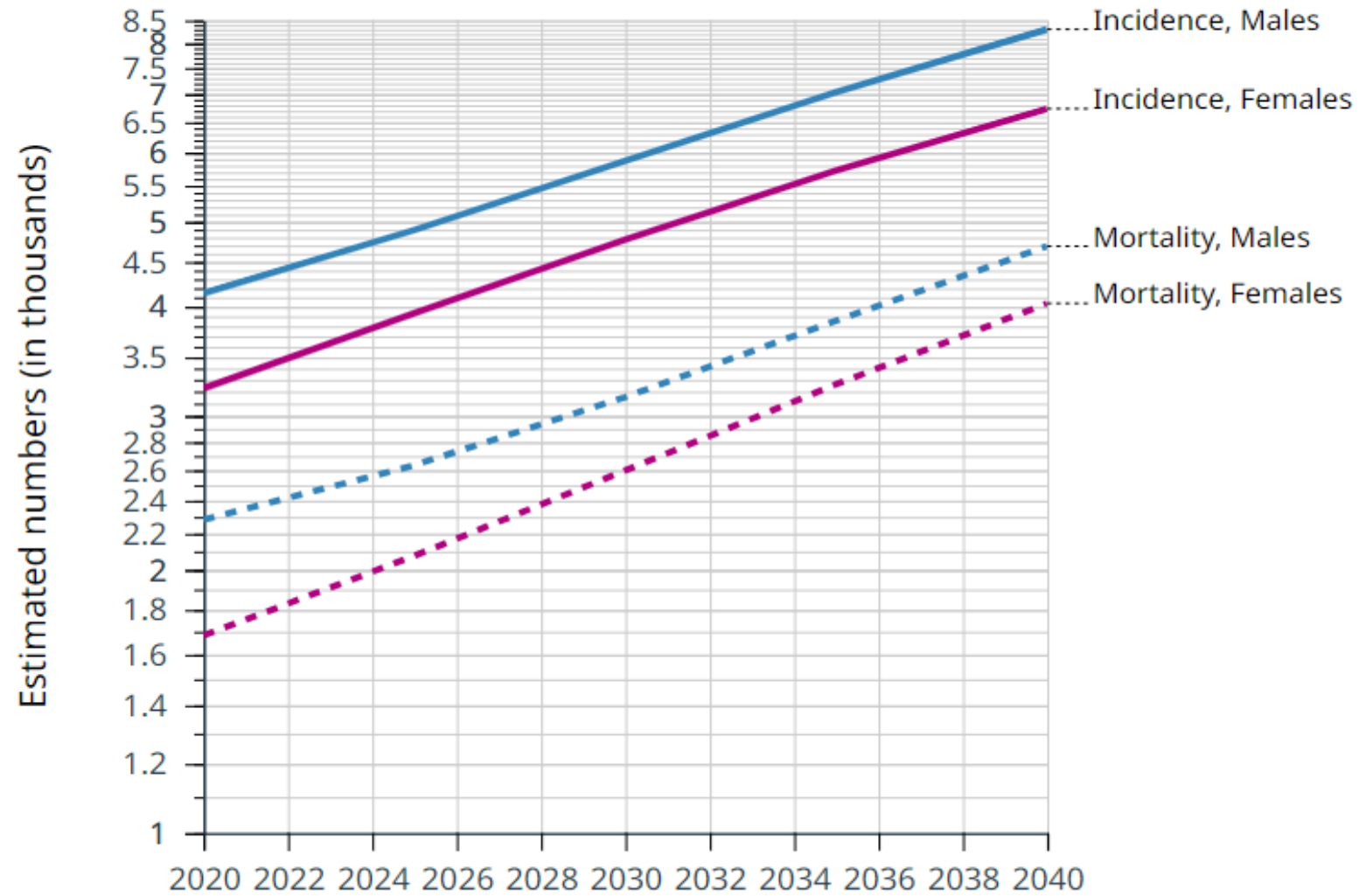
- Africa
- Latin America and the Caribbean
- Asia
- Europe
- Oceania



Data source: GLOBOCAN 2020
Graph production: Global Cancer Observatory (<http://gco.iarc.fr/>)
© International Agency for Research on Cancer 2022

Estimated numbers from 2020 to 2040, Males and Females, age [0-85+]

Islamic Republic of Iran

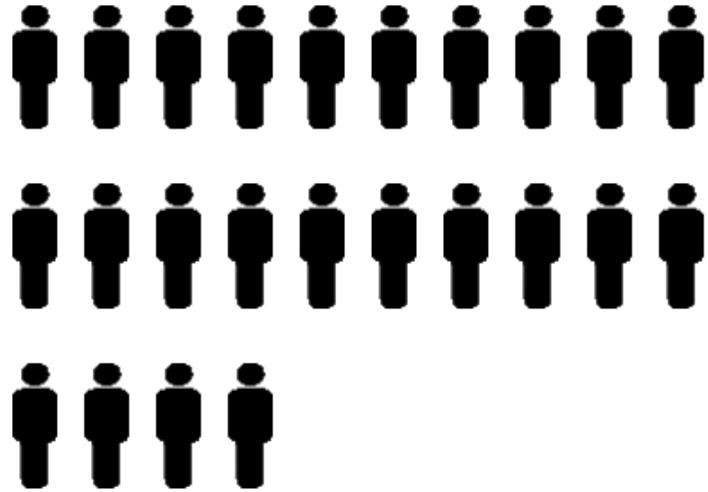


Estimated number of new cases from 2020 to 2040, Both sexes, age [0-85+]

Colon + Rectum
Islamic Republic of Iran

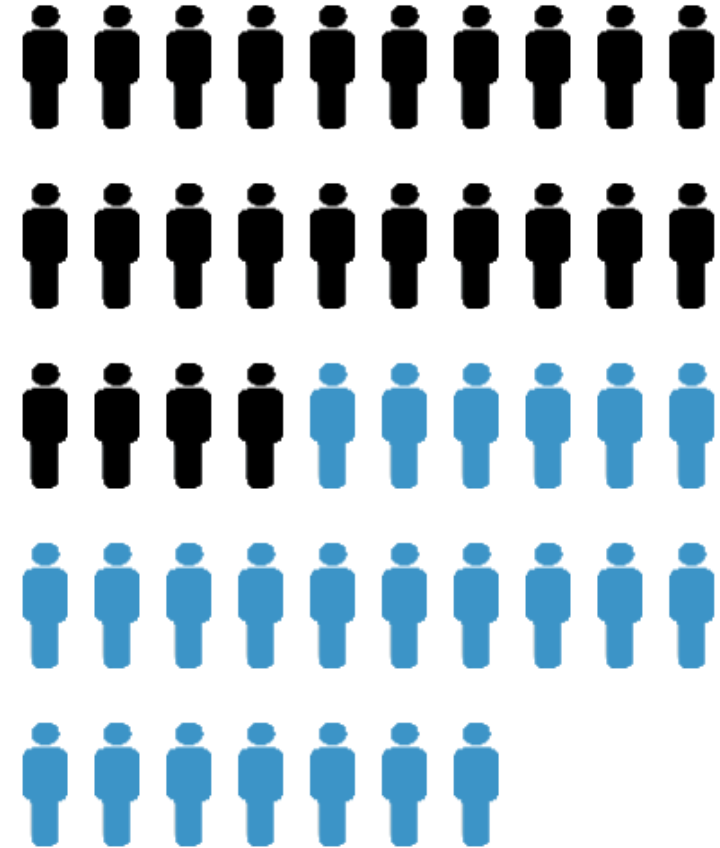


2020



11.8k

2040



23.7k

معرفی بیمار

آقای 56 ساله ای به شما مراجعه کرده است و در مورد خطر ابتلا به سرطان روده از شما سوال میکند . هیچ بیماری خاصی ندارد . شکایت خاصی نیز ندارد . معاینه بالینی طبیعی است .

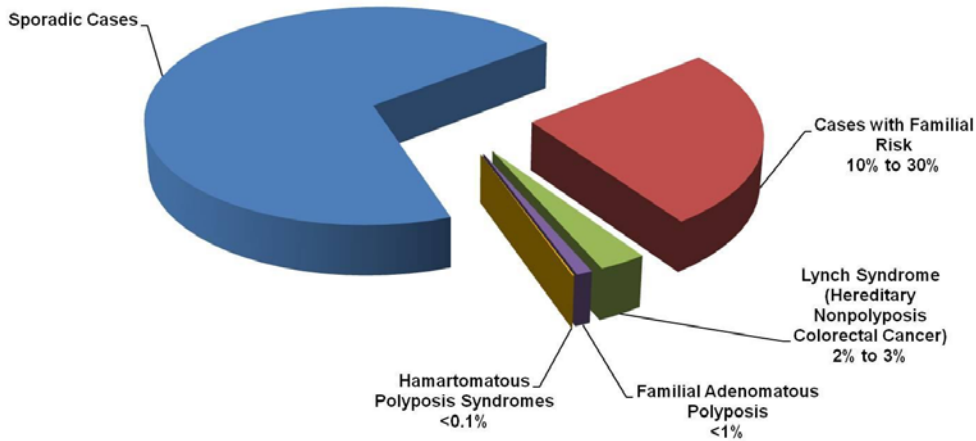
▪ چه نکاتی در مورد این بیمار برای شما مهم است؟

چه کسانی در معرض خطر هستند ؟

- سن
- سابقه خانوادگی در بستگان درجه اول
- سابقه قبلی پولیپ ، سرطان روده و سرطانهای دیگر در خود فرد
- ابتلا به بیماری های التهابی روده

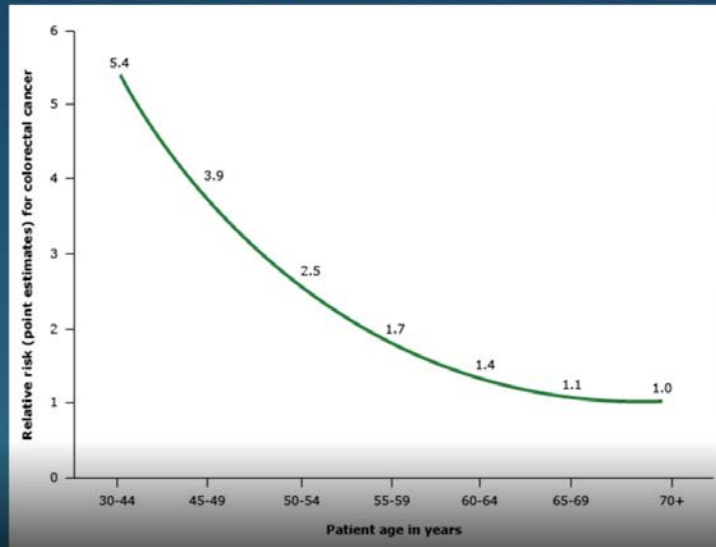
سابقه خانوادگی

Colon Cancer Cases Arising in Various Family Risk Settings



- برای افراد کمتر از 40 سال مهم تر است
- اقل هر پنج سال این اطلاعات در مورد بیمار روزآمد شود
- از سایر سرطانها به خصوص اندومتر ، معده پرسیده شود
- در عمل فقط از حدود نیمی از بیماران پرسیده شده بوده است

Risk of CRC associated with a FDR with CRC declines with age



معرفی بیمار

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▪ چه اقداماتی میتواند احتمال ابتلا به سرطان روده را بکاهد؟

عوامل خطر زا

▪ الكل

▪ 1.41 (95% CI, 1.16–1.72) for consumption exceeding 45 g/day

▪ دخانبات

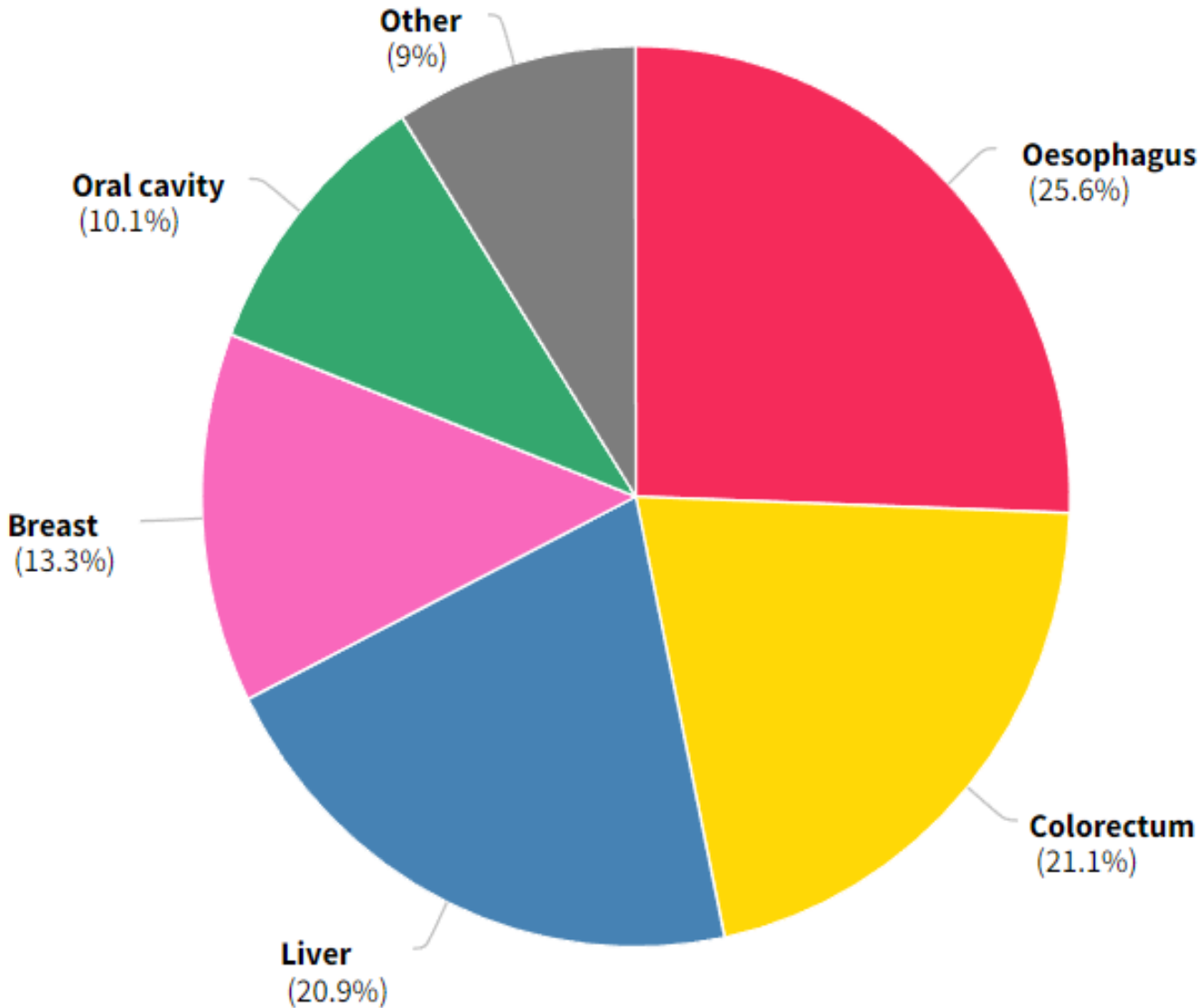
▪ 1.18 (95% CI, 1.11–1.25)

▪ ياقى

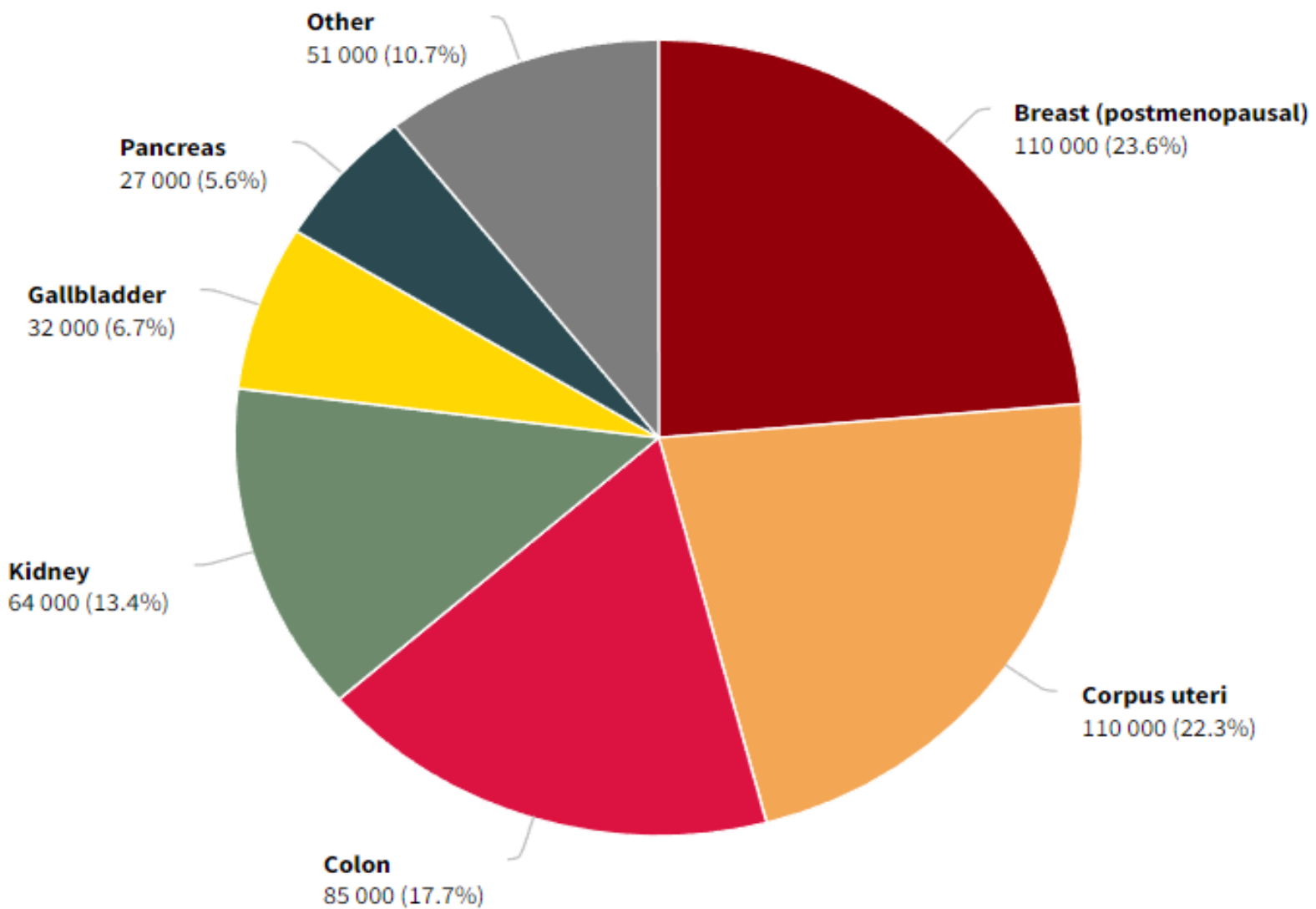
▪ men and women with a BMI of 30 to 34.9 had an adjusted RR for CRC mortality (compared with people with a BMI of 18.5–24.9) of 1.47 (95% CI, 1.30–1.66)

▪ women with BMI >29 , incidence 1.45 (95% CI, 1.02–2.07)

Estimated number of new cancer cases in 2020 attributable to alcohol drinking, World, both sexes



ancer cases (at all anatomical sites) among both sexes in the world in 2012 attributable to excess body mass index, shown by anatomical site as percentages of the total number of all such attributable cases at all anatomical sites in this population



عوامل محافظت کننده

▪ فعالیت ورزشی

▪ 24% reduction in CRC incidence (RR, 0.76; 95% CI, 0.72–0.81)

▪ آسپیرین

▪ تاثیر بعد از ده الی بیست سال مصرف

▪ Hr 0.60; 95% CI, 0.47–0.76).

▪ Daily doses of 75 to 1,200 mg of ASA reduce the 20-year risk of CRC death by approximately 33% (HR, 0.67; 95% CI, 0.52–0.86)

▪ خطرات احتمالی : خونریزی گوارشی و خونریزی مغزی

▪ 14 (95% CI, 7–23) additional major GIB per 1,000 persons over 10 years

▪ 3.2 (95% CI, -0.5 to 0.82) extra hemorrhagic strokes per 1,000 persons over 10 years

▪ These risks increase with advancing age

عوامل محافظت کننده

برداشتن پولیپ به خصوص پوولیپ با اندازه بیش از یک سانتی
متر

▪ خطر سوراخ شدن و خونریزی

BSG

We suggest that individuals at increased familial risk of CRC should be strongly encouraged **not to smoke**, **to maintain a normal body mass index (BMI)**, to moderate their consumption of **red and processed meat**, and to **exercise** regularly.

(GRADE of evidence: low; Strength of recommendation: Weak)

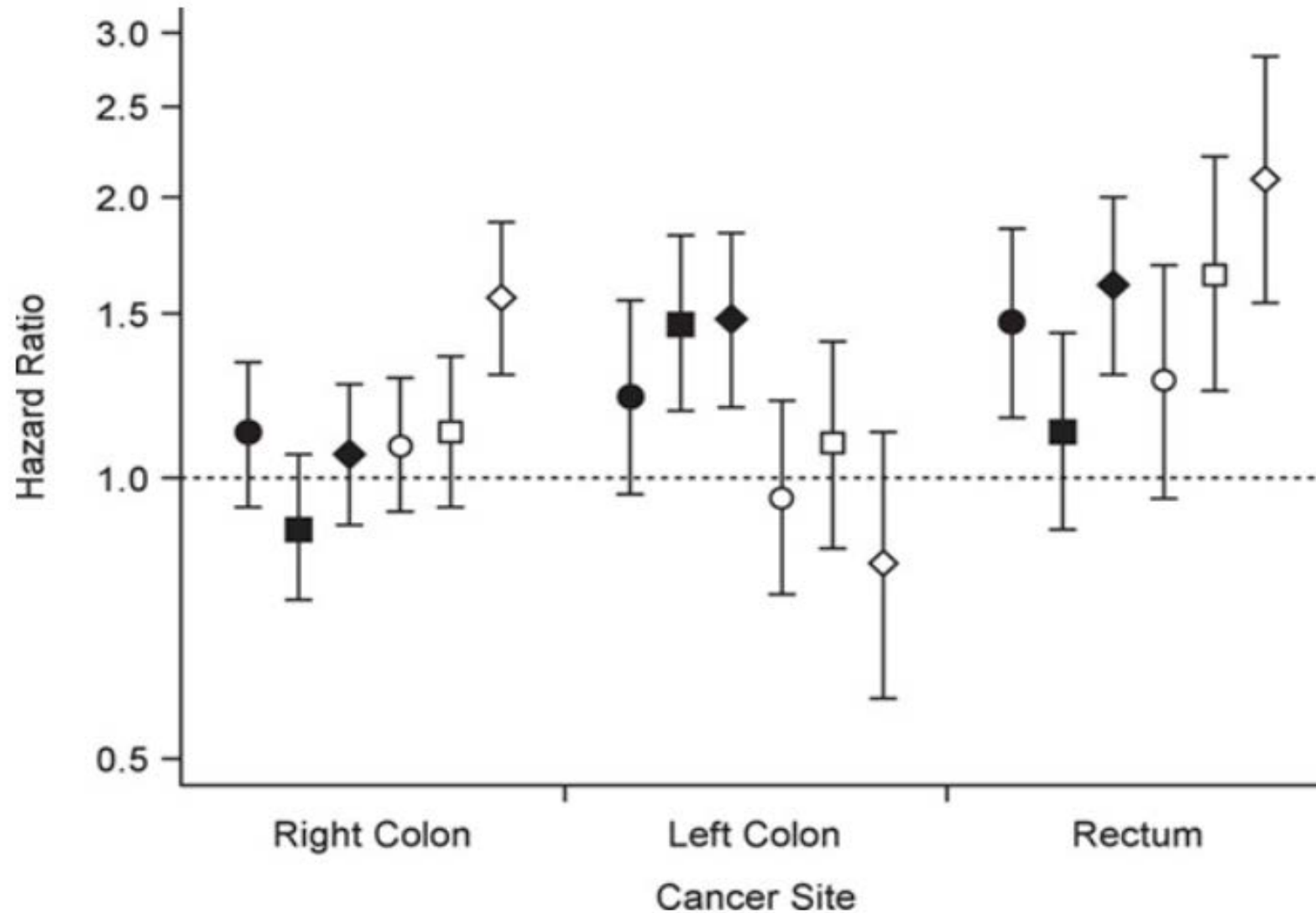
Gut 2020;69:411-444.

دخانیات

Circles, ≤ 10 pack-years of smoking; squares, 11–20 pack-years; diamonds, ≥ 21 pack-years.

Black markers show results for men and white markers results for women.

Am J Epidemiol. 2020
Jun; 189(6): 543–553.



دخانيات

- Male ever smokers : HR = 1.39, 95% CI: 1.16, 1.67 of cancer of the left (distal or descending) colon but not of the right (proximal or ascending) colon
- Female ever smokers :HR = 1.20, 95% CI: 1.06, 1.36 of cancer of the right colon but not of the left colon
- More rectal cancers in female smokers

Am J Epidemiol. 2020 Jun; 189(6): 543–553.

Pooled RR for CRC:

- Current smoker 1.14 (95% CI 1.10–1.18)
- Ex smokers 1.17 (95% CI 1.15–1.20)

CRC risk increased linearly with smoking intensity and duration.

Cigarette smoking increases the risk of CRC in a dose-dependent manner with intensity and duration

Quitting smoking reduces CRC risk after 25 yrs .

Smoking greatly increases the risk of CRC that develops through the microsatellite instability pathway, characterized by microsatellite instability-high, CpG island methylator phenotype positive, and BRAF mutation.

Smoking and Colorectal Cancer Risk, Overall and by Molecular Subtypes: A Meta-Analysis, The American Journal of Gastroenterology: December 2020 - Volume 115 - Issue 12 - p 1940-1949

مواد افیونی

- 160 cases and 320 controls
- Opium use was associated with increased risk of colorectal cancer (adjusted OR = 4.4; 95% CI: 2.2 - 8.8).
- Significant dose-response association was observed for low (OR = 3.4; 95% CI: 1.2 - 9.2) and high (OR = 7.7; 95% CI: 1.5 - 38.6) opium use with presence of colon cancer.

Int J Cancer Manag. 2017;10(6):e8227

غذا :

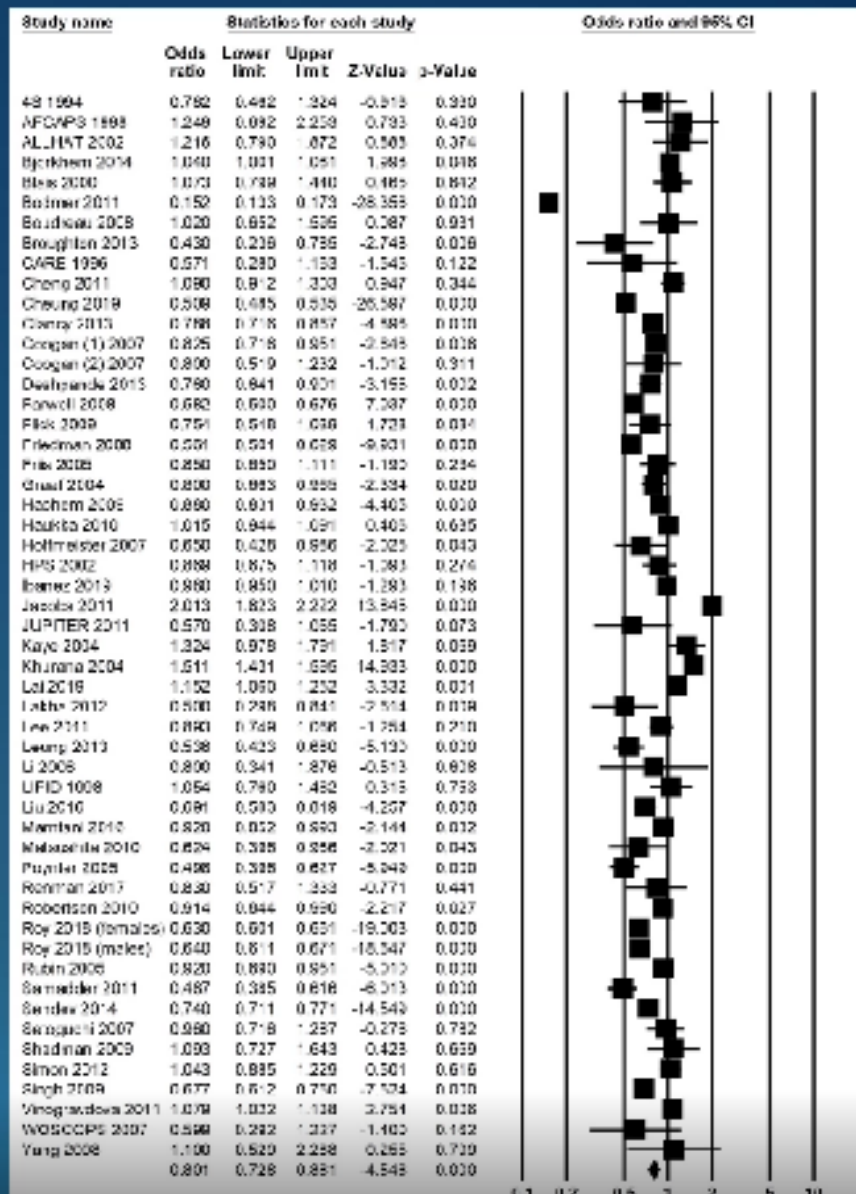
- تا 50 درصد در ایجاد سرطان روده ممکن است نقش آفرینی داشته باشد
- میوه و سبزیجات ؛ فیبر
- ماهی در برابر گوشت قرمز
- گوشت فراهم آوری شده

Statins

Risk of CRC in non-IBD population

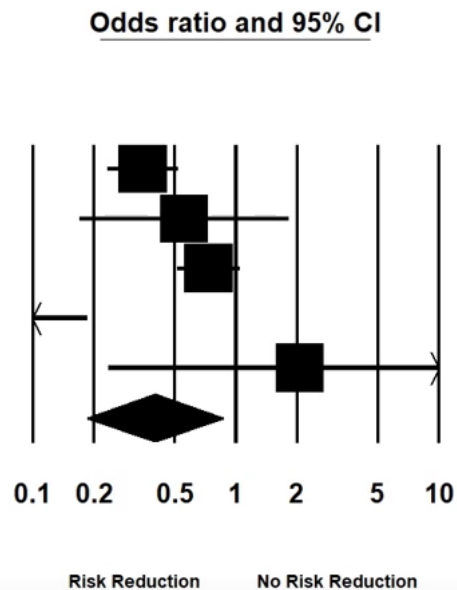
52 studies (17 cohort studies, 27 case-control studies, and 8 randomized clinical trials) with 11,459,306 patients were identified (2,123,293 statin users, 9,336,013 non-statin users).

Statin use was associated with a significant risk reduction of CRC in the non-IBD population; the pooled OR was 0.80 (95% CI 0.73-0.88, $P < 0.001$)



Risk of CRC among IBD populations

Study name	Statistics for each study				
	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Ananthakrishnan 2016	0.350	0.236	0.520	-5.194	0.000
Mak 2020	0.559	0.172	1.814	-0.969	0.333
Rubin 2005	0.740	0.521	1.052	-1.680	0.093
Samadder 2011	0.060	0.019	0.187	-4.850	0.000
Shah 2019	2.071	0.238	18.042	0.659	0.510
	0.399	0.185	0.860	-2.343	0.019



Five observational studies including one unpublished abstract (15,342 IBD patients in published studies: 1,161 statin users and 12,145 non-statin users)

Statin users were found to have a 60% lower risk of CRC in the IBD population

Statins

Conclusions

- The risk reduction of statins may be greater than previously reported
- In the non-IBD population, statin use was associated with a 20% lower risk of CRC and a 60% lower risk of CRC in IBD patients
- Prospective randomized trials are needed to confirm the risk reduction of CRC in the IBD population including whether the effects of statins differ between Ulcerative Colitis and Crohn's disease patients

معرفی بیمار

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▪ چه راهی را برای غربالگری سرطان روده در این بیمار توصیه میکنید؟

COLORECTAL CANCER SCREENING

Stool-based tests

- Highly sensitive fecal immunochemical test (FIT) every year
- Highly sensitive guaiac-based fecal occult blood test (gFOBT) every year
- Multi-targeted stool DNA test (mt-sDNA) every 3 years

Visual (structural) exams of the colon and rectum

- Colonoscopy every 10 years
- CT colonography (virtual colonoscopy) every 5 years
- Flexible sigmoidoscopy (FSIG) every 5 years

آزمایش مدفوع برای خون نهفته

- محدودیت در مصرف گوشت قرمز و دل و جگر برای سه روز؟
- عدم مصرف ویتامین سی بیش از 250 میلی گرم برای 3 تا 7 روز
- عدم مصرف NSAIDs برای هفت روز؟



Fecal immune test ▪

MULTITARGET STOOL DNA TESTS WITH FIT

- **Cologuard** : composite of tests :DNA (KRAS) mutations, a gene amplification technique to test for methylation biomarkers associated with colorectal neoplasia, and FIT
- Testing every three years
- No dietary or medication restrictions
- The implications of positive MT-sDNA testing in patients who are not found to have lesions on subsequent colonoscopy are uncertain but likely represent false positives.
- Sensitivity for CRC detection with MT-sDNA was 92 percent compared with FIT at 74 percent
- Specificity was lower for MT-sDNA than for FIT (87 versus 95 percent).

COLORECTAL CANCER SCREENING

- Average risk of colorectal cancer start regular screening at age 45.
- People who are in good health and with a life expectancy of more than 10 years should continue regular colorectal cancer screening through the age of 75.
- For people ages 76 through 85, the decision to be screened should be based on a person's preferences, life expectancy, overall health, and prior screening history.
- People over 85 should no longer get colorectal cancer screening.

ACS 2022



Select group of patients might benefit from early colonoscopic screening for colorectal cancer

- A total of 2059 patients
- Patients with FH of CRC had significantly higher ADR (27.8% vs. 19.7%, $p = 0.001$)
- There was no significant difference in ADR in patients between 40-44 years and 45-49 years of age (17.7% vs. 21.4%, $p = 0.058$).
- FH of CRC, male sex, BMI > 30 kg/m², chronic kidney disease, and age were associated with high ADR.

	Odds Ratio	P value	95% Conf Interval
Age	1.054242	0.014	1.01-1.1
Gender	1.699974	0.000	1.34-2.15
Race			
Caucasian	1		
African American	0.61	0.001	0.46-0.82
Hispanic	0.98	0.876	0.73-1.31
Asian and others	0.99	0.968	0.68-1.44
F/H CRC	1.55	0.002	1.17-2.05
Fellow involvement	0.74	0.013	0.59-0.94
Cecal intubation	2.4	0.095	0.85-6.99
Adequate bowel prep	1.88	0.044	1.02-3.46
BMI			
<25	1		
25-30	1.22	0.221	0.88-1.70
30-35	1.78	0.001	1.27-2.49
>35	1.85	0.001	1.29-2.63
CKD	2.22	0.019	1.14-4.31

COLORECTAL CANCER SCREENING

For screening, people are considered to be at average risk if they do not have:

- 1. A personal history of colorectal cancer or certain types of polyps**
- 2. A family history of colorectal cancer**
- 3. A personal history of inflammatory bowel disease (ulcerative colitis or Crohn's disease)**
- 4. A confirmed or suspected hereditary colorectal cancer syndrome, such as familial adenomatous polyposis (FAP) or Lynch syndrome (hereditary non-polyposis colon cancer or HNPCC)**
- 5. A personal history of getting radiation to the abdomen or pelvic area to treat a prior cancer**

معرفی بیمار

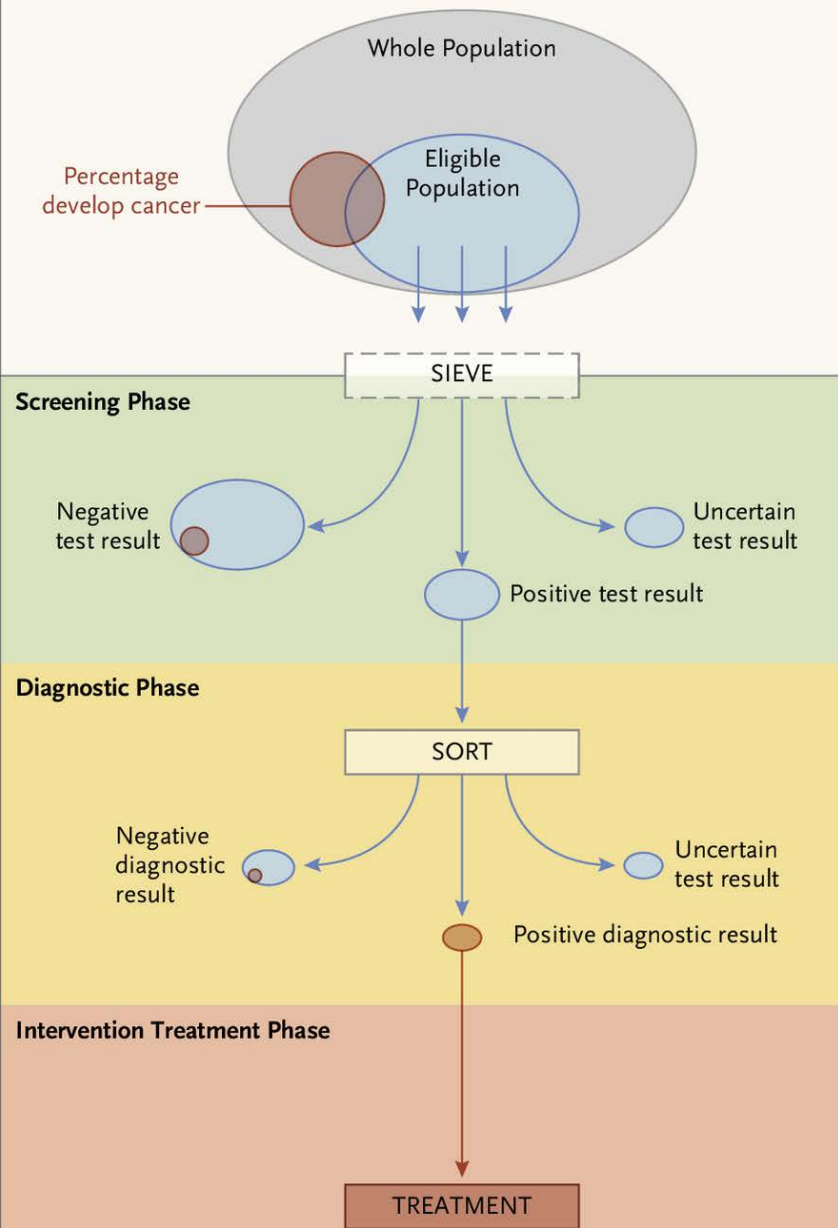
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- با توجه به نتایج غربالگری تا چه حد به بیمار میتوانید در خصوص عدم ابتلا به سرطان روده اطمینان دهید ؟
- تکرار غربالگری را در چه زمانی توصیه میکنید؟

اشتباهات

- تکرار آزمایش مدفوع در صورت مثبت شدن
- در این مرحله قدم بعدی کولونوسکوپی است
- انجام آزمایش مدفوع در کسی که سابقه خونریزی از مقعد را میدهد
- تاخیر در انجام کولونوسکوپی در این موثرد بیش از سه ماه
- عدم تکرار کولونوسکوپی در کسانی که روده تمیز نبوده است

A In Practice: One Round of Screening



B In Theory: Two Rounds of Screening

