

# Putting Prevention into Practice

*An Evidence-Based Approach*

## Screening for Syphilis Infection in Nonpregnant Adults and Adolescents

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► See related U.S. Preventive Services Task Force Recommendation Statement at <http://www.aafp.org/afp/2016/1115/od1.html>.

This PPIP quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and supporting documents on the USPSTF website (<http://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/syphilis-infection-in-nonpregnant-adults-and-adolescents>.

This series is coordinated by Sumi Sexton, MD, Associate Deputy Editor.

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**CME** This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 360. Author disclosure: No relevant financial affiliations.

### Case Study

R.J. is a 27-year-old man who presents for a well-patient visit. He always keeps his appointments and likes to make sure he is healthy. R.J. has started a new relationship and asks if he should be screened for syphilis.

### Case Study Questions

1. According to the recommendation statement from the U.S. Preventive Services Task Force (USPSTF) on screening for syphilis, which of the following populations are at increased risk?

- A. Persons with human immunodeficiency virus (HIV) infection.
- B. Adults in their 30s who are in a monogamous relationship and have no history of sexually transmitted infections.
- C. Men who have sex with men.
- D. Men in their 20s living in a large metropolitan area who have a history of incarceration.

2. You conclude that R.J. is at increased risk of syphilis and recommend screening. Which one of the following statements about available screening tests for syphilis is correct?

- A. If the nontreponemal test (rapid plasma reagin [RPR] or Venereal Disease Research Laboratory [VDRL]) is positive, you can conclude that R.J. has syphilis.
- B. If the nontreponemal test (RPR) is positive, it must be followed with a confirmatory nontreponemal (VDRL) test.
- C. If the nontreponemal test (RPR or VDRL) is positive, it must be followed with a confirmatory treponemal antibody detection test (fluorescent treponemal antibody absorption [FTA-ABS] or *Treponema pallidum* particle agglutination [TPPA]).
- D. A nontreponemal test and a treponemal antibody test must be conducted at the same time.
- E. FTA-ABS or TPPA must be conducted first, followed by a confirmatory nontreponemal test (RPR or VDRL).

3. Which one of the following statements best reflects the benefits and harms of screening for syphilis?

- A. The net benefit of early detection and treatment with antibiotics is substantial and can prevent manifestation of late-stage disease and transmission to others.
- B. There are no harms associated with screening and early detection.
- C. Screening all sexually active patients annually has the greatest benefit.
- D. Although there is a chance of false-positive results from screening, there is no harm in treatment with antibiotics.

Answers appear on the following page.

### Answers

**1. The correct answers are A, C, and D.** Based on 2014 surveillance data, men who have sex with men and persons with HIV infection are at high risk of syphilis. Increased prevalence has been associated with certain racial/ethnic groups, geographic and metropolitan areas, history of incarceration, history of commercial sex work, and being a male younger than 29 years.<sup>1</sup> Risk factors for syphilis often do not present independently and commonly overlap. Clinicians should be aware of the latest data and trends for their specific population and geographic area to help identify individuals at increased risk. Screening in nonpregnant persons who are not at increased risk may result in high false-positive rates and overtreatment.

**2. The correct answer is C.** There are a number of screening tests for syphilis. Commonly, a nontreponemal test (RPR or VDRL) is performed first, followed by a treponemal antibody test (FTA-ABS or TPPA) if the first nontreponemal test is positive. The two tests should not be conducted simultaneously. More recently, a reverse sequence screening algorithm has been developed in which an automated treponemal test is performed first, followed by a nontreponemal test. The USPSTF found that more studies are needed to better understand the implications of using a reverse sequence algorithm for screening in a primary care setting.<sup>2</sup>

**3. The correct answer is A.** Effective treatment with antibiotics can prevent progression to late-stage disease, as well as provide benefit at any stage of disease. The USPSTF found no direct evidence on the harms of screening for syphilis; however, potential harms include false-positive results, unnecessary anxiety, overtreatment, and known harms associated with antibiotic treatment. Harms of treatment include rare adverse drug-related effects, such as anaphylaxis due to penicillin allergy and the Jarisch-Herxheimer reaction. The USPSTF found the harms of treatment with antibiotics to be no greater than small. The USPSTF concluded there is no optimal screening frequency for persons at increased risk of syphilis, but initial studies suggest that men who have sex with men or persons with HIV infection may benefit from screening every three months rather than annually.

The views expressed in this work are those of the authors, and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences, the Department of Defense, or the U.S. government.

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### REFERENCES

1. Cantor AG, Pappas M, Daeges M, Nelson HD. Screening for syphilis: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2016;315(21):2328-2337.
2. U.S. Preventive Services Task Force. Screening for syphilis infection in nonpregnant adults and adolescents: U.S. Preventive Services Task Force recommendation statement. *JAMA*. 2016;315(21):2321-2327. ■