U.S. Preventive Services Task Force

Screening for Chronic Kidney Disease: Recommendation Statement

▶ **See related Putting Prevention into Practice on page 293.**

This summary is one in a series excerpted from the Recommendation Statements released by the U.S. Preventive Services Task Force (USPSTF). These statements address preventive health services for use in primary care clinical settings, including screening tests, counseling, and preventive medications.

The complete version of this statement, including supporting scientific evidence, evidence tables, grading system, members of the USPSTF at the time this recommendation was finalized, and references, is available on the USPSTF website at http://www.uspreventiveservicestaskforce.org/.

A collection of USPSTF recommendation statements reprinted in *AFP* is available at http://www.aafp.org/afp/uspstf.

Summary of Recommendation and Evidence

The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to assess the balance of benefits and harms of routine screening for chronic kidney disease (CKD) in asymptomatic adults *(Table 1)*. **I statement.**

Common tests for CKD screening include creatinine-derived estimates of glomerular filtration rate (GFR), as well as urine testing for albumin. Testing for and monitoring CKD for the purposes of chronic disease management (including testing and monitoring patients with diabetes mellitus or hypertension) are not covered by this recommendation. See the Clinical Considerations section for suggestions for practice regarding the I statement.

Rationale

IMPORTANCE

Approximately 11% of U.S. adults have CKD, many of whom are older persons. The condition is usually asymptomatic until its advanced stages. Most cases of CKD are associated with diabetes or hypertension.

DETECTION

CKD is defined as decreased kidney function or kidney damage that persists for at least three months. No studies have assessed

Table 1. Screening for Chronic Kidney Disease: Clinical Summary of the USPSTF Recommendation

Population	Asymptomatic adults without diagnosed CKD
Recommendation	No recommendation Grade: I (insufficient evidence)
Risk assessment	There is no generally accepted risk assessment tool for CKD or risk of complications of CKD. Diabetes mellitus and hypertension are well-established risk factors with strong links to CKD. Other risk factors for CKD include older age, cardiovascular disease, obesity, and family history.
Screening tests	Although there is insufficient evidence to recommend routine screening, the tests often suggested for screening that are feasible in primary care include testing the urine for protein (microalbuminuria or macroalbuminuria) and testing the blood for serum creatinine to estimate glomerular filtration rate.
Balance of harms and benefits	The USPSTF could not determine the balance between the benefits and harms of screening for CKD in asymptomatic adults.
Other relevant USPSTF recommendations	The USPSTF has made recommendations on screening for diabetes mellitus, hypertension, and obesity, as well as aspirin use for the prevention of cardiovascular disease. These recommendations are available at http://www.uspreventiveservicestaskforce.org.

NOTE: *For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, go to http://www.uspreventiveservicestaskforce.org.*

CKD = chronic kidney disease; USPSTF = U.S. Preventive Services Task Force.

the sensitivity and specificity of screening for CKD with tests for estimated GFR, microalbuminuria, or macroalbuminuria.

BENEFITS OF DETECTION AND EARLY INTERVENTION AND TREATMENT

Evidence that routine screening for CKD improves clinical outcomes for asymptomatic adults is inadequate.

HARMS OF DETECTION AND EARLY INTERVENTION AND TREATMENT

Evidence on the harms of screening for CKD is inadequate. However, convincing evidence shows that medications used to treat early CKD may have adverse effects.

USPSTF ASSESSMENT

The USPSTF concludes that the evidence on routine screening for CKD in asymptomatic adults is lacking, and that the balance of benefits and harms cannot be determined.

Clinical Considerations

PATIENT POPULATION

This recommendation applies to asymptomatic adults without diagnosed CKD. Testing for and monitoring CKD for the purpose of chronic disease management (including monitoring patients with diabetes or hypertension) are not covered by this recommendation.

SUGGESTIONS FOR PRACTICE REGARDING THE I STATEMENT

Potential Preventable Burden and Benefits. CKD is highly prevalent; in 2011, 11% of the general U.S. population had the condition. However, most affected persons have risk factors for CKD, particularly older age, diabetes, and hypertension. It is usually asymptomatic until its advanced stages. Although there is no evidence on the benefits and harms of screening in the general population of asymptomatic adults, evidence shows that specific treatments for patients with diabetes reduce the risk of advanced CKD. The American Diabetes Association recommends screening for CKD in all patients with diabetes. The USPSTF found very limited evidence about whether knowledge of CKD status in patients with isolated hypertension (those who do not also have diabetes or cardiovascular disease) helps in making treatment decisions. However, several organizations recommend screening patients who are being treated for hypertension, including the National Institutes of Health's Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.

Potential Harms. For adults without diabetes or hypertension, the risk of CKD and subsequent adverse outcomes resulting from CKD is small. The number of persons with a positive screening test for CKD who will be confirmed to have CKD is unknown. There are no studies on the benefits of early treatment in persons without diabetes or hypertension. Persons who have positive results on a screening test for CKD but do not have CKD may experience the harms associated with interventions and treatments without the potential for benefit.

Current Practice. Serum creatinine testing is widely done for various reasons in clinical practice, including chronic disease management for patients with hypertension and diabetes. Many patients with CKD stages 1 to 3 seem to have at least some testing in usual clinical care, probably for other conditions or in response to guidelines from other organizations.

RISK ASSESSMENT

No generally accepted risk assessment tool for CKD or risk of complications of CKD exists. Diabetes and hypertension are well-established risk factors with a strong link to CKD. Other risk factors for CKD include older age, cardiovascular disease, obesity, and family history.

SCREENING TESTS

Although evidence to recommend routine screening is insufficient, the tests often suggested for screening that are feasible in primary care include testing the urine for protein (microalbuminuria or macroalbuminuria) and testing the blood for serum creatinine to estimate GFR. No studies have evaluated the sensitivity and specificity of one-time testing with either or both tests for diagnosis of CKD, defined as decreased kidney function or kidney damage persisting for at least three months.

TREATMENT

Treatment of early stages of CKD is generally targeted to comorbid medical conditions, such as diabetes, hypertension, and cardiovascular disease, to reduce the risk of complications and progression of CKD. These treatments include blood pressure medications (particularly angiotensin-converting enzyme inhibitors and angiotensin II receptor blockers), lipid-lowering agents, and diet modification.

This recommendation statement was first published in *Ann Intern Med.* 2012;157(8):567-570.

The "Other Considerations," "Discussion," and "Recommendations of Other Groups" sections of this recommendation statement are available at http://www.uspreventiveservicestaskforce.org/uspstf/uspsckd.htm.