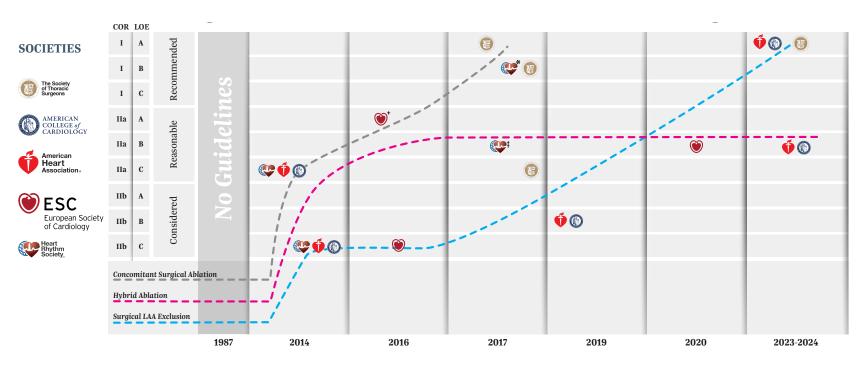
# DO SOMETHING

ACT against Afib

## Do Something





A wealth of data led the Surgical Thoracic and Heart Rhythm Societies to make a Class I recommendation that patients with Afib undergoing valve or coronary surgeries receive surgical Afib treatment.16

# Cox Maze IV yields the highest efficacy for Afib treatment, but literature shows progressive efficacy for each additive lesion set of the Cox Maze IV.

### **Lesion Set Options**

Reported Experiences: 1–5 year retro and prospective peerreviewed publications both on and off AADs

Approach	Reported Experiences w/ Surgical Ablation	Ablation Duration
Pulmonary Vein Isolation (PVI)	PAF ~ <b>50</b> - <b>90</b> % <sup>2,14,19</sup>	
	nPAF ~ <b>60</b> % <sup>2,15</sup>	†
Box Set Lesion (Box)	nPAF ~ <b>55–70</b> % <sup>16,20</sup>	++
Left Atrial Lesion Set (LAL)	nPAF ~ <b>73-86</b> % <sup>17,18,21</sup>	+++
Bi-Atrial Lesion Set (Maze)	nPAF <b>~80–90</b> % <sup>7-9</sup>	++++

Endocardial PVI Outcomes (Lone Afib)
PAF ~70% – meta-analysis¹¹
nPAF ~50% – meta-analysis¹¹

Left Atrial Appendage Management (LAAM)	Effectiveness of LAAM Modalities
LAAM is often part of surgical ablation procedures	Epicardial Clip Exclusion: 97% (93-100%) <sup>22-32</sup> Excision: 74% (45-100%) successful closure <sup>33,34,36</sup> Staple Ligation: 56% (0-71%) successful closure <sup>33-35</sup> Suture Ligation: 36% (23-49%) successful closure <sup>33-36</sup>

The success of various procedures may be influenced by several factors, which may predict the outcome, such as duration of pre-procedural Afib, type of Afib, lesion set performed, left atrial size, patient's age, atrial fibrillation wave <1.0mm, experience of the operator, left atrial reduction, and device used.



#### References:

- <sup>1</sup> January, C. T., et al. (2019). 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation, CIR-00000000000665.
- <sup>2</sup> Badhwar, V. et al. (2017). The Society of Thoracic Surgeons 2017 Clinical Practice Guidelines for the Surgical Treatment of Atrial Fibrillation. Ann of Thorac Surg, 103(1):329-41.
- <sup>3</sup> Calkins, H. et al. (2017), 2017 HRS/EHRA/ECAS/APHRS/SOLAECE expert consensus statement on catheter and surgical ablation of atrial fibrillation. Europace, 20(1):e1-e10.
- 4 January, C.T. et al. (2014). 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. J Am Coll Cardiol, 64(21):e1-e76.
- <sup>5</sup> Meier, B. et al. (2014). EHRA/EAPCI expert consensus statement on catheter-based left atrial appendage occlusion. Europace, 16(10):1397-416.
- <sup>6</sup> Cox, J.L. et al. (1991). Successful surgical treatment of atrial fibrillation. Review and clinical update. JAMA, 266(14):1976-80.
- <sup>7</sup> Gaynor, S.L. et al. (2015), Surgical treatment of atrial fibrillation: predictors of late recurrence. J Thorac Cardiovasc Surg, 129(1):104-11.
- 8 Weimar, T. et al. (2011). The Cox-maze IV procedure for lone atrial fibrillation: a single center experience in 100 consecutive patients. J Interv Card Electrophysiol. 31(1):47-54.
- 9 Schill, M.R. et al. (2017). Late results of the Cox-maze IV procedure in patients undergoing coronary artery bypass grafting. J Thorac Cardiovasc Surg, 153(5):1087-94.
- 10 Ouyang, F. et al. (2010). Long-term results of catheter ablation in paroxysmal atrial fibrillation: lessons from a 5-year follow-up. Circulation, 122(23):2368-77.
- <sup>11</sup> Kirchhof, P. et al. (2016). 2016 ESC guidelines for the management of atrial fibrillation developed in collaboration with EACTS: the Task Force for the management of atrial fibrillation of the European Society of Cardiology (ESC) developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC Endorsed by the European Stroke Organization (ESO). Europace, 18(11):1455-90.
- 12 Tilz, R.R. et al. (2010). Catheter ablation of long-standing persistent atrial fibrillation: a lesson from circumferential pulmonary vein isolation. J Cardiovasc Electrophysiol, 21(10):1085-93. (Abstract-Only).
- 13 Wynn, G.J. et al. (2016). Long-term outcomes after ablation of persistent atrial fibrillation: an observational study over 6 years. Open Heart, 3(2):e000394.
- 14 Gillinov, A.M. et al. (2005). Surgical ablation of atrial fibrillation with bipolar radiofrequency as the primary modality. J Thorac Cardiovasc Surg, 129(6):1322-9.
- <sup>15</sup> Gillinov, A.M. et al. (2015). Surgical ablation of atrial fibrillation during mitral-valve surgery. N Engl J Med, 372(15):1399-409.
- 16 Voeller, R.K. et al. (2008). Isolating the entire posterior left atrium improves surgical outcomes after the Cox maze procedure. J Thorac Cardiovasc Surg, 135(4):870-7.
- <sup>17</sup> Barnett, S.D., & Ad, N. (2006). Surgical ablation as treatment for the elimination of atrial fibrillation: a meta-analysis. J Thorac Cardiovasc Surg, 131(5):1029-35.
- 18 Cox, J.L., & Ad, N. (2000). The importance of cryoablation of the coronary sinus during the Maze procedure. Semin Thorac Cardiovasc Surg, 12(1):20-4.
- 19 Robertson, J.O. et al. (2013). Surgical Techniques Used for the Treatment of Atrial Fibrillation. Circ J, 77(8):1941-51.
- 20 Gillinov, A.M. et al. (2006). Surgery for permanent atrial fibrillation: impact of patient factors and lesion set. Ann Thorac Surg, 82(2):502-14.
- 21 Ad, N., Holmes, S.D., Lamont, D., & Shuman, D.J. (2017). Left-Sided Surgical Ablation for Patients With Atrial Fibrillation Who Are Undergoing Concomitant Cardiac Surgical Procedures. Ann Thorac Surg, 103(1):58-65.
- <sup>22</sup> Ailawadi, G. et al. (2011). Exclusion of the left atrial appendage with a novel device: early results of a multicenter trial. J Thorac Cardiovasc Surg, 142(5):1002-9.
- <sup>23</sup> Caliskan, E. et al. (2017). Epicardial left atrial appendage AtriClip occlusion reduces the incidence of stroke in patients with atrial fibrillation undergoing cardiac surgery. Europace 20(7):e-105-e114. DOI: 10.1093/europace/eux211.
- 24 van Laar, C. et al. (2018). Thoracoscopic Left Atrial Appendage Clipping: A Multicenter Cohort Analysis. JACC Clin Electrophysiol, 4(7):893-901.
- 25 Ellis, C.R. et al. (2017), Angiographic Efficacy of the AtriClip Left Atrial Appendage Exclusion Device Placed by Minimally Invasive Thoracoscopic Approach, JACC Clin Electrophysiol, 3(12):1356-65.
- 26 Kurfirst, V. et al. (2017). Epicardial clip occlusion of the left atrial appendage during cardiac surgery provides optimal surgical results and long-term stability. Interact Cardiovasc Thorac Surg, 25(1):37-40.
- <sup>27</sup> Emmert, M.Y. et al. (2014). Safe, effective and durable epicardial left atrial appendage clip occlusion in patients with atrial fibrillation undergoing cardiac surgery: first long-term results from a prospective device trial. Eur J Cardiothorac Surg. 45(1):126-31.
- 28 Ad, N. et al. (2015), New Approach to Exclude the Left Atrial Appendage During Minimally Invasive Cryothermic Surgical Ablation, Innovations (Phila), 10(5):323-7.
- 29 Gerdisch, M. et al, AtriClip PRO V Left Atrial Appendage Occlusion Study. AtriCure, Inc., Post Market Field Evaluation of the PRO V Device, PM-US-0071A-1020-G.
- 30 Mokracek, A. et al. (2015). Thoracoscopic Occlusion of the Left Atrial Appendage. Innovations (Phila), 10(3):179-82.
- 31 Page, S. et al. (2019). Left Atrial Appendage Exclusion Using the AtriClip Device: A Case Series. Heart Lung Circ, 28(3):430-5.
- 32 Beaver, T.M. et al. (2016). Thoracoscopic Ablation With Appendage Ligation Versus Medical Therapy for Stroke Prevention: A Proof-of-Concept Randomized Trial. Innovations (Phila), 11(2):99-105.
- 33 Kandarian, A.S., Gillinov, A.M., Pettersson, G.B., Blackstone, E., & Klein, A.L. (2008). Success of surgical left atrial appendage closure: assessment by transesophageal echocardiography. J Am Coll Cardiol, 52(11):924-9.
- 34 Cullen, M.W. et al. (2016). Left Atrial Appendage Patency at Cardioversion After Surgical Left Atrial Appendage Intervention. Ann Thorac Surg, 101:675-81.
- 35 Healey, J.S. et al. (2005). Left Atrial Appendage Occlusion Study (LAAOS): results of a randomized controlled pilot study of left atrial appendage occlusion during coronary bypass surgery in patients at risk for stroke. Am Heart J, 150(2):288-93.
- 36 Lee, R. et al. (2016). A randomized, prospective pilot comparison of 3 atrial appendage elimination techniques: Internal ligation, stapled excision, and surgical excision. J Thorac Cardiovasc Surg, 152(4):1075-80.

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