Microalbumin

**Description**
Microalbumin is the quantification of small amounts of albumin, a serum protein, in urine that can be used to identify microvascular endothelial dysfunction. The presence of small amounts of albumin in the urine may suggest the presence of systemic endothelial dysfunction – an early indicator of heart disease. This test is more sensitive than a standard dipstick test routinely performed in an office setting.

**Clinical Use**
Microalbumin may be performed on individuals with type 1 or type 2 diabetes, hypertension, a family history of chronic kidney disease, those at intermediate (10-20%) risk for CVD, or those with known vascular disease.

**Clinical Significance**

**Cardiovascular Significance:**
- Increases in microalbumin excretion in the ‘normal’ range (<30 mg/g) are associated with increased risk for development of cardiovascular morbidity and mortality, as well as all-cause mortality.1-6

- In particular, seemingly healthy individuals from the Framingham Heart Study (defined as non-hypertensive, non-diabetic, and without prevalent CVD) with low microalbumin levels have approximately 3x greater risk for developing cardiovascular disease.1 These microalbumin levels are gender-specific and are noted to be ≥3.9 mg/g for men and ≥7.5 mg/g for women.

- A direct, linear relationship exists between microalbuminuria and the risk of heart attack, stroke, and death.1

**Renal Significance:**
- The American Diabetes Association (ADA) has defined microalbuminuria as a microalbumin value of 30-300 mg/g creatinine.7 A persistent microalbumin of >30 mg/g indicates a loss of kidney function and is used in the diagnosis of chronic kidney disease.8

**Testing Frequency**
Microalbumin testing is determined by an individual’s medical history, but may be performed semi-annually or annually as necessary. If the initial test result is abnormal, then follow-up testing may be performed within 3-6 months following treatment.

**Sample Type**
Microalbumin should be performed on a urine specimen. Fasting is not required.

**Commercial Insurance or Medicare Coverage**
Coverage guidelines, also known as NCD (National Coverage Determination) or LCD (Local Coverage Determination) have been established or posted by CMS (Medicare & Medicaid). Guidelines should be reviewed for coverage and limitation. Limited information has been provided by the majority of the larger carriers (Aetna, United Healthcare, Cigna, Blues).

- Increased levels of microalbumin may identify:
  - Metabolic syndrome/diabetes
  - Kidney disease
  - Cardiovascular disease (CVD)

- Microalbumin levels can be reduced by:
  - Lowering blood pressure
  - Lowering blood sugar levels
References


Treatment Considerations†

These treatment considerations are for educational purposes only. Specific treatment plans should be provided and reviewed by the treating practitioner.

✓ Assess insulin sensitivity.
  • If not at an optimal level, consider insulin-sensitizing therapies described in the ADA guidelines for the management of pre-diabetes/diabetes.

✓ Assess blood pressure.
  • If not at an optimal level, consider initiating or titrating antihypertensive therapy.

Assess the presence of coronary artery disease (CAD) with imaging techniques such as carotid intima-media thickness (IMT) testing or coronary artery calcium (CAC) scoring.

✓ Assess clotting risk.
  • Consider anti-platelet therapy if history of CAD (i.e., myocardial infarction or revascularization) and/or cerebrovascular disease (i.e., transient ischemic attack or stroke).

* The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.
† The treatment considerations are provided for informational purposes only and are not intended as medical advice. A physician’s test selection and interpretation, diagnosis, and patient management decisions should be based on his/her education, clinical expertise, and assessment of the patient.