

How Chest Tube Clogging Leads to Retained Blood Syndrome (RBS*)

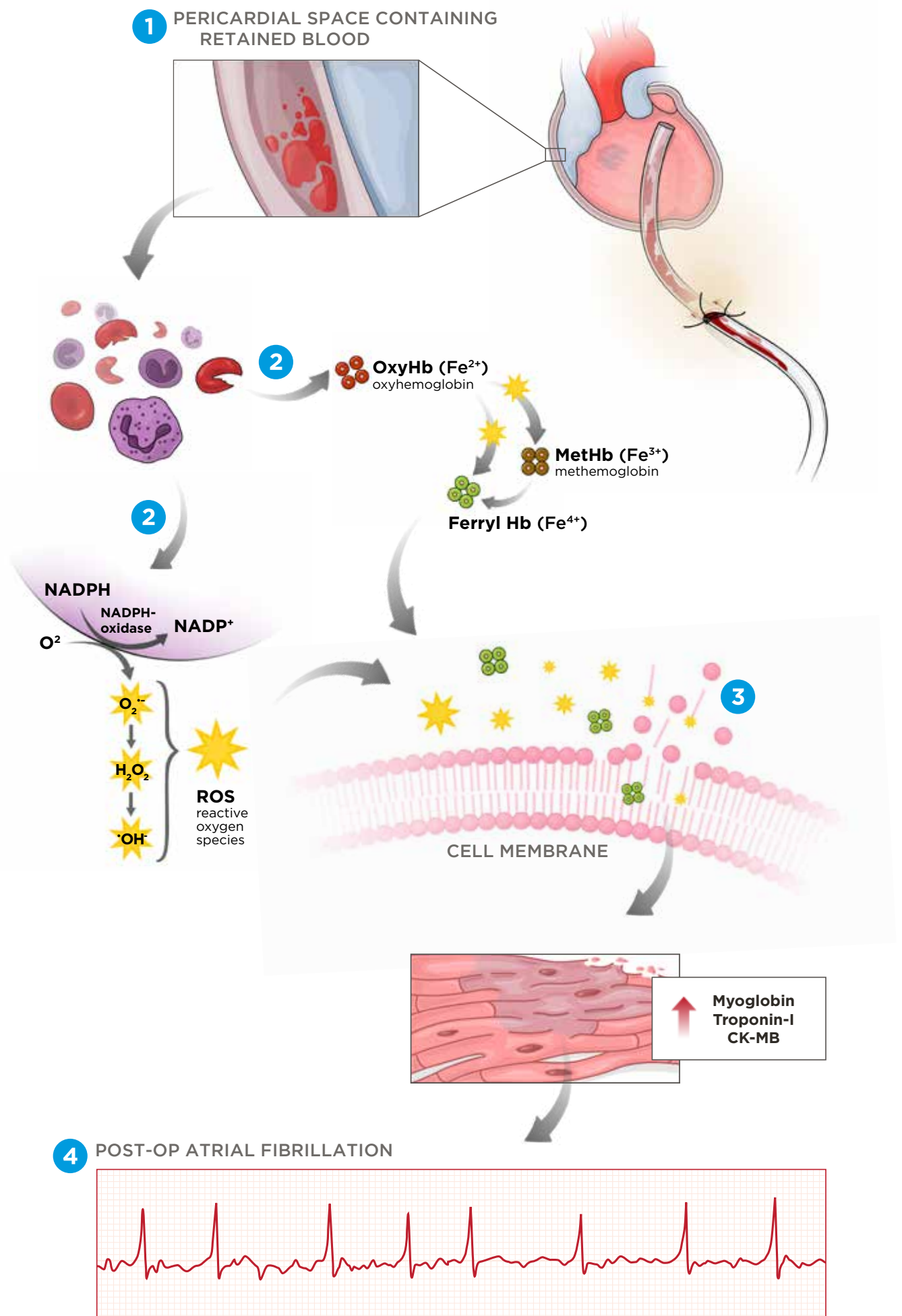
Which Can Trigger Post-op Atrial Fibrillation (POAF)

36% of chest tubes clog completely¹

- 1 Retained blood left behind by clogged chest tubes clots in the pericardial space.
- 2 Red blood cell hemolysis and pro-inflammatory recruitment of white blood cells leads to free radical release and the production of reactive oxygen species (ROS)².
- 3 ROS cause lipid peroxidation, which results in the breakdown of cell membranes, leading to myocardial surface damage, as indicated by increased local biomarkers².
- 4 This kind of myocardial damage from oxidative stress may trigger post-operative complications like POAF.

*Retained Blood Syndrome (RBS) is the composite of interventions for bloody pleural and pericardial effusions, or take backs for wash out of retained blood around the heart or lungs.

56% higher risk of POAF for patients with clogged chest tubes¹



PleuraFlow® Active Clearance Technology® (ACT) System has been shown to reduce both RBS interventions from 20% to 11% (-43%) and POAF from 30% to 20% (-33%).³



¹ Karimov, J.H., Gillinov, A.M., Schenck, L., et al. Incidence of chest tube clogging after cardiac surgery: a single-centre prospective observational study. *Eur J Cardiothorac Surg.* 2013;44(6):1029-1036. doi:10.1093/ejcts/ezt140.

² Kramer P.A., Melby S.J., et al. Hemoglobin-associated oxidative stress in the pericardial compartment of postoperative cardiac surgery patients. *Lab Invest.* 2015;95(2):132-41.

³ Sirch J, Ledwon M, Puski T, Boyle EM, Pfeiffer S, Fischlein T. Active Clearance of Chest Drainage Catheters Reduces Retained Blood. *Journal of Thoracic and Cardiovascular Surgery.* March, 2016 (e-published 2015 Oct 22).

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