American Heart Association.

Top Take-Home Messages for Clinicians:

Using the PREVENT Equations for Risk-Based Cardiovascular-Kidney-Metabolic (CKM) Syndrome Management

Adapted from: 2026 AHA/ACC/ADA/ASN Guideline for the Prevention, Detection, Evaluation, and Management of Cardiovascular-Kidney-Metabolic Syndrome

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1. **Quantify risk of cardiovascular disease using the PREVENT equations in patients with, or at risk for, CKM syndrome.**

   The 2026 Cardiovascular-Kidney-Metabolic (CKM) Syndrome Guideline recommends the PREVENT equations for risk assessment for cardiovascular disease (CVD) and, for the first time, for heart failure (HF). These equations incorporate kidney and metabolic measures to enhance risk assessment among individuals with CKM syndrome. An additional tool to help communicate risk includes the PREVENT-Risk Age, which can be used to compare chronologic age to vascular age. *(Section 4.1)*

2. **Calculate risk with the PREVENT equations in appropriate primary prevention populations beginning in young adulthood for earlier risk identification.**

   The PREVENT equations are recommended in adults without known cardiovascular disease to calculate 10-year risk in those aged 30–79 years and 30-year risk in those aged 30–59 years. PREVENT is not indicated for those with existing CVD in CKM syndrome stage 4. *(Section 4.1)*

3. **Use the PREVENT equations to inform CKM syndrome staging.**

   The 2026 AHA/ACC/ADA/ASN CKM Guideline recommends a systematic approach to evaluating risk in the patient with CKM syndrome. Assessment begins with evaluation

of CKM risk factors followed by calculation of CVD risk with the PREVENT-CVD equations. A 10-year PREVENT-CVD estimate ≥20% is defined as a risk equivalent for CKM syndrome stage 3. *(Section 4.1)*

4. Use the PREVENT equations to consider additional diagnostic testing to detect subclinical CVD.

Risk-based testing in selected individuals with CKM syndrome for detection of subclinical ASCVD with imaging (e.g., coronary artery calcification (CAC) measurement) and pre-HF (e.g., cardiac biomarkers [NT-proBNP, hs-cTn], echocardiography) can be beneficial after quantitative risk assessment with the PREVENT equations. Testing for CAC can be beneficial among individuals with borderline-intermediate 10-year ASCVD risk (PREVENT-ASCVD 3 to <10%), when there is uncertainty in clinical decision-making. Assessments for cardiac biomarkers, as a marker of pre-HF, can be beneficial when 10-year risk PREVENT-HF is increased (≥5%). *(Section 3.1)*

5. Use PREVENT equations to guide decision-making for CKM therapies.

Risk assessment with the PREVENT equations is used to guide shared decision-making for initiation and intensification of CKM therapies. A 10-year CVD risk of ≥7.5% using the PREVENT-CVD equations can further guide the prioritization of pharmacotherapy such as GLP-1-based therapies or SGLT2i or both in the treatment of CKM syndrome. *(Section 5.5)*

6. Calculate 30-year risk of CVD and corresponding risk percentiles with the PREVENT equations in young adults to refine prevention strategies.

For adults aged 30-59 years, the PREVENT equations can be used to estimate 30-year risk of CVD in conjunction with the 10-year risk to guide shared decision-making. The benefit of long-term risk estimation is best demonstrated in individuals who may have low short-term (10-year) risk due to their young age but have high long-term (30-year) risk based on clinical risk factors. Risk communication and clinical decision-making can be supported with the 30-year PREVENT-CVD risk percentiles. Individuals with 30-year risk ≥ the 75th percentile for age and sex, despite a low 10-year risk, will likely benefit from early intervention through lifestyle modification and potentially pharmacotherapy to prevent the progression of CKM syndrome. *(Section 4.1)*

7. Incorporate the PREVENT equations into holistic risk assessment using the "CPR" framework.

In addition to risk estimation using the PREVENT equations, risk enhancers and diagnostic testing for subclinical CVD may refine and reclassify risk to inform shared decision-making with the Calculate-Personalize-Reclassify (CPR) framework. Explain risk in absolute terms and use shared decision-making tools to support patient understanding. *(Section 4.2)*

8. Consider risk enhancers to refine PREVENT estimates and personalize treatment decisions.

Certain risk enhancers drive the development and progression of CKM syndrome. In adults who are at borderline or intermediate risk, additional factors that can increase the risk of CKM syndrome progression, including a family history of diabetes or kidney failure, low socioeconomic status, high-risk demographic groups (such as South Asian ancestry), mental health or sleep disorders, chronic inflammatory diseases, elevated high-sensitivity C-reactive protein (hsCRP), and sex-specific risk markers (e.g., preeclampsia, premature menopause, erectile dysfunction) may be considered. These risk enhancers help personalize treatment decisions and may support earlier or more intensive therapy. *(Section 4.2)*

9. Use albuminuria and hemoglobin A1c when indicated to refine risk estimation with the PREVENT add-on equations.

Chronic kidney disease and diabetes are powerful risk factors for CVD in patients with CKM syndrome. As such, the degree of albuminuria and glycemic status can refine risk estimation with the PREVENT add-on equations. These can also serve as a prompt for when assessments of albuminuria and hemoglobin A1c measurements are indicated to guide initiation and intensification of CKM therapies. *(Section 4.1)*

10. Incorporate social determinants of health into holistic risk assessment for CKM syndrome.

The importance of social determinants of health (SDOH) in CKM syndrome is demonstrated by inclusion of the social deprivation index in the PREVENT equations. The PREVENT equations use zip code for a place-based measure of SDOH to identify individuals at higher risk due to their environment. Adverse SDOH that are identified during screening in the clinical setting should be addressed as part of the CKM interdisciplinary care model. *(Section 3.2)*