Health Promotion and Prevention

AAFP

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Learning Objectives

1. Describe the differences between health promotion, prevention, and screening.
2. Recognize the three leading causes of morbidity in the United States.
3. Counsel patients on necessary lifestyle modifications to maintain health.
4. Reinforce the necessity of patient education and counseling for health promotion, including healthy diets, regular physical activity, and smoking cessation.

Health Promotion and Prevention

❿Effective health promotion

Lifestyle modification: 3 leading causes of preventable morbidity in the US

Counseling

❿Prevention

Primary e.g., Immunizations

Secondary e.g., Breast cancer

- ❿Screening – done in asymptomatic patients

Tertiary e.g., Heart Failure Reduced Ejection Fraction (HFrEF)

Quaternary

- ❿*Set of health activities to mitigate or avoid the consequences of unnecessary or excessive intervention of the health system. It is the practice of "first do no harm."*

Examples of *Quaternary Prevention*

- Avoid presumptive antibiotic treatment of recurrent UTIs in women without first obtaining a UA and Urine C&S.
- Don’t routinely recommend daily home glucose monitoring for patients who have Type 2 DM and are NOT on Insulin
- Avoiding unnecessary screening
  - e.g., Stool-based study following “normal” screening colonoscopy for CRC
  - e.g., Pap tests after the age of 65
- Avoid admission or preoperative chest x-rays for ambulatory patients with unremarkable history and physical exam
- Don’t place women, even those at high-risk, on activity restriction to prevent preterm birth
  - no studies documenting improvement in outcomes in women at risk for preterm birth who are placed on activity restriction
  - multiple studies documenting untoward effects of routine activity restriction on the mother and family

Who is involved?

2022

- AAFP and more than 80+ partners comprising over one million clinicians are now partners of the *Choosing Wisely* campaign
- Specific, evidence-based recommendations clinicians and patients should discuss
  - > 600 recommendations
- Now spread to over 20 countries

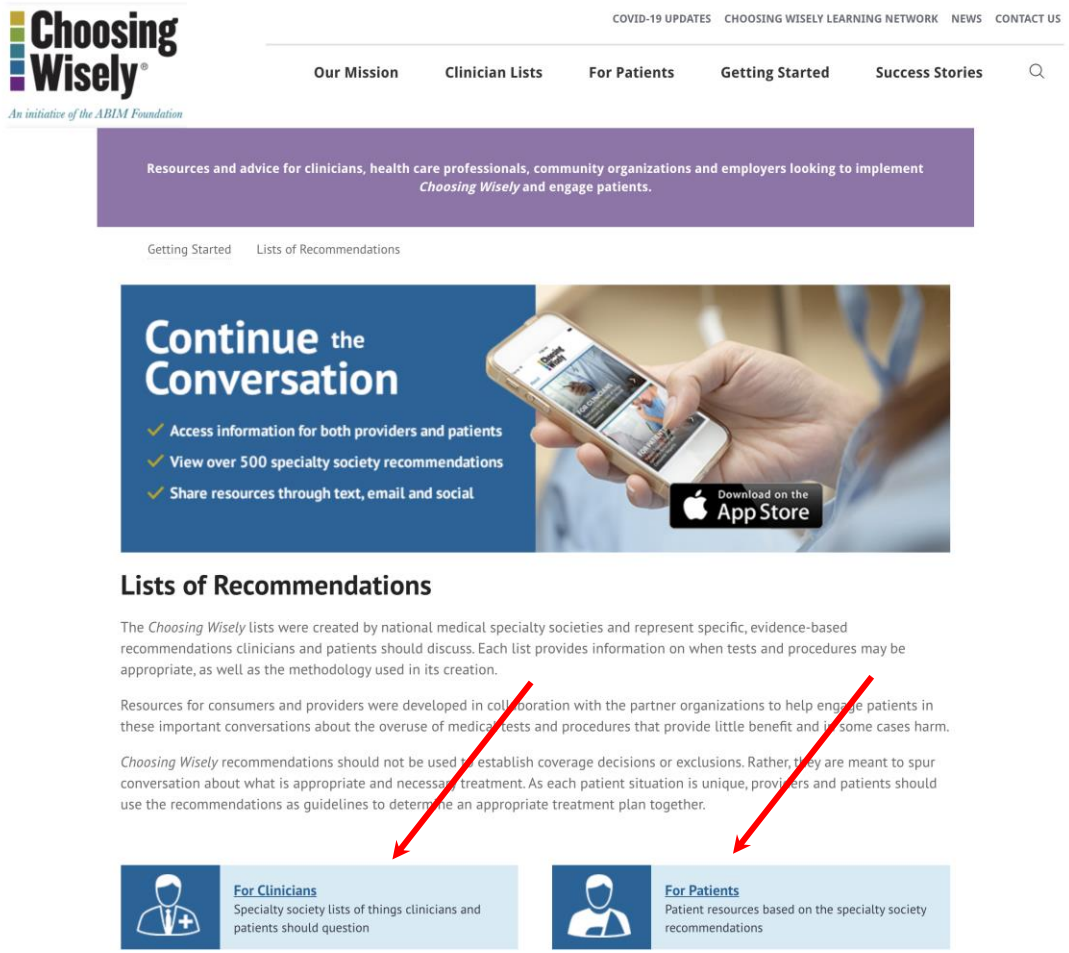
Choosing Wisely®

An initiative of the ABIM Foundation

Choosing Wisely® is an initiative of the ABIM Foundation.
http://www.choosingwisely.org

Lists

- Each list provides information on when tests and procedures may be appropriate, as well as the methodology used in its creation.
- In collaboration with the partner organizations, Consumer Reports has created resources for consumers and providers to engage in these important conversations about the overuse of medical tests and procedures that provide



Choosing Wisely® is an initiative of the ABIM Foundation.
https://www.choosingwisely.org/getting-started/lists/

Best Practice Recommendations

- The *Choosing Wi*sely initiative addresses overuse of tests and treatments in medical care
- Goal: Informed decision making that leads to intelligent and effective patient care choices
- Targeted interventions are needed to help overcome physician and patient reluctance to adopt some of Choosing Wisely's recommendations.
  - Likely that interventions will need to extend beyond [primary care provider]-directed education, feedback, and incentives, in order to impact change for recommendations that [primary care providers] fear patients will reject."
- Anticipation of patient concerns should not be allowed to create undue hesitation in efforts to implement such initiatives
- To search Choosing Wisely Recommendations relevant to primary care: http://www.aafp.org/patient-care/browse/type.tag-choosing-wisley.html

- The process of enabling people to increase control over and improve their **health**.
- It involves the population as a whole in the context of their everyday lives, rather than focusing on people at risk for specific diseases, and is directed toward action on the determinants or causes of **health**.

Health Promotion

Health Promotion

- Risk stratification

  Age, sex, family history (genetic), SES, lifestyle choices, environmental factors, and medical issues

- Counseling

  Reading the patient correctly

  - ❿“Soft-sell”
  - ❿Direct approach

  USPSTF recommends that prevention be discussed at each patient visit

- Patient education

Steps in Administering Health Promotion Counseling

- Define health risks.
- Determine the stage of readiness of the patient.
- Advocate and commend behavior change.
- Assist in identification of a target behavior; identify barriers versus benefits.
- Reinforce health benefits of behavior change.
- Offer resources, strategies, and support; create plan of action and monitoring mechanisms.

Hensrud DD. Clinical preventive medicine in primary care: background and practice: 2. Delivering primary preventive services. Mayo Clin Proc. March 2000;75:255-64.

United States Preventive Services Task Force *(USPSTF)*

- The USPSTF was convened by the Public Health Service to rigorously evaluate clinical research in order to assess the merits of preventive measures, including screening tests, counseling, immunizations, and preventive medications.
- USPSTF published recommendations
- USPSTF Mobile Application
- Affordable Care Act: USPSTF A and B Recommendations

Top 20 Recommendations

1. AAA Screening
2. Screening for DM
3. Aspirin for Primary Prevention
4. Breast Cancer Screening
5. Screening for Carotid Artery Stenosis
6. Chlamydia/GC Screening
7. Screening for Colorectal Cancer
8. Screening for Depression
9. Folic Acid Supplementation for Prevention of Neural Tube Defects
10. Screening for Hepatitis B
11. Screening for Hepatitis C
12. Screening for HIV
13. Screening for Intimate Partner Violence
14. Screening for Latent TB
15. Aspirin for the Prevention of Preeclampsia
16. Screening for Lung Cancer
17. Screening for Obesity
18. Screening for Prostate Cancer
19. Statin Use for the Primary Prevention of CVD
20. Screening for Syphilis

1. The number 1 cause of preventable morbidity and mortality in the United States today is which one of the following?

A. Poverty
B. Tobacco
C. Alcohol dependence
D. Overweight/Obesity

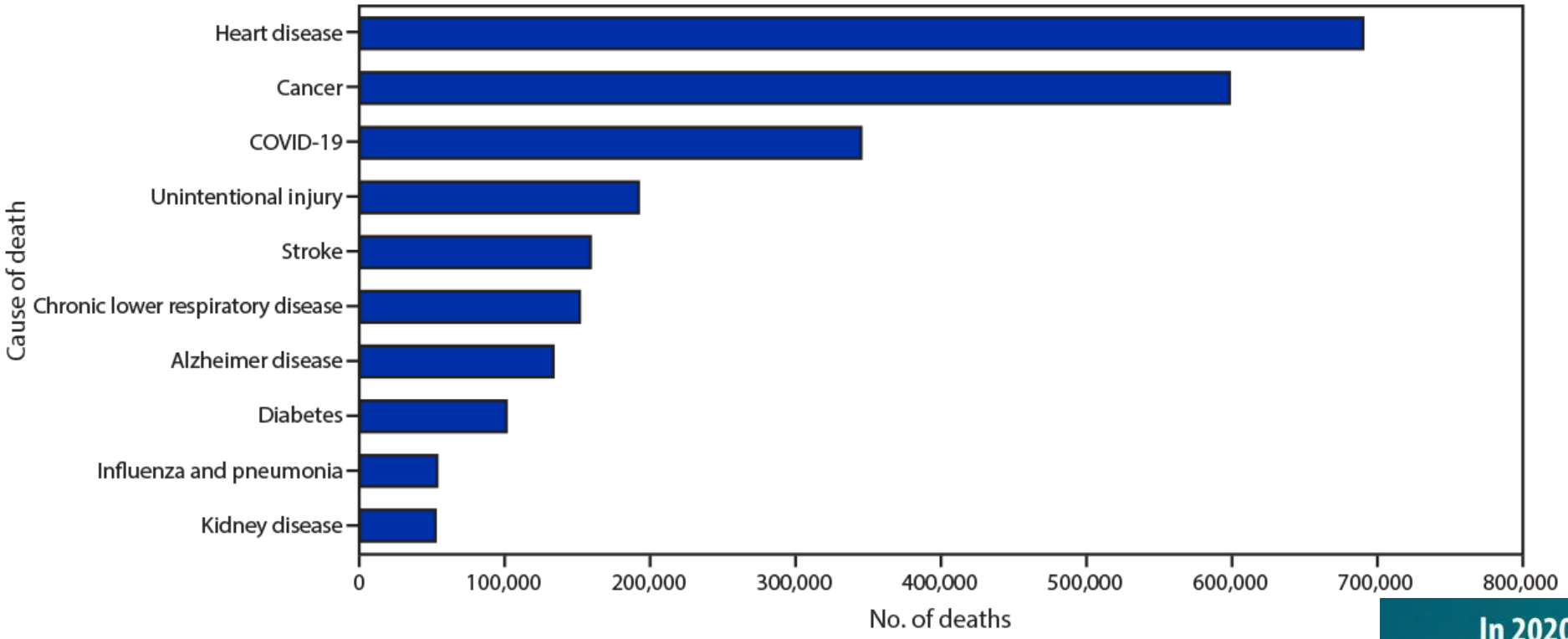
US Major Health Indicators

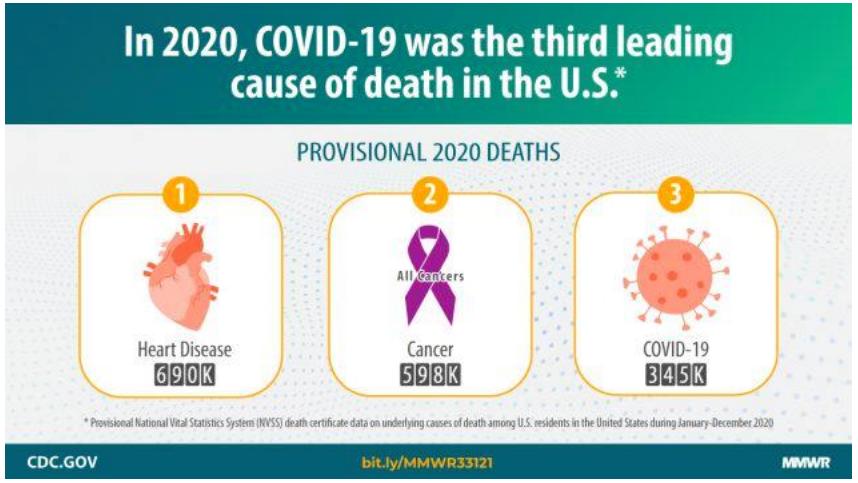
Indicator	Prevalence %
❖ Adults who are current smokers (2020)	12.5%(30.8 million)
❖ Obese adults (2020)	41.9%(108.2 million)
Physically inactive adults (2022)	25%
❖ Adults with alcohol use disorder (2020)	5.3%(14.5 million)
Inadequately insured *ages 19-64 years* (2022)	43%

Three leading causes of morbidity in US.

Burden of Cigarette Smoking Among U.S> Adults Aged 18 years and older
Adult Obesity Facts
Centers for Disease Control, January 2022
Alcohol Facts and Statistics

Provisional number of leading underlying causes of death – National Vital Statistics, United States, 2020





Ahmad FB, Cisewski JA, Miniño A, Anderson RN. Provisional Mortality Data — United States, 2020. MMWR Morb Mortal Wkly Rep 2021;70:519–522. DOI: http://dx.doi.org/10.15585/mmwr.mm7014e1

Highest Ranked Services With the Lowest Delivery Rates

- **Tobacco cessation counseling to adults**
- Screening older adults for undetected vision impairment
- Offering adolescents an anti-tobacco message or advice to quit
- Counseling adolescents on alcohol and drug abstinence
- Screening adults for colorectal cancer
- Screening young women for chlamydial infection
- Screening adults for problem drinking
- Vaccinating older adults against pneumococcal disease

Tobacco Use

Centers for Disease Control and Prevention. Current Cigarette Smoking Among Adults—United States, 2016. Morbidity and Mortality Weekly Report 2018;67(2):53-9

- **Leading cause** of preventable disease, disability, and death in the U.S.

  Approximately **half of smokers will die from a smoking-related disease**.

- Some daily smokers appear to be smoking fewer cigarettes per day

  No amount of smoking is safe, and the best option for any smoker is to quit completely

- Sustained, adequately funded, comprehensive state tobacco control programs can **reduce** adult smoking in the U.S.

The CDC Facts

- About 30.8 million US adults smoke cigarettes, and 58 million nonsmokers are exposed to secondhand smoke.
  - Every day, about 1,600 young people under age 18 try their first cigarette, and nearly 200 become daily cigarette smokers.
  - 1 in 5 US adults use tobacco products
- Cigarette smoking causes more than 480,000 deaths annually, including 41,000 deaths from secondhand smoke.
  - For every American who dies because of smoking, at least 30 are living with a serious smoking-related illness.
- Smoking-related illness cost the United States over $300 billion each year, including more than $225 billion in direct medical costs.

https://www.cdc.gov/chronicdisease/resources/publications/factsheets/tobacco.htm

USPSTF: Tobacco Smoking Cessation in Adults *(January 2021)*

- The USPSTF recommends that clinicians ask all **adults** about tobacco use, advise them to stop using tobacco and provide behavioral interventions and U.S. FDA-approved pharmacotherapy for cessation to adults who use tobacco. *Grade: A recommendation*
- The USPSTF recommends that clinicians ask all **pregnant women** about tobacco use, advise them to stop using tobacco, and provide behavioral interventions for cessation to pregnant women who use tobacco. *Grade: A recommendation*

USPSTF: Tobacco Smoking Cessation in Adults *(January 2021)*

- The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of pharmacotherapy interventions for tobacco cessation in pregnant women. *Grade: I recommendation*
- The USPSTF concludes that the current evidence is insufficient to recommend electronic nicotine delivery systems (ENDS) for tobacco cessation in adults, including pregnant women. The USPSTF recommends that clinicians direct patients who smoke tobacco to other cessation interventions with established effectiveness and safety (previously stated). *Grade: I recommendation*

USPSTF: Tobacco Use Children and Adolescents

April 2020

- Recommends that primary care clinicians provide interventions, including education or brief counseling, to **prevent initiation** of tobacco use in school-aged children and adolescents. Grade: *B recommendation*
- The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of primary care--feasible interventions for the **cessation** of tobacco use among school-aged children and adolescents. Grade: *I recommendation*

Smoking Cessation by the Numbers

- Nearly one-half of people who smoke try to quit each year
- Only 1in 20 who quit without support achieve abstinence for at least 6 months
- Approximately 2-3 percent of people who attempt to stop smoking, will quit with no pharmacological or behavioral intervention

Smoking Cessation

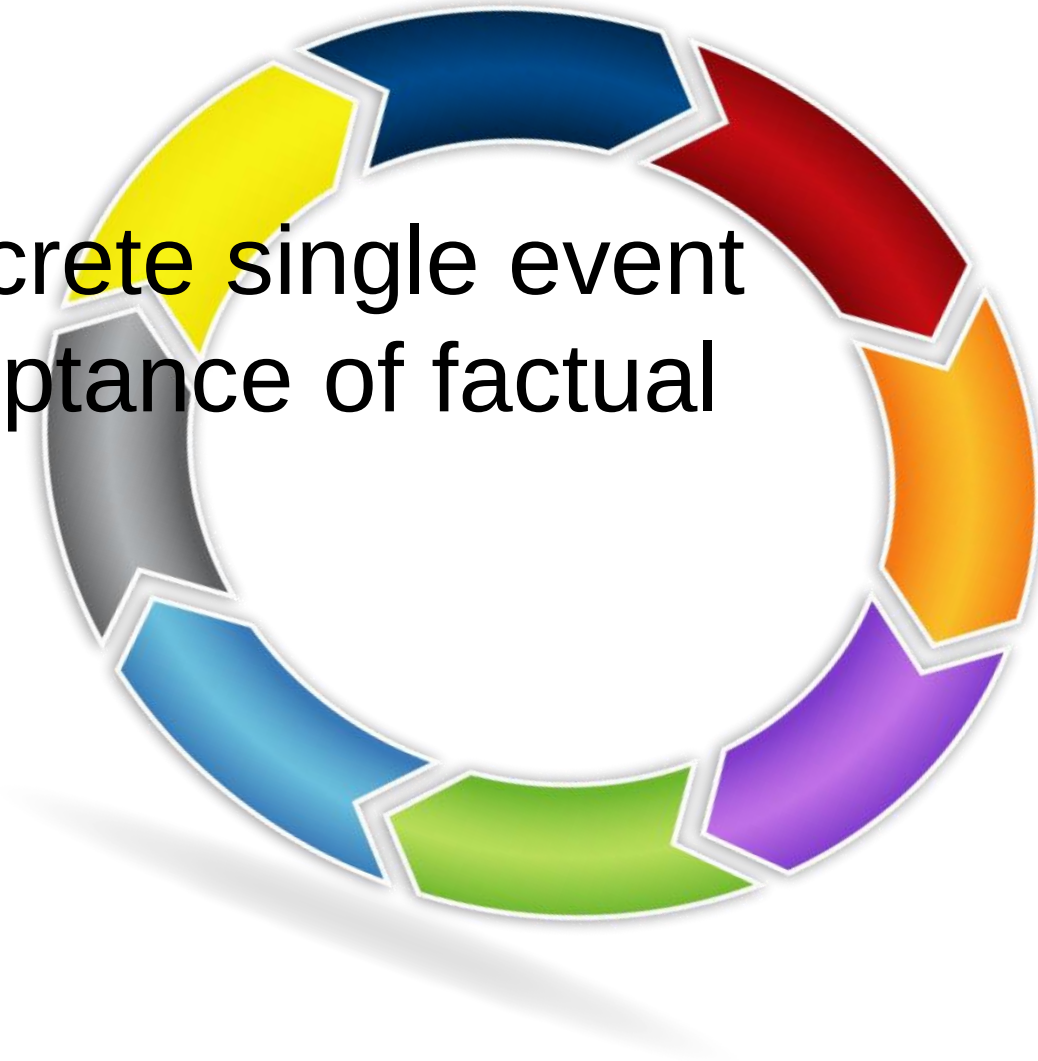
- U.S. Public Health Service Guideline recommends first-line drugs for cessation in all or most smokers who smoke 10–15 cigarettes/day (SOR A)
- Clinical interventions as brief as 3 minutes increase cessation abstinence rates (SOR A)
- Behavior interventions combined with pharmacotherapy improve smoking cessation rates (SOR A)

Smoking Cessation Treatment

- Nicotine Replacement Therapy (NRT)
  - Gum - OTC
  - Lozenge - Rx
  - Nasal Spray - Rx
  - Inhaler - Rx
  - Patch - OTC
- Bupropion (Zyban) - Rx
- Varenicline (Chantix) - Rx
- Psychosocial Therapy
- Behavior Therapy

Methods for Behavioral Change

- Behavior change is rarely a discrete single event
- Gradual process involving acceptance of factual information being presented



Methods for Behavioral Change

- **Motivational interviewing**
  - Attempt to move people in need of motivation into the action stage of actual behavior change
- **Stages of change model**
  - Pre-contemplation
  - Contemplation
  - Preparation
  - Action
  - Maintenance and relapse prevention
- **5 As**
  - Ask, Advise, Assess, Assist, Arrange

Smoking Cessation

- Counseling and medication are effective when used by themselves for treating tobacco dependence
  - Combination of counseling and medication, however, is more effective than either alone
- Telephone quit line counseling is effective with diverse populations and has broad reach

Telephone Quit Lines

- They are free for smokers AND connect smokers with trained counselors who prepare customized cessation plan
- Cochrane review

  Not proven as effective as Nicotine Replacement Therapy

  - ❿Odds ratio of 1.56
  - ❿Nicotine replacement therapy Odds ratio of 1.74
- Some evidence that it offers an additional benefit when combined with other interventions

  Physician advice

  Pharmacotherapy

Reimbursement

- Coverage for tobacco cessation increases the likelihood of success by a factor of 1.5-2X
- Medicare will reimburse both brief and intensive counseling for cessation services, in outpatient clinic and inpatient hospital settings
- Beneficiary must have a condition* that:

  Is adversely affected by smoking or tobacco use OR

  Affects metabolism or dosing of a medication being used to treat the beneficiary's condition

  That condition must be billed as the primary diagnosis; **Not health and behavior code*

Payment for Tobacco Cessation Services

- Medicare
  - Covers 2 quit attempts per year
    - 4 counseling sessions per attempt
    - Either inpatient or outpatient
  - Prescription treatments are covered by Medicare Part D
- Affordable Care Act – all Medicaid programs to cover
  - All tobacco cessation medications for all individuals
  - Counseling for pregnant women

2. Which one of the following statements is TRUE regarding the use of antidepressants for smoking cessation?

A. Bupropion may only be used as monotherapy for smoking cessation

B. Bupropion is unsafe to use in patients with heart disease

C. The U.S. Public Health Service (USPHS) guidelines on tobacco cessation recommend the use SSRIs for smoking cessation

D. USPHS guidelines on tobacco cessation recommend against the use of all tricyclic antidepressants for smoking cessation

E. Bupropion is contraindicated in a patient with an eating disorder

Smoking Cessation

- Controllers help reduce the impulse to smoke
- Relievers aid in managing acute cravings

First Line Agents

- NRT
- bupropion
- varenicline

Controllers

- Bupropion
- Varenicline
- Nicotine patch

Relievers

- NRT
  - Gum
  - Lozenge
  - Inhaler
  - Nasal spray

Second line agents (Neither FDA approved for this use)

- Nortriptyline Initially 25 mg/d, may increase75 mg over 10 days to 5 weeks as adverse effects permit
- Clonidine 0.1-0.75 mg/day (transdermal or oral)

Smoking Cessation - Pharmacotherapy

⓾ Special consideration should be given before using pharmacotherapy with selected populations

- Medical contraindications
- Smoking fewer than 10 cigarettes per day
- Pregnant/breastfeeding women
- Adolescent smokers

Nicotine Replacement Therapy (NRT)

- Of the 3 classes of pharmacotherapy for nicotine dependence, NRT has the greatest flexibility in dosage forms
- Combinations of different types of NRT can be used together safely
  - Using a combination of long- and short-acting NRTs increases the quit rate by 25% over a single form
  - Greater abstinence with **patch plus an acute form of NRT for breakthrough craving**; especially among highly addicted smokers
  - Patient using the nicotine patch who complains of early morning cravings should use the 24-hour patch
- Taking any form of NRT - 55% more likely to sustain smoking cessation for at least six months (NNT = 17) compared with placebo or no NRT
- Although smokers traditionally start NRT on their quit date, *some evidence* supports increased abstinence rates if NRT is started **before** the quit date.
- NRT dependence – uncommon, outweighed by the overall benefits of cessation

Lindson N, Chepkin SC, Ye W, et al. Different doses, durations and modes of delivery of nicotine replacement therapy for smoking cessation. Cochrane Database Syst Rev. 2019(4):CD013308.

NRT

- Designed to reduce cravings and withdrawal symptoms by stabilizing the patient's nicotine dose to approximate intake and then gradually reducing the dose, without the associated toxins found in cigarettes
- Dose needed to mitigate symptoms can be estimated based on the patient's average cigarette use
  - (One cigarette contains approximately 2 mg of nicotine)

NRT and CV Disease

- All NRT's associated with an increased risk of chest pain and heart palpitations; events are rare
- No increase in major cardiovascular adverse events e.g., cardiovascular death, nonfatal myocardial infarction, and nonfatal stroke
- Should not be used within two weeks of MI, unstable angina, or life-threatening arrhythmia

Antidepressants and Smoking Cessation

Bupropion (Zyban)

- Atypical antidepressant
  - **Sustained-release formulations** are approved for smoking cessation
- Inhibits dopamine and norepinephrine reuptake
- 64% higher likelihood of sustained smoking cessation compared with placebo
- Bupropion **and** nicotine replacement therapy? *No significant improvement in cessation rates*

Howes S, Hartmann-Boyce J, Livingstone-Banks J, et al. Antidepressants for smoking cessation. *Cochrane Database Syst Rev.* 2020(4):CD000031.

Antidepressants and Smoking Cessation

Bupropion (Zyban)

- May be particularly useful in patients with COPD
- **Appears safe for use with patients who have coronary artery disease, including in hospital settings**
  - Improves cessation rates compared with placebo among inpatients with heart disease
  - **Caution is indicated with unstable angina or acute coronary syndrome**

Antidepressants and Smoking Cessation

Bupropion (Zyban)

- **Contraindicated**
  - ✓ Seizure disorders
  - ✓ Medications that lower the seizure threshold
  - ✓ History of significant head injury
  - ✓ Anorexia nervosa or Bulimia **(eating disorder)**

Antidepressants and Smoking Cessation

- Cochrane review of antidepressants in smoking cessation

  Bupropion and nortriptyline are **effective**

  - Evidence suggests that the mode of action of bupropion and nortriptyline is independent of their antidepressant effect and that they are of similar efficacy to nicotine replacement

  Other TCAs, anxiolytics, and SSRIs are **ineffective**

  - 2 large studies - SSRIs did not significantly increase the likelihood of abstinence relative to placebo treatment

Hughes JR, Stead LF, Hartmann-Boyce J, Cahill K, Lancaster T. Antidepressants for smoking cessation. Cochrane Database of Systematic Reviews 2014, Issue 1. Art. No.: CD000031. DOI: 10.1002/14651858.CD000031.pub4.

Varenicline (Chantix)

- Partial alpha$_4$-beta$_2$ nicotinic acetylcholine (Ach) receptor agonist and a nicotine receptor blocker
  - Leads to the release of small amounts of dopamine and other neurotransmitters similarly released by nicotine; relieves cravings
  - Blocks nicotine from nicotine receptor; relieves withdrawal symptoms
- Significantly increased 4-week and 1-year continuous abstinence rates compared with placebo **or** Bupropion
  - 2.2 times more likely
- Most effective FDA-approved pharmacotherapy for cessation
  - NNT of 7 for abstinence at six months compared with bupropion and NRT

Howes S, Hartmann-Boyce J, Livingstone-Banks J, et al. Antidepressants for smoking cessation. *Cochrane Database Syst Rev.* 2020(4):CD000031.

Varenicline (Chantix)

- Dosage reductions
  - Required in patients with significant renal disease
- No good data for use in combination with OTHER smoking cessation medications
- Although medications have been traditionally restricted to individuals ready to quit, there is evidence that varenicline is effective for smoking cessation **even in patients who are reluctant to quit** (SOR B)
  - ATS strongly recommends offer varenicline to patients with nicotine dependence even **before they have expressed readiness to quit** because this increases cessation at six months
- Side effects (NNH 143-165)
  - Nausea (less frequent when taken with meals), seizures, vivid dreams

Leone FT, Zhang Y, Evers-Casey S, et al. Initiating pharmacologic treatment in tobacco-dependent adults. an official American Thoracic Society clinical practice guideline. Am J Respir Crit Care Med. 2020;202(2):e5-e31.

Varenicline (Chantix)

FDA Alerts

- Serious adverse psychiatric events (depressed mood, agitation, and suicidal behavior/ideation – black-box warning **removed** 12/2016
- Possible increased risk of adverse cardiovascular events in persons with CV disease
  - Weigh the risks against the benefits of its use
  - Counsel patients to seek medical attention if they experience new or worsening symptoms of cardiovascular disease while taking varenicline

❿ May change the way people react to alcohol (e.g., possible increased drunkenness, unusual behavior, memory lapse), as well as rare accounts of seizures with treatment (2015)

Summary - NNT
at 6 months

- Varenicline compared with bupropion and NRT
  - NNT 7
- Bupropion compared with placebo
  - NNT 14 (64% smoking cessation at 6 months)
- NRT compared with placebo
  - NNT 17 (55% smoking cessation at 6 months)
- Nortriptyline
  - NNT = 11

Crowford P, Cieslak D. Vareicline for Smoking Cessation. Am Fam Physician. 2017;96(5):online https://www.aafp.org/afp/2017/0901/od1.html

Length of Treatment

- Traditionally, treatment with pharmacotherapies **limited to 12 weeks**
- American Thoracic Society (ATS) systematic review of eight studies (2020)
  - extended use of a **controller therapy** for greater than 12 weeks leads to significantly **higher sustained quit ra**tes and **lower relapse rates** compared with standard use of six to 12 weeks
  - NNT of 19 (one additional patient achieving abstinence at one year)
- ATS recommends extended use of controller pharmacotherapies for **up to one year** for smoking cessation
- 2021 randomized controlled trial did not find improved abstinence with extended use of varenicline (JAMA 2021)

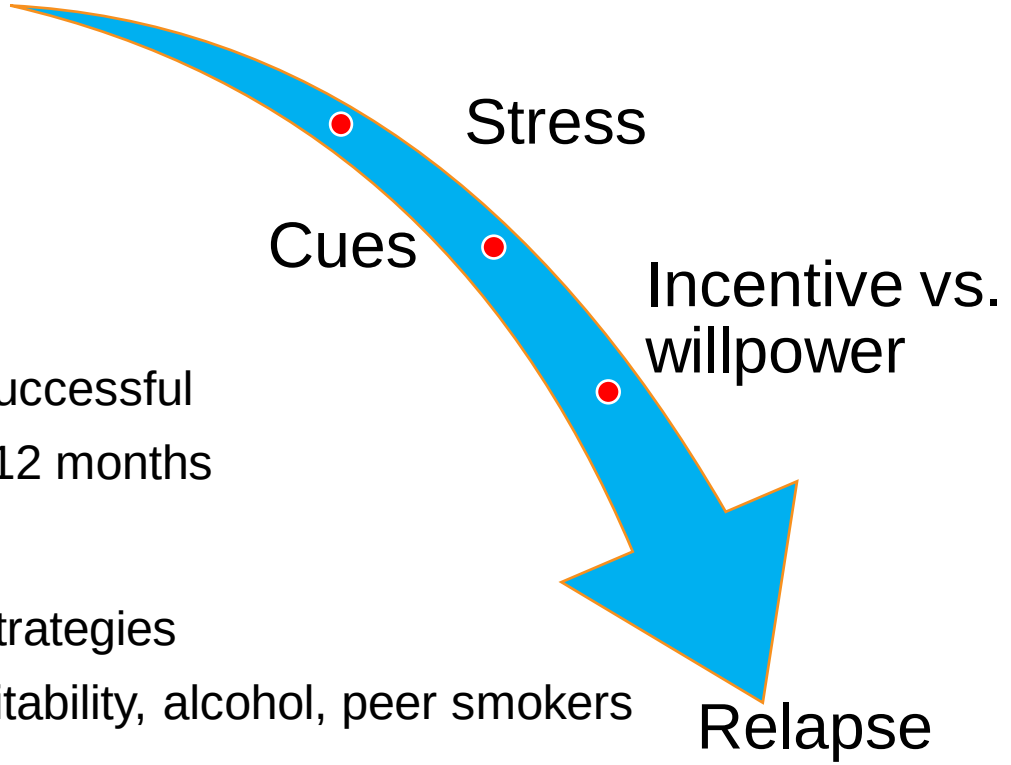
Leone FT, Zhang Y, Evers-Casey S, et al. Initiating pharmacologic treatment in tobacco-dependent adults. an official American Thoracic Society clinical practice guideline. *Am J Respir Crit Care Med.* 2020;202(2):e5-e31.
Baker TB, Piper ME, Smith SS, et al. Effects of combined varenicline with nicotine patch and of extended treatment duration on smoking cessation: a randomized clinical trial. *JAMA.* 2021;326(15):1485-1493.

Optimizing Success

- **Arrange timely follow-up**
  - Within one week of patient's quit date
  - Risk of relapse is highest during the first few days of abstinence
  - Additional follow-up increases cessation success rates
    - ❿ Office visits
    - ❿ Letters
    - ❿ Phone calls
    - ❿ Self-help materials
      - ❿ Brochures from professional organizations
      - ❿ Free telephone quit lines
      - ❿ Internet-based resources

RELAPSE

Spending time in the company of smokers



- **Defined**
  - Smoking on seven consecutive days
  - Smoking once each week over two consecutive weeks
- **Common**
  - Most attempt to quit smoking 4-5 times before cessation is successful
  - 6-38% who relapse will attempt to quit again within the next 12 months
- **Strategies to help prevent**
  - Identify cues and triggers and decide on alternative coping strategies
  - Identify problems or barriers to cessation: negative mood, irritability, alcohol, peer smokers
  - Discuss benefits of cessation
  - Frequently assess progress
  - Highlight and congratulate previous successes
    - ➉ Duration of abstinence
    - ➉ Effective coping strategies

Obesity

- **Adults**

  BMI ≥ 25 is overweight.

  BMI ≥ 30 is obese.

- **Pediatrics**

  Overweight (Risk for overweight): BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex.

  Obese (Overweight): BMI at or above the 95th percentile for children of the same age and sex.

The 2018 Physical Activity Guidelines for Americans—*Recommendations*

- Adults should move more and sit less throughout the day. Some physical activity is better than none. Adults who sit less and do any amount of moderate-to-vigorous physical activity gain some health benefits.
- For substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week.
- Additional health benefits are gained by engaging in physical activity beyond the equivalent of 300 minutes (5 hours) of moderate-intensity physical activity a week.

https://health.gov/PAGuidelines/

The 2018 Physical Activity Guidelines for Americans—*Recommendations*

- Muscle strengthening activity every week (SOR C)
  - All major muscle groups 2 or more days/wk
    - Legs
    - Hips
    - Back
    - Abdomen
    - Chest
    - Shoulders
    - Arms

https://health.gov/paguidelines/second-edition/pdf/PAG_ExecutiveSummary.pdf

USPSTF – Weight and Obesity

- Weight Loss to Prevent Obesity-Related Morbidity and Mortality in Adults: Behavioral Interventions (2018)
  - recommends that clinicians offer or refer adults with a body mass index (BMI) of 30 or higher (calculated as weight in kilograms divided by height in meters squared) to intensive, multicomponent behavioral interventions. Grade: *B recommendation*
- Obesity in Children and Adolescents: Screening (2017)
  - recommends that clinicians screen for obesity in children and adolescents 6 years and older and offer or refer them to comprehensive, intensive behavioral interventions to promote improvements in weight status. Grade: *B recommendation*

USPSTF – Weight and Obesity

- Healthy Diet and Physical Activity for Cardiovascular Disease Prevention in Adults With Cardiovascular Risk Factors: Behavioral Counseling Interventions (2020)
  - recommends offering or referring adults with cardiovascular disease risk factors (**dyslipidemia, elevated blood pressure or hypertension, and mixed or multiple risk factors [metabolic syndrome; estimated 10-year CVD risk of 7.5% or greater])** to behavioral counseling interventions to promote a healthy diet and physical activity. (Adults with other known modifiable cardiovascular risk factors such as abnormal blood glucose levels, obesity, and smoking are **not** included in this recommendation.) Grade: *B recommendation*

Alcohol

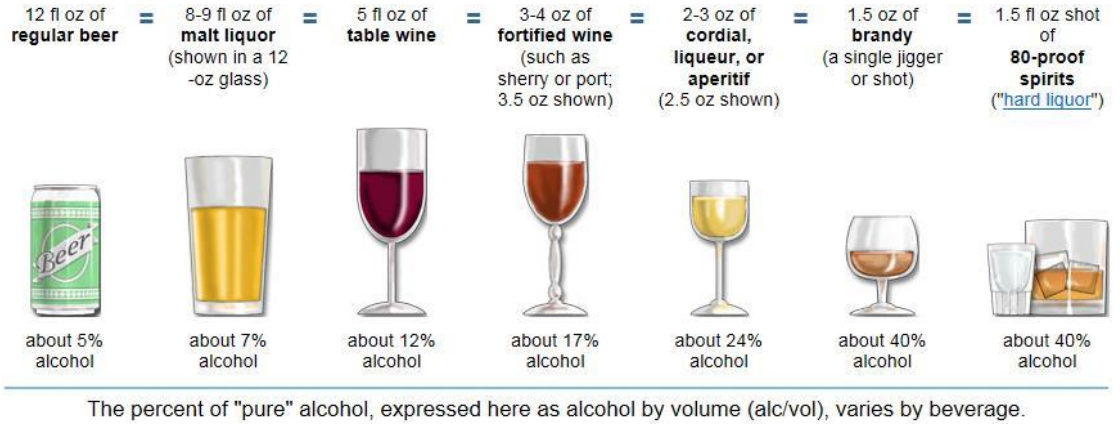
3. Which of the following statements is true regarding alcohol abuse counseling?

A. The CAGE but NOT the AUDIT tool has been validated as a screening instrument for adult alcohol abuse.
B. The US Preventive Services Task Force (USPSTF) recommends screening and counseling adolescents on the risks of alcohol misuse.
C. The USPSTF recommends screening and counseling adults on the risks of alcohol misuse.
D. While the USPSTF found that screening can accurately identify adults at risk for alcohol misuse, they found insufficient evidence of effectiveness for brief, office-based interventions.

Highest-Ranked Services With the Lowest Delivery Rates

- ⑩ Tobacco cessation counseling to adults
- ⑩ Screening older adults for undetected vision impairment
- ⑩ Offering adolescents an anti-tobacco message or advice to quit
- ⑩ Counseling adolescents on alcohol and drug abstinence
- ⑩ Screening adults for colorectal cancer
- ⑩ Screening young women for chlamydial infection
- ⑩ **Screening adults for problem drinking**
- ⑩ Vaccinating older adults against pneumococcal disease

Alcohol Use



Source: National. Institutes of Health

➉Definitions of patterns of drinking alcohol

Excessive drinking includes heavy drinking, binge drinking, and any drinking by pregnant women or underage youth.

Acceptable

- ➉Men ≤ 2 drinks per day
- ➉Women ≤ 1 drink per day

Heavy

- ➉For women, more than 1 drink per day on average
- ➉For men, more than 2 drinks per day on average

Binge, the most common form of excessive alcohol consumption

- ➉For women, 4 or more drinks during a single occasion
- ➉For men, 5 or more drinks during a single occasion

Most people who binge drink are not alcoholics or alcohol dependent.

Validated Instruments

Alcohol Abuse

- The CAGE and AUDIT tools are two of several validated instruments that can be used in primary care settings to screen for alcohol abuse (SOR A)

Acceptable limit of alcohol: Men ≤ 2 drinks per day, women ≤ 1 drink per day

CAGE

CAGE Questionnaire (PDF)

- CAGE test scores ≥ 2 had a sensitivity of 93% and a specificity of 76% for the identification of problem drinkers.
  1. *Have you ever felt you needed to **C**ut down on your drinking?*
  2. *Have people **A**nnoyed you by criticizing your drinking?*
  3. *Have you ever felt **G**uilty about drinking?*
  4. *Have you ever felt you needed a drink first thing in the morning (**E**ye-opener) to steady your nerves or to get rid of a hangover?*

John A. Ewing. Detecting Alcoholism: The CAGE Questionnaire. *JAMA.* 1984.

AUDIT

- Ten-question test developed by the World Health Organization to determine if a person's alcohol consumption may be harmful
- Test designed to be used internationally; validated in a study using patients from six countries.
- **Questions**
  - 1-3 deal with alcohol consumption
  - 4-6 relate to alcohol dependence
  - 7-10 consider alcohol-related problems
- **Scoring**
  - A score of 8 or more in men (7 in women) indicates a strong likelihood of hazardous or harmful alcohol consumption.
  - A score of 20 or more is suggestive of alcohol dependence.

AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care, second edition, by TF Babor, JC Higgins-Biddle, JB Saunders, and MG Monteiro.

Prevention

- *Primary*
- *Secondary (Screening)*
- *Tertiary*
- *Quaternary*

Prevention

Primary

- Avoids the development of a disease. Most population-based health promotion activities are primary preventive measures.
- Example: *Immunizations*

General Principles

- Serious side effects are exceedingly rare
- Every visit is an opportunity for primary prevention
- A 25-mm needle should be used instead of a 16-mm needle to reduce the risk of adverse reactions to vaccinations (SOR A)
- Immunization series do not need to be restarted
- Antipyretics are not recommended for routine prophylaxis before immunizations (SOR A)
- Breastfeeding is NOT a contraindication to vaccines

General Principles

- Successful dialogue

  Take time to LISTEN.

  Solicit and welcome questions.

  Keep the conversation going.
- Immunization Schedules

  Ages 0-18

  Adult

Table 1 Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars.
To determine minimum intervals between doses, see the catch-up schedule (Table 2).

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16 yrs	17–18 yrs
Hepatitis B (HepB)	1st dose	◄---- 2nd dose ----►			◄---------- 3rd dose ----------►												
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1st dose	2nd dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1st dose	2nd dose	3rd dose			◄---- 4th dose ----►				5th dose					
Haemophilus influenzae type b (Hib)			1st dose	2nd dose	See Notes		◄ 3rd or 4th dose, See Notes ►										
Pneumococcal conjugate (PCV13)			1st dose	2nd dose	3rd dose		◄---- 4th dose ----►										
Inactivated poliovirus (IPV <18 yrs)			1st dose	2nd dose	◄---------- 3rd dose ----------►							4th dose					
Influenza (IIV4)					Annual vaccination 1 or 2 doses								Annual vaccination 1 dose only				
or													or				
Influenza (LAIV4)											Annual vaccination 1 or 2 doses		Annual vaccination 1 dose only				
Measles, mumps, rubella (MMR)					See Notes		◄---- 1st dose ----►					2nd dose					
Varicella (VAR)							◄---- 1st dose ----►					2nd dose					
Hepatitis A (HepA)					See Notes		2-dose series, See Notes										
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)														1 dose			
Human papillomavirus (HPV)														See Notes			
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2years)			See Notes											1st dose		2nd dose	
Meningococcal B (MenB-4C, MenB-FHbp)														See Notes			
Pneumococcal polysaccharide (PPSV23)											See Notes						
Dengue (DEN4CYD; 9-16 yrs)														Seropositive in endemic areas only (See Notes)			

Range of recommended ages for all children
Range of recommended ages for catch-up vaccination
Range of recommended ages for certain high-risk groups
Recommended vaccination can begin in this age group
Recommended vaccination based on shared clinical decision-making
No recommendation/ not applicable

ACIP – 2022
Children and Adolescents
https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Table 2 Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More than 1 Month Behind, United States, 2022

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. **Always use this table in conjunction with Table 1 and the Notes that follow.**

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Children age 4 months through 6 years					
Hepatitis B	Birth	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose** minimum age for the final dose is 24 weeks		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days.	**4 weeks**	**4 weeks** maximum age for final dose is 8 months, 0 days		
Diphtheria, tetanus, and acellular pertussis	6 weeks	**4 weeks**	**4 weeks**	**6 months**	**6 months**
Haemophilus influenzae type b	6 weeks	**No further doses needed** if first dose was administered at age 15 months or older. **4 weeks** if first dose was administered before the 1st birthday. **8 weeks (as final dose)** if first dose was administered at age 12 through 14 months.	**No further doses needed** if previous dose was administered at age 15 months or older **4 weeks** if current age is younger than 12 months ***and*** first dose was administered at younger than age 7 months ***and*** at least 1 previous dose was PRP-T (ActHib®, Pentacel®, Hiberix®), Vaxelis® or unknown **8 weeks *and* age 12 through 59 months (as final dose)** if current age is younger than 12 months ***and*** first dose was administered at age 7 through 11 months; OR if current age is 12 through 59 months ***and*** first dose was administered before the 1st birthday ***and*** second dose was administered at younger than 15 months; OR if both doses were PedvaxHIB® and were administered before the 1st birthday	**8 weeks (as final dose)** This dose only necessary for children age 12 through 59 months who received 3 doses before the 1st birthday.	
Pneumococcal conjugate	6 weeks	**No further doses needed** for healthy children if first dose was administered at age 24 months or older **4 weeks** if first dose was administered before the 1st birthday **8 weeks (as final dose for healthy children)** if first dose was administered at the 1st birthday or after	**No further doses needed** for healthy children if previous dose was administered at age 24 months or older **4 weeks** if current age is younger than 12 months and previous dose was administered at <7 months old **8 weeks (as final dose for healthy children)** if previous dose was administered between 7–11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was administered before age 12 months	**8 weeks (as final dose)** This dose only necessary for children age 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus	6 weeks	**4 weeks**	**4 weeks** if current age is <4 years **6 months (as final dose)** if current age is 4 years or older	**6 months (minimum age 4 years for final dose)**	
Measles, mumps, rubella	12 months	**4 weeks**			
Varicella	12 months	**3 months**			
Hepatitis A	12 months	**6 months**			
Meningococcal ACWY	2 months MenACWY-CRM 9 months MenACWY-D 2 years MenACWY-TT	**8 weeks**	See Notes	See Notes	
Children and adolescents age 7 through 18 years					
Meningococcal ACWY	Not applicable (N/A)	**8 weeks**			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis	7 years	**4 weeks**	**4 weeks** if first dose of DTaP/DT was administered before the 1st birthday **6 months (as final dose)** if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday	**6 months** if first dose of DTaP/DT was administered before the 1st birthday	
Human papillomavirus	9 years	**Routine dosing intervals are recommended.**			
Hepatitis A	N/A	**6 months**			
Hepatitis B	N/A	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose**		
Inactivated poliovirus	N/A	**4 weeks**	**6 months** A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	**4 weeks**			
Varicella	N/A	**3 months** if younger than age 13 years. **4 weeks** if age 13 years or older			
Dengue	9 years	**6 months**	6 months		

ACIP – 2022

Children and Adolescents based on medical indications

https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Table 3

Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2022

Always use this table in conjunction with Table 1 and the Notes that follow.

VACCINE	INDICATION										
	Pregnancy	Immunocompromised status (excluding HIV infection)	HIV infection CD4+ count[1]: <15% or total CD4 cell count of <200/mm³	HIV infection CD4+ count[1]: ≥15% and total CD4 cell count of ≥200/mm³	Kidney failure, end-stage renal disease, or on hemodialysis	Heart disease or chronic lung disease	CSF leak or cochlear implant	Asplenia or persistent complement component deficiencies	Chronic liver disease	Diabetes
Hepatitis B										
Rotavirus		SCID[2]								
Diphtheria, tetanus, and acellular pertussis (DTaP)										
Haemophilus influenzae type b										
Pneumococcal conjugate										
Inactivated poliovirus										
Influenza (IIV4)										
or										
Influenza (LAIV4)						Asthma, wheezing: 2–4yrs[3]				
Measles, mumps, rubella	*									
Varicella	*									
Hepatitis A										
Tetanus, diphtheria, and acellular pertussis (Tdap)										
Human papillomavirus	*									
Meningococcal ACWY										
Meningococcal B										
Pneumococcal polysaccharide										
Dengue										

- Vaccination according to the routine schedule recommended
- Recommended for persons with an additional risk factor for which the vaccine would be indicated
- Vaccination is recommended, and additional doses may be necessary based on medical condition or vaccine. See Notes.
- Precaution—vaccine might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended—vaccine should not be administered
  *Vaccinate after pregnancy
- No recommendation/not applicable

1 For additional information regarding HIV laboratory parameters and use of live vaccines, see the *General Best Practice Guidelines for Immunization*, "Altered Immunocompetence," at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html and Table 4-1 (footnote J) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.
2 Severe Combined Immunodeficiency
3 LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months

Key points to the 2021 Schedule
(Age 0-18)

Vaccine	What's New	Routine Vaccination
Hepatitis A	Emphasized that unvaccinated persons through 18 years should complete a 2-dose series (minimum interval: 6 months) *(2020)*	2-dose series (minimum interval: 6 months) beginning at age 12 months
Hib	No further doses of catch-up vaccination are needed if a dose was administered at age 15 months or older	4-dose series at 2,4,6*,15-15 months
DTaP	Clarified, dose 5 is NOT necessary IF dose 4 was administered at age 4 years or older AND at least 6 months after dose 3. *(2020)*	5-dose series at 2,4,6,15-18 months, 4-6 years

Key points to the 2021 Schedule
(Age 0-18)

Vaccine	What's New	Routine Vaccination
Tdap or Td	*For persons 7 years of age or older with history of 3 or more doses of tetanus-toxoid-containing vaccine*: • For clean and minor wounds, administer Tdap or Td if more than 10 years since the last dose. • For all other wounds, administer Tdap or Td if more than 5 years since the last dose. • Tdap is preferred for persons age 11 years or older who have not previously received Tdap or whose Tdap history is unknown. • If a tetanus-toxoid-containing vaccine is indicated for a pregnant adolescent, Tdap should be used.	---

Key points to the 2022 Schedule
(Age 0-18)

- Vaxelis
  - Contains DTaP, inactivated poliovirus, *Haemophilus influenzae* b conjugate, and hepatitis B vaccines
  - Extensive recommendations for how to work it into the vaccine schedule, including some situations when it should not be used

Key points to the 2022 Schedule
(Age 0-18)

REMINDERS:

- Although MMR and hepatitis A are both recommended to begin at 12 months, infants aged 6-11 months who are undergoing international travel to high-risk areas can begin with one dose before departure and then receive a two-dose series after turning 12 months of age
- Only one dose of *Haemophilus influenzae* b vaccine is indicated after age 15 months and none at 60 months or older if the child does not have high-risk conditions
- Total number of doses for some vaccines, such as pneumococcus and polio, vary depending on how old the child is if not already fully vaccinated
  - E.g., pneumococcal conjugate vaccine catchup in a healthy child, one dose after age 24 months would make the child up-to-date.
  - E.g., inactivated poliovirus in children aged 4 years or older, a third dose given at least 6 months after the second dose would make that child up-to-date.

Vaccine Refusal

➉ AAFP

Does NOT support immunization exemption policies except in cases of allergic and medical contraindication

Sign a refusal to vaccinate form, declination should be documented with provision of vaccine information statement (SOR C)*

➉ AAP

Has developed form that can be used to document vaccine refusal

- ➉ https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Pages/refusal-to-vaccinate.aspx

➉ Dismiss from practice?

CDC recommends **AGAINST** dismissing the patient or family from the practice if they refuse vaccination*

AAP now accepts this practice if done in a conscientious was

* Spencer JP, Trondsen Pawlowski RH, Thomas S: Vaccine adverse events: Separatingmyth from reality. Am Fam Physician 2017;95(12):786-794.

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
Influenza inactivated (IIV4) or **Influenza recombinant** (RIV4) or **Influenza live, attenuated** (LAIV4)	1 dose annually	1 dose annually		
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			
Varicella (VAR)	2 doses (if born in 1980 or later)	2 doses		
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			1 dose PCV15 followed by PPSV23 OR 1 dose PCV20
Hepatitis A (HepA)	2 or 3 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

No recommendation/ Not applicable

ACIP – 2022 *Adult*

https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

ACIP – 2022

Adult by Medical Condition and Other Indications

https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2022

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism[1]	Chronic liver disease	Diabetes	Health care personnel[2]	Men who have sex with men
			<15% or <200 mm³	≥15% and ≥200 mm³							
IIV4 or RIV4	1 dose annually										
or										or	
LAIV4	Contraindicated					Precaution				1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated*	Contraindicated	1 or 2 doses depending on indication								
VAR	Contraindicated*	Contraindicated			2 doses						
RZV		2 doses at age ≥19 years			2 doses at age ≥50 years						
HPV	Not Recommended*	3 doses through age 26 years			2 or 3 doses through age 26 years depending on age at initial vaccination or condition						
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)									
HepA	2 or 3 doses depending on vaccine										
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY	1 or 2 doses depending on indication, see notes for booster recommendations										
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT[3] recipients only			1 dose						

- Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
- Recommended vaccination for adults with an additional risk factor or another indication
- Recommended vaccination based on shared clinical decision-making
- Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended—vaccine should not be administered.
  *Vaccinate after pregnancy.
- No recommendation/ Not applicable

1. Precaution for LAIV4 does not apply to alcoholism. **2.** See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. **3.** Hematopoietic stem cell transplant.

4. Which immunization would be considered safe to administer during pregnancy?

A. MMR

B. HPV

C. Tdap

D. Varicella

Vaccines and Pregnancy

❿Safe

- ❿Tdap*
- ❿Influenza IV
- ❿Hepatitis A, if at risk
- ❿Hepatitis B, if at risk
- ❿Meningococcal, if indicated
- ❿Pneumococcal polysaccharide, if indicated

❿Wait until after pregnancy

- ❿MMR
- ❿Varicella
- ❿HPV
- ❿Influenza LAV

***ACIP Recommendations for Pregnant Women - 2013**

Administer a dose of Tdap during each pregnancy, irrespective of the patient's prior history of receiving Tdap.

Guidance for Use:

To maximize maternal antibody response and passive antibody transfer to the infant, optimal timing for Tdap administration is between 27 and 36 weeks gestation although Tdap may be given at any time during pregnancy. **Vaccinate AS EARLY AS POSSIBLE in the gestational age window – immunization closer to 27 weeks – infant born with higher concentration of maternal antibodies**

Adults - 2021

Vaccine	Recommendations
Hepatitis B	• Pregnant women at risk for infection or an adverse infection-related pregnancy outcome have been added to list of vulnerable patients who may benefit from vaccination. Whereas older formulations are safe, ACIP **does not** recommend the Heplisav-B during pregnancy because of lacking safety data. (2020) • HepB vaccination is now routinely recommended for adults younger than 60 years with diabetes. For those with diabetes who are older than 60, shared decision making is recommended. (2021)
MenACWY	• Continues to recommend routine vaccination with a quadrivalent meningococcal conjugate vaccine (MenACWY) for persons at increased risk for meningococcal disease caused by serogroups A, C, W, or Y.
Meningitis B *(2020)*	• Discuss vaccination with individuals aged 16-23 years even if they are nor at an increased risk for meningococcal disease • Persons aged 10 years or older who have a complement deficiency, use a complement inhibitor, or who have asplenia should receive a vaccine dose 1 year following completion of a primary series
Td/Tdap *(2020)*	• Either the Td or Tdap can be administered for the 10-year booster shot and for tetanus prophylaxis in wound management, and the catch-up immunization schedule
PCV13 *(2019)*	• Reversal of 2014 recommendation for adults ≥ 65

Adults - 2022

Vaccine	Recommendations
Hepatitis B	**Aged 19-59 – complete a 2-, 3-, or 4-dose series** • 2-dose series only applies when 2 doses of Heplisav-B* are used at least 4 weeks apart *(ACIP **does not** recommend the Heplisav-B during pregnancy because of lacking safety data.)* • 3-dose series Engerix-B or Recombivax HB at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks]) • 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months]) • 4-dose series HepA-HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months • 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose, i.e., 2 mL instead of 1 mL)

Adults - 2022

Vaccine	Recommendations
Hepatitis B	**Age 60 years or older* and at risk for hepatitis B virus infection:** 2-dose (Heplisav-B) or 3-dose (Engerix-B, Recombivax HB) series or 3-dose series HepA-HepB (Twinrix) as above • **Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal) • **HIV infection** • **Sexual exposure risk** (e.g., sex partners of hepatitis B surface antigen [HBsAg]-positive persons; sexually active persons not in mutually monogamous relationships; persons seeking evaluation or treatment for a sexually transmitted infection; men who have sex with men) • **Current or recent injection drug use** • **Percutaneous or mucosal risk for exposure to blood** (e.g., household contacts of HBsAg-positive persons; residents and staff of facilities for developmentally disabled persons; health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids; hemodialysis, peritoneal dialysis, home dialysis, and predialysis patients; patients with diabetes) • **Incarcerated persons** • **Travel in countries with high or intermediate endemic hepatitis B**

**Note*: *Anyone age 60 years or older who does not meet risk-based recommendations may still receive Hepatitis B vaccination.*

Adults - 2022

Vaccine	Recommendations
Zoster	• 2 RZV doses for prevention of herpes zoster and related complications in immunodeficient or immunosuppressed (caused by known disease* or therapy) adults aged ≥19 years (Immunocompromised persons experience a higher incidence of herpes zoster and related complications.) * *HIV, cancer and transplant patients taking immunosuppressive drugs, inherited diseases that affect the immune system*

Anderson TC, Masters NB, Guo A, et al. Use of Recombinant Zoster Vaccine in Immunocompromised Adults Aged ≥19 Years: Recommendations of the Advisory Committee on Immunization Practices — United States, 2022. MMWR Morb Mortal Wkly Rep 2022;71:80–84. DOI: http://dx.doi.org/10.15585/mmwr.mm7103a2external icon.

NEW Pneumococcal Vaccine Recommendations - *2022*

- **Adults aged ≥65 years** who have not previously received PCV or whose previous vaccination history is unknown should receive 1 dose of PCV20 (OR 1 dose of PCV15 followed by a dose of PPSV23 ≥1 years later)
- **Adults aged 19–64 years with certain underlying medical conditions or other risk factors*** who have not previously received PCV or whose previous vaccination history is unknown should receive 1 dose of PCV20 (OR 1 dose of PCV15 followed by a dose of PPSV23 ≥1 years later)

Prevention
Secondary

- Activities are aimed at early disease detection, thereby increasing opportunities for interventions to prevent progression of the disease and emergence of symptoms.
  Breast cancer

Breast Cancer

Screening

Breast Cancer

- Most common cause (with exception of skin) of cancer in women and the 2nd leading cause of cancer death
  - 1/8 women will develop breast cancer.
  - 1/30 will die.
- Presence of dominant inherited cancer susceptibility genes (BRCA 1 and BRCA 2) occur in about 1/300-500 of general population
  - Screening for inherited risk (USPSTF 2019)
    - Assessment of risk for significant BRCA mutations
    - Genetic testing of high-risk women *(Level A)*

USPSTF

August 2019

- Recommends that primary care clinicians assess women with a personal or family history of breast, ovarian, tubal, or peritoneal cancer **or** who have an ancestry associated with breast cancer susceptibility 1 and 2 (*BRCA1/2)* gene mutations with an **appropriate brief familial risk assessment tool**. Women with a positive result on the risk assessment tool should receive genetic counseling and, if indicated after counseling, genetic testing. B Recommendation
- The USPSTF recommends AGAINST routine risk assessment, genetic counseling, or genetic testing for women whose personal or family history or ancestry is not associated with potentially harmful *BRCA1/2* gene mutations. D Recommendation

Screening Tools Evaluated by the USPSTF

Tool
Ontario Family History Assessment Tool
Manchester Scoring System
Referral Screening Tool*
Pedigree Assessment Tool
FHS 7*

** Simplest and quickest to administer*

Since 2005, family history risk stratification tools have been developed and validated for use in primary care practice to guide referral for BRCA genetic counseling. In addition, the potential benefits and harms of medications for breast cancer risk reduction have been studied for longer follow-up periods, and more information is available about the potential psychological effects of genetic counseling and risk-reducing surgery.

http://www.uspreventiveservicestaskforce.org/uspstf12/brcatest/brcatestfinalrstab.htm#tab1

BRCA1 or BRCA 2 Mutation

- **Can be considered for prophylactic oophorectomy and mastectomy**
  - Prophylactic therapy
    - Decreases incidence of breast and ovarian cancer
    - Inadequate evidence for mortality benefits
- ***Cancer Genetics Studies Consortium Recommendations for Screening***
  - Monthly BSE: Age 21
  - CBE q 6-12 m starting at age 25-35 years
  - Annual mammograms starting at age 25-35 years
  - Ovarian cancer screening (US, CA-125 levels) q 6-12 months starting at age 25-35 years

Breast Cancer: Screening

(USPSTF-2016, update in progress)

Population	Recommendation	Grade
Women aged 50-74 years	The USPSTF recommends biennial screening mammography for women aged 50 to 74 years.	B
Women aged 40-49 years	The decision to start screening mammography in women prior to age 50 years should be an individual one. Women who place a higher value on the potential benefit than the potential harms may choose to begin biennial screening between the ages of 40 and 49 years.	C
Women aged 75 years or older	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening mammography in women aged 75 years or older.	I
All women	The USPSTF concludes that the current evidence is insufficient to assess the benefits and harms of digital breast tomosynthesis (DBT) as a primary screening method for breast cancer.	I
Women with dense breasts	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of adjunctive screening for breast cancer using breast ultrasonography, magnetic resonance imaging, DBT, or other methods in women identified to have dense breasts on an otherwise negative screening mammogram.	I

Women Aged 40-49

- *Individualize decision to begin biennial screening according to the patient's context and values.*
- The recommendation applies to women who are NOT at increased risk by virtue of a known genetic mutation or history of chest radiation.

Timing of Screening

- Evidence indicates that biennial screening is optimal.
- Biennial schedule preserves most of the benefit of annual screening AND cuts the harms nearly in half.

Recommendations of Others

Organization	Year	Recommendation
ACS	**2015**[§]	Women with average risk of breast cancer should undergo regular screening mammography starting at age 45. (45-54 years, annual; ≥55 biennial). **NO CBE for screening at ANY AGE**
AMA	2002	Similar to ACS, except for inclusion of a Positive recommendation for BSE
AAFP	**2009**	Endorsed the USPSTF recommendation
ACOG	2011*	Mammography (Level B) and CBE (Level C) **annually starting at the age of 40**. No consensus on upper age limit of mammograms. All women should be encouraged to practice breast "self-awareness."
WHO	**2009**	Mammography q 1-2 years (Age 50-59). Does NOT recommend CBE or BSE

[§]*JAMA 2015;314(15)1599-1614.*
**Obstet Gynecol. 2011;118:372-382*

Screening Breast MRI

- The *American Cancer Society* recommends screening breast MRI **(impact on breast cancer mortality is uncertain)**:
  - Women with BRCA1 or BRCA2 gene mutations
  - Women with a first-degree relative with BRCA1 or BRCA2 gene mutations who have not as yet had genetic testing
  - Women with a lifetime risk of more than 25% as defined by risk assessment tools largely dependent on family history
  - Women who underwent radiation to the chest between ages 10-30 for Hodgkins disease
  - Women known to have a hereditary breast cancer syndrome, i.e., Li Fraumeni, Cowden, and Bannayan-Riley-Ruvalcaba, and their first-degree relatives

Breast Cancer Screening

Conclusions

- Has resulted in an increase in diagnosis of localized disease without a commensurate decrease in the incidence of more widespread disease
- It cannot predict which of the discovered cancers are more aggressive, and cannot accurately detect premalignant lesions.
- <u>The decrease in the mortality rate of breast cancer is due BOTH to earlier detection and better follow-up medical care.</u>

USPSTF – Breast Cancer: Medication Use to to Reduce Risk *(September 2019)*

Population	Recommendation	Grade
Women at increased risk for breast cancer*	Clinicians offer to prescribe risk-reducing medications, such as tamoxifen, raloxifene, or aromatase inhibitors, to women who are at increased risk for breast cancer and at low risk for adverse medication effects	**B**
Women not at increased risk for breast cancer	Recommends against the routine use of risk-reducing medications, such as tamoxifen, raloxifene, or aromatase inhibitors, in women who are not at increased risk for breast cancer.	**D**

- National Cancer Institute (NCI) Breast Cancer Risk Assessment Tool, estimate a woman's risk of developing breast cancer over the next 5 years. There is no single cutoff for defining increased risk for all women.*
- **Women at greater risk, at least a 3% risk for breast cancer in the next 5 years, are likely to derive more benefit than harm from risk-reducing medications and should be offered these medications if their risk of harms is low**.
- Some women at lower risk for breast cancer have also been included in trials documenting reduced risk for breast cancer when taking tamoxifen, raloxifene, or aromatase inhibitors. However, when balancing the harms associated with these medications, the net benefit will be lower among women at lower risk.

NIH NATIONAL CANCER INSTITUTE

Breast Cancer Risk Assessment Tool

RISK CALCULATOR ABOUT THE CALCULATOR

The Breast Cancer Risk Assessment Tool

The Breast Cancer Risk Assessment Tool allows health professionals to estimate a woman's risk of developing invasive breast cancer over the next 5 years and up to age 90 (lifetime risk).

The tool uses a woman's personal medical and reproductive history and the history of breast cancer among her first-degree relatives (mother, sisters, daughters) to estimate absolute breast cancer risk—her chance or probability of developing invasive breast cancer in a defined age interval.

Assess Patient Risk

The tool has been validated for white women, black/African American women, Hispanic women and for Asian and Pacific Islander women in the United States. The tool may underestimate risk in black women with previous biopsies and Hispanic women born outside the United States. Because data on American Indian/Alaska Native women are limited, their risk estimates are partly based on data for white women and may be inaccurate. Further studies are needed to refine and validate these models.

This tool cannot accurately estimate breast cancer risk for:

- Women carrying a breast-cancer-producing mutation in *BRCA1* or *BRCA2*
- Women with a previous history of invasive or in situ breast cancer
- Women in certain other subgroups

https://bcrisktool.cancer.gov/

Agent	Type	Comment	SOR
Tamoxifen	SERM	FDA-approved; primary prevention of breast cancer in high-risk women. It can decrease the risk of developing breast cancer (specifically estrogen-receptor–positive breast cancer) by up to 48%; only FDA-approved medication for the chemoprevention of breast cancer in **premenopausal women**	**A**
Raloxifene	SERM	Approved for the chemoprevention of breast cancer in postmenopausal women, but **not** premenopausal women	**A**
Letrozole	Aromatase inhibitor	Approved for chemoprevention of breast cancer in **postmenopausal** women but are **not** approved for **premenopausal** women. *Aromatase inhibitors block the conversion of androgens to estrogen but cannot block ovarian production of estrogen, so they do not work in premenopausal women unless the woman is also taking a gonadotropin-releasing hormone inhibitor.*	**A**
Combined OCPs	-	Can be used for the **prevention of ovarian cancer and endometrial cancer** but does **NOT** prevent breast cancer	**C**
Progesterone	-	Does **NOT** reduce the risk for breast cancer	**A**

Prevention

Tertiary

- Reduces the negative impact of an already established disease by restoring function and reducing disease-related complications.
- e.g. Heart Failure

  The definition of HF has now expanded to:

  - HF with reduced ejection fraction (HFrEF, EF ≤40%)
  - HF failure with preserved ejection fraction (HFpEF, EF ≥50%)
  - HFpEF, borderline (EF 41-49%)
  - HFpEF, improved (EF >40%)

5. A 74 yo female with New York Heart Association class II heart failure and a left ventricular ejection fraction of 34% is on optimal dosages of an ACE inhibitor, a β-blocker, and rosuvastatin (Crestor). Her past medical history is notable only for a long history of hypertension. She is a nonsmoker and reports that she has a small glass of blush wine with dinner each evening. On examination she has a blood pressure of 126/72 mm Hg and a BMI of 28.2 kg/m^2. Her chest is clear and her cardiac examination is notable only for an S_4. *Self-help measures recommended for patients such as this include which one of the following?*

A. A sodium intake ≤ 4000 mg/day
B. Strict avoidance of alcohol consumption
C. Avoiding NSAID use
D. A weight-loss program with a goal BMI of 25 kg/m^2 or less

Heart Failure

- Daily weight
- *Low sodium diet*
  ≤ 2400 mg per day
- Medications
  Beta blocker
  ACE inhibitor
  Diuretic
  (+/−) Digoxin
- Echocardiogram

ACC/AHA 2013 Guideline for the Diagnosis and Management of Chronic Heart Failure in the Adult

Self-Help and Chronic Disease

- HF patient must deal with his/her condition on a daily basis; help from clinicians is not always available.
  - Partnership model of care
  - Responsibility shifts from the physician to the patient, encouraging shared decision-making and steering away from the passive patient/expert doctor paradigm.
- Patients have been found to have better outcomes simply by wielding more power in the doctor/patient encounter.
- Educating patients to self-manage their chronic diseases has been shown to lead to **increased levels of functioning, reduced pain, and decreased health care costs** *(Hibbard, 2003)*.

Self-Help

- *Advocated as a Method of Improving Outcomes in Patients with Heart Failure*
- Sodium Intake ≤ 2400 mg daily (AHA)
  - Same amount recommended for healthy adults
- Fluid restriction to < 2 L/day may be appropriate for patients with hyponatremia or persistent or recurrent fluid retention; more liberal intake appropriate for stable HF patients.

Self-Help

- Avoid NSAID use.

  Shown to increase the risk for renal insufficiency and hospitalization

- Available studies indicate that survival is highest in patients with a BMI of 30-32 kg/m^2; no studies have demonstrated a survival benefit from weight loss in patients with heart failure.

  AHA guidelines currently recommend that weight loss be encouraged only in patients with a BMI > 40 kg/m^2.

Self-Help

- Several epidemiologic studies have failed to demonstrate a correlation between alcohol consumption and the development of heart failure.

  Exception: Patients with alcoholic cardiomyopathy, who should abstain from alcohol use

  Heart failure patients who choose to drink should be advised to limit their alcohol intake to no more than 1-2 drinks a day.

Self-Help

- Avoidance of physical exertion has been advised in the past; it is now thought that a reduction in physical activity leads to physical deconditioning and an unnecessary worsening of symptoms.
- Exercise training 3-5 days a week should be considered in all stable outpatients with chronic heart failure.

Symptoms of Heart Failure

Recommended Therapy

Known structural heart disease AND shortness of breath and fatigue, reduced exercise tolerance

Goals

- Treat hypertension.
- Encourage smoking cessation.
- Treat lipid disorders.
- Encourage regular exercise.
- Discourage alcohol intake, illicit drug use.
- Control metabolic syndrome.

Therapy

Drugs for routine use

- Diuretics
- ACE I
- Beta blockers

Drugs in selected patients

- Aldosterone antagonist
- ARBs
- Digitalis
- Hydralazine/nitrates

Devices in selected patients

- **Biventricular pacing**
- **Implantable defibrillators**

Summary

- **Effective health promotion**
  - Lifestyle modification: 3 leading causes of morbidity in the US
  - Counseling/Education
- **Prevention**
  - Primary e.g., Immunizations
  - Secondary e.g., Breast cancer
  - Tertiary e.g., Heart failure
  - *Quaternary*
    - *Set of health activities to mitigate or avoid the consequences of unnecessary or excessive intervention of the health system. It is the practice of "first do no harm."*
- **Screening**
  - Done in asymptomatic persons, typically secondary prevention

Thank you!


gender
intersex
intersectionality
policy
equality
minority
marginalization
health
population
women
environments
collaboration
transdisciplinary
communities
prevention
sexuality
promotion
culture
determinants
identity
individuals
sex
equity

AMERICAN ACADEMY OF FAMILY PHYSICIANS

STRONG MEDICINE FOR AMERICA