**Definition:** Microvolt T-wave alternans (MTWA) testing is a noninvasive diagnostic assessment tool that detects minute electrical activity in the T-wave portion of an electrocardiogram (ECG). During controlled exercise, anterior chest electrodes are used to detect subtle beat-to-beat changes (microvolt, or millionths of a volt, in the T-wave) that may indicate increased risk for ventricular arrhythmias and sudden cardiac death (SCD).

Spectral analysis, a mathematical method used to analyze ECG signals, is utilized to calculate minute voltage changes. A software program analyzes the microvolt changes and produces a report which is interpreted by a physician.

MTWA testing has been suggested as a risk stratification tool to identify individuals at risk for SCD as a result of ventricular arrhythmias, and possible candidates for implantable cardioverter defibrillator (ICD) therapy. It has been suggested that a negative MTWA test may be useful in identifying individuals at low risk, and therefore less likely to benefit from ICD placement. The available evidence is not sufficient, however, to support the use of the test as standard of care for a decision not to implant an ICD in patients who otherwise meet established criteria.

**Medical Necessity:** The Company considers MTWA testing (CPT Code 93025) medically necessary and eligible for reimbursement for the evaluation of patients at risk for SCD;

**AND**

*At least one* of the following clinical conditions is present:

- Acute myocardial infarction
- Other coronary insufficiency (acute)
- Cardiomyopathy
- Paroxysmal ventricular tachycardia
- Ventricular fibrillation
- Ventricular flutter
- Syncope and collapse
- Personal history of surgery to heart and great vessels presenting health hazards
Based upon our findings, the Company considers MTWA testing **not medically necessary** and **not** eligible for reimbursement for **any** the following:

- Test results will not alter treatment; or
- Testing is performed as part of a routine physical examination or screening service in asymptomatic individuals; or
- Spectral analysis will not be utilized to calculate results.

**Documentation Requirements:**

The Company reserves the right to request additional documentation as part of its coverage determination process. The Company may deny reimbursement when it has determined that the services performed were not medically necessary, investigational or experimental, not within the scope of benefits afforded to the member and/or a pattern of billing or other practice has been found to be either inappropriate or excessive. Additional documentation supporting medical necessity for the services provided must be made available upon request to the Company. Documentation requested may include patient records, test results and/or credentials of the provider ordering or performing a service. The Company also reserves the right to modify, revise, change, apply and interpret this policy at its sole discretion, and the exercise of this discretion shall be final and binding.
Sources of Information:

- Madias JE. A proposal for an upgraded microvolt t-wave alternans index with consideration of t-wave amplitudes and the rise in heart rate. Indian Pacing Electrophysiol J. 2011;11(3):89-90.

Applicable Code(s):

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