

Reimbursement

Adjunctive TMR
CABG + TMR

ICD-10-PCS

- 021L0Z5
 - o Bypass Left Ventricle to Coronary Circulation, Open Approach

DRG

- 228: Other Cardiothoracic Procedure w/MCC
- 229: Other Cardiothoracic Procedure w/CC

Sole Therapy TMR
Stand alone TMR

ICD-10-PCS

- 02OC4ZZ
 - o Repair Left Heart, Percutaneous Endoscopic Approach (e.g., Thoracoscopic)

DRG

- 228: Other Cardiothoracic Procedure w/MCC
- 229: Other Cardiothoracic Procedure w/CC

	Average Reimbursement	
	Adjunctive CABG + TMR	Sole Therapy TMR
DRG 228*	\$49,752	
DRG 229*	\$31,017	
CPT Codes	33141 - \$137	33140 - \$1,638

*FY2017 National Base Payment; 1 CMS 42 CFR Parts 405, 412, 413, and 485 [CMS-1655-F; CMS-16644-F; CMS-1632-F2] RIN 0938-AS77; 0938-AS88; 0938-AS41 Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Policy

CardioGenesis® | Cardiac
Laser Therapy

Visit

www.heartpainrelief.com

to learn more about helping patients with chronic angina!

References

1. Williams et al. Patients with Coronary Artery Disease Not Amendable to Traditional Revascularization: Prevalence and 3-Year Mortality. Catheterization Cardiovascular Interventions. 2010 May 1;75(6):886-891.

2. Leon et al. A Blinded Randomized, Placebo-Controlled Trial of Percutaneous Laser Myocardial Revascularization to Improve Angina Symptoms in Patients With Severe Coronary Disease. Am Coll Cardiol 2005;46:1812-9

3. Bridges et al. The Society of Thoracic Surgeons Practice Guideline Series: Transmyocardial Laser Revascularization. Ann Thorac Surg 2004;77:1494 -1502

4. Allen KB, et al. Adjunctive Transmyocardial Revascularization: 5-Year Follow-Up of a Prospective, Randomized Multicenter Trial. Ann Thorac Surg 2004;78:458-65.

5. Allen KB, Dowling RB, Fudge TL, et al. Comparison of transmyocardial revascularization with medical therapy in patients with refractory angina. N Engl J Med. 1999;341:1029-1036.

6. Iwanski et al. Clinical outcomes meta-analysis: measuring subendocardial perfusion and efficacy of transmyocardial laser revascularization with nuclear imaging. Journal of Cardiothoracic Surgery (2017) 12:37.

7. Allen, KB, et al. Transmyocardial Revascularization: 5-Year Follow-Up of a Prospective, randomized Multicenter Trial. Ann Thorac Surg 2004 Apr;77(4):1228-35.

8. Tran, R. et al. Transmyocardial Laser Revascularization Enhances Blood Flow within Bypass Grafts. Innovations 2007;2: 226-230

CardioGenesis® | Cardiac
Laser Therapy

Transmyocardial Revascularization
Patient Selection and Reimbursement



CryoLife, Inc.
1655 Roberts Boulevard, NW,
Kennesaw, Georgia 30144 USA
Phone: (888) 858-6395
Fax: 770-590-3753
Email: CUSTSVC@cryolife.com

CryoLife, the snowflake design, Life Restoring Technologies, and CardioGenesis are registered trademarks owned by CryoLife, Inc. or its subsidiaries. All other registered trademarks are owned by their respective owners. © 2018 CryoLife, Inc. All rights reserved.

MLENG1300.000 (08/2018)



CryoLife®
Life Restoring Technologies®

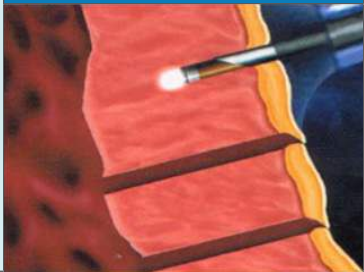


Are Your Patients Right for TMR?

Patients suffering from severe, Canadian Cardiovascular Society (CCS) Class IV angina, often have a sense of hopelessness about their situation. Approximately 7% of patients with coronary artery disease (CAD) are classified as “No-Option”.¹ Consider referring your severe angina patients for TMR if they fit the criteria below:

- Profound physical limitations due to angina
- Patients with an ejection fraction (EF) ≥ 30%
- Refractory to maximum medical therapy (including Ranexa®)
- Region of the myocardium with reversible ischemia not amenable to:
 - Percutaneous Coronary Intervention (PCI)
 - Coronary Artery Bypass Graft (CABG)
 - Redo CABG with few or small targets
 - Diabetic patients with poor vessel quality and diffuse disease

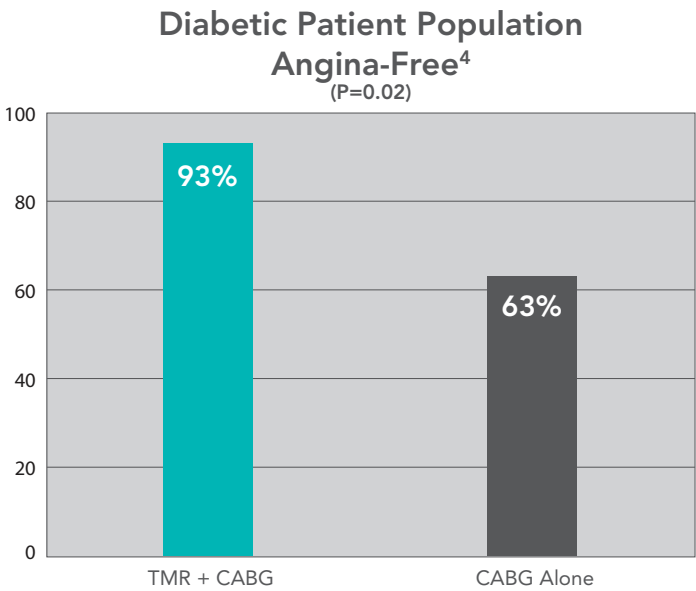
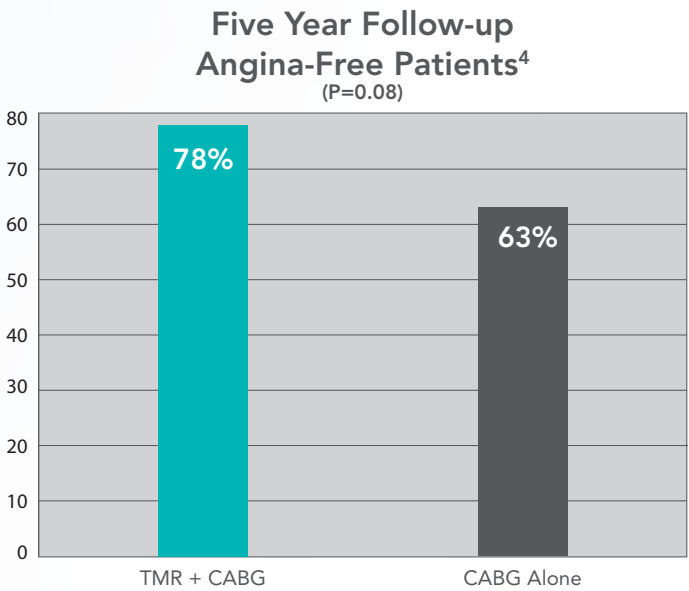
Don’t Confuse TMR With Other Procedures

In the late 1990s, Percutaneous and Direct Myocardial Revascularization (PMR and DMR, respectively) were researched but no clinical benefit(s) was found.² The lead authors grouped TMR in with these other procedures and confused many, especially in the Cardiology community. However, five randomized multicenter trials provide the evidence that TMR benefits patients with chronic angina.³ TMR is a Class I Indication recommendation by the Society of Thoracic Surgeons.³

	Transmyocardial Revascularization (TMR)	Percutaneous Myocardial Revascularization (PMR)	Direct Myocardial Revascularization (DMR)
			
Access	Surgical	Transcatheter	Transcatheter
Channel Creation	Yes	Partial (3 mm)	No - Laser fiber is only placed on tissue wall for acoustical effect
Clinically Proven and FDA Approved as a Class III Device	Yes	No	No

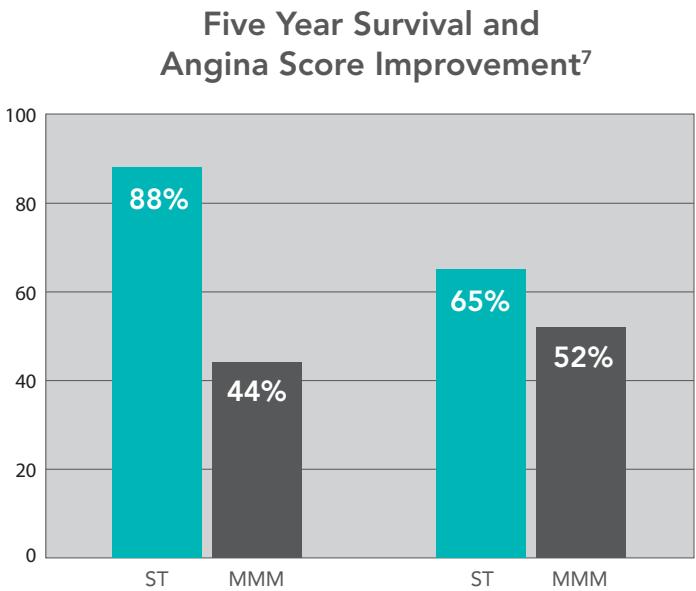
TMR has Proven Results

Adjunctive



Sole Therapy

- Significantly higher rates of improvement in angina for patients who were not candidates for conventional therapies⁵
- Freedom from treatment failure⁵
- Freedom from cardiac-related return hospital visits compared with patients who received medical therapy alone⁵
- Two or more grade CCS improvements⁵
- Significantly higher exercise tolerance and quality of life scores⁵
- Statistically significant improvements in myocardial perfusion⁶



	Experienced Two or More CCS Class Improvements in Angina (p = 0.001)	Kaplan-Meier Survival at 5 Years (p = 0.03)
TMR	88%	65%
Medical Management	44%	52%

“Our study demonstrated that TMR acutely improves venous bypass graft blood flow.”⁸