



BlueCross BlueShield of Illinois  
BlueCross BlueShield of Montana  
BlueCross BlueShield of New Mexico  
BlueCross BlueShield of Oklahoma  
BlueCross BlueShield of Texas

## 2021-2022 Preventive Care Guidelines

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## Introduction

**Blue Cross and Blue Shield of Illinois, Blue Cross and Blue Shield of Montana, Blue Cross and Blue Shield of New Mexico, Blue Cross and Blue Shield of Oklahoma, and Blue Cross and Blue Shield of Texas (“the Plans”)** publish and disseminate evidence-derived Preventive Care Guidelines (“Guidelines”) based upon the recommendations of recognized sources such as professional medical associations, specialty societies, professional consensus panels, national task forces, and governmental entities. The Guidelines are designed to improve physician/practitioner awareness of (and compliance with) effective clinical preventive care, to improve patient education and to increase the percentage of members who receive recommended clinical preventive care services.

The Guidelines do not cover all possible circumstances, but should be considered a summary of basic preventive services for these populations:

1. Children from birth to 18 years
2. Adults 19 years and older
3. Adults 65 years and older
4. Women needing perinatal care

The Guidelines are focused upon primary prevention; that is, strategies that have been shown to reduce the likelihood of future adverse outcomes in individuals prior to the onset of symptomatic disease. Services such as immunizations, education and counseling, and screening tests are primary preventive services. The Guidelines apply to average risk, asymptomatic and otherwise healthy individuals. Preventive care interventions appropriate for those with other levels of risk (increased or decreased) will vary by individual circumstance, and physicians/practitioners are encouraged to tailor the approach to these patients as necessary. For certain increased risk groups, additional guidelines have been included to assist physicians/practitioners.

Expert groups may disagree on certain preventive interventions, therefore, recommendations regarding preventive services are not always identical. Despite this disparity, there are numerous areas where consensus exists, allowing for the formulation of this set of guidelines. Whenever possible, the Guidelines follow the recommendations of the United States Preventive Services Task Force (USPSTF) that are considered “recommended” (“A” and “B” level recommendations). When USPSTF recommendations do not provide sufficient guidance, the Plans, with input from network providers, have adopted the recommendations of other professional organizations that evaluate the value of clinical preventive services.

The Guidelines represent a minimal set of recommended preventive health services. Additional interventions may be indicated, except where there is a specific recommendation against routine screening. Individual considerations for a given patient should dictate clinical decisions. In addition, physicians/practitioners are encouraged to review the USPSTF statements regarding services that are should not be routinely used (level “D”). These are available at: <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index>.

The following points should be emphasized when using the guidelines:

- Unless specified, guidelines are meant to apply to average risk, asymptomatic and otherwise healthy individuals. Preventive care interventions appropriate for those with other levels of risk (increased or decreased) will vary by individual circumstance, and physicians are encouraged to tailor the approach to these patients as necessary.
- The interventions listed are *minimal guidelines*. Additional interventions may be useful.
- The Guidelines are designed to assist clinicians by providing a guide to clinical preventive care that is usually appropriate, and are not intended to replace a clinician’s judgment, establish a protocol for all patients, or define standards of practice. The final decision regarding medical treatment, including preventive care services, is made by the physician and the patient.
- The Guidelines document is not a statement of coverage. Coverage is based upon member eligibility, the member’s specific benefit plan design, and state or federal law. There is substantial variation in coverage between benefit programs, and *inclusion of a service in the Guidelines does not imply that the service is necessarily a covered benefit and does not guarantee payment.*

- Because the Guidelines summarize a large amount of information, all details cannot be provided. The practitioner is, therefore, encouraged to review the original sources for more complete discussion of indications and contraindications for specified preventive care services, and to verify the accuracy of the summary.
- Sources are cited for each guideline. Where possible, the exact recommendation of the source is used. In some cases, the recommendation, or its periodicity, has been modified to resolve conflicting recommendations by various sources, or to facilitate practical usage of the guideline in clinical practice settings.
- This material is provided for informational purposes only and is not intended to be a substitute for the sound independent medical judgment of health care practitioners. Health care providers are instructed to exercise their independent medical judgment based on the patient's individual medical circumstances including, but not limited to symptoms, history, family history and other factors. The final decision about whether a particular service or treatment should be rendered is between the health care provider and the member (patient). The fact that a particular medical service is listed in this document is not a guarantee that benefits are available for such service. The member is instructed to refer to their health benefits document or certificate of coverage to determine what benefits are available for the medical service.

KEY TO MAJOR PROFESSIONAL ORGANIZATIONS REFERENCED IN THE GUIDELINES	
AAP	American Academy of Pediatrics
ACIP	Advisory Committee on Immunization Practices of the CDC
ACS	American Cancer Society
ACOG	American Congress of Obstetricians and Gynecologists
AAFP	American Academy of Family Practice
AHA	American Heart Association
ADA	American Diabetes Association
AMA	American Medical Association
CDC	Centers for Disease Control and Prevention
HHS	U.S. Department of Health and Human Services
HRSA	Health Resources & Service Administration
IDPH	Illinois Department of Public Health
MDPHHS	Montana Department of Public Health and Human Services
NCI	National Cancer Institute
NMDOH	New Mexico Department of Health
NMHSD	New Mexico Human Services Department
OSDH	Oklahoma State Department of Health
RUSP	Recommended Uniform Screening Panel
TDSHS	Texas Department of State Health Services
USPSTF	U.S. Preventive Services Task Force

## Preventive Health Guidelines for Children Age Birth To 18

### Part I: Neonates (Birth to 1 Month)

#### 1. History and Physical Examination (Reference: 1-AAP)

Perform newborn examination and at 3-5 days:

- a) History
- b) Physical exam
- c) Length and weight, weight for length
- d) Head circumference
- e) Development surveillance
- f) Psychosocial/Behavioral Assessment
- g) Newborn blood (*state required screening panels*)
- h) Newborn bilirubin (*if indicated*)
- i) Critical Congenital Heart Defect (*if indicated*)
- j) Immunization

#### 2. Screening Tests (References: 2, 3 – AAP; 4, 5, 6 – USPSTF; 7, 8, 9, 10, 11 – States of Illinois, Montana, New Mexico, Oklahoma and Texas)

- Perform screening tests prior to discharge or transfer from the nursery, but no later than 7 days of age. *The USPSTF is not updating the recommendation for screening for phenylketonuria, congenital hypothyroidism and sickle-cell disease and refers to the Health Resources & Service Administration (HRSA) and the Recommended Uniform Screening Panel (RUSP). **However, state regulations define required screening.*** The state-specific lists of required newborn screening can be found at these sites:

IL <http://dph.illinois.gov/topics-services/life-stages-populations/newborn-screening>

MT <https://dphhs.mt.gov/ecfsd/cshs/newbornscreeningprograms>

NM <http://nmhealth.org/about/phd/fhb/cms/nbgs/>

OK [https://www.ok.gov/health/Family\\_Health/Screening\\_&\\_Special\\_Services/Newborn\\_Screening\\_Program/index.html](https://www.ok.gov/health/Family_Health/Screening_&_Special_Services/Newborn_Screening_Program/index.html)

TX [https://www.dshs.texas.gov/newborn/screened\\_disorders.shtm](https://www.dshs.texas.gov/newborn/screened_disorders.shtm)

#### 3. Ocular Chemoprophylaxis (Reference: 12 – USPSTF)

- Prophylactic ocular topical medication for all newborns to prevent gonococcal ophthalmia neonatorum

#### 4. Immunizations (References: 13, 19 – CDC)

- Administer immunizations in accordance with the ACIP Recommended Immunization Schedules for Persons Aged 0 through 18 Years. Copies of the Schedules are attached at the end of the document.

#### 5. Counseling/Anticipatory Guidance (Reference: 1 – AAP)

- Relevant topics include injury prevention, nutrition, and sleep positioning.

**Part II: Children Age 1 month through 17 years – Average Risk Pediatric Population**

- General Recommendations – see table below.** Provide preventive services for children in accordance with the recommendation summarized in the following table. (References: 1, - AAP; 14, 16, 17, 18, 21, 22, 56, 66 - USPSTF).
- For Texas Medicaid, ages 0 to 21, please use the below periodicity schedule or at: <https://brightfutures.aap.org/Pages/default.aspx>



**Recommendations for Preventive Pediatric Health Care**  
Bright Futures/American Academy of Pediatrics



Each child and family is unique; therefore, these Recommendations for Preventive Pediatric Health Care are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in a satisfactory fashion. Developmental, psychosocial, and chronic disease issues for children and adolescents may require frequent counseling and treatment visits separate from preventive care visits. Additional visits also may become necessary if circumstances suggest variations from normal. These recommendations represent a consensus by the American Academy of Pediatrics (AAP) and Bright Futures. The AAP continues to emphasize the great importance of continuity of care in comprehensive health supervision and the need to avoid fragmentation of care.

Refer to the specific guidance by age as listed in the *Bright Futures Guidelines* (Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*. 4th ed. American Academy of Pediatrics; 2017).

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The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

The Bright Futures/American Academy of Pediatrics Recommendations for Preventive Pediatric Health Care are updated annually.

AGE <sup>1</sup>	INFANCY								EARLY CHILDHOOD							MIDDLE CHILDHOOD						ADOLESCENCE												
	Prenata <sup>2</sup>	Newborn <sup>3</sup>	3-5 d <sup>4</sup>	By 1 mo	2 mo	4 mo	6 mo	9 mo	12 mo	15 mo	18 mo	24 mo	30 mo	3 y	4 y	5 y	6 y	7 y	8 y	9 y	10 y	11 y	12 y	13 y	14 y	15 y	16 y	17 y	18 y	19 y	20 y	21 y		
<b>HISTORY</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>MEASUREMENTS</b>																																		
Length/Height and Weight		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Head Circumference		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Weight for Length		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Body Mass Index <sup>5</sup>																●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Blood Pressure <sup>6</sup>		★	★	★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
<b>SENSORY SCREENING</b>																																		
Vision <sup>7</sup>		★	★	★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Hearing		● <sup>8</sup>	● <sup>9</sup>	→	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
<b>DEVELOPMENTAL/BEHAVIORAL HEALTH</b>																																		
Developmental Screening <sup>10</sup>																																		
Autism Spectrum Disorder Screening <sup>11</sup>																																		
Developmental Surveillance		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Psychosocial/Behavioral Assessment <sup>12</sup>		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Tobacco, Alcohol, or Drug Use Assessment <sup>13</sup>																							★	★	★	★	★	★	★	★	★	★	★	
Depression Screening <sup>14</sup>																								●	●	●	●	●	●	●	●	●	●	
Maternal Depression Screening <sup>15</sup>																																		
<b>PHYSICAL EXAMINATION<sup>16</sup></b>		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
<b>PROCEDURES<sup>14</sup></b>																																		
Newborn Blood		● <sup>19</sup>	● <sup>20</sup>	→																														
Newborn Bilirubin <sup>21</sup>		●																																
Critical Congenital Heart Defect <sup>22</sup>		●																																
Immunization <sup>23</sup>		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Anemia <sup>24</sup>						★				★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Lead <sup>25</sup>						★	★	★	● or ★ <sup>26</sup>	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Tuberculosis <sup>27</sup>			★			★			★			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Dyslipidemia <sup>28</sup>																																		
Sexually Transmitted Infections <sup>29</sup>																																		
HIV <sup>30</sup>																																		
Hepatitis C Virus Infection <sup>31</sup>																																		
Cervical Dysplasia <sup>32</sup>																																		
<b>ORAL HEALTH<sup>33</sup></b>																																		
Fluoride Varnish <sup>34</sup>																																		
Fluoride Supplementation <sup>35</sup>																																		
<b>ANTICIPATORY GUIDANCE</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Footnotes:

1. If a child comes under care for the first time at any point on the schedule, or if any items are not accomplished at the suggested age, the schedule should be brought up to date at the earliest possible time.
2. A prenatal visit is recommended for parents who are at high risk, for first-time parents, and for those who request a conference. The prenatal visit should include anticipatory guidance, pertinent medical history, and a discussion of benefits of breastfeeding and planned method of feeding, per “The Prenatal Visit” (<http://pediatrics.aappublications.org/content/124/4/1227.full>).
3. Newborns should have an evaluation after birth, and breastfeeding should be encouraged (and instruction and support should be offered).
4. Newborns should have an evaluation within 3 to 5 days of birth and within 48 to 72 hours after discharge from the hospital to include evaluation for feeding and jaundice. Breastfeeding newborns should receive formal breastfeeding evaluation, and their mothers should receive encouragement and instruction, as recommended in “Breastfeeding and the Use of Human Milk” (<http://pediatrics.aappublications.org/content/129/3/e827.full>). Newborns discharged less than 48 hours after delivery must be examined within 48 hours of discharge, per “Hospital Stay for Healthy Term Newborns” (<http://pediatrics.aappublications.org/content/125/2/405.full>).
5. Screen, per “Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report” ([http://pediatrics.aappublications.org/content/120/Supplement\\_4/S164.full](http://pediatrics.aappublications.org/content/120/Supplement_4/S164.full))
6. Screening should occur per “Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents” (<http://pediatrics.aappublications.org/content/140/3/e20171904>). Blood pressure measurement in infants and children with specific risk conditions should be performed at visits before age 3 years.
7. A visual acuity screen is recommended at ages 4 and 5 years, as well as in cooperative 3-year-olds. Instrument-based screening may be used to assess risk at ages 12 and 24 months, in addition to the well visits at 3 through 5 years of age. See “Visual System Assessment in Infants, Children, and Young Adults by Pediatricians” (<http://pediatrics.aappublications.org/content/137/1/e20153596>) and “Procedures for the Evaluation of the Visual System by Pediatricians” (<http://pediatrics.aappublications.org/content/137/1/e20153597>).
8. Confirm initial screen was completed, verify results, and follow up, as appropriate. Newborns should be screened, per “Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs” (<http://pediatrics.aappublications.org/content/120/4/898.full>).
9. Verify results as soon as possible, and follow up, as appropriate.
10. Screen with audiometry including 6,000 and 8,000 Hz high frequencies once between 11 and 14 years, once between 15 and 17 years, and once between 18 and 21 years. See “The Sensitivity of Adolescent Hearing Screens Significantly Improves by Adding High Frequencies” (<https://www.sciencedirect.com/science/article/abs/pii/S1054139X16000483>).
11. Screening should occur per “Promoting Optimal Development: Identifying Infants and Young Children With Developmental Disorders Through Developmental Surveillance and Screening” (<https://pediatrics.aappublications.org/content/145/1/e20193449>).
12. Screening should occur per “Identification, Evaluation, and Management of Children With Autism Spectrum Disorder” (<https://pediatrics.aappublications.org/content/145/1/e20193447>).
13. This assessment should be family centered and may include an assessment of child social-emotional health, caregiver depression, and social determinants of health. See “Promoting Optimal Development: Screening for Behavioral and Emotional Problems” (<http://pediatrics.aappublications.org/content/135/2/384>) and “Poverty and Child Health in the United States” (<http://pediatrics.aappublications.org/content/137/4/e20160339>).
14. A recommended assessment tool is available at <http://crafft.org>.
15. Recommended screening using the Patient Health Questionnaire (PHQ)-2 or other tools available in the GLAD-PC toolkit and at [https://downloads.aap.org/AAP/PDF/Mental\\_Health\\_Tools\\_for\\_Pediatrics.pdf](https://downloads.aap.org/AAP/PDF/Mental_Health_Tools_for_Pediatrics.pdf).)

16. Screening should occur per “Incorporating Recognition and Management of Perinatal Depression Into Pediatric Practice” (<https://pediatrics.aappublications.org/content/143/1/e20183259>).
17. At each visit, age-appropriate physical examination is essential, with infant totally unclothed and older children undressed and suitably draped. See “Use of Chaperones During the Physical Examination of the Pediatric Patient” (<http://pediatrics.aappublications.org/content/127/5/991.full>).
18. These may be modified, depending on entry point into schedule and individual need.
19. Confirm initial screen was accomplished, verify results, and follow up, as appropriate. The Recommended Uniform Screening Panel (<https://www.hrsa.gov/advisory-committees/heritable-disorders/rusp/index.html>), as determined by The Secretary’s Advisory Committee on Heritable Disorders in Newborns and Children, and state newborn screening laws/regulations (<https://www.babysfirsttest.org/newborn-screening/states>) establish the criteria for and coverage of newborn screening procedures and programs.
20. Verify results as soon as possible, and follow up, as appropriate.
21. Confirm initial screening was accomplished, verify results, and follow up, as appropriate. See “Hyperbilirubinemia in the Newborn Infant  $\geq 35$  Weeks’ Gestation: An Update With Clarifications” (<http://pediatrics.aappublications.org/content/124/4/1193>).
22. Screening for critical congenital heart disease using pulse oximetry should be performed in newborns, after 24 hours of age, before discharge from the hospital, per “Endorsement of Health and Human Services Recommendation for Pulse Oximetry Screening for Critical Congenital Heart Disease” (<http://pediatrics.aappublications.org/content/129/1/190.full>).
23. Schedules, per the AAP Committee on Infectious Diseases, are available at [https://redbook.solutions.aap.org/SS/immunization\\_Schedules.aspx](https://redbook.solutions.aap.org/SS/immunization_Schedules.aspx). Every visit should be an opportunity to update and complete a child’s immunizations.
24. Perform risk assessment or screening, as appropriate, per recommendations in the current edition of the AAP Pediatric Nutrition: Policy of the American Academy of Pediatrics (Iron chapter).
25. For children at risk of lead exposure, see “Prevention of Childhood Lead Toxicity” (<http://pediatrics.aappublications.org/content/138/1/e20161493>) and “Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention” ([http://www.cdc.gov/nceh/lead/ACCLPP/Final\\_Document\\_030712.pdf](http://www.cdc.gov/nceh/lead/ACCLPP/Final_Document_030712.pdf)).
26. Perform risk assessments or screenings as appropriate, based on universal screening requirements for patients with Medicaid or in high prevalence areas.
27. Tuberculosis testing per recommendations of the AAP Committee on Infectious Diseases, published in the current edition of the AAP Red Book: Report of the Committee on Infectious Diseases. Testing should be performed on recognition of high-risk factors.
28. See “Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents” ([http://www.nhlbi.nih.gov/guidelines/cvd\\_ped/index.htm](http://www.nhlbi.nih.gov/guidelines/cvd_ped/index.htm)).
29. Adolescents should be screened for sexually transmitted infections (STIs) per recommendations in the current edition of the AAP Red Book: Report of the Committee on Infectious Diseases.
30. Adolescents should be screened for HIV according to the US Preventive Services Task Force (USPSTF) recommendations (<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/human-immunodeficiency-virus-hiv-infection-screening>) once between the ages of 15 and 18, making every effort to preserve confidentiality of the adolescent. Those at increased risk of HIV infection, including those who are sexually active, participate in injection drug use, or are being tested for other STIs, should be tested for HIV and reassessed annually.
31. All individuals should be screened for hepatitis C virus (HCV) infection according to the USPSTF (<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hepatitis-c-screening>) and Centers for Disease Control and

Prevention (CDC) recommendations (<https://www.cdc.gov/mmwr/volumes/69/rr/rr6902a1.htm>) at least once between the ages of 18 and 79. Those at increased risk of HCV infection, including those who are persons with past or current injection drug use, should be tested for HCV infection and reassessed annually.

32. See USPSTF recommendations (<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/cervical-cancer-screening>). Indications for pelvic examinations prior to age 21 are noted in “Gynecologic Examination for Adolescents in the Pediatric Office Setting” (<http://pediatrics.aappublications.org/content/126/3/583.full>).

33. Assess whether the child has a dental home. If no dental home is identified, perform a risk assessment (<https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Oral-Health-Practice-Tools.aspx>) and refer to a dental home. Recommend brushing with fluoride toothpaste in the proper dosage for age. See “Maintaining and Improving the Oral Health of Young Children” (<http://pediatrics.aappublications.org/content/134/6/1224>).

34. Perform a risk assessment (<https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Oral-Health-Practice-Tools.aspx>). See “Maintaining and Improving the Oral Health of Young Children” (<http://pediatrics.aappublications.org/content/134/6/1224>).

35. See USPSTF recommendations (<https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/dental-caries-in-children-from-birththrough-age-5-years-screening>). Once teeth are present, fluoride varnish may be applied to all children every 3 to 6 months in the primary care or dental office. Indications for fluoride use are noted in “Fluoride Use in Caries Prevention in the Primary Care Setting” (<http://pediatrics.aappublications.org/content/134/3/626>).

36. If primary water source is deficient in fluoride, consider oral fluoride supplementation. See “Fluoride Use in Caries Prevention in the Prim

### **Summary of Changes Made to the Bright Futures/AAP Recommendations for Preventive Pediatric Health Care (Periodicity Schedule)**

This schedule reflects changes approved in November 2020 and published in March 2021. For updates and a list of previous changes made, visit [www.aap.org/periodicityschedule](http://www.aap.org/periodicityschedule).

#### **CHANGES MADE IN NOVEMBER 2020**

##### **DEVELOPMENTAL**

- Footnote 11 has been updated to read as follows: “Screening should occur per ‘Promoting Optimal Development: Identifying Infant and Young Children With Developmental Disorders Through Developmental Surveillance and Screening’ (<https://pediatrics.aappublications.org/content/145/1/e20193449>).”

##### **AUTISM SPECTRUM DISORDER**

- Footnote 12 has been updated to read as follows: “Screening should occur per ‘Identification, Evaluation, and Management of Children With Autism Spectrum Disorder’ (<https://pediatrics.aappublications.org/content/145/1/e20193447>).”

##### **HEPATITIS C VIRUS INFECTION**

- Screening for hepatitis C virus infection has been added to occur at least once between the ages of 18 and 79 years (to be consistent with recommendations of the USPSTF and CDC).

- Footnote 31 has been added to read as follows: “All individuals should be screened for hepatitis C virus (HCV) infection according to the USPSTF (<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hepatitis-c-screening>) and Centers for Disease Control and Prevention (CDC) recommendations (<https://www.cdc.gov/mmwr/volumes/69/rr/rr6902a1.htm>) at least once between the ages of 18 and 79. Those at increased risk of HCV infection, including those who are persons with past or current injection drug use, should be tested for HCV infection and reassessed annually.”

- Footnotes 31 through 35 have been renumbered as footnotes 32 through 36.

### **3. Immunizations (References: 13 - CDC, 19 – ACIP)**



- Administer immunizations in accordance with ACIP Recommended Immunization Schedules for Persons Aged 0 through 18 years, or in accordance with state law or mandates if such exist. Copies of the ACIP immunization schedules are attached at the end of this document.

**4. Prevention of Dental Caries in Children from Birth through Age 5 Years** (Reference: 67- USPSTF)

- The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation starting at age 6 months for children whose water supply is deficient in fluoride. It is also recommended that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption.

**Part III: Recommendations for Select Populations at Risk**

**1. Iron Supplementation** (Reference: 15 – USPSTF)

- The U.S. Preventive Services Task Force (USPSTF) concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for iron deficiency anemia in children ages 6 to 24 months.
- Literature scans conducted in December 2020 in MEDLINE and the Cochrane Database of Systematic Reviews showed a lack of new evidence to support an updated systematic review on the topic at this time.

**2. Hepatitis B Screening** (Reference: 68 – USPSTF)

- Hepatitis B Virus (HBV) screening should be offered to persons born in countries with a prevalence of hepatitis B surface antigen (HBsAg) of 2% or greater; adolescents and adults born in the US who did not receive the HBV vaccine as infants; persons who have injected drugs in the past or currently; men who have sex with men; persons with HIV; and sex partners, needle-sharing contacts, and household contacts of persons known to be HBsAg positive; patients with conditions requiring immunosuppressive therapy, predialysis, hemodialysis, peritoneal dialysis, or home dialysis; patients who have elevated ALT levels of unknown etiology; or developmentally disabled persons and staff in residential facilities.

**3. Behavioral Counseling to Prevent Skin Cancer** (Reference: 62- USPSTF, 75-AAP)

- All children and adolescents age 6 months to 24 years especially those with fair skin types should be counseled about minimizing ultraviolet radiation to reduce risk for skin cancer.

**4. Sexually Transmitted Infections** (Reference: 16, 17, and 18 – USPSTF)

- a) Gonorrhea - Screen for Gonorrhea in sexually active adolescent females.
- b) Chlamydia - Screen for Chlamydia in sexually active adolescent females.
- c) Behavioral Counseling - Intensive behavioral counseling is recommended for all sexually active adolescents and for adults who are at increased risk for sexually transmitted infections (STIs).

**Preventive Health Guidelines for Adults 18 years and Older**

**Part I: Adults at Average Risk**

**1. Periodic evaluations** (Reference 28- SGIM)

- a) Height and Weight Measurement: Get baseline height at initial visit and weight at every visit (References: 29 – AHA; 30 - USPSTF)
- b) Calculation of Body Mass Index: At every visit (References: 30 – USPSTF; 29 - AHA)
- c) Blood Pressure Measurement: At every visit (References: 31 - USPSTF)

- d) Pulse rate and Temperature Measurement: At every visit (Reference: 81 – National Center for Biotechnology Information, U.S. National Library of Medicine)
- e) Allergies, an updated list of medications used (prescribed and over the counter) at every visit (Reference: 83- U. S. Department of Health and Human Services. Agency for Healthcare Research and Quality, Reference: 82 - World Health Organization)

## 2. Counseling

Provide health counseling regarding the following topics: (Reference: 18, 30, 34, 35, 37, 62 – USPSTF, 38 – ACS, 84 – American Association of Family Physicians, 85 – American Medical Association)

- a) Avoidance of tobacco and/or tobacco cessation
- b) Weight loss for obese adults
- c) Promotion of healthy diet
- d) Benefits of physical activity
- e) Alcohol use
- f) Sexually transmitted infection prevention
- g) Risks and symptoms of endometrial cancer to women of average risk at the time of menopause. Strongly encourage women to report any unexpected bleeding or spotting to their physicians.
- h) Minimizing exposure to ultraviolet radiation to reduce risk for skin cancer
- i) Social determinants of health, housing, transportation availability and employment
- j) Counseling for advanced directives (living will and healthcare power of attorney) and collection of those documents, if applicable

## 3. Screening Tests

### a) Cholesterol

*Note: Recommendations from different national entities vary. We encourage review of the detailed and nuanced language in the following references: (References: 39 – USPSTF; 40 - ADA; 70 - AHA).*

- Screen men age 35 and older for lipid disorders.
- Screen women age 45 and older for lipid disorders if they are at increased risk for coronary heart disease.
- Men age 20 to 35 and women age 20 to 45 that are at increased risk for coronary heart disease should be screened for lipid disorder.
- Reasonable options for screening interval include: every 5 years; screening at < 5-year intervals for people who have lipid levels close to those warranting therapy; and screening at intervals >5 years for low-risk people who have had low or repeatedly normal lipid levels.
- For adult diabetics, perform a lipid profile at least annually. If lipid values are low-risk, the lipid profile may be performed every two years.

### b) Breast cancer screening (female only)

*Note: Recommendations from different national entities vary. We encourage review of the detailed and nuanced language in the following references: (References: 33, 41 – USPSTF; 32 – ACS)*

- Screen women aged 50 to 74 years for breast cancer with biennial mammography. Some entities recommend annual mammography in this age group.
- The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take patient context into account, including the patient's values regarding specific benefit and harm. Some entities recommend annual mammography in the 40 to 49 age group.
- The USPSTF 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.

- c) Cervical Cancer Screening (Pap) (female only) (References: 25 – USPSTF; 26 – ACS; also see Reference 27 – ACOG)
- The USPSTF recommends screening for cervical cancer every 3 years with cervical cytology alone in women aged 21 to 29 years.
  - For women aged 30 to 65 years, the USPSTF recommends screening every 3 years with cervical cytology alone, every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (cotesting).
- d) Prostate Cancer Screening (male only) (Reference: 42 – ACS; also see references 43 – USPSTF and 44 – AUA)
- Prostate cancer screening recommendations vary, and review of the detailed language in the references is recommended. The USPSTF recommends men ages 55 to 69 make an individual decision about prostate cancer screening with their clinician. The Task Force recommends against routine screening for men age 70 and older. The American Cancer Society (ACS) and the American Urological Association (AUA) recommend an informed decision-making process for men age 50 and older (ACS) or men age 55-69 (AUA) who have at least a ten-year life expectancy. Among the potential considerations for informed decision making are the risks, benefits and uncertainties of screening, as well as individual values and preferences. ACS states that prostate cancer screening should not occur without an informed decision-making process.
- e) Colorectal Cancer Screening (Reference: 46 – USPSTF; also see References 45 – ACS and 47 - CDC)
- Screen men and women age 45-75 for colorectal cancer using:
- Guaiac Fecal Occult Blood Test (gFOBT) annually or;
  - Fecal Immunochemical Testing (FIT) annually or;
  - Fecal Immunochemical Testing (FIT)-DNA every 3 years or;
  - Flexible sigmoidoscopy every 5 years or;
  - Flexible sigmoidoscopy every 10 years with FIT annually or;
  - Colonoscopy every 10 years or;
  - CT Colonography every 5 years
  - The risks and benefits of different screening methods vary.
- For pt. at high risk it is recommend you have an in-depth conversation with your physician (e.g., personal family history of colorectal disease or other hereditary syndromes).
- Note: Single-panel gFOBT performed in the medical office using a stool sample collected during a digital rectal examination is not a recommended option for CRC screening *due to its very low sensitivity for advanced adenomas and cancer.*
- Some entities recommend annual colorectal cancer screening in the 45 to 49 age group. The decision to start colorectal cancer screening before the age of 50 years should be an individual one and take into account patient context, disease risk, and include the patient's preferences and values regarding specific benefit and harm.
- f) Screening for Depression (Reference: 48, 74 – USPSFT)
- Screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.
  - Clinicians should provide or refer pregnant and postpartum persons who are at increased risk of perinatal depression to counseling interventions
- g) Screening for Alcohol Misuse (Reference: 35– USPSTF)
- Screen for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women, and providing persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce unhealthy alcohol use
- h) Screening for Unhealthy Drug Use (Reference: 79 - USPSTF)

- The USPSTF recommends screening by asking questions about unhealthy drug use in adults age 18 years or older. Screening should be implemented when services for accurate diagnosis, effective treatment, and appropriate care can be offered or referred. (Screening refers to asking questions about unhealthy drug use, not testing biological specimens.)

i) Counseling and Interventions to Address Tobacco Use (Reference: 34 – USPSTF).

- Ask all adults about tobacco use and provide tobacco cessation interventions for those who use tobacco products. Provide augmented, pregnancy-tailored counseling for pregnant women who use tobacco.

j) Screening for Obesity (Reference: 30 - USPSTF)

- Screen all adults for obesity. Clinicians should offer or refer patients with a body mass index (BMI) of 30 kg/m<sup>2</sup> or higher to intensive, multicomponent behavioral interventions.

k) HIV Serology (Reference: 56 – USPSTF)

- Screen for HIV infection in adults age 18 to 65 years. Older adults who are at increased risk should also be screened. Screen all pregnant women for HIV. The USPSTF 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.

l) Screening for Intimate Partner Violence (Reference: 59 – USPSTF)

- Screen for intimate partner violence (IPV) in women of reproductive age and provide or refer women who screen positive to ongoing support services

m) Screening for Hepatitis C (Reference: 64 – USPSTF)

- The USPSTF recommends screening for hepatitis C virus (HCV) infection in adults aged 18 to 79 years. Most adults need to be screened only once. Persons with continued risk for HCV infection (eg, PWID) should be screened periodically.

n) Screening for Lung Cancer (Reference: 69 - USPSTF)

- Screen annually for lung cancer with low-dose computed tomography in adults ages 50 to 80 who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

o) Screening for Hypertension in Adults (Reference: 80 - USPSTF)

- Screen for hypertension in adults 18 years or older with office blood pressure measurement (OBPM). Obtain blood pressure measurements outside of the clinical setting for diagnostic confirmation before starting treatment

**4. Immunizations** (References: 49, 50, 19 – ACIP)

- Administer immunizations in accordance with the ACIP Recommended Adult Immunization Schedule or in accordance with state law or regulations. See the ACIP Recommended Adult Immunization Schedule at the end of this document.

**5. Preventive Treatment**

a) Aspirin (Reference: 51 – USPSTF, 20- ACC)

- Adults aged 50 to 59 years with a ≥10% 10-year CVD risk: The USPSTF recommends initiating low-dose aspirin use for the primary prevention of cardiovascular disease (CVD) and colorectal cancer (CRC) in adults aged 50 to 59 years who have a 10% or greater 10-year CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.

b) Folic acid (Reference: 52 – USPSTF)

- All women planning or capable of pregnancy should take a daily supplement containing 0.4 to 0.8 mg (400 to 800 µg) of folic acid.

c) Chemoprevention of breast cancer (Reference: 53 – USPSTF)

- The USPSTF recommends that 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

d) Statins for Cardiovascular Disease Prevention (Reference 39-USPSTF, 20 ACC)

- The USPSTF recommends that adults without a history of cardiovascular disease (CVD) (i.e. symptomatic coronary artery disease or ischemic stroke) use a low- to moderate-dose statin for the prevention of CVD events and mortality when all the following criteria are met:
  - they are aged 40 to 75 years;
  - they have 1 or more CVD risk factors (i.e. dyslipidemia, diabetes, hypertension, or smoking);
  - they have a calculated 10-year risk of a cardiovascular event of 10% or greater.
- Identification of dyslipidemia and calculation of 10-year CVD event risk requires universal lipids screening in adults aged 40 to 75 years.

e) Prevention of Human Immunodeficiency Virus (HIV) Infection (Reference 78- USPSTF)

- The USPSTF recommends that clinicians offer preexposure prophylaxis (PrEP) with effective antiretroviral therapy to persons who are at high risk of HIV acquisition.

**Part II: Recommendations for Select Adult Populations at Increased Risk**

1. Screening for Diabetes (References: 54 – USPSTF; 55 – ADA)

Screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity.

Prevention or Delay of Type 2 Diabetes

- Criteria for testing for diabetes or prediabetes in asymptomatic adults:
  1. Adults of any age with overweight or obesity, and who have one or more of the following risk factors:
    - First-degree relative with diabetes
    - High-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
    - History of CVD
    - Hypertension (≥140/90 mmHg or on therapy for hypertension)
    - HDL cholesterol level <35 mg/dL (0.90 mmol/L) and/or a triglyceride level >250 mg/dL (2.82 mmol/L)
    - Women with polycystic ovary syndrome
    - Physical inactivity
    - Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)
  2. Patients with prediabetes should be tested yearly.
  3. Test all other adults, beginning at age 45, regardless of weight.
- Metformin therapy for prevention of type 2 diabetes should be considered in those with:
  - Prediabetes;
  - BMI ≥ 35 kg/m<sup>2</sup>
  - Age < 60 years
  - Women with prior gestational diabetes mellitus

- Consider periodic measurement of vitamin B12 levels in patients with long-term use of metformin, especially in those with anemia or peripheral neuropathy
- Refer patients with prediabetes to a program of intensive diet and physical activity with a behavioral counseling component:
  - Target 7% body weight loss
  - Encourage at least 150 minutes/week of moderate-intensity physical activity.
  - Offer follow-up, including counseling, diabetes self-management education, and ongoing support.

**2. Tuberculosis Testing: Test person at increased risk for TB, (References: 23, 24 – CDC)**

- Persons with increased risk for developing TB include the following:
  - Persons who may have recent infection, including close contacts of persons with infectious pulmonary TB; persons who have recently immigrated from areas of the world with high rates of TB; or groups of people with high rates of TB transmission (homeless persons, those with HIV infections, injection drug use, persons who reside or work in institutional settings).
  - Persons with clinical conditions that are associated with progression to active TB, including: HIV infection, injections drug use, pulmonary fibrotic lesions on CXR, underweight, silicosis, chronic renal failure on hemodialysis, diabetes, gastrectomy, jejunioileal bypass, renal and cardiac transplantation, head and neck cancer, other neoplasms, prolonged corticosteroid or immunosuppressive therapy.

**3. Syphilis Serology (References: 57, 58 – USPSTF)**

- The USPSTF recommends screening for syphilis infection in persons who are at increased risk for infection.
- Perform early screening for all pregnant women.

**4. Gonorrhea Screening (References: 17 – USPSTF)**

- Screen for gonorrhea in sexually active women age 24 years and younger and in older women who are at increased risk for infection.

**5. Chlamydia Screening (References: 16 – USPSTF)**

- Screen for chlamydia in sexually active women age 24 years and younger and in older women who are at increased risk for infection.

**6. Counseling and Interventions to Address Tobacco Use (Reference: 34 – USPSTF).**

- Ask all adults about tobacco use and provide tobacco cessation interventions for those who use tobacco products. Provide augmented, pregnancy-tailored counseling for pregnant women who use tobacco.

**7. Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults with Cardiovascular Risk Factors: Behavioral Counseling (Reference: 37 - USPSTF)**

- Offer or refer adults with cardiovascular disease (CVD) risk factors to behavioral counseling interventions to promote a healthy diet and physical activity.

**8. Screening for Hepatitis B Virus Infection (Reference: 68 - USPSTF)**

- Screen for Hepatitis B in adults at high risk for infection.
- Risk factors include country of origin, HIV positive persons, Injection drug users, household contacts or sexual partners with HBV infection, and men who have sex with men.
- Screening is also recommended for persons receiving hemodialysis or cytotoxic or immunosuppressive therapy.

**9. Sexually Transmitted Infections: Behavioral Counseling (Reference: 18- USPSTF)**

- The USPSTF recommends intensive behavioral counseling for all sexually active adolescents and for adults who are at increased risk for sexually transmitted infections (STIs)

### **Part III: Additional Recommendations for Adults Age 65 and Older**

In addition to the services recommended in the guidelines for adults age 19 and older, the following services are recommended for individuals age 65 and older.

- 1. Immunizations** (Reference: 49 – ACIP)
  - Administer immunizations in accordance with the ACIP Recommended Adult Immunization Schedule. A copy is attached.
- 2. Osteoporosis Screening** (Reference: 60 – USPSTF)
  - Screen for osteoporosis with bone measurement testing to prevent osteoporotic fractures in women 65 years and older.
  - Screen for osteoporosis with bone measurement testing to prevent osteoporotic fractures in postmenopausal women younger than 65 years who are at increased risk of osteoporosis, as determined by a formal clinical risk assessment tool.
- 3. Screening for Abdominal Aortic Aneurysm** (Reference: 61 - USPSTF)
  - Men ages 65 to 75 who have ever smoked should be screened one time for abdominal aortic aneurysm, using ultrasonography.
- 4. Prevention of Falls in Community Dwelling Older Adults** (Reference: 63 - USPSTF)
  - The USPSTF recommends exercise interventions to prevent falls in community-dwelling adults 65 years or older who are at increased risk for falls.

### **Part IV: Women Receiving Perinatal Care** (References: 49 - ACIP; 65, 73 - ACOG; 71, 72, 74, 76, 77 USPSTF)

The following summary addresses key aspects of the American College of Obstetricians and Gynecologists Guidelines for Preconception Care, Prenatal Care and Postpartum Care, as they apply in uncomplicated situations. However, it does not attempt to cover all details, and readers are encouraged to refer to the original source document for the comprehensive guidelines.

#### **I. Preconception Care**

<b>Preconception Care</b>
<p>Preconception care aims to optimize a woman's health, health behaviors, and knowledge prior to conception. Recommended care includes:</p> <ul style="list-style-type: none"><li>• History<ul style="list-style-type: none"><li>○ Gynecologic, obstetrical, medical, surgical, and psychiatric histories</li><li>○ Family history and genetic history</li><li>○ Assessment of socioeconomic, educational, and cultural context</li><li>○ Immunization status</li><li>○ Medications (prescription and nonprescription)</li></ul></li><li>• Physical Exam</li><li>• Preconception counseling and interventions, including:<ul style="list-style-type: none"><li>○ Substance use (tobacco, alcohol, and drugs)</li><li>○ Family planning</li><li>○ Sexually transmitted diseases including HIV</li></ul></li></ul>

- Nutritional counseling and folic acid use
- Safety and social supports
- Immunizations, as indicated
- Evaluation of medications
- Consideration of preconception genetic screening
- Management of medical conditions, including diabetes, hypertension, epilepsy, thyroid conditions, maternal phenylketonuria, asthma, history of bariatric surgery, hemoglobinopathies, inherited thrombophilias, obesity, and other chronic diseases

## II. Prenatal Care

Prenatal care involves an ongoing process of risk identification, assessment and management. Prenatal care visits should begin in the first trimester. A typical visit schedule is every 4 weeks for the first 28 weeks of gestation, every 2 weeks until 36 weeks of gestation, and weekly thereafter. The visit schedule may be altered for women requiring close surveillance, such as those with medical or obstetric problems or at the extremes of reproductive age.

### First Prenatal Visit

- History
  - Obstetrical and medical histories
  - Family history and genetic history
  - History of substance use and abuse, including tobacco, alcohol, drugs
  - Assessment of socioeconomic, educational, and cultural context
  - Immunization status
  - Medications (prescription and nonprescription) and allergies
- Physical exam including pelvic exam
- Education about the expected course of pregnancy, nausea and vomiting, signs and symptoms to report to the physician, laboratory tests to be done, costs, physician/midwife coverage for labor and delivery
- Education and counseling about safety practices (lap and shoulder belt use, infection prevention), counseling about substance use and abuse, psychosocial issues, nutrition, exercise, air travel
- Documentation of Last Menstrual Period (LMP) and assignment of Estimated Date of Delivery (EDD) / Estimated Date of Confinement (EDC)
- Recommend prenatal vitamins with folic acid and iron

### Each Subsequent Prenatal Visit

- Blood pressure
  - Screen for preeclampsia in pregnant women with blood pressure measurements throughout pregnancy
- Weight
- Uterine size for progressive growth and consistency with EDD
- Presence of fetal heart activity at appropriate gestational ages
- Ask about fetal movement (at appropriate gestational ages), leakage of fluid, vaginal bleeding



- Urine dipstick, as clinically indicated

### Initial Testing

- Blood type, D(Rh) type, Antibody screen
- Complete blood count
- Urinalysis
- Hepatitis B (HBsAg)
- Syphilis (VDRL/RDR)
- Rubella titer
- HIV
- Chlamydia
- For women at higher risk:
  - Gonorrhea
  - Tuberculin skin test
- Ultrasound, as indicated to address specific clinical questions

### Antepartum Genetic Screening and Diagnosis

- Family history and ethnic background are key considerations in the need for genetic testing. There are a variety of ways to screen for fetal birth defects or genetic abnormalities. Obstetric providers should provide recommended screening or establish referral sources for screening. Patients should be educated about available options.
- Screening for aneuploidy should be offered to all women who seek prenatal care before 20 weeks gestation, regardless of maternal age, along with counseling to assist in informed decision-making.

### Recommended Subsequent Testing

#### Testing recommended for all pregnant women

- Hematocrit or hemoglobin – early in third trimester
- Diabetes screening – usually at 24-28 weeks with a plasma glucose one hour after a 50-g oral glucose challenge. A 3-hour oral glucose tolerance test should be performed for those with an abnormal screening test.
- Screening for asymptomatic bacteriuria using urine culture in pregnant persons
- Screening for Group B streptococcal disease at 35-37 weeks
  - Women with group B streptococcal bacteriuria during the current pregnancy and those who have previously given birth to a neonate with early-onset group B streptococcal disease do not need to be screened but should be treated with intrapartum prophylactic antibiotics.

#### Testing recommended when indicated

- Ultrasound
  - The timing and type of ultrasound should be based on the clinical question being asked. The optimal timing for a single ultrasound examination in the absence of specific indications for a first trimester exam is 18-20 weeks of gestation.
- Antepartum tests of fetal well-being are indicated when there is increased risk of fetal demise.
  - The type of test, when to start testing, and frequency of testing are dependent upon the clinical situation.

#### Testing recommended only for women at increased risk

- Antibody tests in unsensitized D-negative patients at 28-29 weeks
- Third trimester HIV, chlamydia, syphilis, gonorrhea
- Testing at time of hospital admission: Hepatitis B

### Education and Counseling (After Initial Prenatal Visit)

- Working
- Childbirth education classes
- Newborn care provider
- Anticipating labor
- Preterm labor
- Trial of labor after Cesarean delivery
- Elective deliveries are not recommended prior to 39 weeks of gestation without medical indication and documentation of term gestation
- Breastfeeding
- Postpartum contraception/sterilization/tubal ligation
- Psychosocial issues, including substance use or abuse, depression, intimate partner violence
- Dental Care
- Parenting Classes and Maternity Education Tools
- Birth Preferences
- Sudden Infant Death Syndrome
- Assess for social determinants of health and provide referrals and resources to platforms and materials and WIC

### Treatment

- Anti-D immune globulin for unsensitized D-negative patients at 28-29 weeks and at the time of ectopic gestation, abortion, procedures associated with possible fetal-to-maternal bleeding, conditions associated with fetal-maternal hemorrhage, unexplained vaginal bleeding, delivery of a newborn who is D-positive.
- Immunizations:
  - Influenza vaccine for women who will be pregnant during the influenza season, using inactivated influenza vaccine.
  - Tdap – Administer one dose of Tdap during each pregnancy, preferably between 27 and 36 weeks gestation, regardless of the interval since prior Td or Tdap vaccination.
  - Other vaccines when specifically indicated: Hepatitis A, Hepatitis B, pneumococcal, meningococcal
- Use low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia.

### III. Postpartum Care

All women should ideally have contact with a maternal care provider within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth.

Services at that visit should include:

#### Postpartum Visit

##### Interval History

##### Physical Exam

- Weight, blood pressure, breasts, abdomen, pelvic exam (including examination of episiotomy repair and evaluation of uterine involution)

- Pap test if needed

**Testing**

- Women with gestational diabetes should be screened for diabetes 6-12 weeks postpartum

**Counseling**

- Breastfeeding
- Screen for postpartum depression, postpartum blues
- Discuss contraception and plans for future pregnancies
- Discuss implication of any pregnancy complications on future pregnancies
- Review immunizations and administer Tdap, rubella and/or varicella vaccines if indicated
- Counseling regarding behaviors, such as tobacco, alcohol, and other substance use, with referrals for follow up care if appropriate
- Physical Activity
- Importance of ongoing well-women care
- Assess for social determinants of health and provide referrals and resources to platforms and materials and WIC

## Immunization Schedules 2021

### Part I: Child & Adolescent for Ages 0-18 Years Immunization Schedule:

**Table 1** Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

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). School entry and adolescent vaccine age groups are shaded in gray.

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)	1 <sup>st</sup> dose	← 2 <sup>nd</sup> dose →		← 3 <sup>rd</sup> dose →													
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	← 4 <sup>th</sup> dose →			5 <sup>th</sup> dose								
Haemophilus influenzae type b (Hib)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See Notes	← 3 <sup>rd</sup> or 4 <sup>th</sup> dose, See Notes →											
Pneumococcal conjugate (PCV13)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	← 4 <sup>th</sup> dose →											
Inactivated poliovirus (IPV <18 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	← 3 <sup>rd</sup> dose →					4 <sup>th</sup> dose							
Influenza (IIV)	Annual vaccination 1 or 2 doses										Annual vaccination 1 dose only						
Influenza (LAIV4)	Annual vaccination 1 or 2 doses										Annual vaccination 1 dose only						
Measles, mumps, rubella (MMR)					See Notes	← 1 <sup>st</sup> dose →			2 <sup>nd</sup> dose								
Varicella (VAR)						← 1 <sup>st</sup> dose →			2 <sup>nd</sup> dose								
Hepatitis A (HepA)					See Notes	2-dose series, See Notes											
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)															Tdap		
Human papillomavirus (HPV)														*	See Notes		
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2years)			See Notes												1 <sup>st</sup> dose	2 <sup>nd</sup> dose	
Meningococcal B															See Notes		
Pneumococcal polysaccharide (PPSV23)												See Notes					

Range of recommended ages for all children
Range of recommended ages for catch-up immunization
Range of recommended ages for certain high-risk groups
Recommended based on shared clinical decision-making or \*can be used in this age group
No recommendation/ not applicable

Administer recommended vaccines if immunization history is incomplete or unknown. Do not restart or add doses to vaccine series for extended intervals between doses. When a vaccine is not administered at the recommended age, administer at a subsequent visit. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

## **Part II: Child & Adolescent: 0 to 18 Notes**

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

For vaccination recommendations for persons ages 19 years or older, see the [Recommended Adult Immunization Schedule](#), 2021.

### **Additional information**

#### COVID-19 Vaccination

**ACIP recommends use of COVID-19 vaccines within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine. Interim ACIP recommendations for the use of COVID-19 vaccines can be found on the [ACIP Vaccine Recommendations and Guidelines](#) page.**

- Consult relevant ACIP statements for detailed [recommendations](#).
- For information on contraindications and precautions for the use of a vaccine, consult the [General Best Practice Guidelines for Immunization](#) and relevant [ACIP statements](#).
- For calculating intervals between doses, 4 weeks = 28 days. Intervals of  $\geq 4$  months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as “through.”
- Vaccine doses administered  $\leq 4$  days before the minimum age or interval are considered valid. Doses of any vaccine administered  $\geq 5$  days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated as age-appropriate. **The repeat dose should be spaced after the invalid dose by the recommended minimum interval.** For further details, see [Table 3-1](#), Recommended and minimum ages and intervals between vaccine doses, in [General Best Practice Guidelines for Immunization](#).
- Information on travel vaccination requirements and recommendations is available at <https://www.cdc.gov/travel/>.
- For vaccination of persons with immunodeficiencies, see [Table 8-1](#), Vaccination of persons with primary and secondary immunodeficiencies, in [General Best Practice Guidelines for Immunization](#), and Immunization in Special Clinical Circumstances (In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2018 report of the Committee on Infectious Diseases*. 31st ed. Itasca, IL: American Academy of Pediatrics, 2018:67–111).
- For information about vaccination in the setting of a vaccine-preventable disease outbreak, contact your state or local health department.
- The National Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information, see [www.hrsa.gov/vaccinecompensation/index.html](http://www.hrsa.gov/vaccinecompensation/index.html) [external icon](#).

Diphtheria, tetanus, and pertussis (DTaP) vaccination (minimum age: 6 weeks [4 years for Kinrix or Quadracel])

#### Routine vaccination

- 5-dose series at 2, 4, 6, 15–18 months, 4–6 years
  - **Prospectively:** Dose 4 may be administered as early as age 12 months if at least 6 months have elapsed since dose 3.
  - **Retrospectively:** A 4th dose that was inadvertently administered as early as age 12 months may be counted if at least 4 months have elapsed since dose 3.

#### Catch-up vaccination

- Dose 5 is not necessary if dose 4 was administered at age 4 years or older **and** at least 6 months after dose 3.

- For other catch-up guidance, see [Table 2](#).

Special situations

- **Wound management** in children less than age 7 years with history of 3 or more doses of tetanus-toxoid-containing vaccine: For all wounds except clean and minor wounds, administer DTaP if more than 5 years since last dose of tetanus-toxoid-containing vaccine. For detailed information, see [www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm](http://www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm).

***Haemophilus influenzae type b vaccination***

***(minimum age: 6 weeks)***

Routine vaccination

- **ActHIB, Hiberix, or Pentacel:** 4-dose series at 2, 4, 6, 12–15 months
- **PedvaxHIB:** 3-dose series at 2, 4, 12–15 months

Catch-up vaccination

- **Dose 1 at age 7–11 months:** Administer dose 2 at least 4 weeks later and dose 3 (final dose) at age 12–15 months or 8 weeks after dose 2 (whichever is later).
- **Dose 1 at age 12–14 months:** Administer dose 2 (final dose) at least 8 weeks after dose 1.
- **Dose 1 before age 12 months and dose 2 before age 15 months:** Administer dose 3 (final dose) 8 weeks after dose 2.
- **2 doses of PedvaxHIB before age 12 months:** Administer dose 3 (final dose) at age 12–59 months and at least 8 weeks after dose 2.
- **1 dose administered at age 15 months or older:** No further doses needed
- **Unvaccinated at age 15–59 months:** Administer 1 dose.
- **Previously unvaccinated children age 60 months or older who are not considered high risk:** Do not require catch-up vaccination
- For other catch-up guidance, see [Table 2](#).

Special situations

- **Chemotherapy or radiation treatment:**

**12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

*Doses administered within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.*

- **Hematopoietic stem cell transplant (HSCT):**
  - 3-dose series 4 weeks apart starting 6 to 12 months after successful transplant regardless of Hib vaccination history
- **Anatomic or functional asplenia (including sickle cell disease):**

**12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

***Unvaccinated\* persons age 5 years or older***

- 1 dose

- **Elective splenectomy:**

***Unvaccinated\* persons age 15 months or older***

- 1 dose (preferably at least 14 days before procedure)

- **HIV infection:**

**12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

***Unvaccinated\* persons age 5–18 years***

- 1 dose

- **Immunoglobulin deficiency, early component complement deficiency:**

**12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

\*Unvaccinated = Less than routine series (through age 14 months) OR no doses (age 15 months or older)

**Hepatitis A vaccination**

**(minimum age: 12 months for routine vaccination)**

Routine vaccination

- 2-dose series (minimum interval: 6 months) beginning at age 12 months

Catch-up vaccination

- Unvaccinated persons through age 18 years should complete a 2-dose series (minimum interval: 6 months).
- Persons who previously received 1 dose at age 12 months or older should receive dose 2 at least 6 months after dose 1.
- Adolescents age 18 years or older may receive the combined HepA and HepB vaccine, **Twinrix**<sup>®</sup>, as a 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).

International travel

- Persons traveling to or working in countries with high or intermediate endemic hepatitis A (<http://www.cdc.gov/travel/>)
  - **Infants age 6–11 months:** 1 dose before departure; revaccinate with 2 doses, separated by at least 6 months, between age 12–23 months.
  - **Unvaccinated age 12 months or older:** Administer dose 1 as soon as travel is considered.

**Hepatitis B vaccination (minimum age: birth)**

Birth dose (monovalent HepB vaccine only)

- **Mother is HBsAg-negative:** 1 dose within 24 hours of birth for **all** medically stable infants  $\geq 2,000$  grams. Infants  $< 2,000$  grams: Administer 1 dose at chronological age 1 month or hospital discharge (whichever is earlier and even if weight is still  $< 2,000$  grams).
- **Mother is HBsAg-positive:**
  - Administer **HepB vaccine** and **hepatitis B immune globulin (HBIG)** (in separate limbs) within 12 hours of birth, regardless of birth weight. For infants  $< 2,000$  grams, administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
  - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
- **Mother's HBsAg status is unknown:**
  - Administer **HepB vaccine** within 12 hours of birth, regardless of birth weight.
  - For infants  $< 2,000$  grams, administer **HBIG** in addition to HepB vaccine (in separate limbs) within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
  - Determine mother's HBsAg status as soon as possible. If mother is HBsAg-positive, administer **HBIG** to infants  $\geq 2,000$  grams as soon as possible, but no later than 7 days of age.

Routine series

- 3-dose series at 0, 1–2, 6–18 months (use monovalent HepB vaccine for doses administered before age 6 weeks)
- Infants who did not receive a birth dose should begin the series as soon as feasible (see [Table 2](#)).
- Administration of **4 doses** is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum age** for the final (3rd or 4th) dose: 24 weeks
- **Minimum intervals:** dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks (when 4 doses are administered, substitute “dose 4” for “dose 3” in these calculations)

Catch-up vaccination

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months.
- Adolescents age 11–15 years may use an alternative 2-dose schedule with at least 4 months between doses (adult formulation **Recombivax HB** only).

- Adolescents age 18 years or older may receive a 2-dose series of HepB (**Hepelisav-B®**) at least 4 weeks apart.
- Adolescents age 18 years or older may receive the combined HepA and HepB vaccine, **Twinrix**, as a 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).
- For other catch-up guidance, see [Table 2](#).

#### Special situations

- Revaccination is not generally recommended for persons with a normal immune status who were vaccinated as infants, children, adolescents, or adults.
- **Revaccination** may be recommended for certain populations, including:
  - **Infants born to HBsAg-positive mothers**
  - **Hemodialysis patients**
  - **Other immunocompromised persons**
- For detailed revaccination recommendations, see <http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html>.

#### **Human papillomavirus vaccination (minimum age: 9 years)**

##### Routine and catch-up vaccination

- HPV vaccination routinely recommended at **age 11–12 years (can start at age 9 years)** and catch-up HPV vaccination recommended for all persons through age 18 years if not adequately vaccinated
- 2- or 3-dose series depending on age at initial vaccination:
  - **Age 9 –14 years at initial vaccination:** 2-dose series at 0, 6–12 months (minimum interval: 5 months; repeat dose if administered too soon)
  - **Age 15 years or older at initial vaccination:** 3-dose series at 0, 1–2 months, 6 months (minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 12 weeks / dose 1 to dose 3: 5 months; repeat dose if administered too soon)
- **Interrupted schedules:** If vaccination schedule is interrupted, the series does not need to be restarted.
- No additional dose recommended after completing series with recommended dosing intervals using any HPV vaccine.

##### Special situations

- **Immunocompromising conditions, including HIV infection:** 3-dose series as above
- **History of sexual abuse or assault:** Start at age 9 years.
- **Pregnancy:** HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

#### **Influenza vaccination (minimum age: 6 months [IIV], 2 years [LAIV4], 18 years [recombinant influenza vaccine, RIV4])**

##### Routine vaccination

- Use any influenza vaccine appropriate for age and health status annually:
  - 2 doses, separated by at least 4 weeks, for **children age 6 months–8 years** who have received fewer than 2 influenza vaccine doses before July 1, 2020, or whose influenza vaccination history is unknown (administer dose 2 even if the child turns 9 between receipt of dose 1 and dose 2)
  - 1 dose for **children age 6 months–8 years** who have received at least 2 influenza vaccine doses before July 1, 2020
  - 1 dose for **all persons age 9 years or older**
- For the 2021–22 season, see the 2021–22 ACIP influenza vaccine recommendations.

##### Special situations

- **Egg allergy, hives only:** Any influenza vaccine appropriate for age and health status annually
- **Egg allergy with symptoms other than hives** (e.g., angioedema, respiratory distress, need for emergency medical services or epinephrine): Any influenza vaccine appropriate for age and health status annually. If using an influenza vaccine other than Flublok or Flucelvax, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- Severe allergic reactions to vaccines can occur even in the absence of a history of previous allergic reaction. All vaccination providers should be familiar with the office emergency plan and certified in cardiopulmonary resuscitation.
- A previous severe allergic reaction to influenza vaccine is a contraindication to future receipt of any influenza vaccine.
- **LAIV4 should not be used** in persons with the following conditions or situations:



- History of severe allergic reaction to a previous dose of any influenza vaccine or to any vaccine component (excluding egg, see details above)
- Receiving aspirin or salicylate-containing medications
- Age 2–4 years with history of asthma or wheezing
- Immunocompromised due to any cause (including medications and HIV infection)
- Anatomic or functional asplenia
- Close contacts or caregivers of severely immunosuppressed persons who require a protected environment
- Pregnancy
- Cochlear implant
- Cerebrospinal fluid-orpharyngeal communication
- Children less than age 2 years
- Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days

***Measles, mumps, and rubella vaccination (minimum age: 12 months for routine vaccination)***

Routine vaccination

- 2-dose series at 12–15 months, 4–6 years
- Dose 2 may be administered as early as 4 weeks after dose 1.

Catch-up vaccination

- Unvaccinated children and adolescents: 2-dose series at least 4 weeks apart
- The maximum age for use of MMRV is 12 years.

Special situations

**International travel**

- **Infants age 6–11 months:** 1 dose before departure; revaccinate with 2-dose series at age 12–15 months (12 months for children in high-risk areas) and dose 2 as early as 4 weeks later.
- **Unvaccinated children age 12 months or older:** 2-dose series at least 4 weeks apart before departure

***Meningococcal serogroup A, C, W, Y vaccination (minimum age: 2 months [MenACWY-CRM, Menveo], 9 months [MenACWY-D, Menactra], 2 years [MenACWY-TT, MenQuadfi])***

Routine vaccination

- 2-dose series at 11–12 years, 16 years

Catch-up vaccination

- Age 13–15 years: 1 dose now and booster at age 16–18 years (minimum interval: 8 weeks)
- Age 16–18 years: 1 dose

Special situations

**Anatomic or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:**

- **Menveo**

- Dose 1 at age 8 weeks: 4-dose series at 2, 4, 6, 12 months
- Dose 1 at age 3–6 months: 3- or 4- dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
- Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
- Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart

- **Menactra**

- **Persistent complement component deficiency or complement inhibitor use:**
  - Age 9–23 months: 2-dose series at least 12 weeks apart
  - Age 24 months or older: 2-dose series at least 8 weeks apart

- **Anatomic or functional asplenia, sickle cell disease, or HIV infection:**
  - Age 9–23 months: Not recommended
  - Age 24 months or older: 2-dose series at least 8 weeks apart
  - **Menactra** must be administered at least 4 weeks after completion of PCV13 series.
- **MenQuadfi**

- Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart

**Travel in countries with hyperendemic or epidemic meningococcal disease, including countries in the African meningitis belt or during the Hajj**  
[\(http://www.cdc.gov/travel/\)](http://www.cdc.gov/travel/):

- Children age less than 24 months:
  - **Menveo (age 2–23 months)**
    - Dose 1 at age 8 weeks: 4-dose series at 2, 4, 6, 12 months
    - Dose 1 at age 3–6 months: 3- or 4- dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
    - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
  - **Menactra (age 9–23 months)**
    - 2-dose series (dose 2 at least 12 weeks after dose 1; dose 2 may be administered as early as 8 weeks after dose 1 in travelers)
- Children age 2 years or older: 1 dose **Menveo, Menactra, or MenQuadfi**

**First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits:**

- 1 dose **Menveo, Menactra, or MenQuadfi**

**Adolescent vaccination of children who received MenACWY prior to age 10 years:**

- **Children for whom boosters are recommended** because of an ongoing increased risk of meningococcal disease (e.g., those with complement deficiency, HIV, or asplenia): Follow the booster schedule for persons at increased risk.
- **Children for whom boosters are not recommended** (e.g., a healthy child who received a single dose for travel to a country where meningococcal disease is endemic): Administer MenACWY according to the recommended adolescent schedule with dose 1 at age 11–12 years and dose 2 at age 16 years.

**Note: Menactra** should be administered either before or at the same time as DTaP. For MenACWY **booster dose recommendations** for groups listed under “Special situations” and in an outbreak setting and additional meningococcal vaccination information, see <https://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm>.

**Meningococcal serogroup B vaccination (minimum age: 10 years [MenB-4C, Bexsero; MenB-FHbp, Trumenba])**

Shared Clinical Decision-Making

- **Adolescents not at increased risk** age 16–23 years (preferred age 16–18 years) based on shared clinical decision-making:
  - **Bexsero:** 2-dose series at least 1 month apart
  - **Trumenba:** 2-dose series at least 6 months apart; if dose 2 is administered earlier than 6 months, administer a 3rd dose at least 4 months after dose 2.

Special situations

**Anatomic or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:**

- **Bexsero:** 2-dose series at least 1 month apart
- **Trumenba:** 3-dose series at 0, 1–2, 6 months

**Bexsero** and **Trumenba** are not interchangeable; the same product should be used for all doses in a series. For MenB **booster dose recommendations** for groups listed under “Special situations” and in an outbreak setting and additional meningococcal vaccination information, see <https://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm>.

**Pneumococcal vaccination (minimum age: 6 weeks [PCV13], 2 years [PPSV23])**

Routine vaccination with PCV13

- 4-dose series at 2, 4, 6, 12–15 months

Catch-up vaccination with PCV13

- 1 dose for healthy children age 24–59 months with any incomplete\* PCV13 series
- For other catch-up guidance, see [Table 2](#).

Special situations

**Underlying conditions below: When both PCV13 and PPSV23 are indicated, administer PCV13 first. PCV13 and PPSV23 should not be administered during same visit. Chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma treated with high-dose, oral corticosteroids); diabetes mellitus:**

**Age 2–5 years**

- Any incomplete\* series with:
  - 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
  - Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after completing all recommended PCV13 doses)

**Age 6–18 years**

- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after completing all recommended PCV13 doses)

**Cerebrospinal fluid leak, cochlear implant:**

**Age 2–5 years**

- Any incomplete\* series with:
  - 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
  - Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)

**Age 6–18 years**

- No history of either PCV13 or PPSV23: 1 dose PCV13, 1 dose PPSV23 at least 8 weeks later
- Any PCV13 but no PPSV23: 1 dose PPSV23 at least 8 weeks after the most recent dose of PCV13
- PPSV23 but no PCV13: 1 dose PCV13 at least 8 weeks after the most recent dose of PPSV23

**Sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiency; HIV infection; chronic renal failure; nephrotic syndrome; malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and other diseases associated with treatment with immunosuppressive drugs or radiation therapy; solid organ transplantation; multiple myeloma:**

**Age 2–5 years**

- Any incomplete\* series with:
  - 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
  - Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose) and a 2nd dose of PPSV23 5 years later

**Age 6–18 years**

- No history of either PCV13 or PPSV23: 1 dose PCV13, 2 doses PPSV23 (dose 1 of PPSV23 administered 8 weeks after PCV13 and dose 2 of PPSV23 administered at least 5 years after dose 1 of PPSV23)
- Any PCV13 but no PPSV23: 2 doses PPSV23 (dose 1 of PPSV23 administered 8 weeks after the most recent dose of PCV13 and dose 2 of PPSV23 administered at least 5 years after dose 1 of PPSV23)
- PPSV23 but no PCV13: 1 dose PCV13 at least 8 weeks after the most recent PPSV23 dose and a 2nd dose of PPSV23 administered 5 years after dose 1 of PPSV23 and at least 8 weeks after a dose of PCV13

**Chronic liver disease, alcoholism:**

**Age 6–18 years**

- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)

\**Incomplete series* = Not having received all doses in either the recommended series or an age-appropriate catch-up series. See Tables 8, 9, and 11 in the in the ACIP pneumococcal vaccine recommendations (<https://www.cdc.gov/mmwr/pdf/rr/rr5911.pdfpdf icon>) for complete schedule details.

### **Poliovirus vaccination (minimum age: 6 weeks)**

#### Routine vaccination

- 4-dose series at ages 2, 4, 6–18 months, 4–6 years; administer the final dose on or after age 4 years and at least 6 months after the previous dose.
- 4 or more doses of IPV can be administered before age 4 years when a combination vaccine containing IPV is used. However, a dose is still recommended on or after age 4 years and at least 6 months after the previous dose.

#### Catch-up vaccination

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- IPV is not routinely recommended for U.S. residents age 18 years or older.

#### **Series containing oral polio vaccine (OPV), either mixed OPV-IPV or OPV-only series:**

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See <https://www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm>.
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements.
  - Doses of OPV administered before April 1, 2016, should be counted (unless specifically noted as administered during a campaign).
  - Doses of OPV administered on or after April 1, 2016, should not be counted. For guidance to assess doses documented as “OPV,” see <http://www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm>.
- For other catch-up guidance, see [Table 2](#).

### **Rotavirus vaccination (minimum age: 6 weeks)**

#### Routine vaccination

- **Rotarix:** 2-dose series at 2 and 4 months
- **RotaTeq:** 3-dose series at 2, 4, and 6 months
- If any dose in the series is either **RotaTeq** or unknown, default to 3-dose series.

#### Catch-up vaccination

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see [Table 2](#).

### **Tetanus, diphtheria, and pertussis (Tdap) vaccination (minimum age: 11 years for routine vaccination, 7 years for catch-up vaccination)**

#### Routine vaccination

- **Adolescents age 11–12 years:** 1 dose Tdap
- **Pregnancy:** 1 dose Tdap during each pregnancy, preferably during the early part of gestational weeks 27–36
- Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

#### Catch-up vaccination

- **Adolescents age 13–18 years who have not received Tdap:** 1 dose Tdap, then Td or Tdap booster every 10 years
- **Persons age 7–18 years not fully vaccinated\* with DTaP:** 1 dose Tdap as part of the catch-up series (preferably the first dose); if additional doses are needed, use Td or Tdap.
- **Tdap administered at age 7–10 years**
  - **Children age 7–9 years** who receive Tdap should receive the routine Tdap dose at age 11–12 years.
  - **Children age 10 years** who receive Tdap do not need the routine Tdap dose at age 11–12 years.
- **DTaP inadvertently administered on or after age 7 years:**
  - **Children age 7–9 years:** DTaP may count as part of catch-up series. Administer routine Tdap dose at age 11–12 years.
  - **Children age 10–18 years:** Count dose of DTaP as the adolescent Tdap booster.
- For other catch-up guidance, see [Table 2](#).

### Special situations

- **Wound management** in persons age 7 years 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 last dose of tetanus-toxoid-containing vaccine; for all other wounds, administer Tdap or Td if more than 5 years since last dose of tetanus-toxoid-containing vaccine. 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, use Tdap. For detailed information, see <https://www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm>.

\*Fully vaccinated = 5 valid doses of DTaP OR 4 valid doses of DTaP if dose 4 was administered at age 4 years or older.

### **Varicella vaccination (minimum age: 12 months)**

#### Routine vaccination

- 2-dose series at 12–15 months, 4–6 years
- Dose 2 may be administered as early as 3 months after dose 1 (a dose administered after a 4-week interval may be counted).

#### Catch-up vaccination

- Ensure persons age 7–18 years without evidence of immunity (see *MMWR* at <http://www.cdc.gov/mmwr/pdf/rr/rr5604.pdfpdf icon> ) have a 2-dose series:
  - **Age 7–12 years:** routine interval: 3 months (a dose administered after a 4-week interval may be counted)
  - **Age 13 years or older:** routine interval: 4–8 weeks (minimum interval: 4 weeks)
  - The maximum age for use of MMRV is 12 years.

### **Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind — United States, 2019.**

Please follow link to the CDC recommendation: <https://www.cdc.gov/vaccines/schedules/hcp/imz/catchup.html>

**Table 1** Recommended Adult Immunization Schedule by Age Group, United States, 2021

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
<b>Influenza inactivated (IIV) or Influenza recombinant (RIV4)</b> <i>or</i>	1 dose annually			
<b>Influenza live, attenuated (LAIV4)</b>				
<b>Tetanus, diphtheria, pertussis (Tdap or Td)</b>	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			
<b>Measles, mumps, rubella (MMR)</b>	1 or 2 doses depending on indication (if born in 1957 or later)			
<b>Varicella (VAR)</b>	2 doses (if born in 1980 or later)		2 doses	
<b>Zoster recombinant (RZV)</b>			2 doses	
<b>Human papillomavirus (HPV)</b>	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
<b>Pneumococcal conjugate (PCV13)</b>	1 dose			1 dose
<b>Pneumococcal polysaccharide (PPSV23)</b>	1 or 2 doses depending on indication			1 dose
<b>Hepatitis A (HepA)</b>	2 or 3 doses depending on vaccine			
<b>Hepatitis B (HepB)</b>	2 or 3 doses depending on vaccine			
<b>Meningococcal A, C, W, Y (MenACWY)</b>	1 or 2 doses depending on indication, see notes for booster recommendations			
<b>Meningococcal B (MenB)</b>	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
<b>Haemophilus influenzae type b (Hib)</b>	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

Part IV: Adult Notes

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2021

For vaccine recommendations for persons 18 years of age or younger, see the [Recommended Child/ Adolescent Immunization Schedule](#).

Additional information

**COVID-19 Vaccination**

ACIP recommends use of COVID-19 vaccines within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine. Interim ACIP recommendations for the use of COVID-19 vaccines can be found on the [ACIP Vaccine Recommendations and Guidelines](#) page.

**Haemophilus influenzae type b vaccination**

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib; if elective splenectomy, 1 dose, preferably at least 14 days before splenectomy
- Hematopoietic stem cell transplant (HSCT): 3-dose series 4 weeks apart starting 6–12 months after successful transplant, regardless of Hib vaccination history

**Hepatitis A vaccination**

Routine vaccination

- Not at risk but want protection from hepatitis A (identification of risk factor not required): 2-dose series HepA (Havrix 6–12 months apart or Vaqta 6–18 months apart [minimum interval: 6 months]) or 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])

Special situations

- At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above
  - Chronic liver disease (e.g., persons with hepatitis B, hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
  - HIV infection
  - Men who have sex with men
  - Injection or noninjection drug use
  - Persons experiencing homelessness
  - Work with hepatitis A virus in research laboratory or with nonhuman primates with hepatitis A virus infection
  - Travel in countries with high or intermediate endemic hepatitis A (HepA-HepB [Twinrix] may be administered on an accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months)
  - Close, personal contact with international adoptee (e.g., household or regular babysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
  - Pregnancy if at risk for infection or severe outcome from infection during pregnancy
  - Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required)

**Hepatitis B vaccination**

Routine vaccination

- Not at risk but want protection from hepatitis B (identification of risk factor not required): 2- or 3-dose series (2-dose series Hepsiv-B at least 4 weeks apart [2-dose series HepB only applies when 2 doses of Hepsiv-B are used at least 4 weeks apart] or 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]) or 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])

Special situations

- At risk for hepatitis B virus infection: 2-dose (Hepsiv-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; persons with diabetes mellitus age younger than 60 years, shared clinical decision-making for persons age 60 years or older)
- Incarcerated persons
- Travel in countries with high or intermediate endemic hepatitis B
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy. HepHisav-B not currently recommended due to lack of safety data in pregnant women

### **Human papillomavirus vaccination**

#### Routine vaccination

- HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
  - Age 15 years or older at initial vaccination: 3-dose series at 0, 1–2 months, 6 months (minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 12 weeks / dose 1 to dose 3: 5 months; repeat dose if administered too soon)
  - Age 9–14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart: 1 additional dose
  - Age 9–14 years at initial vaccination and received 2 doses at least 5 months apart: HPV vaccination series complete, no additional dose needed
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended after completing series with recommended dosing intervals using any HPV vaccine

#### Shared clinical decision-making

- Some adults age 27–45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

#### Special situations

- Age ranges recommended above for routine and catch-up vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, regardless of age at initial vaccination
- Pregnancy: HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

### **Influenza vaccination**

#### Routine vaccination

- Persons age 6 months or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For additional guidance, see [www.cdc.gov/flu/professionals/index.htm](http://www.cdc.gov/flu/professionals/index.htm)

#### Special situations

- Egg allergy, hives only: 1 dose any influenza vaccine appropriate for age and health status annually
- Egg allergy—any symptom other than hives (e.g., angioedema, respiratory distress): 1 dose any influenza vaccine appropriate for age and health status annually. If using an influenza vaccine other than RIV4 or cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- Severe allergic reactions to any vaccine can occur even in the absence of a history of previous allergic reaction. Therefore, all vaccine providers should be familiar with the office emergency plan and certified in cardiopulmonary resuscitation.
- A previous severe allergic reaction to any influenza vaccine is a contraindication to future receipt of the vaccine.
- LAIV4 should not be used in persons with the following conditions or situations:
  - History of severe allergic reaction to any vaccine component (excluding egg) or to a previous dose of any influenza vaccine



- Immunocompromised due to any cause (including medications and HIV infection)
- Anatomic or functional asplenia
- Close contacts or caregivers of severely immunosuppressed persons who require a protected environment
- Pregnancy
- Cranial CSF/oropharyngeal communications
- Cochlear implant
- Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days
- Adults 50 years or older
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

### **Measles, mumps, and rubella vaccination**

#### Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: 1 dose
  - Evidence of immunity: Born before 1957 (health care personnel, see below), documentation of receipt of MMR vaccine, laboratory evidence of immunity or disease (diagnosis of disease without laboratory confirmation is not evidence of immunity)

#### Special situations

- Pregnancy with no evidence of immunity to rubella: MMR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose
- Nonpregnant women of childbearing age with no evidence of immunity to rubella: 1 dose
- HIV infection with CD4 count  $\geq 200$  cells/mm<sup>3</sup> for at least 6 months and no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart; MMR contraindicated for HIV infection with CD4 count  $< 200$  cells/mm<sup>3</sup>
- Severe immunocompromising conditions: MMR contraindicated
- Students in postsecondary educational institutions, international travelers, and household or close, personal contacts of immunocompromised persons with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart if previously did not receive any doses of MMR or 1 dose if previously received 1 dose MMR
- Health care personnel:
  - Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
  - Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for rubella

### **Meningococcal vaccination**

#### Special situations for MenACWY

- Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use: 2-dose series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, microbiologists routinely exposed to *Neisseria meningitidis*: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate every 5 years if risk remains
- First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) and military recruits: 1 dose MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under “Special situations” and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see [www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm](http://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm)

#### Shared clinical decision-making for MenB

- Adolescents and young adults age 16–23 years (age 16–18 years preferred) not at increased risk for meningococcal disease: Based on shared clinical decision-making, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

#### Special situations for MenB

- Anatomical or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use, microbiologists routinely exposed to *Neisseria meningitidis*: 2-dose primary series MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under “Special situations” and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see [www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm](http://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm)

#### Pneumococcal vaccination

##### Routine vaccination

- Age 65 years or older (immunocompetent—see [www.cdc.gov/mmwr/volumes/68/wr/mm6846a5.htm](http://www.cdc.gov/mmwr/volumes/68/wr/mm6846a5.htm)): 1 dose PPSV23
  - If PPSV23 was administered prior to age 65 years, administer 1 dose PPSV23 at least 5 years after previous dose

##### Shared clinical decision-making

- Age 65 years or older (immunocompetent): 1 dose PCV13 based on shared clinical decision-making if previously not administered.
  - PCV13 and PPSV23 should not be administered during the same visit
  - If both PCV13 and PPSV23 are to be administered, PCV13 should be administered first
  - PCV13 and PPSV23 should be administered at least 1 year apart

##### Special situations

(<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6140a4.htm>)

- Age 19–64 years with chronic medical conditions (chronic heart [excluding hypertension], lung, or liver disease, diabetes), alcoholism, or cigarette smoking: 1 dose PPSV23
- Age 19 years or older with immunocompromising conditions (congenital or acquired immunodeficiency [including B- and T-lymphocyte deficiency, complement deficiencies, phagocytic disorders, HIV infection], chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression [e.g., drug or radiation therapy], solid organ transplant, multiple myeloma) or anatomical or functional asplenia (including sickle cell disease and other hemoglobinopathies): 1 dose PCV13 followed by 1 dose PPSV23 at least 8 weeks later, then another dose PPSV23 at least 5 years after previous PPSV23; at age 65 years or older, administer 1 dose PPSV23 at least 5 years after most recent PPSV23 (note: only 1 dose PPSV23 recommended at age 65 years or older)
- Age 19 years or older with cerebrospinal fluid leak or cochlear implant: 1 dose PCV13 followed by 1 dose PPSV23 at least 8 weeks later; at age 65 years or older, administer another dose PPSV23 at least 5 years after PPSV23 (note: only 1 dose PPSV23 recommended at age 65 years or older)

#### Tetanus, diphtheria, and pertussis vaccination

##### Routine vaccination

- Previously did not receive Tdap at or after age 11 years: 1 dose Tdap, then Td or Tdap every 10 years

##### Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: At least 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose); Td or Tdap every 10 years thereafter
- Pregnancy: 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36

- Wound management: Persons with 3 or more doses of tetanus-toxoid-containing vaccine: For clean and minor wounds, administer Tdap or Td if more than 10 years since last dose of tetanus-toxoid-containing vaccine; for all other wounds, administer Tdap or Td if more than 5 years since last dose of tetanus-toxoid-containing vaccine. Tdap is preferred for persons who have not previously received Tdap or whose Tdap history is unknown. If a tetanus-toxoid-containing vaccine is indicated for a pregnant woman, use Tdap. For detailed information, see [www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm](http://www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm)

### **Varicella vaccination**

#### Routine vaccination

- No evidence of immunity to varicella: 2-dose series 4–8 weeks apart if previously did not receive varicella-containing vaccine (VAR or MMRV [measles-mumps-rubella-varicella vaccine] for children); if previously received 1 dose varicella-containing vaccine, 1 dose at least 4 weeks after first dose
  - Evidence of immunity: U.S.-born before 1980 (except for pregnant women and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

#### Special situations

- Pregnancy with no evidence of immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose if previously received 1 dose varicella-containing vaccine or dose 1 of 2-dose series (dose 2: 4–8 weeks later) if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- Health care personnel with no evidence of immunity to varicella: 1 dose if previously received 1 dose varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- HIV infection with CD4 count  $\geq 200$  cells/mm<sup>3</sup> with no evidence of immunity: Vaccination may be considered (2 doses 3 months apart); VAR contraindicated for HIV infection with CD4 count  $< 200$  cells/mm<sup>3</sup>
- Severe immunocompromising conditions: VAR contraindicated

### **Zoster vaccination**

#### Routine vaccination

- Age 50 years or older: 2-dose series RZV (Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon), regardless of previous herpes zoster or history of zoster vaccine live (ZVL, Zostavax) vaccination (administer RZV at least 2 months after ZVL)

#### Special situations

- Pregnancy: Consider delaying RZV until after pregnancy if RZV is otherwise indicated.
- Severe immunocompromising conditions (including HIV infection with CD4 count  $< 200$  cells/mm<sup>3</sup>): Recommended use of RZV under review

### **Vaccines in the Adult Immunization Schedule**

This schedule is recommended by the Advisory Committee on Immunization Practices ([ACIP](#)) and approved by the Centers for Disease Control and Prevention ([CDC](#)), American College of Physicians ([ACPexternal icon](#)), American Academy of Family Physicians ([AAFPexternal icon](#)), American College of Obstetricians and Gynecologists ([ACOGexternal icon](#)), American College of Nurse-Midwives ([ACNMexternal icon](#)), and American Academy of Physician Assistants ([AAPAexternal icon](#)).

The comprehensive summary of the ACIP recommended changes made to the adult immunization schedule can be found in the [February 12, 2021 MMWR](#).

## References and Links to Websites

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6. U.S. Preventive Services Task Force. Screening for sickle cell disease in newborns; September 2007. *The USPSTF is not updating its recommendation for screening for sickle cell disease in newborns. It is deferring to the Health resources & Service Administration. Recommended Uniform Screening Panel (RUSP). Recommended Screening for sickle cell anemia.* Accessed March 19, 2021. Available at: <https://www.hrsa.gov/advisory-committees/heritable-disorders/rusp/index.html>
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- *No screening for cervical cancer before 21 years of age.*
  - *For women aged 21-29 years, cervical cytology alone is recommended every 3 years with HPV testing not recommended for screening in this age group.*
  - *For women age 30-65 years, options include HPV and cytology “cotesting” every 5 years (preferred) or cytology alone every 3 years (acceptable). Screening by HPV testing alone is not recommended for most clinical settings.*
  - *For women age >65 years, no screening is recommended following adequate negative prior screening and are not otherwise at high risk for cervical cancer.*
  - *Women who have received HPV vaccine should be screened in the same manner as women who have not been vaccinated.*

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- *Younger women should not be screened, except for women who are infected with HIV. More frequent screening is appropriate for certain women, including those infected with HIV.*
  - *Cervical cytology alone should be used for women aged 21 to 29 years, and screening should be performed every three years.*
  - *Women younger than 30 years should not undergo co-testing.*
  - *Cytology and human papillomavirus (HPV) co-testing every five years is preferred for women aged 30 to 65 years; cytology alone every three years is acceptable.*
  - *Screening should be discontinued after age 65 years in women with adequate negative prior screening test results.*
  - *Routine cytology and HPV testing should be discontinued and not restarted for women who have had a total hysterectomy and never had cervical intraepithelial neoplasia 2 or higher.*
  - *Acceptable screening methods include liquid-based and conventional methods of cervical cytology collection.*
28. Society of General Internal Medicine (SGIM). SGIM Releases List of Commonly Used Tests and Treatments to Question as Part of Choosing Wisely Campaign. October 2019. Available at : <https://www.sgim.org/File%20Library/SGIM/Resource%20Library/Forum/2013/Oct2013-09.pdf> . Accessed March 26, 2021. *The SGIM recommends against routine general health checks for asymptomatic adults.*
29. Goff DC, Lloyd-Jones DM, Bennett G, et al. 2013 ACC/AHA Guideline on the assessment of cardiovascular risk: a report of the American College of Cardiology / American Heart Association Task Force on Practice Guidelines. *Circulation* 2014;129-549-573. Published online November 12, 2013. Available at: <https://www.ahajournals.org/doi/full/10.1161/01.cir.0000437741.48606.98>. Accessed March 26, 2021. *The AHA recommends measurement of height and weight and calculation of body mass index at least annually.*
30. U.S. Preventive Services Task Force. Weight Loss to Prevent Obesity-Related Morbidity and Mortality in Adults: Behavioral Interventions. September 18, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/obesity-in-adults-interventions> . Accessed March 24, 2021. *The USPSTF 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.*
31. U. S. Preventive Services Task Force. High Blood Pressure in Adults: Screening. October 12, 2015. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/high-blood-pressure-in-adults-screening?ds=1&s=Blood%20Pressure>. Accessed March 24 ,2021. *The USPSTF recommends screening for high blood pressure in adults aged 18 years or older. The USPSTF recommends obtaining measurements outside of the clinical setting for diagnostic confirmation before starting treatment.*
32. Smith, R. A., Andrews, K. S., Brooks, D., Fedewa, S. A., Manassaram-Baptiste, D., Saslow, D., Brawley, O. W. and Wender, R. C. (2019), Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA: A Cancer Journal for Clinicians*, 67: 100-121. Available at <https://doi.org/10.3322/caac.21557> . Accessed March 26, 2021. *Women should undergo regular screening mammography starting at age 45 y; women ages 45 to 54 y should be screened annually; women should have the opportunity to begin annual screening between ages 40 and 44 y. Women aged ≥55 y should transition to biennial screening or have the opportunity to continue screening annually; women should continue screening mammography as long as their overall health is good and they have a life expectancy of ≥10 y.*
33. U. S. Preventive Services Task force. Breast Cancer: Screening. January 11, 2016. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening>. Accessed March 24, 2021. *The USPSTF recommends biennial screening mammography for women aged 50 to 74 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. The USPSTF concludes that the current evidence is insufficient to assess the benefits and harms of screening mammography in women 75 years or older. 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. 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.

34. U.S. Preventive Services Task Force. Interventions for Tobacco Smoking Cessation in Adults, Including Pregnant Persons. January 19, 2021. Available at: <https://uspreventiveservicestaskforce.org/uspstf/recommendation/tobacco-use-in-adults-and-pregnant-women-counseling-and-interventions>. March 24, 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. Food and Drug Administration (FDA)–approved pharmacotherapy for cessation to nonpregnant adults who use tobacco. 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.*

35. U.S. Preventive Services Task Force. Unhealthy Alcohol Use in Adolescents and Adults: Screening and Behavioral Counseling Intervention. November 13, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/unhealthy-alcohol-use-in-adolescents-and-adults-screening-and-behavioral-counseling-interventions>. Accessed March 24, 2021. *The USPSTF recommends screening for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women, and providing persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce unhealthy alcohol use*

36. U.S. Preventive Services Task Force. Depression in Children and Adolescents: Screening. February 8, 2016. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/depression-in-children-and-adolescents-screening>. Accessed March 24, 2021. *The USPSTF recommends screening for major depressive disorder (MDD) in adolescents aged 12 to 18 years. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.*

37. U.S. Preventive Services Task Force. Healthy Diet and Physical Activity for Cardiovascular Disease Prevention in Adults With Cardiovascular Risk Factors: Behavioral Counseling Interventions. November 24, 2020. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/healthy-diet-and-physical-activity-counseling-adults-with-high-risk-of-cvd>. Accessed March 24, 2021. *The USPSTF recommends offering or referring adults with cardiovascular disease risk factors to behavioral counseling interventions to promote a healthy diet and physical activity.*

38. Smith, R. A., Andrews, K. S., Brooks, D., Fedewa, S. A., Manassaram-Baptiste, D., Saslow, D., Brawley, O. W. and Wender, R. C. (2019), Cancer screening in the United States, 2020: A review of current American Cancer Society guidelines and current issues in cancer screening. CA: <https://doi.org/10.3322/caac.21557>. Accessed March 26, 2021. *The ACS recommends that at the time of menopause, women at average risk should be informed about the risks and symptoms of endometrial cancer and should be strongly encouraged to report unexpected bleeding or spotting to their physicians.*

39. U.S. Preventive Service Task Force. Statin Use for the Primary Prevention of Cardiovascular Disease in Adults: Preventive Medication. November 13, 2016. Accessed March 26, 2021. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/statin-use-in-adults-preventive-medication>. *The USPSTF recommends that adults without a history of cardiovascular disease (CVD) (ie, symptomatic coronary artery disease or ischemic stroke) use a low- to moderate-dose statin for the prevention of CVD events and mortality when all of the following criteria are met: 1) they are aged 40 to 75 years; 2) they have 1 or more CVD risk factors (e.g., dyslipidemia, diabetes, hypertension, or smoking); and 3) they have a calculated 10-year risk of a cardiovascular event of 10% or greater. Identification of dyslipidemia and calculation of 10-year CVD event risk requires universal lipids screening in adults aged 40 to 75 years. See the “Clinical Considerations” section for more information on lipids screening and the assessment of cardiovascular risk.*



40. American Diabetes Association. Standards of Medical Care in Diabetes 2021. Available at: <https://professional.diabetes.org/content-page/practice-guidelines-resources> . Accessed March 26, 2021. *In adults not taking statins or other lipid-lowering therapy, it is reasonable to obtain a lipid profile at the time of diabetes diagnosis, at an initial medical evaluation, and every 5 years thereafter if under the age of 40 years, or more frequently if indicated.*

41. U.S. Preventive Services Task Force. BRCA-Related Cancer: Risk Assessment, Genetic Counseling, and Genetic Testing. August 20, 2019. Available at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/brca-related-cancer-risk-assessment-genetic-counseling-and-genetic-testing> . Accessed March 26, 2021. *The USPSTF 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.*

42. Smith, R. A., Andrews, K. S., Brooks, D., Fedewa, S. A., Manassaram-Baptiste, D., Saslow, D. , Brawley, O. W. and Wender, R. C. (2019), Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. CA: A Cancer Journal for Clinicians, 67: 100-121. doi: <https://doi.org/10.3322/caac.21557> Accessed March 26, 2021. *Men who have at least a 10-year life expectancy should have an opportunity to make an informed decision with their health care provider about whether to be screened for prostate cancer, after receiving information about the benefits, risks, and uncertainties associated with prostate cancer. Prostate cancer screening should not occur without an informed decision-making process.*

43. U.S. Preventive Services Task Force. Prostate Cancer: Screening. May 8, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/prostate-cancer-screening> . Accessed March 26, 2021. *The Task Force recommends men ages 55 to 69 make an individual decision about prostate cancer screening with their clinician. The Task Force recommends against routine screening for men age 70 and older.*

44. American Urological Association. Early detection of prostate cancer. Published 2013; Reviewed and Validated 2018. Available at: <https://www.auanet.org/guidelines/prostate-cancer-early-detection-guideline> . Accessed March 26, 2021. *The AUA recommends against screening for prostate cancer in men under age 40 years, does not recommend routine screening in men age 40-54 years at average risk, and recommends shared decision making for men age 55-69 years that are considering PSA screening, and proceeding based on a man's values and preferences. A routine screening interval of two years or more may be preferred over annual screening in those who have decided on screening. Routine PSA screening is not recommended in men over 70 years of age or in any man with less than a 10-15-year life expectancy.*

45. Smith, R. A., Manassaram-Baptiste, D., Brooks, D., Doroshenk, M., Fedewa, S., Saslow, D., Brawley, O. W. and Wender, R. (2019), Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. CA: A Cancer Journal for Clinicians, 65: 30–54. doi: 10.3322/caac.21557 . Accessed March 26, 2021.

- *Men and women, aged 45-75 y, for all tests listed Fecal immunochemical test (annual), or high-sensitivity guaiac-based fecal occult blood test (annual), or multitarget stool DNA test (every 3 y, per manufacturer's recommendation), or colonoscopy (every 10 y), or CT colonography (every 5 y), or flexible sigmoidoscopy (every 5 y)*
  - *Adults aged 45 y and older should undergo regular screening with either a high-sensitivity, stool-based test or a structural (visual) examination, depending on patient preference and test availability; as part of the screening process, all positive results on noncolonoscopy screening tests should be followed with timely colonoscopy; adults in good health with a life expectancy of greater than 10 y should continue screening through the age of 75 y.*
- *Men and women aged 76 through 85 y*

- decisions should be individualized based on patient preferences, life expectancy, health status, and prior screening history; if a decision is made to continue screening, the patient should be offered options as listed above
- Men and women aged >85 y
  - Individuals should be discouraged from continuing screening

46. U.S. Preventive Services Task Force. Colorectal Cancer: Screening. June 15, 2016. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening#fullrecommendationstart>. Accessed March 26, 2021. *The USPSTF recommends screening for colorectal cancer starting at age 45 years and continuing until age 75 years. The risks and benefits of different screening methods vary.*

47. Centers for Disease Control and Prevention. Colorectal Cancer Screening Tests. Last Reviewed February 8, 2021. Available at [https://www.cdc.gov/cancer/colorectal/basic\\_info/screening/tests.htm](https://www.cdc.gov/cancer/colorectal/basic_info/screening/tests.htm). Accessed March 26, 2021. *Several screening tests can be used to find polyps or colorectal cancer. Physicians should discuss when to begin screening, which test is right, and how often to get tested with persons at an increased risk for colorectal cancer.*

48. U.S. Preventive Services Task Force. Depression in Adults: Screening. January 26, 2016. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/depression-in-adults-screening>. Accessed March 26, 2021. *The USPSTF recommends screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.*

49. Advisory Committee on Immunization Practices. Recommended adult immunization schedule-United States. 2021. Available at: <http://www.cdc.gov/vaccines/schedules/hcp/adult.html>. Accessed March 26, 2021. *The 2021 adult immunization schedule summarizes the immunizations recommended by the ACIP.*

50. Centers for Disease Control and Prevention. Prevention and Control of Seasonal Influenza with Vaccines, 2020-21. August 2020. Available at: <https://www.cdc.gov/flu/professionals/acip/index.htm>. Accessed March 26, 2021. *Routine annual influenza vaccination is recommended for all persons aged ≥6 months who do not have contraindications. No preferential recommendation is made for one influenza vaccine product over another for persons for whom more than one licensed, recommended product is available.*

51. U. S. Preventive Services Task Force. Aspirin Use to Prevent Cardiovascular Disease and Colorectal Cancer: Preventive Medication. April 11, 2016. Available at <http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/aspirin-to-prevent-cardiovascular-disease-and-cancer>. Accessed March 26, 2021. *Adults aged 50 to 59 years with a ≥10% 10-year CVD risk: The USPSTF recommends initiating low-dose aspirin use for the primary prevention of cardiovascular disease (CVD) and colorectal cancer (CRC) in adults aged 50 to 59 years who have a 10% or greater 10-year CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.*

52. U.S. Preventive Services Task Force. Folic Acid for the Prevention of Neural Tube Defects: Preventive Medication. January 10, 2017. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/folic-acid-for-the-prevention-of-neural-tube-defects-preventive-medication>. Accessed March 26, 2021. *The USPSTF recommends that all women planning or capable of pregnancy take a daily supplement containing 0.4 to 0.8 (400 to 800 µg) of folic acid.*

53. U.S. Preventive Services Task Force. Breast cancer: Medication use to Reduce Risk. September 3, 2019. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/breast-cancer-medications-for-risk-reduction>. Accessed March

26, 2021. *The USPSTF recommends that 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.*

54. U.S. Preventive Services Task Force: Abnormal Blood Glucose and Type 2 Diabetes Mellitus: Screening. Adults aged 40 to 70 years who are overweight or obese: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/screening-for-abnormal-blood-glucose-and-type-2-diabetes>. Accessed March 26, 2021. *The USPSTF recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity.*

55. American Diabetes Association. Standards of Medical Care in Diabetes 2021. Available at: [https://care.diabetesjournals.org/content/44/Supplement\\_1](https://care.diabetesjournals.org/content/44/Supplement_1). © 2021 by the American Diabetes Association. Accessed April 8, 2021.

#### Prevention or Delay of Type 2 Diabetes

- Criteria for testing for diabetes or prediabetes in asymptomatic adults:
  4. Adults of any age with overweight or obesity, and who have one or more of the following risk factors:
    - First-degree relative with diabetes
    - High-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
    - History of CVD
    - Hypertension ( $\geq 140/90$  mmHg or on therapy for hypertension)
    - HDL cholesterol level  $< 35$  mg/dL (0.90 mmol/L) and/or a triglyceride level  $> 250$  mg/dL (2.82 mmol/L)
    - Women with polycystic ovary syndrome
    - Physical inactivity
    - Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)
  5. Patients with prediabetes should be tested yearly.
  6. Test all other adults, beginning at age 45, regardless of weight.
- Metformin therapy for prevention of type 2 diabetes should be considered in those with:
  - Prediabetes;
  - BMI  $\geq 35$  kg/m<sup>2</sup>
  - Age  $< 60$  years
  - Women with prior gestational diabetes mellitus
  - Consider periodic measurement of vitamin B12 levels in patients with long-term use of metformin, especially in those with anemia or peripheral neuropathy
- Refer patients with prediabetes to a program of intensive diet and physical activity with a behavioral counseling component:
  - Target 7% body weight loss
  - Encourage at least 150 minutes/week of moderate-intensity physical activity.
  - Offer follow-up, including counseling, diabetes self-management education, and ongoing support.

56. U.S. Preventive Services Task Force. Human Immunodeficiency Virus (HIV) Infection: Screening. June 2019. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/human-immunodeficiency-virus-hiv-infection-screening>. Accessed March 24, 2021. *The USPSTF recommends that clinicians screen for HIV infections in adolescents and adults aged 15 to 65 years. Younger adolescents and older adults who are at risk should also be screened. The USPSTF recommends that clinicians screen all pregnant women for HIV, including those who present in labor or at delivery whose HIV status is unknown.*

57. U.S. Preventive Services Task Force. Syphilis Infection in Nonpregnant Adults and Adolescents: Screening. June 7, 2016. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/syphilis-infection-in-nonpregnant-adults-and-adolescents>. Accessed March 26, 2021. *The USPSTF recommends screening for syphilis infection in persons who are at increased risk for infection.*

58. U.S. Preventive Services Task Force. Syphilis Infection in Pregnant Women: Screening. September 4, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/syphilis-infection-in-pregnancy-screening1>. Accessed March 26, 2021. *The USPSTF recommends early screening for syphilis infection in all pregnant women.*
59. U.S. Preventive Services Task Force. Intimate Partner Violence, Elder Abuse, and Abuse of Vulnerable Adults: Screening. October 23, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/intimate-partner-violence-and-abuse-of-elderly-and-vulnerable-adults-screening>. Accessed March 26, 2021. *The USPSTF recommends that clinicians screen for intimate partner violence (IPV) in women of reproductive age and provide or refer women who screen positive to ongoing support services.*
60. U.S. Preventive Services Task Force. Osteoporosis to Prevent Fractures: Screening. June 26, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/osteoporosis-screening>. Accessed March 26, 2021. *The USPSTF recommends screening for osteoporosis with bone measurement testing to prevent osteoporotic fractures in women 65 years and older. The USPSTF recommends screening for osteoporosis with bone measurement testing to prevent osteoporotic fractures in postmenopausal women younger than 65 years who are at increased risk of osteoporosis, as determined by a formal clinical risk assessment tool.*
61. U.S. Preventive Services Task Force. Abdominal Aortic Aneurysm: Screening. December 10, 2019. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/abdominal-aortic-aneurysm-screening>. Accessed March 26, 2021. *The USPSTF recommends one-time screening for abdominal aortic aneurysm (AAA) by ultrasonography in men aged 65 to 75 who have ever smoked.*
62. U.S. Preventive Services Task Force. Skin Cancer Prevention: Behavioral Counseling. March 20, 2018 Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/skin-cancer-counseling>. Accessed March 24, 2021. *The USPSTF recommends counseling young adults, adolescents, children, and parents of young children about minimizing exposure to ultraviolet (UV) radiation for persons aged 6 months to 24 years with fair skin types to reduce their risk of skin cancer.*
63. U.S. Preventive Services Task Force. Falls Prevention in Community-Dwelling Older Adults: Interventions. April 17, 2018. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/falls-prevention-in-older-adults-interventions> Accessed March 26, 2021. *The USPSTF recommends exercise interventions to prevent falls in community-dwelling adults 65 years or older who are at increased risk for falls.*
64. U.S. Preventive Services Task Force. Hepatitis C Virus Infection in Adolescents and Adults: Screening. March 02, 2020. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/hepatitis-c-screening>. Accessed March 26, 2021. *The USPSTF recommends screening for hepatitis C virus (HCV) infection in adults aged 18 to 79 years.*
65. American Academy of Pediatrics, ACOG Committee on Obstetrics: Guidelines for perinatal care. 8th ed. Elk Grove Village, Ill: American Academy of Pediatrics and the American College of Obstetricians and Gynecologists. September 2017. Accessed March 26, 2021. Available at: <https://www.acog.org/clinical-information/physician-faqs/-/media/3a22e153b67446a6b31fb051e469187c.ashx>.
66. U. S. Preventive Services Task Force. Prevention and Cessation of Tobacco Use in Children and Adolescents: Primary Care Interventions. April 28, 2020. Accessed March 24, 2021. Available at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/tobacco-and-nicotine-use-prevention-in-children-and-adolescents-primary-care-interventions>. *The USPSTF recommends that primary care clinicians provide interventions, including education or brief counseling, to prevent initiation of tobacco use among school-aged children and adolescents.*
67. U. S. Preventive Services Task Force. Dental Caries in Children from Birth Through Age 5 Years: Screening May 05, 2014. Available at <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/dental-caries-in-children-from-birth-through-age-5-years-screening>. Accessed March 24, 2021. *The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation starting at age 6*

months for children whose water supply is deficient in fluoride. The USPSTF recommends that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption.

68. U. S. Preventive Services Task Force. Screening for Hepatitis B Virus Infection in Adolescents and Adults. December 15, 2020 Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hepatitis-b-virus-infection-screening>. Accessed March 24, 2021. *The USPSTF recommends screening for hepatitis B virus (HBV) infection in adolescents and adults at increased risk for infection.*

69. U.S. Preventive Services Task Force. Lung Cancer: Screening. March 9, 2021. Available at <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/ung-cancer-screening>. Accessed March 26, 2021. *The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults ages 55 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.*

70. American Heart Association. American College of Cardiology/American Heart Association Task Force on Practice 2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk: A report of The American College of Cardiology/American Heart Association task force on practice guidelines. November 12, 2013. Available at: <https://doi.org/10.1161/01.cir.0000437741.48606.98>. Accessed March 26, 2021. *The AHA recommends it is reasonable to assess traditional ASCVD risk factors every 4 to 6 years in adults 20 to 79 year of age who are free from ASCVD and estimate 10-year ASCVD risk every 4 to 6 years in adults 40 to 79 years of age who are free from ASCVD. The race- and sex-specific Pooled Cohort Equations to predict 10-year risk for a first hard ASCVD\* event should be used in non-Hispanic African Americans and non-Hispanic Whites, 40 to 79 years of age.*

71. U.S. Preventive Services Task Force. Low-Dose Aspirin Use for the Prevention of Morbidity and Mortality from Preeclampsia. September 9, 2014. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/low-dose-aspirin-use-for-the-prevention-of-morbidity-and-mortality-from-preeclampsia-preventive-medication>. Accessed April 13, 2020. *The USPSTF recommends the use of low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia.*

72. U.S. Preventive Services Task Force. Preeclampsia: Screening. April 25, 2017. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/preeclampsia-screening>. Accessed March 26, 2021. *The USPSTF recommends screening for preeclampsia in pregnant women with blood pressure measurements throughout pregnancy.*

73. ACOG Committee Opinion Number 736: Optimizing Postpartum Care. Reaffirmed 2021. Available at: <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Postpartum-Care>. Accessed March 26, 2021. *This Committee Opinion has been revised to reinforce the importance of the “fourth trimester” and to propose a new paradigm for postpartum care. It is recommended that all women have contact with their obstetrician–gynecologists or other obstetric care providers within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth. The comprehensive postpartum visit should include a full assessment of physical, social, and psychological well-being, including the following domains: mood and emotional well-being; infant care and feeding; sexuality, contraception, and birth spacing; sleep and fatigue; physical recovery from birth; chronic disease management; and health maintenance. Women with chronic medical conditions such as hypertensive disorders, obesity, diabetes, thyroid disorders, renal disease, and mood disorders should be counseled regarding the importance of timely follow-up with their obstetrician–gynecologists or primary care providers for ongoing coordination of care.*

74. U.S. Preventive Services Task Force. Perinatal Depression: Preventive Interventions. February 12, 2019. Available at <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/perinatal-depression-preventive-interventions>. Accessed March 26, 2021. *The USPSTF recommends that clinicians provide or refer pregnant and postpartum persons who are at increased risk of perinatal depression to counseling interventions.*

75. American Academy of Pediatrics. Ultraviolet Radiation: A Hazard to Children and Adolescents. March 2011. <https://pediatrics.aappublications.org/content/127/3/588>, Accessed March 24, 2021. *People at highest risk of melanoma have light skin and eyes and sunburn easily. Risk of developing melanoma is increased for people with a first-degree relative who has had melanoma or those with a personal history of previous melanoma. Those who freckle easily and those with a large number of typical or atypical moles (high nevus count) are also at higher risk of cutaneous malignancy. People with xeroderma pigmentosum (a condition in which there is a genetically determined defect in the repair of DNA damaged by UVR) and related disorders are at increased risk of melanoma.*
76. U. S. Preventive Services Task Force. Asymptomatic Bacteriuria in Adults: Screening. September 24, 2019. Available at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/asymptomatic-bacteriuria-in-adults-screening> . Accessed March 26, 2021. *The USPSTF recommends screening for asymptomatic bacteriuria using urine culture in pregnant persons*
77. U. S. Preventive Services Task Force. Hepatitis B Virus Infection in Pregnant women: Screening. July 23, 2019. Available at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hepatitis-b-virus-infection-in-pregnant-women-screening> . Accessed March 26, 2021. *The USPSTF recommends screening for hepatitis B virus (HBV) infection in pregnant women at their first prenatal visit*
78. U. S. Preventive Services Task Force. Prevention of Human Immunodeficiency Virus (HIV) Infection: Preexposure Prophylaxis. June 11, 2019. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/prevention-of-human-immunodeficiency-virus-hiv-infection-pre-exposure-prophylaxis> . Accessed March 26, 2021. *The USPSTF recommends that clinicians offer preexposure prophylaxis (PrEP) with effective antiretroviral therapy to persons who are at high risk of HIV acquisition.*
79. U. S. Preventive Services Task Force. Unhealthy Drug Use. June 2020. Accessed April 19, 2021. Available at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/drug-use-illicit-screening> . *The USPSTF recommends screening by asking questions about unhealthy drug use in adults age 18 years or older. Screening should be implemented when services for accurate diagnosis, effective treatment, and appropriate care can be offered or referred. (Screening refers to asking questions about unhealthy drug use, not testing biological specimens.)*
80. U. S. Preventive Services Task Force. Screening for Hypertension in Adults. April 27, 2021. Accessed April 30, 2021 Available at : <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hypertension-in-adults-screening> . *The USPSTF recommends screening for hypertension in adults 18 years or older with office blood pressure measurement (OBPM). The USPSTF recommends obtaining blood pressure measurements outside of the clinical setting for diagnostic confirmation before starting treatment*
81. National Center for Biotechnology Information, U.S. National Library of Medicine. Vital Sign Assessment. Accessed May 11<sup>th</sup>, 2021. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK553213/> *In an article published by the National Center for Biotechnology Information, U.S. National Library of Medicine, vital signs consist of temperature, pulse rate, blood pressure, and respiratory rate. It is noted that the first set of clinical examinations is an evaluation of the vital signs of the patient. The basis of patient triage in an urgent care /prompt care or an emergency room is on their vital signs as it tells the physician the degree of derangement that is happening from the baseline. In addition, it is noted that the degree of vital sign abnormalities may also predict the long-term patient health outcomes, return emergency room visits, and frequency of readmission to hospitals, and utilization of healthcare resources.*
82. World Health Organization. Medication Safety in Transitions of Care. 2019. Accessed May 11<sup>th</sup>, 2021. Available at: <https://apps.who.int/iris/bitstream/handle/10665/325453/WHO-UHC-SDS-2019.9-eng.pdf?ua=1> *The WHO urges countries to commit to prioritizing effective action for improving medication safety in transitions of care. Key elements of programmes include implementing formal structured processes with enhanced workforce capacity and capability to deliver medication reconciliation at transitions, partnering with patients and families, improving information quality and availability, in particular a patient held medication record or medication passport, and measurement.*

83. U. S. Department of Health and Human Services. Agency for Healthcare Research and Quality. Improving Allergy Documentation and Clinical Decision Support in the Electronic Health Record (Massachusetts). May 2018. Accessed May 11<sup>th</sup>, 2021. Available at: <https://digital.ahrq.gov/ahrq-funded-projects/improving-allergy-documentation-and-clinical-decision-support-electronic-health> *Accurate documentation and management of patients' allergies and adverse reactions to medications, foods, and other substances is vital to patient safety and quality of care. It is critical to obtain a complete and accurate allergy history for each patient and to provide clinicians with an efficient allergy-alerting clinical decision support tool.*

84. American Association of Family Physicians. Addressing Social Determinants of Health in Primary Careteam-based approach for advancing health equity. 2018. Accessed May 11<sup>th</sup>, 2021. Available at: [https://www.aafp.org/dam/AAFP/documents/patient\\_care/everyone\\_project/team-based-approach.pdf](https://www.aafp.org/dam/AAFP/documents/patient_care/everyone_project/team-based-approach.pdf) *The American Academy of Family Physicians (AAFP) recommend the regular assessment of social determinants of health (SDOH) including socioeconomic status; racism and discrimination; poverty and income inequality; and the lack of community resources, among others as they can account for as much as 55% of health outcomes.*

85. American Medical Association. Advanced Care Planning. June 2011. Accessed May 11<sup>th</sup>, 2021. Available at: <https://www.ama-assn.org/delivering-care/ethics/advance-care-planning>. *The AMA recommends planning and discussing advanced directives regardless of current health status as this gives individuals the opportunity to reflect on and express the values they want to have govern their care, to articulate the factors that are important to them for quality of life, and to make clear any preferences they have with respect to specific interventions should they not have decision-making capacity.*