



**Table 1. USPSTF Recommendations for Screening and Counseling in Adolescents**

<i>Screening/counseling</i>	<i>Recommendation</i>
<b>Cancer</b>	
Cervical	Start screening every three years at 21 years of age*
Skin	Insufficient evidence to recommend for or against screening in the general population
Testicular	Screening with physician examination or self-examination is not recommended
<b>Cardiovascular</b>	
Blood pressure	Start screening at 18 years or older at every visit
Lipid levels	Insufficient evidence to recommend for or against screening
<b>General health</b>	
Obesity	Screen with body mass index measurements annually, and offer behaviorally based interventions if indicated
Scoliosis	Routine screening is not recommended for asymptomatic adolescents because it results in moderate harms from wearing unnecessary braces and from unnecessary referrals, without benefits of decreased pain, disability, or clinically significant scoliosis
<b>Injury prevention</b>	
Motor vehicle crashes	Insufficient evidence to recommend for or against counseling about drinking and driving
<b>Mental health</b>	
Depression	Screen adolescents 12 to 18 years of age for major depression if adequate treatment and follow-up can be provided
Suicide risk	Insufficient evidence to recommend for or against screening in the general population
<b>Sexually transmitted infections</b>	
Chlamydia	Screen sexually active females Insufficient evidence to recommend for or against screening in males
Gonorrhea	Screen sexually active females Insufficient evidence to recommend for or against screening in males, even if high risk†
Herpes simplex virus infection	Routine serologic screening is not recommended
Human immunodeficiency virus infection	Screen those with risk factors or in areas with high prevalence annually‡
<b>Substance abuse</b>	
Alcohol, illicit drugs, tobacco	Insufficient evidence to recommend for or against routine screening or counseling

USPSTF = U.S. Preventive Services Task Force.

\*—The American College of Obstetricians and Gynecologists also recommends screening starting at 21 years of age.<sup>6</sup>

†—Risk factors include history of gonorrhea or other sexually transmitted infection, new or multiple sex partners, inconsistent condom use, sex work, and illicit drug use.

‡—The Centers for Disease Control and Prevention recommends offering testing to all adolescent and adult patients, regardless of risk.<sup>7</sup>

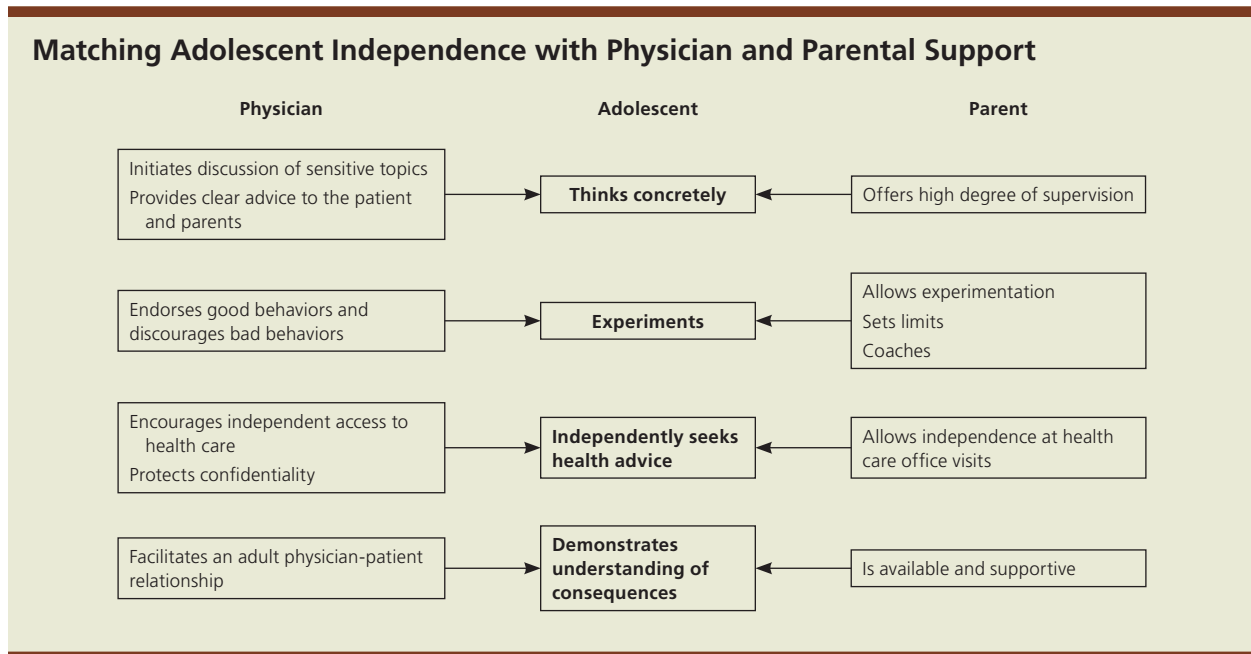
Information from references 5 through 7.

special challenges. First, adolescence (the stage of life from puberty to maturity, typically between 12 and 18 years of age) is a period of dramatic physical, cognitive, and emotional transformation. Second, children develop at different rates. In general, development begins with concrete thinking and little understanding of implications, transitions to a middle phase characterized by increasing insight and experimentation, and ends with a transition to adulthood with independent seeking of advice and a realistic understanding of long-term consequences. Taking time to assess the cognitive and emotional abilities of the patient, and the role their caregivers play in making decisions, is crucial but challenging. *Figure 1* outlines how physician and parental support can influence adolescent development.

There are specific data on which behaviors put adolescents at risk (*Table 2*).<sup>8</sup> However, given the variability in the patient's development, family support, life experience, and personality, it is not completely clear how to best deliver risk counseling. The data on the effectiveness of different approaches are limited.

It is important to talk with adolescents privately. A survey of adolescents indicates that time alone with the physician improves sharing of personal concerns.<sup>16</sup> However, even when meeting a physician alone, many adolescents hold back, possibly because of ambiguity about confidentiality; a fear of being "lectured"; discomfort with talking about personal issues, especially sex<sup>17</sup>; and lack of clarity about the purpose of the physician visit.<sup>16</sup> Although physicians often provide assurances of confidentiality, many adolescents still have concerns that personal information will be available to clinic staff or shared with parents. A study shows that adolescents are more comfortable seeking advice and information from anonymous, online sources.<sup>18</sup>

Another study shows that adolescents are more satisfied with physicians who themselves raise sensitive topics, and are more likely to share personal information with these physicians.<sup>3</sup> Male adolescents have also reported that the relationship with their



**Figure 1.** Physician and parental support in adolescent health.

physician, the physician's demeanor, and continuity of care are crucial to their willingness to share sensitive information.<sup>16</sup> In establishing a rapport with adolescents, it is helpful to keep the conversation personal. Instead of stating general facts, the physician should ask adolescents specifically what is happening in their lives (e.g., regarding substance use and sex).

Stating a clear position on confidentiality is important. The Society for Adolescent Medicine recommends protecting the confidentiality of adolescents' health care communications and records.<sup>19</sup> Most states allow minors to independently consent to contraceptive services and STI screening and treatment; however, abortion services often require parental notification or consent.<sup>20</sup> If information suggests abuse or possible harm to the patient or another person, the physician may be obligated to involve others. However, physicians may take into account the adolescent's age and level of maturity in deciding how to break confidentiality, if necessary, and how much to involve the patient in that process.

### Reducing Risks

Although many national trends in youth risk behavior are improving (*Table 2*), many high school-aged adolescents still engage in risky behaviors.<sup>8</sup> Evidence is lacking that medical interventions reduce these behaviors. Until studies provide more information, a team approach that includes behavior therapy referrals,

school-based programs, or community groups may be most beneficial.

### SEXUAL ACTIVITY

Education and offering contraceptives lower the rate of unintended pregnancy among adolescents. *Table 3* includes tips for talking with adolescents about sexual health. In females 15 to 17 years of age, pregnancy rates have decreased from 75 per 1,000 persons in the 1980s to 37 per 1,000 in 2008. Pregnancy rates remained higher for nonwhite adolescents (96 per 1,000 persons).<sup>21</sup> Education methods aimed at reducing sexual risk often involve discussion about contraceptive options, including emergency contraception; prevailing attitudes; risk of pregnancy and disease; and building skills to discuss sexual risk with partners. Evidence supports educational programs (typically lasting nine to 15 months) in school-, community-, or faith-based settings.<sup>22</sup> The USPSTF concludes that high-intensity counseling (three to nine hours, usually in a group setting) reduces STI rates in sexually active adolescents.<sup>23</sup>

Physician promotion of contraception is a component of some educational

**Physicians should ask adolescents about tobacco use, tell them that it causes illness and death, and offer cessation assistance if needed.**

programs for adolescents. When sexually active adolescents seek primary care, physicians should offer contraception and STI testing. Screening those at high risk of STIs (e.g., those with a history of STIs or a higher number of sex partners) reduces rates of pelvic inflammatory disease.<sup>24</sup> Sexually active adolescent females should be

screened for chlamydia<sup>25</sup> and gonorrhea.<sup>26</sup> The Centers for Disease Control and Prevention recommends screening all adolescents for human immunodeficiency virus infection, whereas the USPSTF recommends screening only those who are high risk; testing should be routinely offered to adolescents.<sup>7,27</sup>

**Table 2. Adolescent Risky Health Behaviors**

Behavior	1991* (%)	2011 (%)
<b>Poor diet/low physical activity</b>		
Overweight	14.2	15.2
Physically active less than 60 minutes on any day in previous seven days	Not reported	13.8
Obese	10.6 (1999)	13.0
<b>Sexual activity</b>		
Ever had sexual intercourse	54	47.4
Did not use a condom during last sexual intercourse	54	40
Currently sexually active	37	33.7
Has had at least four sex partners	19	15.3
Did not use any method to prevent pregnancy before last sexual intercourse	16.5	12.9
<b>Substance abuse</b>		
Used marijuana in previous 30 days	31	23.1
Consumed five or more alcoholic drinks in a row in previous 30 days	Not reported	21.9
Smoked cigarettes on at least one day in previous 30 days	27	18.1
Ever used an inhalant (glue) to get high	20 (1995)	11.4
Ever used methamphetamines	9 (1999)	3.8
Used cocaine in previous 30 days	1.7	3.0
<b>Suicide</b>		
Seriously considered suicide	29	15.8
Attempted suicide	7.3	7.8
<b>Unintentional injury</b>		
Never or rarely wears a bicycle helmet	96	87.5
Texted or e-mailed while driving	Not reported	33
Ridden in a car in the past 30 days with a driver who was drinking alcohol	40	24.1
Carried a weapon in previous 30 days	26	16.6
Drove a car after drinking alcohol in previous 30 days	17	8.2
Never or rarely wears a seat belt	26	7.7
Carried a gun in previous 30 days	8	5.1

\*—Unless otherwise specified.

Information from reference 8.

**VIOLENCE**

The firearm-related death rate among males 15 to 19 years of age is 20 per 100,000 persons, and is higher among black male adolescents at 55 per 100,000 persons.<sup>28</sup> School-based programs focusing on violence prevention reduce aggressive behavior over the short-term; however, evidence is lacking about long-term benefits beyond 12 months or reduction in violent injuries.<sup>29</sup> There are no randomized studies or high-quality cohort studies of how physicians can influence adolescents to avoid violence. Strategies to deter adolescents from joining gangs is an especially important area for further research because gang involvement significantly increases violence in this age group.<sup>30</sup>

Physicians should ask adolescent patients about risk factors for violent behavior (e.g., history of abuse, low commitment to school, involvement in gangs, fear of assault)<sup>31</sup>; offer follow-up; and connect families with school-based programs, psychologists, and community groups that work with at-risk adolescents.

**OBESITY**

High-intensity weight-loss programs (more than 25 hours over six months) that include counseling, dietary advice, and physical activity reduce body mass index (BMI) by 1.9 to 3.3 kg per m<sup>2</sup> at 12 months in children and adolescents who are obese. This reduction in BMI can be maintained an additional 12 months after weight-loss counseling ends.<sup>32</sup> Physicians should calculate BMI in adolescent patients at yearly visits. The USPSTF recommends referral to a weight-loss program or obesity clinic for patients six to 18 years of age who are obese (BMI greater than the 95th percentile).<sup>32</sup>

Although exercise alone has not been shown to improve BMI or health outcomes, it improves self-esteem in adolescents.<sup>33</sup>

**Table 3. Tips for Discussing Sexual Health with Adolescents****Be personal and respectful**

"May I ask you some personal questions that will help me understand what kind of health advice you might need?"

"What are your plans for birth control?"

"Are you participating in sex education classes in your school or church?"

"Have you been sexually involved with anyone (guys, girls, or both) in the past six months?"

"What are your concerns or questions about sex?"

"What have you learned about HIV and STIs?"

**Describe how physicians can help**

"I'm here to educate you and give you information. I'm hoping you'll make good decisions. If you ever make a mistake, I hope you will trust me enough to help take care of you."

**Be clear and direct**

"HIV is an STI that can kill you."

**Address confidentiality**

"By law, I have to keep anything you tell me confidential unless I'm concerned about your safety or someone else's safety. Then, the law sometimes requires me to notify others. Do you have any questions about what is and isn't confidential?"

**Set goals**

"Make an appointment with me to discuss birth control before becoming sexually active."

"Ask potential new partners to get tested for STIs."

*HIV = human immunodeficiency virus; STI = sexually transmitted infection.*

**Table 4. Tips for Discussing Alcohol Use with Adolescents****Be personal and respectful**

"What's happening with alcohol use in your school and among your friends?"

**Be clear and direct**

"Alcohol impairs judgment and causes car crashes."

"Any amount of alcohol, even hours before driving, can cause a fatal crash."

"Alcohol impairs your judgment about safe sex. You could get a sexually transmitted infection or get pregnant."

**Set goals**

Suggest a contract between the adolescent and the parents that allows the adolescent to call for a ride without punishment to avoid getting into a car with a drunk driver.

Ask the patient to pledge that he or she won't drink and drive or get in a car with a driver who has been drinking.

The CRAFFT (car, relax, alone, forget, family or friends, trouble) questionnaire, a brief screening tool for substance abuse, is 92 percent sensitive and 64 percent specific for high-risk alcohol behavior in adolescents. Although the questionnaire will identify substance abuse in most adolescents, a positive screening result requires confirmation through a more detailed discussion with the patient.<sup>37</sup> The CRAFFT questionnaire is available at <http://www.ceasar-boston.org/CRAFFT/index.php>. Individually tailored guidance and use of community programs are prudent until studies reveal how to best reduce high-risk drinking behavior. *Table 4* provides tips for talking with adolescents about alcohol use.

Physicians should recommend daily exercise and limiting sedentary behavior, such as watching television, playing video games, and other "screen time," for overall health. Increasing self-esteem may also improve resistance to peer pressure and risky behavior.

**ALCOHOL USE**

Counseling reduces alcohol consumption and increases safe drinking behavior in high-risk adults,<sup>34</sup> although the effectiveness of primary care counseling in high-risk adolescents is less clear. Clinical trials show that compared with those receiving no alcohol counseling, young adults who were counseled had less intent to drink, drank less, and were less likely to consume more than five drinks in a row.<sup>35</sup> However, a study has also found increased drinking among adolescents after counseling.<sup>36</sup>

**TOBACCO USE**

Interventions to reduce tobacco use, such as cognitive behavior therapy, motivational interviewing, and medications, have not been well studied in adolescents.<sup>38</sup> However, randomized controlled trials have shown that brief physician advice and one to four motivational interviewing sessions increase quit rates in adults (number needed to treat = 7).<sup>39,40</sup> Although evidence regarding adolescents is insufficient to justify clinical guidelines, it is reasonable to ask adolescents about tobacco use, provide them with data that show that tobacco use causes illness and death, and offer smoking cessation assistance if needed. Because exposure to tobacco advertising increases experimentation and smoking rates among adolescents,<sup>41</sup> advocating against tobacco advertising aimed at this age group may be beneficial.

**SORT: KEY RECOMMENDATIONS FOR PRACTICE**

<i>Clinical recommendation</i>	<i>Evidence rating</i>	<i>References</i>
Sexually active adolescent females should be screened for chlamydia.	A	25
Physicians should recommend that adolescents participate in school-, faith-, or community-based sex education programs.	B	22
Sexually active adolescent females should be screened for gonorrhea.	B	26
Adolescents should be offered screening for human immunodeficiency virus infection.	B	7, 27
Adolescents should be screened for obesity, and offered behaviorally based counseling if indicated.	B	32
Adolescents should be screened for depression if follow-up treatment and monitoring are available.	B	43, 45
Physicians should address the following issues with adolescents: sexual activity, violence, and substance abuse.	C	19, 22, 23, 29, 30, 40

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to <http://www.aafp.org/afpsort.xml>.

**Table 5. PHQ-9 for Adolescents: Screening Instrument for Depression**

<i>Over the past two weeks, how often have you been bothered by the following problems?</i>	<i>Not at all</i>	<i>Several days</i>	<i>More than one-half of the days</i>	<i>Nearly every day</i>
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, irritable, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite, weight loss, or overeating	0	1	2	3
6. Feeling bad about yourself, that you are a failure, or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things such as schoolwork, reading, or watching television	0	1	2	3
8. Moving or speaking so slowly that others could have noticed; or the opposite, being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
<i>Total:</i>	_____ +	_____ +	_____ +	_____

NOTE: A total score of  $\geq 5$  suggests mild major depression,  $\geq 10$  suggests moderate major depression, and  $\geq 15$  suggests severe major depression. Any positive response to question 9 warrants follow-up.

PHQ = Patient Health Questionnaire.

Adapted from patient health questionnaire (PHQ) screeners. <http://www.phqscreeners.com>. Accessed September 6, 2012.

**DEPRESSION**

The USPSTF recommends screening patients 12 to 18 years of age for major depression, if adequate treatment and follow-up are available, using the nine-item Patient Health Questionnaire for Adolescents (Table 5<sup>42</sup>) or the seven-question Beck Depression Inventory-Primary Care

Version.<sup>43</sup> These instruments have a 70 to 91 percent sensitivity for depression in adults<sup>44</sup>; however, no trials have examined whether screening improves outcomes in adolescents.

Treatment with selective serotonin reuptake inhibitors (SSRIs), psychotherapy, or both improves quality of life

and symptoms in adolescents with depression. Clinical trials have consistently shown that the SSRIs fluoxetine (Prozac) and citalopram (Celexa) are effective in improving symptoms in adolescents with major depression (number needed to treat = 5).<sup>43</sup> Psychotherapy, including cognitive behavior therapy or interpersonal therapy, also reduces depression symptoms in adolescents compared with control treatments. Combining SSRIs and psychotherapy provides the greatest reduction in depressive symptoms (number needed to treat = 3).<sup>45</sup> Because studies have shown a statistically significant increase in suicidal ideation in children and adolescents taking SSRIs, they should be used only if monitoring and support are available.<sup>45</sup>

Although not proven to reduce rates of completed suicide or unintentional death, physician advice to adults increases safe firearm storage. Therefore, discussions with parents should be part of depression counseling and routine preventive care of adolescents.<sup>46</sup>

### Approach to the Patient

Because of a lack of data indicating what makes up an effective physician-adolescent conversation, as well as physician and adolescent discomfort with addressing sensitive topics, physicians are missing key opportunities to discuss critical health issues with these patients.

Physicians can establish a productive relationship with adolescents through the following steps: (1) assess the individual adolescent's ability to understand the consequences of risky behavior; (2) assess the role of the parent; (3) clarify expectations about confidentiality; (4) meet privately with the adolescent and raise sensitive topics; and (5) use the physician-patient relationship to personalize risk-reduction messages. Physicians should also actively seek to collaborate with community programs that address adolescent violence, sex, and overall health. Adolescents should be invited to independently access the physician's office, and should be provided with other resources appropriate for their individual needs.

**Data Sources:** We searched the Cochrane Database of Systematic Reviews, Essential Evidence Plus, U.S. Preventive Services Task Force, National Guideline Clearinghouse, and Ovid Medline using a combination of the terms: adolescent, teen, pregnancy prevention, sexually transmitted disease, violence, alcohol, mortality, injury, suicide, depression, anxiety, obesity, and tobacco. Search dates: August 15, 2011, and January 15, 2012.

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