Healthy Arizona
WORKSITES
A PUBLIC HEALTH INITIATIVE

HEALTHY ARIZONA WORKSITES PROGRAM (HAWP) PRESENTS:

DISEASE PREVENTION THROUGH DIET

Presented by:

RONALD GAGLIANO, MD

Chairman of the Department of Surgery, and Associate Chief Medical Officer for Oncology Physician Services

Dignity Health.

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WEBINAR HOUSEKEEPING

WELCOME

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Please type any questions into the chat or Questions panel and we will do our best to answer them all at the end.

All handouts and a copy of the presentation slides are available in the Handouts panel.

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A recording will be added to the library of HAWP webinars on our website within 48 hours.

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Disease Prevention Through Diet

Ronald A. Gagliano, Jr., MD, FASCRS, FACS
Professor of Colon & Rectal Surgery
Associate Chief Medical Officer, Dignity Health - Cancer Institute
Chair, Department of Surgery, Dignity Health Medical Group
March 18, 2021

Dignity Health. St. Joseph's Hospital and Medical Center
Dignity Health. Cancer Institute
Dignity Health Medical Group Arizona

Learning Objectives

- Enhance understanding of the diet – disease relationship
- Describe the scope of the obesity epidemic
- Identify how diseases can be caused or worsened by improper nutrition
- Identify proper diets are beneficial for chronic disease prevention and management

Diseases Caused By or Linked to Malnutrition

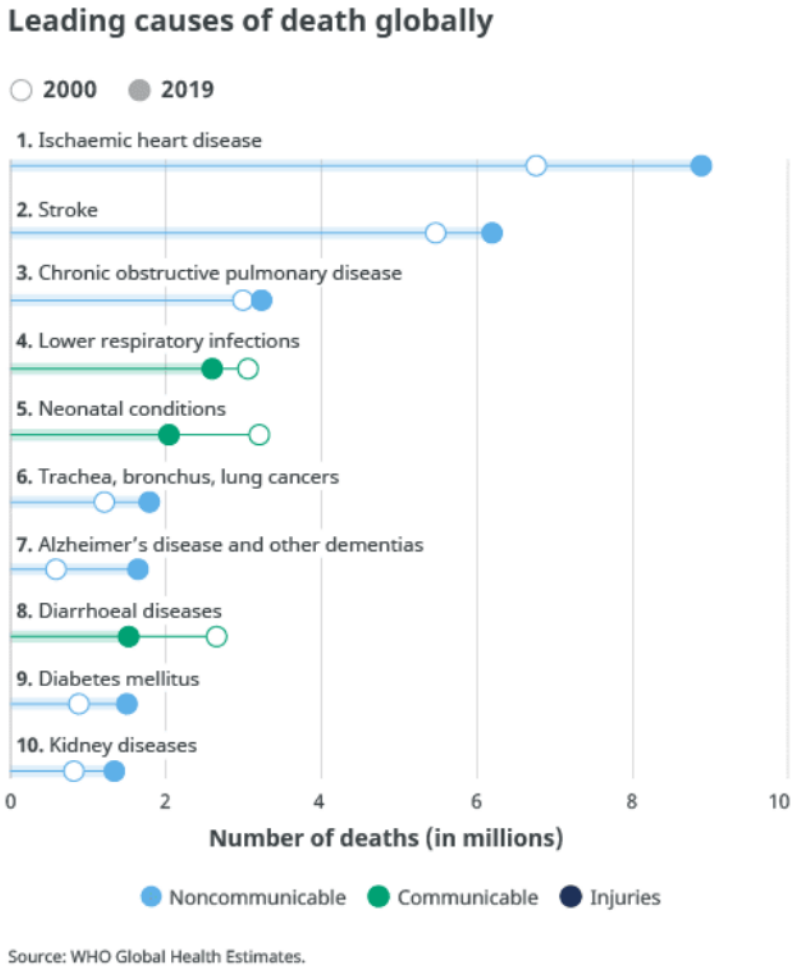
- Scurvy
- Rickets
- Beriberi
- Hypocalcemia
- Osteomalacia
- Vitamin K Deficiency
- Pellagra
- Xerophthalmia
- Iron Deficiency
- Protein Calorie Malnutrition
  - **Kwashiorkor** is a protein deficiency disorder with adequate energy intake, whereas **Marasmus** is inadequate general calorie intake, including proteins.

Diseases Caused by or Linked to Obesity

- Some Cancers
- Digestive Tract Diseases
  - Esophageal Reflux
  - Nonalcoholic Steatohepatitis
  - Gall Bladder Disease
  - Diverticular Disease
  - Anorectal Diseases
- Cardiovascular Diseases
  - Hypertension (high blood pressure)
  - Coronary Artery Disease
  - Stroke
- Diabetes
- Alzheimer's Disease/Dementia
- Dyslipidemia
- Asthma
- Hyperuricemia (gout / kidney stones)
- Reproductive Hormone Abnormalities / Polycystic Ovarian Syndrome / Impaired Fertility
- Depression and/or Anxiety
- Low energy and easy fatigue
- Acne
- Osteoarthritis
- Sleep Apnea
- Respiratory Problems
- Tooth Decay

Chronic Disease

- In 2005 the World Health Organization (WHO) "…by 2020, chronic diseases will account for **almost three-quarters** of all deaths worldwide."
- On 9 Dec 2020, the WHO reported: "At a global level, 7 of the 10 leading causes of deaths in 2019 were noncommunicable diseases. These seven causes accounted for 44% of all deaths or 80% of the top 10. However, all noncommunicable diseases together accounted for **74% of deaths** globally in 2019."



Worldwide Obesity Epidemic

- 2.5 million deaths can be attributed to being overweight or obese worldwide
- Nearly 70% of cases of Cardio-Vascular Disease (CVD) are associated with obesity
- Obesity levels range from 20-30% in European countries, to over 70% in Polynesia
- 650 million adults were obese in 2016 (WHO report Apr 1, 2020)
- 39% of adults were overweight
- 13% of adults (11% of men and 15% of women) were obese

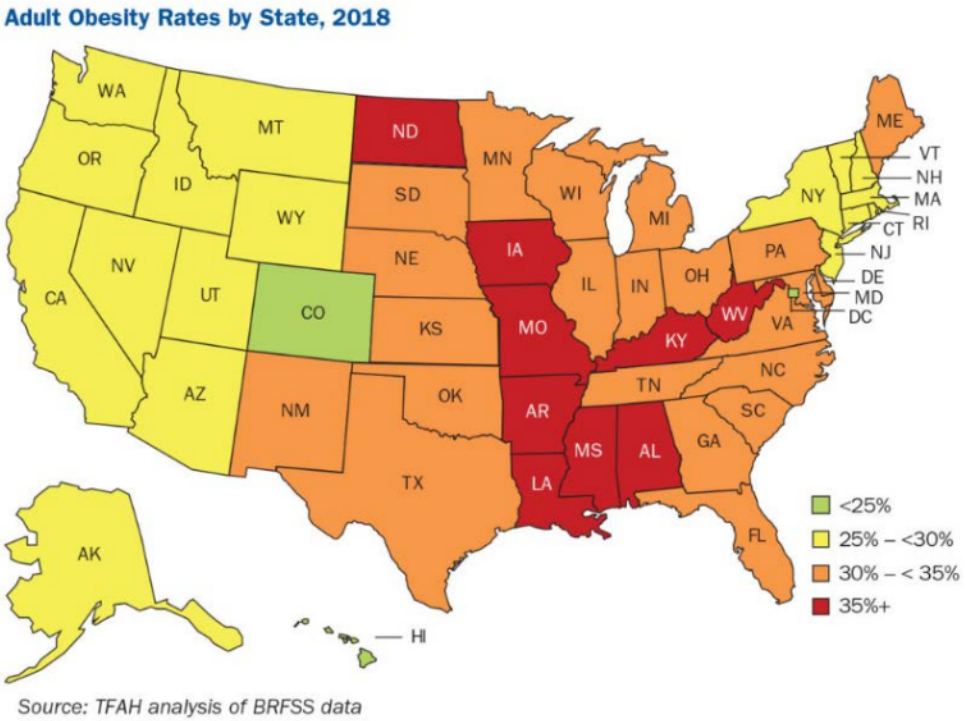
Americans Living with Diseases Related to Diet

Obesity	**78,100,000**
High Blood Pressure	66,900,000
Diabetes	29,100,000
Heart disease	26,600,000
Cancer	20,073,000
Osteoporosis	9,900,000
Stroke	6,400,000

- Unhealthy diet is a leading cause of disability, and unhealthy eating habits and physical inactivity are leading causes of loss of independence
- Diabetes is a leading cause of blindness and amputations with ~ 73,000 people having lower-limb amputations each year due to diabetes
- Bone injuries due to osteoporosis are most likely to occur in the hips, spine, and wrist
  - Even a slight fracture in these areas can result in loss of independence
  - Twenty percent of seniors who break their hip **die within just one year** and those who survive often require long-term nursing home care
- Heart attack or stroke can result in difficulty walking, bathing, getting out of bed or cognitive impairment

Arizona Obesity

- Trust for America's Health 2019 report shows **29.5 percent** of Arizona adults were obese in 2018
- AZ ranks 34th in the 50 United States and the District of Columbia



Source: TFAH analysis of BRFSS data

Diseases Caused by or Linked to Obesity

- **Some Cancers**
- **Digestive Tract Diseases**
  - **Esophageal Reflux**
  - **Nonalcoholic Steatohepatitis**
  - **Gall Bladder Disease**
  - **Diverticular Disease**
  - **Anorectal Diseases**
- Cardiovascular Diseases
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- Depression and/or Anxiety
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- Acne
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- Sleep Apnea
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Weight Classification

Weight Classification by Body Mass Index (BMI)

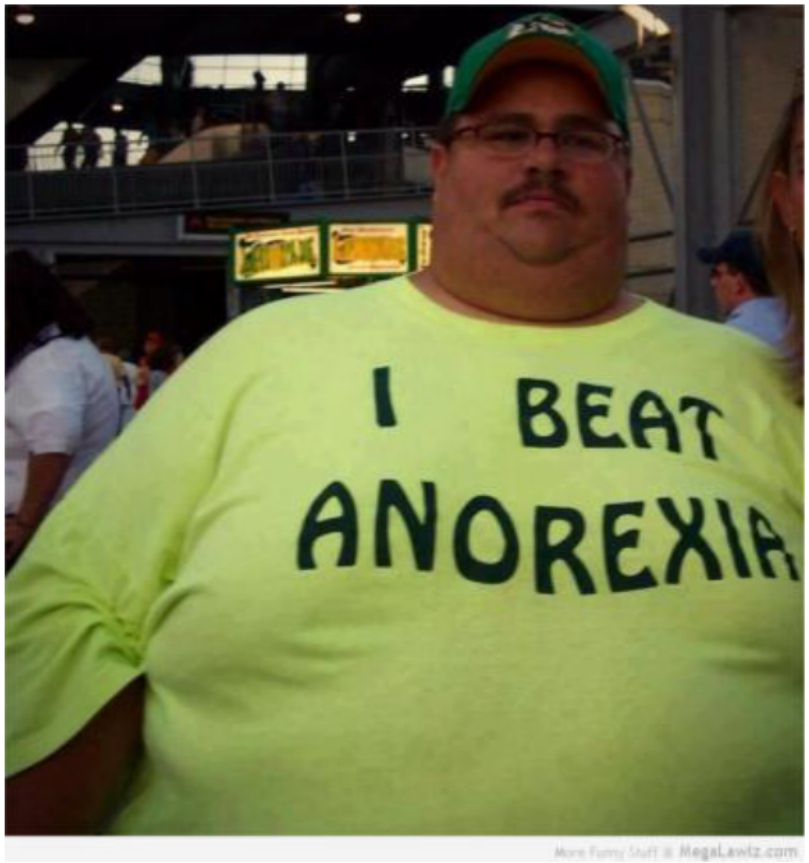
- BMI = Weight (kg) / Body Surface area (m^2)
- BMI = weight in **pounds** / (height in **inches**) squared …then multiply the result by 703 to convert to **BMI in kg/m^2**

BMI = (weight (lb) ÷ height^2 (in)) * 703

Classification	BMI(kg/m^2)
Underweight	**<18.50**
Severe thinness	<16.00
Moderate thinness	16.00 - 16.99
Mild thinness	17.00 - 18.49
Normal range	**18.50 - 24.99**
Overweight	**≥25.00**
Pre-obese	25.00 - 29.99
Obese	**≥30.00**
Obese class I	30.00 - 34-99
Obese class II	35.00 - 39.99
Obese class III	≥40.00

http://apps.who.int/bmi/index.jsp?introPage=intro_3.html

What do these men have in common?



They both have a high BMI

Weight Classification by Percentage Body Fat

Body fat percentage chart for women						
Age	Dangerously low	Excellent	Good	Fair	Poor	Dangerously high
20–29	under 14%	14–16.5%	16.6–19.4%	19.5–22.7%	22.8–27.1%	over 27.2%
30–39	under 14%	14–17.4%	17.5–20.8%	20.9–24.6%	24.7–29.2%	over 29.2%
40–49	under 14%	14–19.8%	19.9–23.8%	23.9–27.6%	27.7–31.9%	over 31.3%
50–59	under 14%	14–22.5%	22.6–27%	27.1–30.4%	30.5–34.5%	over 34.6%
over 60	under 14%	14–23.2%	23.3–27.9%	28–31.3%	31.4–35.4%	over 35.5%

Body fat percentage chart for men						
Age	Dangerously low	Excellent	Good	Fair	Poor	Dangerously high
20–29	under 8%	8–10.5%	10.6–14.8%	14.9–18.6%	18.7–23.1%	over 23.2%
30–39	under 8%	8–14.5%	14.6–18.2%	18.3–21.3%	21.4–24.9%	over 25%
40–49	under 8%	8–17.4%	17.5–20.6%	20.7–23.4%	23.5–26.6%	over 26.7%
50–59	under 8%	8–19.1%	19.2–22.1%	22.2–24.6%	24.7–27.8%	over 27.9%
over 60	under 8%	8–19.7%	19.8–22.6%	22.7–25.2%	25.3–28.4%	over 28.5%

Problems and Limitations with Measures

- Assessments of body fat consistently show that people have higher body fat percentages than official guidelines recommend
- Average body fat percentages also vary across race and ethnicity, suggesting that body fat percentage ideals might be culturally or racially influenced
- BMI only accounts for weight - it makes no distinction between lean muscle, body fat percentage, and bone mass
- BMI cannot assess where fat is in the body; the location of body fat is also relevant to overall health
- Having a high BMI does not always lead to health problems, but this method does still provide a quick and useful clinical tool to assess health risks

Value of Waist Circumference

- Location of excess fat is important
- If excess fat is mainly around midsection = more likely to develop health problems than if excess fat is mainly around hips and thighs
  - Apple vs. Pear shapes
  - True even if BMI falls within the normal range
- Women: waist measurement of more than 35 inches (88 cm)
- Men: waist measurement of more than 40 inches (102 cm)

Higher risk body shape

Lower risk body shape

The Role of Genetics in Body Weight

- Epidemiological evidence shows that obesity, excess energy (Calorie) intake, and sedentary lifestyle are primary contributors to the chronic disease epidemic
- Up to 40% of BMI is attributable to independent genetic influences

Obesity and Inflammation

Obesity is an Inflammatory State

- Obesity is the major determinant of elevated C-reactive protein in subjects with the metabolic syndrome. D Aronson, P Bartha, O Zinder, et al
- Objective: To investigate the relationship between C-reactive protein (CRP) and various characteristics of the metabolic syndrome
- Subjects: A total of 1,929 subjects undergoing a medical examination in a preventive medicine clinic

Conclusion: Obesity is the major factor associated with elevated CRP in individuals with the metabolic syndrome. CRP levels in the range suggesting a source of infection or inflammation (>10 mg/l) are more common among obese subjects than in nonobese subjects.

Obesity is an Inflammatory State

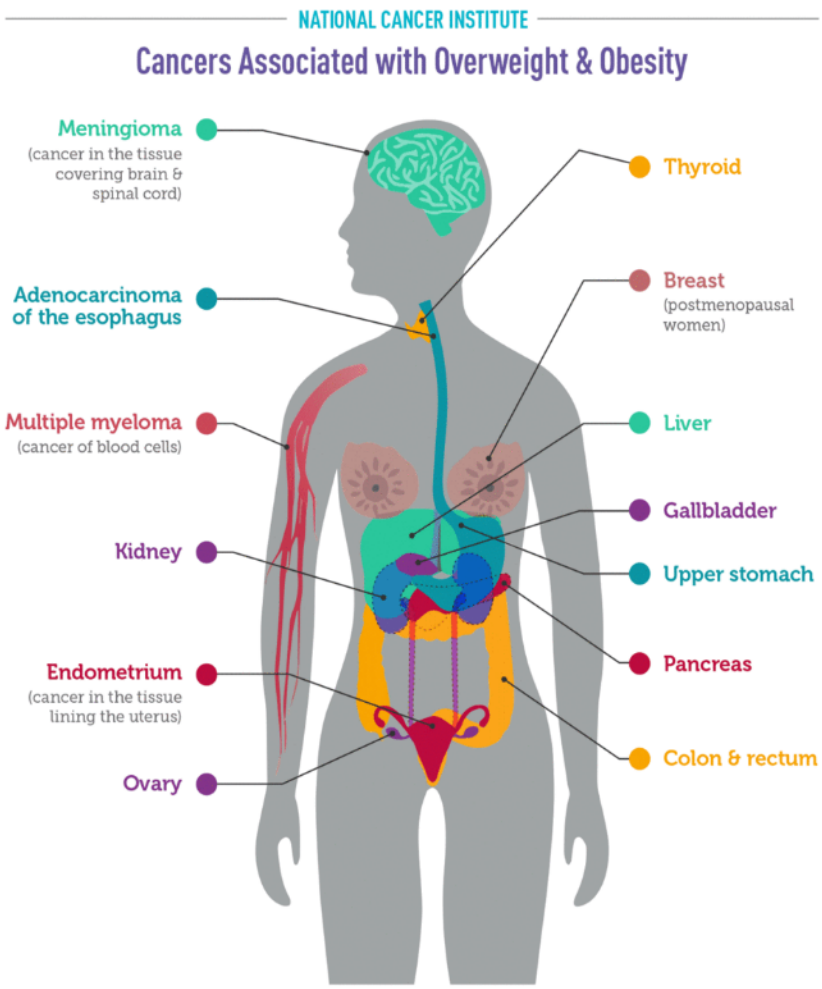
- Relation between degree of weight loss after bariatric surgery and reduction in albuminuria and C-reactive protein Varun Agrawal, Kevin R Krause, David L Chengelis, et al
- Subjects: A retrospective study of 62 obese adults who had gastric bypass surgery with a median follow-up of 15 months
- Selected Results: Post-operation, a decrease occurred in hs-CRP (from a mean **11.2** +/- 9.8 mg/L to **4.7** +/- 5.9 mg/L; P <.0001)

Conclusion: The results of our study have shown that obese adults experience a reduction in albuminuria and hs-CRP after bariatric surgery, with a greater reduction in hs-CRP observed with more surgical weight loss.

The Relationship Between Obesity & Cancer

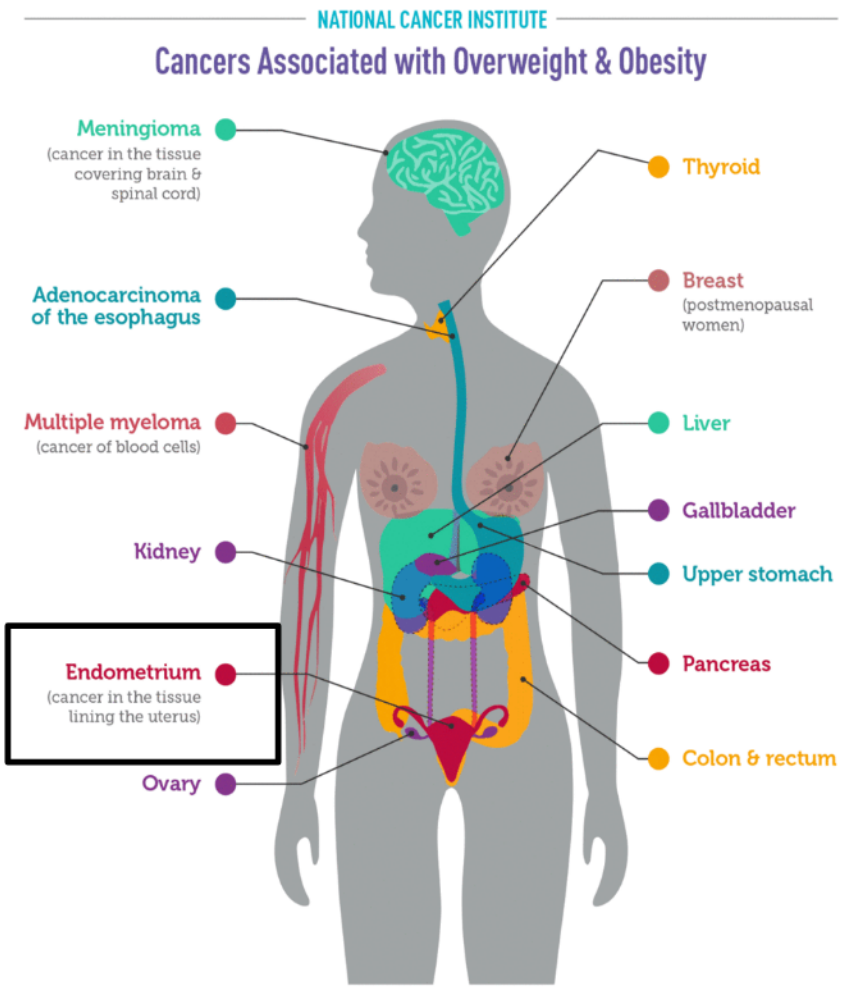
The Relationship Between Obesity & Cancer

- Evidence linking obesity to cancer risk comes from many large cohort studies
- Can be difficult to interpret, and cannot definitively establish that obesity causes cancer
  - Because obese or overweight people may differ from lean people in ways other than their body fat
- Still, there is consistent evidence that higher amounts of body fat are associated with increased risks of a number of cancers



Cancer Types Linked to Obesity

- **Endometrial cancer:** Obese and overweight women risk is 2-4 times as likely as normal-weight women; in extremely obese women risk is 7 times as likely
- **Esophageal adenocarcinoma:** Overweight or obese risk is twice as likely as normal-weight people; in extremely obese people risk is 4 times as likely
- **Gastric cardia cancer:** Obesity risk is nearly twice as likely as normal-weight people
- **Liver cancer:** Overweight or obese risk is twice as likely as normal-weight people (This association is stronger in men than women)
- **Kidney cancer:** Overweight or obese risk is twice as likely as normal-weight people



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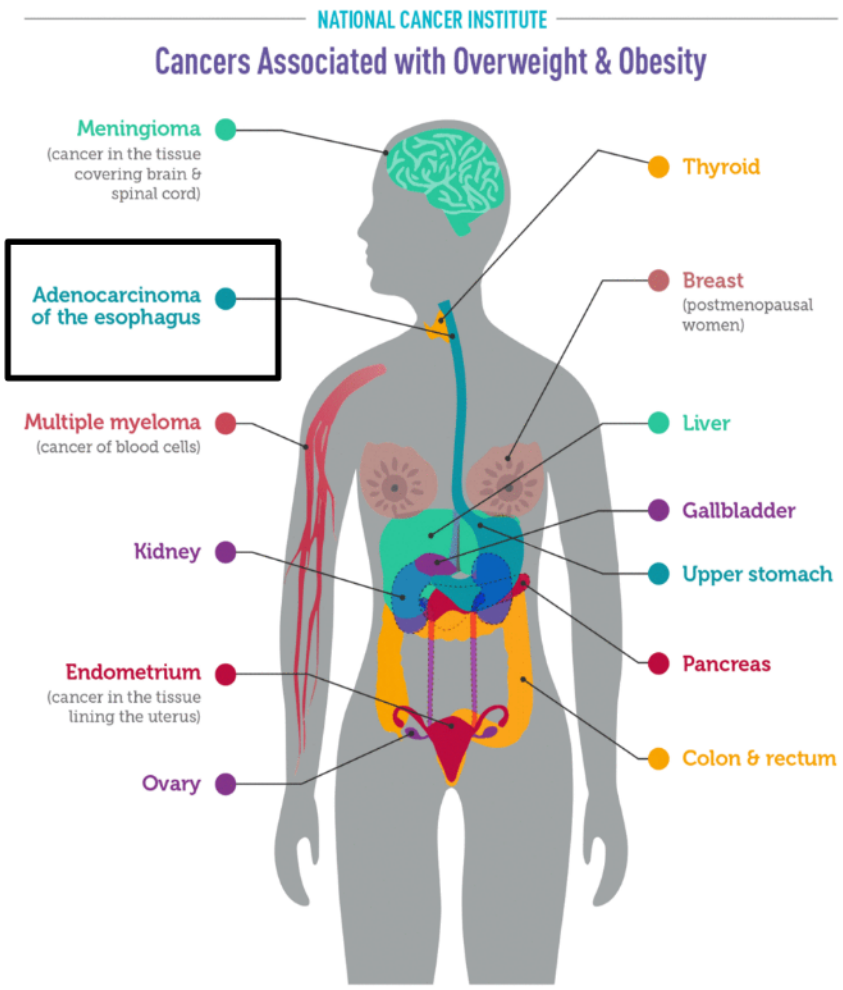

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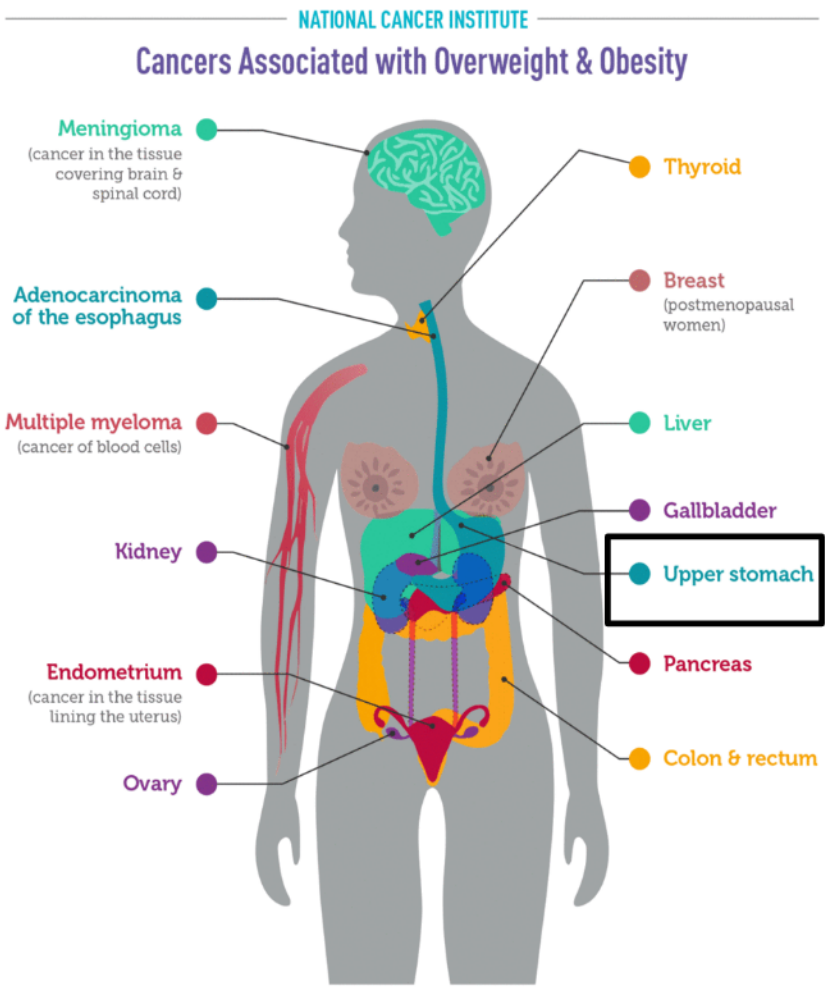

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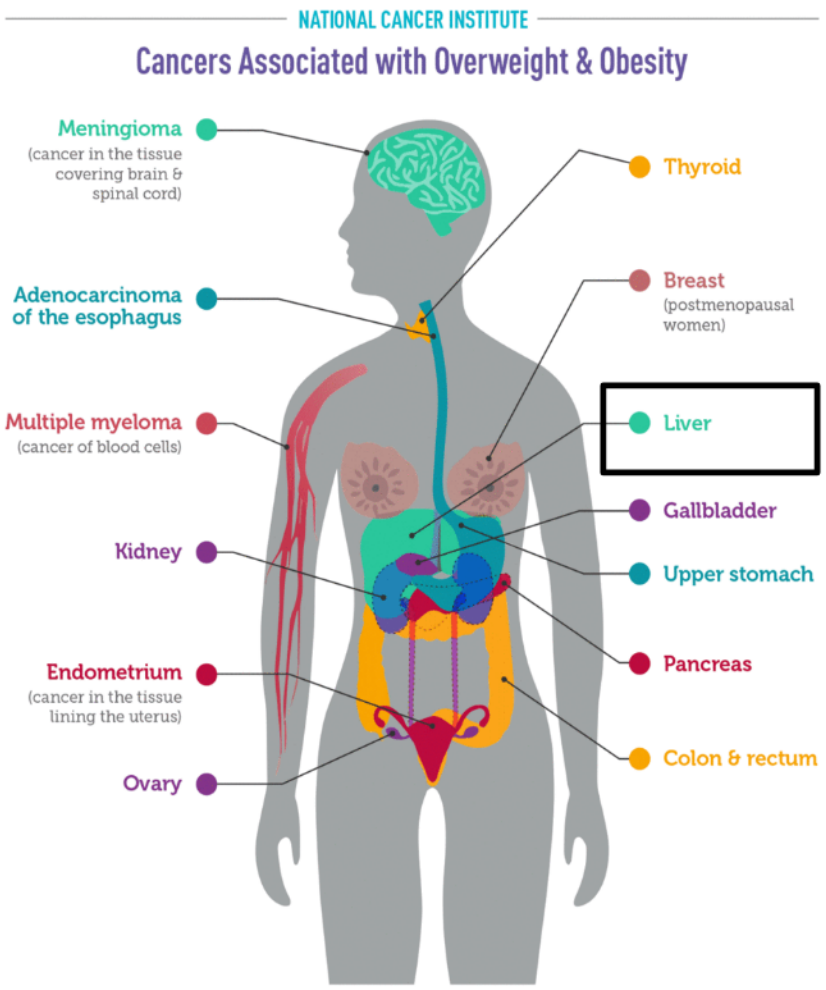

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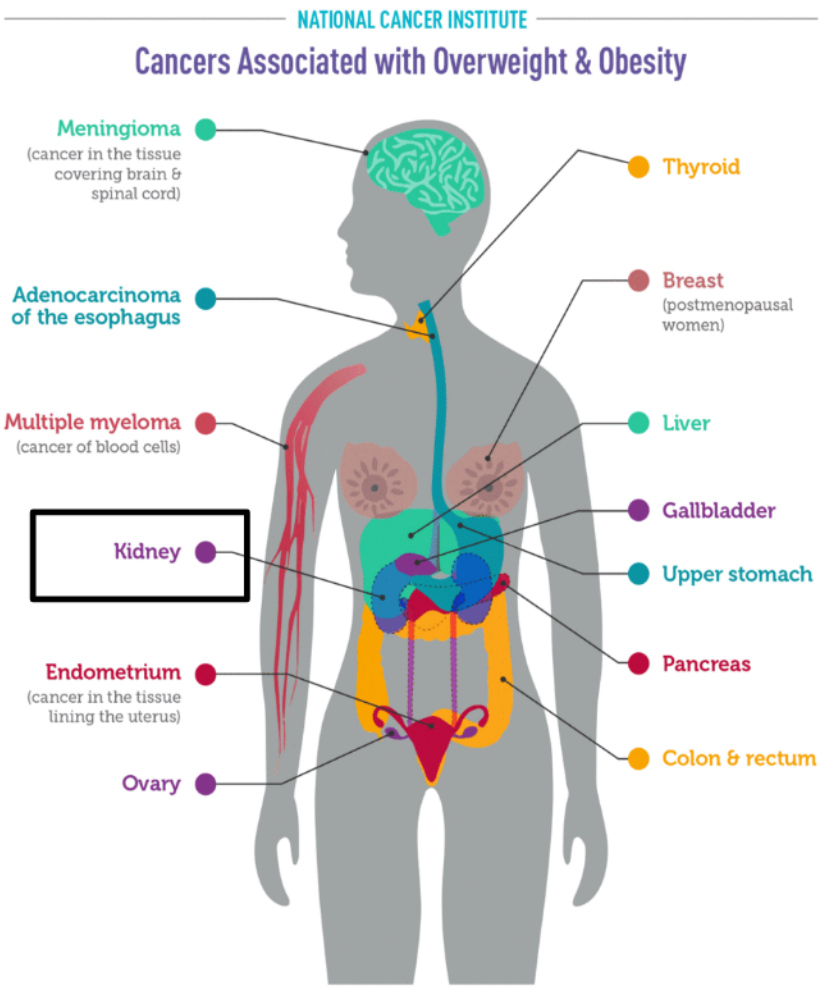
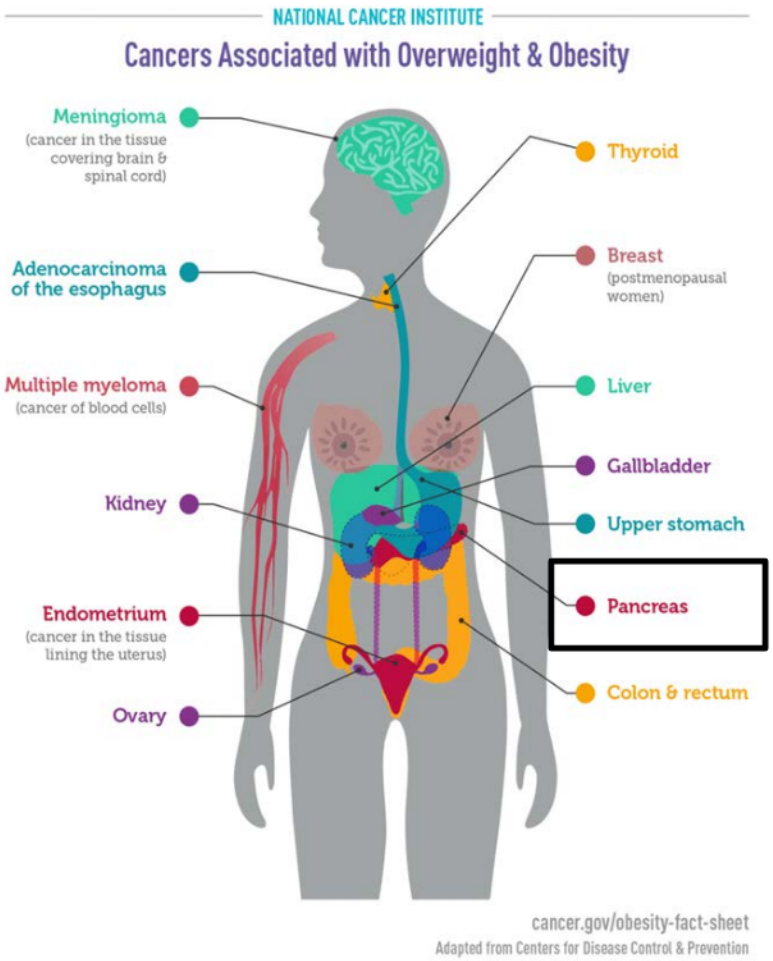


Cancer Types Linked to Obesity

- **Pancreatic cancer:** Overweight or obese risk is 1.5 times that of normal-weight people
- **Colorectal cancer:** People who are obese are 30% more likely to develop colorectal cancer than normal-weight people
- **Multiple myeloma:** Compared with normal-weight individuals, overweight and obese individuals have a 10% to 20% increase in the risk of developing multiple myeloma
- **Meningioma:** The risk of this slow-growing brain tumor that arises in the membranes surrounding the brain and the spinal cord is increased by about 50% in people who are obese and about 20% in people who are overweight



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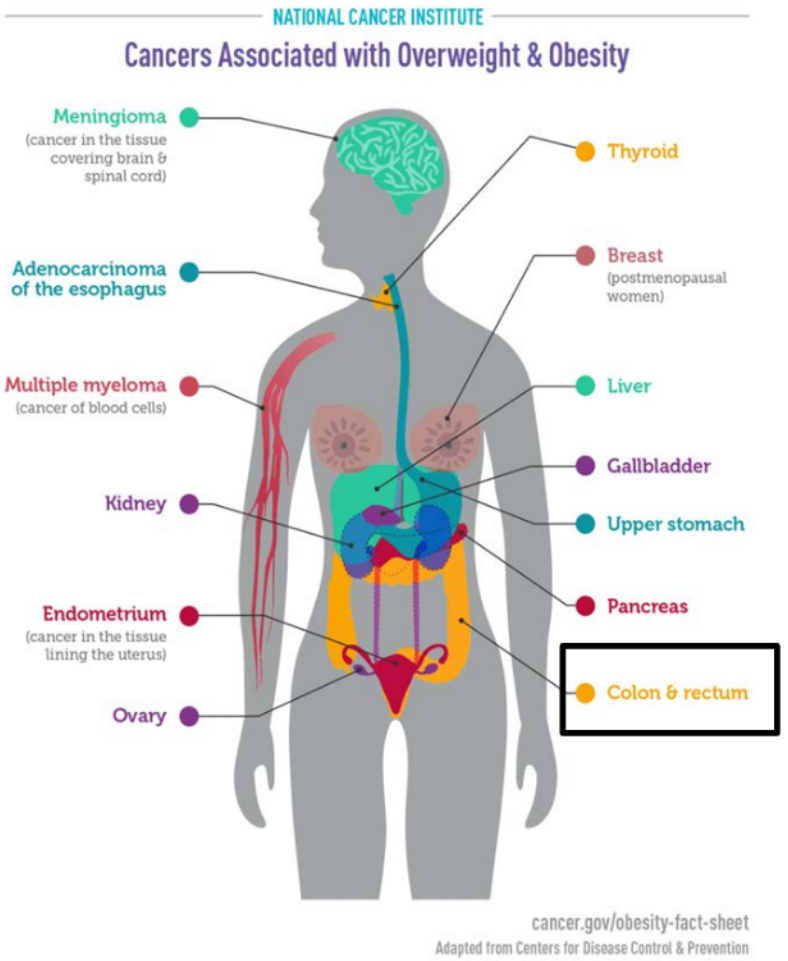

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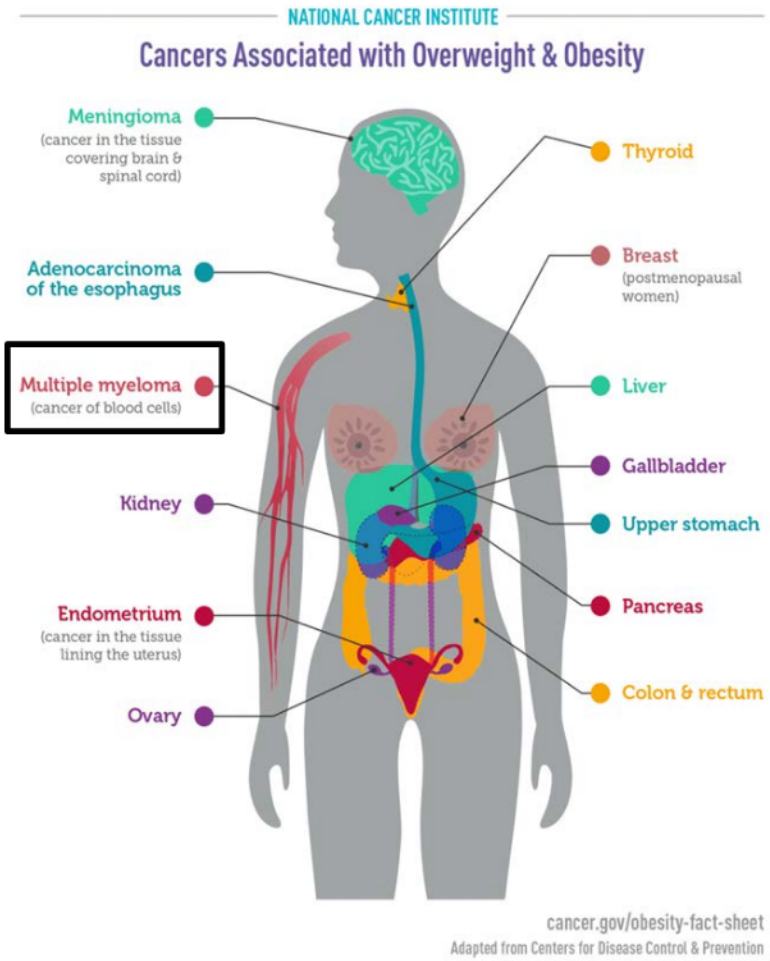

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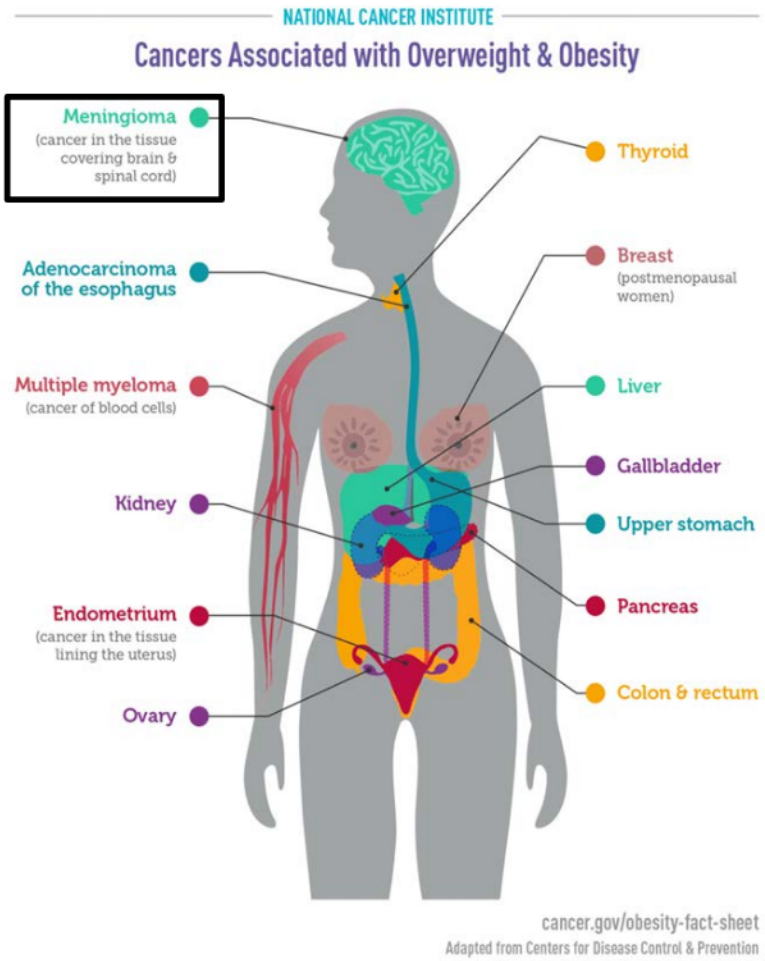
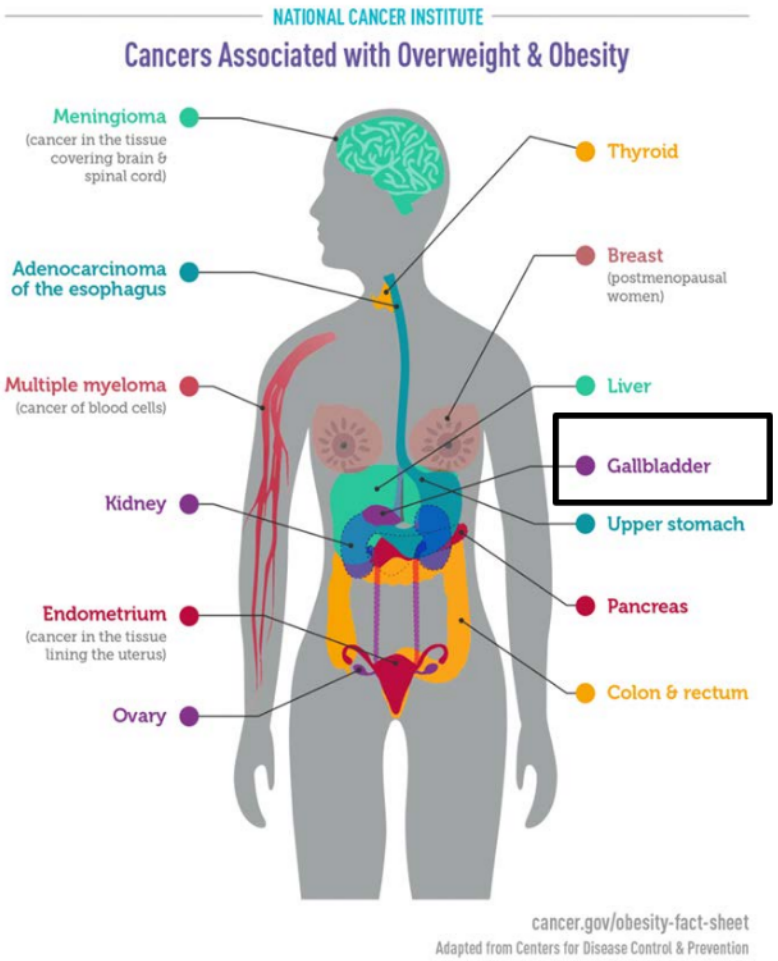


Cancer Types Linked to Obesity

- **Gallbladder cancer:** Overweight have a about 20% increase in risk, but obese have a 60% increase in risk of gallbladder cancer (W > M)
- **Breast cancer:** Obese postmenopausal women have 20% to 40% increase in risk compared with normal-weight women
  - The higher risks are seen mainly in women who have never used menopausal hormone therapy and for tumors that express hormone receptors
  - Obesity is also a risk factor for breast cancer in men



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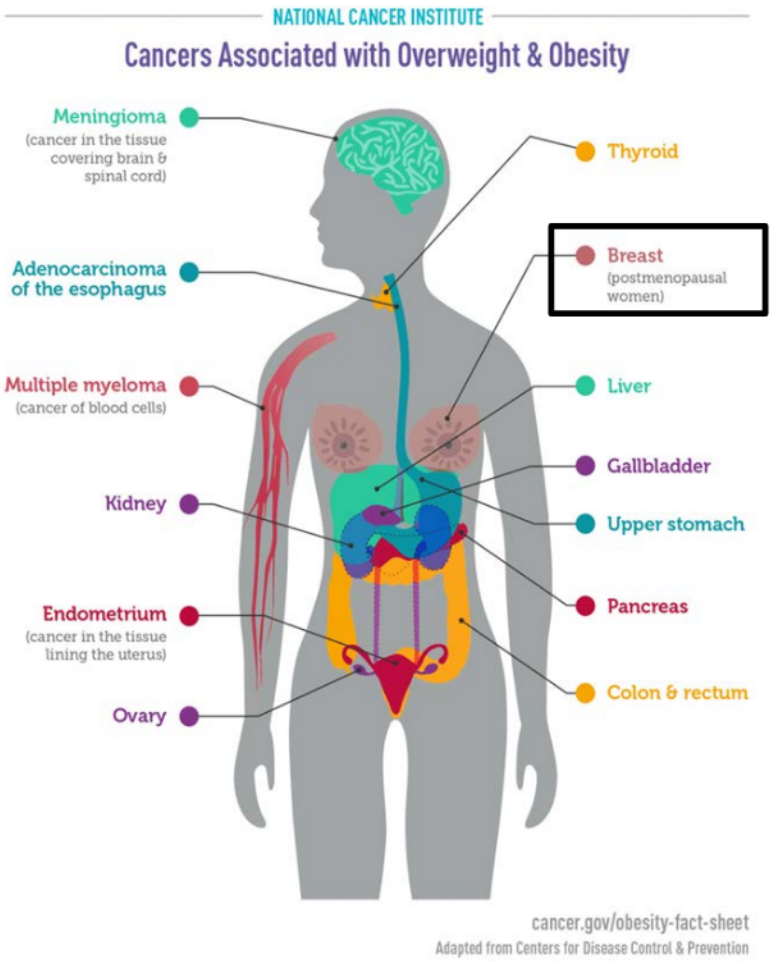
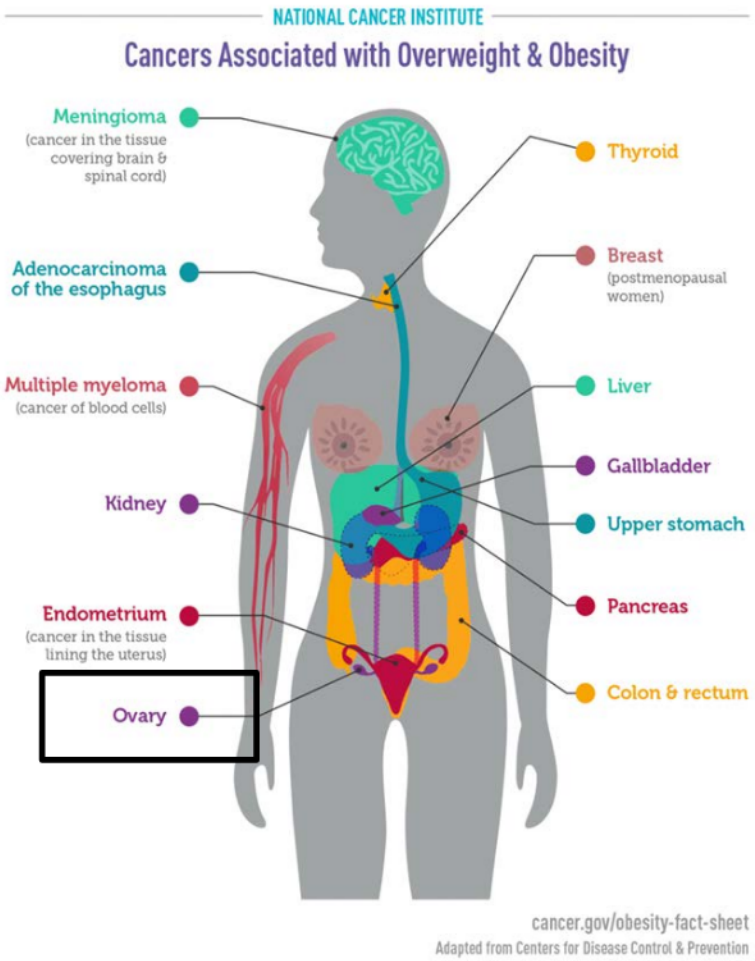


Cancer Types Linked to Obesity

- **Ovarian cancer:** Higher BMI is associated with a slight increase in the risk of ovarian cancer, particularly in women who have never used menopausal hormone therapy (5-unit increase in BMI is associated with a 10% increase)
- **Thyroid cancer:** Higher BMI (a 5-unit increase in BMI) is associated with a 10% increase in risk



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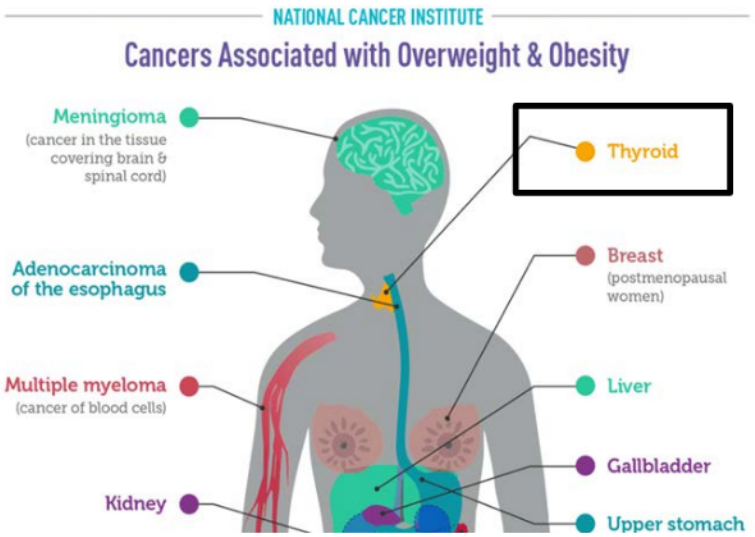

How might obesity increase the risk of cancer?

- Obese people often have increased blood levels of insulin and insulin-like growth factor-1 (IGF-1)
  - This condition, known as hyperinsulinemia or insulin resistance, precedes the development of type 2 diabetes
  - High levels of insulin and IGF-1 may promote the development of colon, kidney, prostate, and endometrial cancers
- Fat cells produce adipokines, hormones that may stimulate or inhibit cell growth
  - Leptin, which seems to promote cell proliferation, increases in the circulating blood with increasing body fat
  - Adiponectin—which is less abundant in obese people than in those of normal weight—may have antiproliferative effects.
- Fat cells may also have direct and indirect effects on other cell growth regulators, including mammalian target of rapamycin (mTOR) and AMP-activated protein kinase
- Other possible mechanisms by which obesity could affect cancer risk include changes in the mechanical properties of the scaffolding that surrounds breast cells and altered immune responses to cancers

How might obesity increase the risk of cancer?

- Obese people often have chronic low-level inflammation, which can, over time, cause DNA damage that leads to cancer
- Overweight and obese individuals are more likely than normal-weight individuals to have conditions or disorders that are linked to or that cause chronic local inflammation and that are risk factors for certain cancers:
  - Chronic local inflammation induced by gastroesophageal reflux disease or Barrett esophagus is a likely cause of esophageal or gastric cardia adenocarcinoma
  - Obesity is a risk factor for gallstones, a condition characterized by chronic gallbladder inflammation, and a history of gallstones is a strong risk factor for gallbladder cancer
  - Nonalcoholic Steatohepatitis or NASH (a fatty liver disease of the liver causing liver inflammation) and chronic ulcerative colitis (a chronic colon inflammatory condition) are risk factors for different types of liver cancer
- Fat tissues produces excess amounts of estrogen:
  - High levels of estrogen have been associated with increased risks of breast, endometrial, ovarian, and some other cancers
  - Male breast enlargement

Why does Japan have a high incidence of gastric cancer? Comparison of gastritis between UK and Japanese patients

G M Naylor, T Gotoda, M Dixon, T Shimoda, L Gatta, R Owen, D Tompkins, A Axon

Gut 2006;**55**:1545–1552. doi: 10.1136/gut.2005.080358

See end of article for authors' affiliations

Correspondence to: Dr G M Naylor, Chesterfield Royal Hospital, Chesterfield, N Derbyshire S44 5BL, UK; gregnaylor@doctors.org.uk

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Background and aims: The incidence of gastric cancer in Japan is four times higher than in the UK. It usually arises in a stomach with corpus predominant or pangastritis that has undergone extensive atrophy and intestinal metaplasia. We hypothesised that a Japanese population would have a more severe gastritis with a corpus predominant or pangastritis pattern and a greater degree of atrophy and intestinal metaplasia than that found in the UK. To test this we designed a comparative trial.

Methods: A total of 252 age matched consecutive patients were recruited from the endoscopy services in Leeds and Tokyo. In each centre, 21 patients were prospectively selected from each decennial, between the ages of 20–80 years. All had epigastric discomfort as their predominant symptom. Patients with peptic ulcer, cancer, and oesophagitis were excluded. Five gastric biopsies were examined by two histopathologists using the updated Sydney system. *Helicobacter pylori* infection was assessed by histology and culture of biopsies and enzyme linked immunosorbent assay and immunoblot of plasma.

Results: Gastritis was found by both pathologists in 59 (47%) UK and 76 (60%) Japanese patients (χ^2 test, $p=0.04$). In those patients with gastritis, corpus predominant or pangastritis was commoner in the Japanese (63% Japan *v* 36% in the UK (χ^2 test, $p=0.003$) Atrophy and intestinal metaplasia were more extensive and severe (Mann-Whitney U test, $p<0.001$) and chronic inflammation and polymorph activity were also greater, especially in the corpus (Mann-Whitney U test, $p<0.001$). Fifty three of 59 UK gastritis patients (90%) and 67/76 (88%) (χ^2 test, $p=1$) Japanese gastritis patients were positive for *H pylori*. Using a previously described "gastric cancer risk index" among *H pylori* positive patients, there were significantly more Japanese than UK subjects with a "high risk" score.

Conclusion: In Japanese as opposed to English patients, gastritis is more prevalent and severe with more corpus predominant atrophy and intestinal metaplasia. These differences may partially explain the higher incidence of gastric cancer in Japan.

How many cancer cases may be due to obesity?

- A population study using BMI & cancer in 2012 in the US
  - Men: 28,000 new cases of cancer (3.5%) due to overweight or obesity
  - Women: 72,000 new cases of cancer (9.5%) due to overweight or obesity
- The percentage of cases attributed to overweight or obesity varied widely for different cancer types
  - 44% for esophageal adenocarcinoma in men
  - 54% for gallbladder cancer in women
- Worldwide estimates of the different cancers attributable to overweight/obesity in 2016
  - The US had the highest percentage of overweight/obesity related cases for colorectal, pancreatic, and postmenopausal breast cancer

Does avoiding weight gain or losing weight decrease the risk of cancer?

- Most of the data about whether avoiding weight gain or losing weight reduces cancer risk comes from cohort and case-control studies, and these studies can be difficult to interpret because people who lose weight or avoid weight gain may differ in other ways from people who do not
- When the evidence from multiple observational studies is consistent, the association is more likely to be real
- Many observational studies have provided consistent evidence that people who have lower weight gain during adulthood have lower risks of colon cancer, kidney cancer, and for postmenopausal women, breast, endometrial, and ovarian cancers

Does avoiding weight gain or losing weight decrease the risk of cancer?

- Fewer studies have examined possible associations between weight loss and cancer risk
  - Some of these have found decreased risks of breast, endometrial, colon, and prostate cancers among people who have lost weight
  - Stronger evidence for a relationship between weight loss and cancer risk comes from studies of people who have undergone bariatric or weight loss surgery, as these patients appear to have lower risks of obesity-related cancers than obese people who do not have bariatric surgery
- For women who were already overweight or obese at baseline, weight change (either gain or loss) was not associated with breast cancer risk during follow-up, but women who were of normal weight at baseline and gained more than 5% of body weight were associated with increased breast cancer risk

How does obesity affect cancer survivorship?

- Most of the evidence about obesity in cancer survivors comes from people who were diagnosed with breast, prostate, or colorectal cancer
- Research indicates that obesity may worsen several aspects of cancer survivorship including quality of life, cancer recurrence, cancer progression, and survival
  - In breast cancer survivors, obesity increased risks of treatment related lymphedema
  - Prostate cancer survivors treated with radical prostatectomy have higher rates of incontinence
  - Rectal cancer patients (particularly men) with stage II and stage III disease and a higher baseline BMI had an increased risk of local recurrence
  - Death from multiple myeloma is 50% more likely for people at the highest levels of obesity compared with people at normal weight

How does obesity affect cancer survivorship?

- Several randomized clinical trials in breast cancer survivors have reported weight loss interventions that resulted in both weight loss and beneficial changes in biomarkers that have been linked to the association between obesity and prognosis
  - However, there is little direct evidence about whether weight loss improves cancer recurrence risk or survival
- The Breast cancer WEight Loss (BWEL) Study is a ongoing NCI sponsored randomized trial examining recurrence rates in overweight and obese women after a breast cancer diagnosis, comparing those who take part in a weight loss program with those who do not

American Cancer Society 2020 Diet & Activity Guidelines

CA CANCER J CLIN 2020;70:245–271

American Cancer Society Guideline for Diet and Physical Activity for Cancer Prevention

Cheryl L. Rock, PhD, RD[1]; Cynthia Thomson, PhD, RD[2]; Ted Gansler, MD, MPH, MBA [3]; Susan M. Gapstur, MPH, PhD[4];

CANCER SITE	WEIGHT MANAGEMENT	PHYSICAL ACTIVITY	DIET	ALCOHOL
Breast	• Weight gain during adult life and/or excess body fatness increases risk after menopause (WCRF/AICR 2018[4]) • Weight loss may lower risk (Chlebowski 2019[9])	• Physical activity, especially moderate to vigorous, lowers risk for postmenopausal disease and also may lower risk for premenopausal disease; regular vigorous physical activity lowers risk for premenopausal disease (WCRF/AICR 2018,[4] USDHSS 2019[6])	• Dietary patterns rich in plant foods and low in animal products and refined carbohydrates lower risk (US Dietary Guidelines Advisory Committee 2015[7]); the Mediterranean diet pattern lowers risk (Toledo 2015[8]) • Consumption of nonstarchy vegetables and/or vegetables rich in carotenoids may lower risk for estrogen receptor–negative breast tumors (WCRF/AICR 2018[4]); diets higher in calcium/calcium-rich dairy may reduce risk (WCRF/AICR 2018[4])	• Alcohol consumption may increase risk of premenopausal breast cancer and increases risk of postmenopausal breast cancer (WCRF/AICR 2018[4])
Colorectal	• Excess body fatness increases risk (WCRF/AICR 2018[4])	• Regular, moderate to vigorous physical activity lowers the risk of colon cancer, but not the risk of rectal cancer (WCRF/AICR 2018,[4] USDHSS 2019[6]) • Reducing sedentary behavior may lower risk of colon cancer, but not the risk of rectal cancer. (USDHSS 2019[6])	• A healthy eating pattern with whole grains, higher fiber, and less added sugar lowers risk (WCRF/AICR 2018,[4] US Dietary Guidelines Advisory Committee 2015[7]); consuming nonstarchy vegetables and whole fruits probably lowers risk (WCRF/AICR 2018[4]) • Processed meat intake, even in small amounts, and red meat in moderate to high amounts, increases risk (WCRF/AICR 2018[4]) • Consuming nonstarchy vegetables and whole fruits probably lowers risk (WCRF/AICR 2018[4]) • Consume diets higher in calcium/calcium-rich dairy foods (WCRF/AICR 2018[4]); supplemental calcium may lower risk (WCRF/AICR 2018[4]) • Low circulating levels of vitamin D (<30 nmol/L) may increase risk (McCullough 2019[10])	• Alcohol consumption increases risk (WCRF/AICR 2018[4])

American Cancer Society 2020 Diet & Activity Guidelines

Recommendations for individuals

1. Achieve and maintain a healthy body weight throughout life.

- Keep body weight within the healthy range and avoid weight gain in adult life.

2. Be physically active.

- Adults should engage in 150-300 min of moderate-intensity physical activity per wk, or 75-150 min of vigorous-intensity physical activity, or an equivalent combination; achieving or exceeding the upper limit of 300 min is optimal.
- Children and adolescents should engage in at least 1 hr of moderate- or vigorous-intensity activity each day.
- Limit sedentary behavior, such as sitting, lying down, and watching television, and other forms of screen-based entertainment.

3. Follow a healthy eating pattern at all ages.

- A healthy eating pattern includes:
  - Foods that are high in nutrients in amounts that help achieve and maintain a healthy body weight;
  - A variety of vegetables—dark green, red, and orange, fiber-rich legumes (beans and peas), and others;
  - Fruits, especially whole fruits with a variety of colors; and
  - Whole grains.
- A healthy eating pattern limits or does not include:
  - Red and processed meats;
  - Sugar-sweetened beverages; or
  - Highly processed foods and refined grain products.

4. It is best not to drink alcohol.

- People who do choose to drink alcohol should limit their consumption to no more than 1 drink per day for women and 2 drinks per day for men.

My Plate Planner

Please refer to meal planning guidelines on the back.

My Plate Planner
Methods of Use

- Fill 1/2 of your plate with vegetables such as broccoli, carrots, cauliflower, and salad.
- Fill 1/4 of your plate with lean meat, chicken or fish; this is about 3 ounces.
- Fill 1/4 of your plate with a starchy choice such as 1/2 cup mashed potatoes.
- Add 1 serving of fruit.
- Choose 1 serving of milk.
- Add margarine or oil for preparation or addition at the table.

Add other portions as needed to round out your meal plan.

For breakfast, use only half the plate.

For lunch and dinner, use the whole plate.

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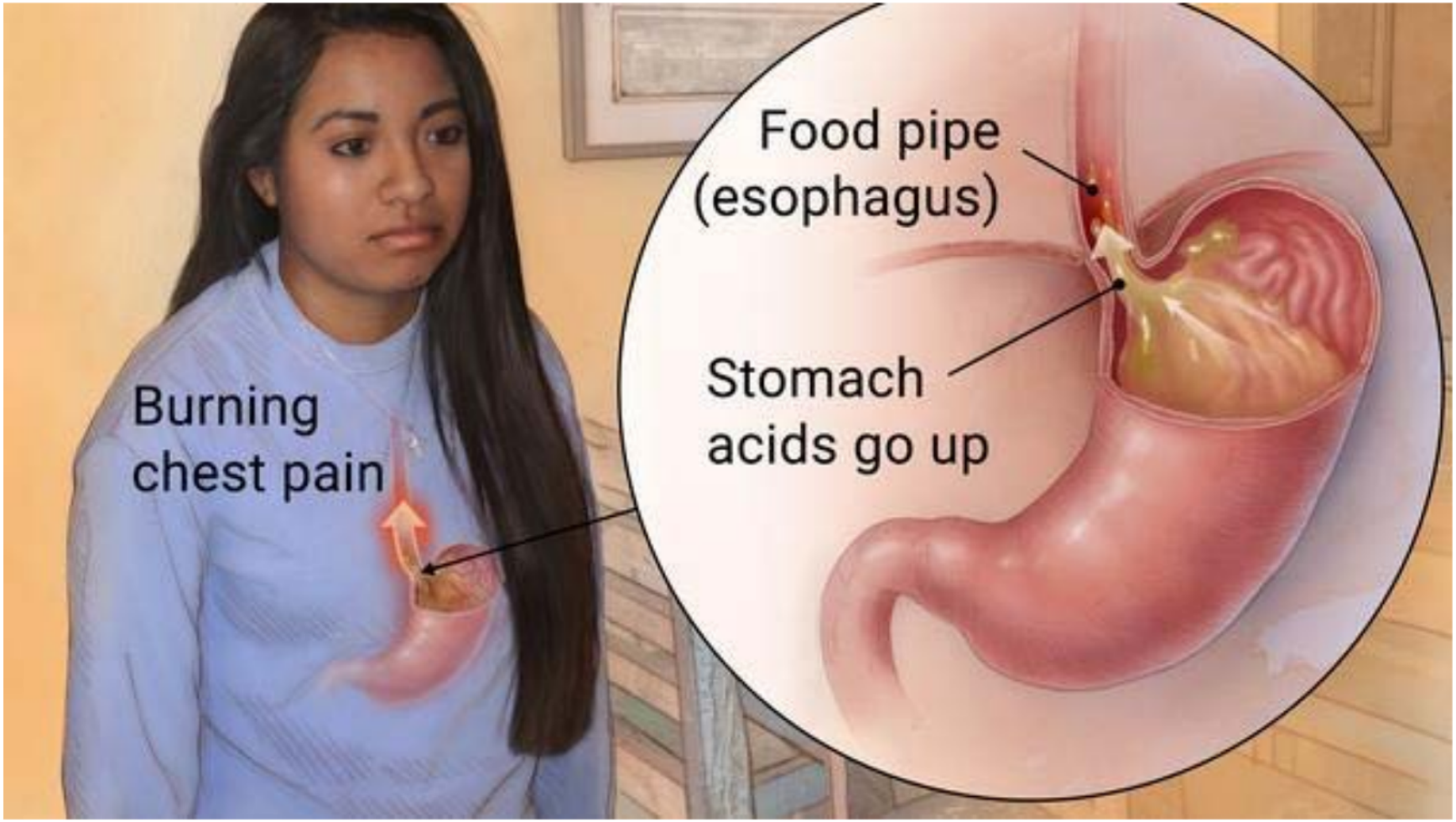
Digestive Diseases and Obesity

Gastroesophageal Reflux



Gastroesophageal Reflux

Foods That Help Prevent Acid Reflux

- Whole grains such as oatmeal, couscous and brown rice
- Root vegetables such as sweet potatoes, carrots and beets
- Green vegetables such as asparagus, broccoli and green beans
- Diet with intentionality, if one is overweight or obese, to feel better and to try to prevent surgery

Foods to Avoid for Acid Reflux

- High fat foods
- Chocolate
- Caffeine
- Peppermint / Spearmint
- Carbonated beverages
- Alcohol
- Onions
- Citrus and tomato products
  - Avoid using straws

Gastroesophageal Reflux

- **Chew gum:** Increases saliva production and reduces the amount of acid in the esophagus (not spearmint or peppermint)
- **Avoid alcohol:** Weakens the lower esophageal sphincter (LES) and an irritant that can trigger reflux symptoms
- **Keep good posture during and after a meal:** Sit up while eating and avoid lying flat for a minimum of two hours after eating a meal
  - Standing up and walking around after a meal helps encourage gastric juices to flow in the right direction
- **Avoid eating immediately before bed:** When you lie down, the ability of the LES to prevent stomach contents from traveling up the esophagus decreases
  - Timing can vary from individual to individual, but generally wait three to four hours after eating before bed

Gall Bladder Disease

Gall Bladder Disease

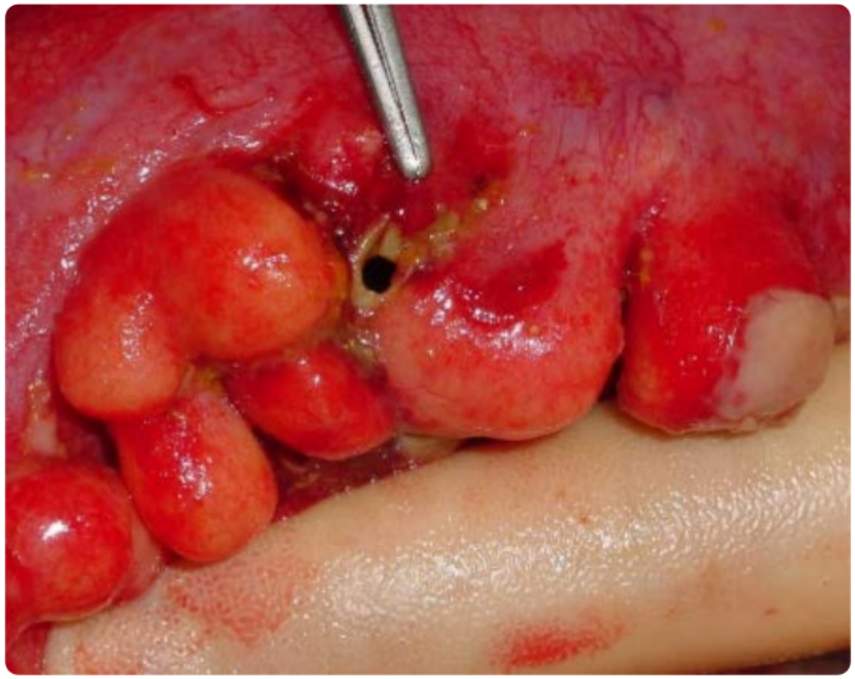
- High Fat diet and rapid cycling of weight (6-10 pounds)
- Female
  - Estrogens effect cholesterol
- Fertile
  - Hormonal changes and weight changes with pregnancy
- Forty
  - Perimenopause can cause spike in estrogen and effect the formation of stones

Gall Bladder Disease

Diverticular Diseases

Diverticular Disease

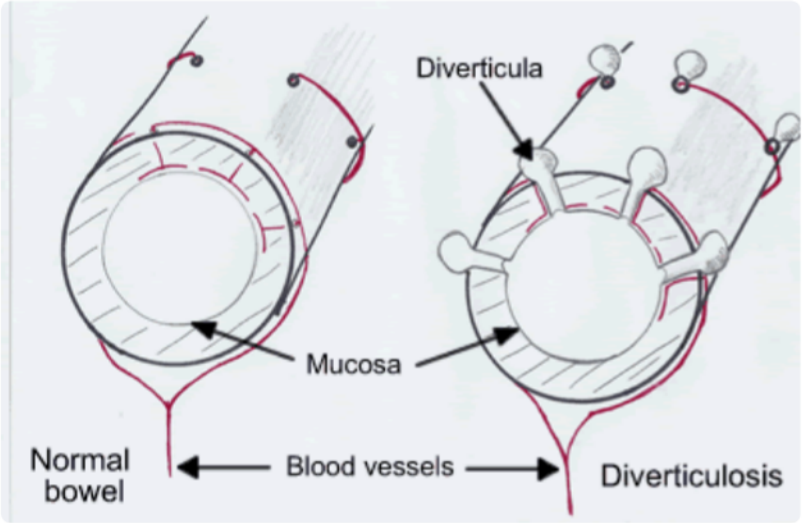
Diverticulosis



Perforated Diverticulitis

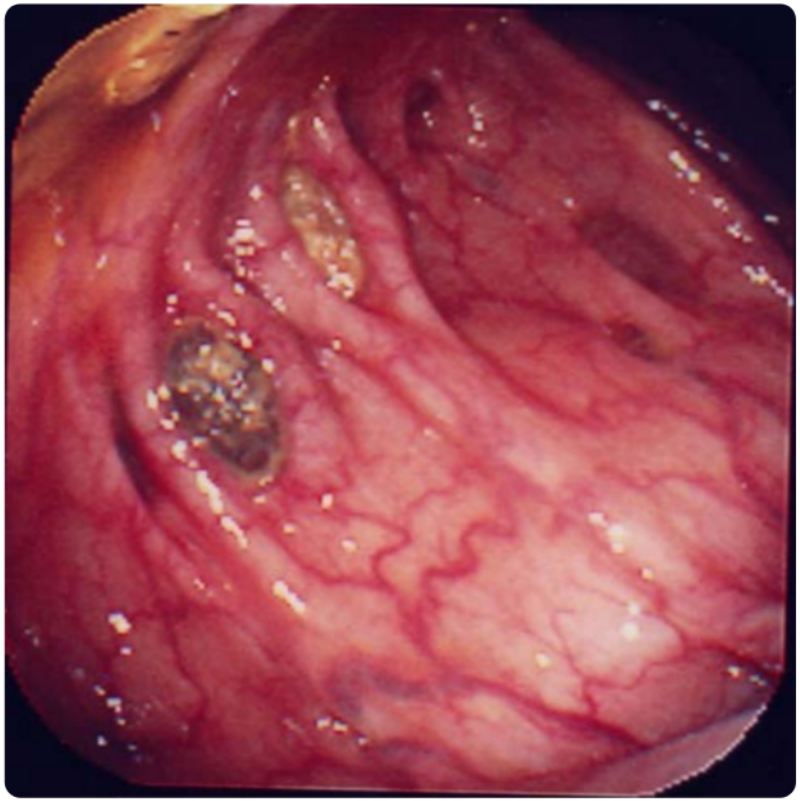
Diverticulosis Disease

- Caused by low fiber, high fat diet, generally with limited water intake
- Over time, chronic constipation and straining develops
- Colon thickens and stiffens
- Increased intraluminal pressure
- False diverticulum at site of blood vessel penetration of colon wall
- Generally no symptoms except for constipation symptoms



Diverticulitis Disease

- Stool hardens in diverticulae and then can cause
  - Intradiverticular abscess
  - Ischemic pressure necrosis
- Small or large perforation of the bowel
  - Infection: local, regional or across the entire abdomen
- Left lower abdominal pain and tenderness, mass, fever, peritonitis, or sepsis can all result



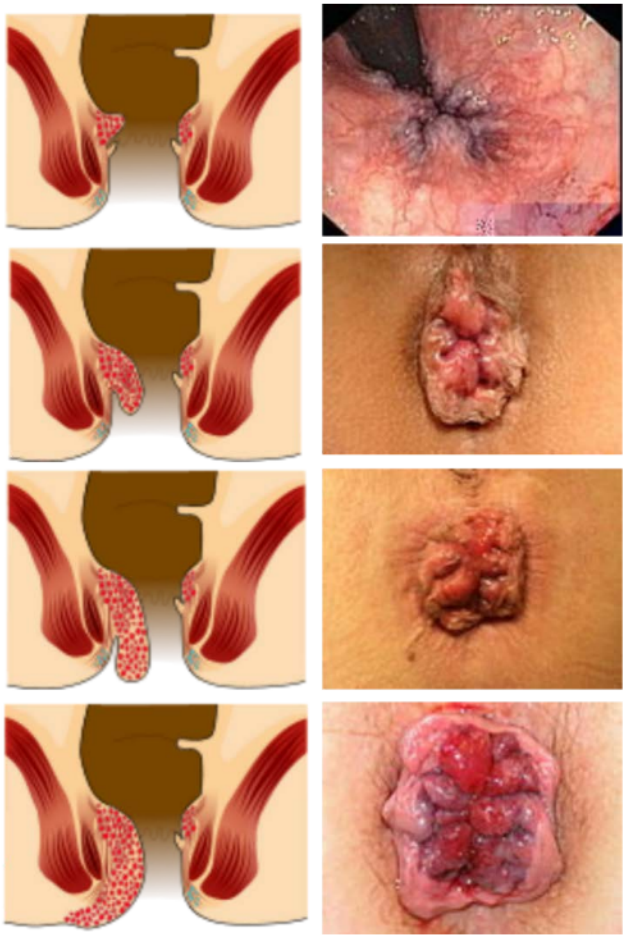
Anorectal Diseases

Anorectal Diseases: Internal and External Hemorrhoids

Prolapsing Internal Hemorrhoids

Thrombosed External Hemorrhoids

Anorectal Diseases: Internal Hemorrhoids

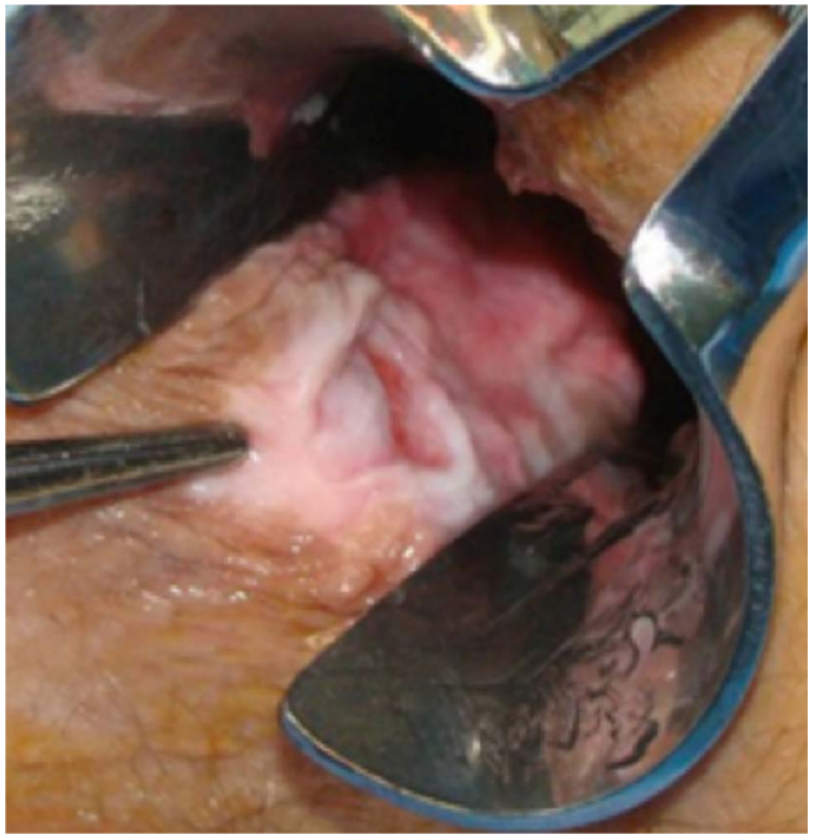


Grade I	No prolapse
Grade II	Prolapse and reduces spontaneously
Grade III	Prolapse and needs manual reduction
Grade IV	Does not reduce

80% of grade I-III can be managed by diet

Anorectal Diseases: Anal Fissure

Acute Anal Fissure



Chronic Anal Fissure

Anorectal Diseases: Anal Fissure

- Common causes of anal fissure include:
  - Passing large and hard stools
  - Constipation and straining during bowel movements
- Frequently this is a result of a high fat, low fiber, low water diet
- Dehydration from caffeine is also a contributing factor
- Correcting dietary factors can help prevent anal surgery

Diet Management of Diverticular & Anorectal Diseases

- Hydration throughout the day (8 to 16 8oz glasses of water per day in Phoenix)
  - Caffeine, alcohol, and too much sodium can dehydrate you
- Plenty of Fiber
  - It increases the amount of water in your stools and also makes your stools more normal and easier to pass
  - Fiber is also important for keeping you feeling fuller for longer so you're less likely to snack on unhealthy foods that can cause digestive issues
  - Includes fruits, vegetables, whole grains, legumes, nuts, broccoli, apples, black beans, pears, peas, lentils, bananas, Brussel sprouts, raspberries, brown rice, oatmeal, barley, and prunes. (Fruit skins are a great source of insoluble and taking a fiber supplement can also be helpful)
- Limit Foods That Can Cause Constipation
  - Avoid processed foods and refined carbs, like white bread and pasta
  - Dairy products, like cheese, yogurt, and milk can also increase constipation
  - Limit red and avoiding processed meat as well as fried food or those high in saturated fat

Summary

Summary

- Chronic diseases can be prevented or improved with lifestyle changes such as healthier eating, increasing physical activity, appropriate hydration, and smoking cessation
- Very active populations with diets rich in vegetables, legumes, fruits and whole grains may have a total fat intake of up to 35% of total calories without the risk of unhealthy weight gain
- Dietary advice from your primary physician or a registered dietitian can improve or even save your life
- Cancer patients should have dietary recommendations as part of their cancer evaluation, treatment, and survivorship programs

Questions?

Thank You.

For more information about women and heart health or to request a speaker,
Call: 602.406.3929.

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