



Kaiser Foundation Health Plan of Washington

Clinical Review Criteria Myocardial Strain Imaging

- [Speckle-tracking echocardiography](#)

NOTICE: Kaiser Foundation Health Plan of Washington and Kaiser Foundation Health Plan of Washington Options, Inc. (Kaiser Permanente) provide these Clinical Review Criteria for internal use by their members and health care providers. The Clinical Review Criteria only apply to Kaiser Foundation Health Plan of Washington and Kaiser Foundation Health Plan of Washington Options, Inc. Use of the Clinical Review Criteria or any Kaiser Permanente entity name, logo, trade name, trademark, or service mark for marketing or publicity purposes, including on any website, or in any press release or promotional material, is strictly prohibited.

Kaiser Permanente Clinical Review Criteria are developed to assist in administering plan benefits. These criteria neither offer medical advice nor guarantee coverage. Kaiser Permanente reserves the exclusive right to modify, revoke, suspend or change any or all of these Clinical Review Criteria, at Kaiser Permanente's sole discretion, at any time, with or without notice. **Member contracts differ in health plan benefits. Always consult the patient's Evidence of Coverage or call Kaiser Permanente Member Services at 1-888-901-4636 (TTY 711), Monday through Friday, 8 a.m. to 5 p.m. to determine coverage for a specific medical service.**

Criteria

For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	None
Local Coverage Article (LCA)	None
Kaiser Permanente Medical Policy	Due to the absence of an active NCD, LCD, or other coverage guidance, Kaiser Permanente has chosen to use their own Clinical Review Criteria, Myocardial Strain Imaging for medical necessity determinations. Refer to the Non-Medicare criteria below.

For Non-Medicare Members

Myocardial strain imaging is considered medically necessary:

- Prior to, during, or following exposure to oncology medications* that could result in cardiotoxicity

*Including but not limited to – doxorubicin (Adriamycin); trastuzumab (Herceptin, Kanjinti); pertuzumab (Perjeta); ado-trastuzumab emtansine (Kadcyla); fam-trastuzumab deruxtecan (Enhertu); mitoxantrone (Novantrone); liposomal doxorubicin (Doxil)

Myocardial strain imaging is considered experimental, investigational or unproven for all other indications.

If requesting this service, please send the following documentation to support medical necessity:

- Last 6 months of clinical notes from requesting provider &/or specialist

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background Technology Description

Myocardial strain imaging (MSI) involves a sophisticated analysis of images from echocardiography. Reflection of ultrasonic waves from myocardial tissue creates stable patterns of brighter and darker spots (speckles) that can serve as "fingerprints" to identify specific segments of the myocardial walls. Image processing computer software tracks the movement of these patterns to assess the severity of myocardial damage and abnormal heart function.

Quality of the Evidence

The body of evidence concerning diagnostic and prognostic use of MSI was large in size and overall low in quality. The overall low-quality rating for the body of evidence reflects individual study limitations, wide variability in the MSI parameters used for diagnosis or prognosis in DCM, and the absence of studies evaluating the clinical utility of MSI in patients with DCM. Overall quality was determined based on the balance of benefits and harms and was assessed taking into consideration the quality of individual studies; the precision, directness, and consistency of data; and the applicability of data to general practice.

Conclusion

The available studies have not provided sufficient evidence to evaluate diagnostic uses of MSI in DCM patients due to the small number and diverse applications of MSI in diagnostic studies. Although some prognostic studies found that certain MSI parameters had statistically significant correlations with health outcomes, results were not consistent across studies and the parameter that appeared most accurate for prognosis (early DSR) was measured in only 1 study. Furthermore, no studies of the clinical utility of MSI were identified to evaluate whether the diagnostic and prognostic information obtained from MSI can be used to improve patient management. MSI does not pose any safety concerns. Additional studies are needed to identify the optimal MSI parameters for diagnosis and prognosis in DCM patients and to demonstrate that guidance of care with MSI provides meaningful improvements in health outcomes for DCM patients.

Insights

- MSI can be used to measure many types of changes and rates of change in myocardial length, shape, and rotation in each of the 4 heart chambers. More research is needed to evaluate which of these measurements are most useful for all of the potential diagnostic and prognostic uses of MSI.
- Although the equipment needed to perform echocardiographic MSI is much less complicated than the equipment needed for cardiac magnetic resonance imaging (MRI), MSI may be less accurate and there is little evidence addressing the relative accuracy of these techniques. Only 1 study compared MSI with cardiac MRI; therefore, additional studies are needed to evaluate the relative accuracy of these techniques in patients with DCM.
- MSI may provide some useful diagnostic or prognostic information if cardiac MRI is not available or not feasible.
- Two studies that included exercise testing or cardiac stress testing obtained results that greatly differed from results of measurements obtained solely in resting patients, suggesting that additional MSI studies incorporating exercise and stress testing are needed.

Reference

Hayes. Hayes Health Technology Assessment. Myocardial Strain Imaging by Speckle-Tracking Echocardiography for Evaluation of Dilated Cardiomyopathy. Dallas, TX: Hayes; September 24, 2020. Retrieved January 7, 2022 from <https://evidence.hayesinc.com/report/dir.myocardialstrain4712>.

Applicable Codes

Considered Not Medically Necessary:

CPT® or HCPCS Codes	Description
93356	Myocardial strain imaging using speckle tracking-derived assessment of myocardial mechanics (List separately in addition to codes for echocardiography imaging)

***Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

**To verify authorization requirements for a specific code by plan type, please use the [Pre-authorization Code Check](#).

CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). HCPCS codes, descriptions, and materials are copyrighted by Centers for Medicare Services (CMS).

Date Created	Date Reviewed	Date Last Revised
01/18/2022	02/01/2022 ^{MPC} , 02/07/2023 ^{MPC} , 04/02/2024 ^{MPC}	

^{MPC} Medical Policy Committee

Revision History	Description
02/01/2022	MPC approved to adopt criteria for Myocardial Strain Imaging. Requires 60-day notice, effective date 07/01/2022.