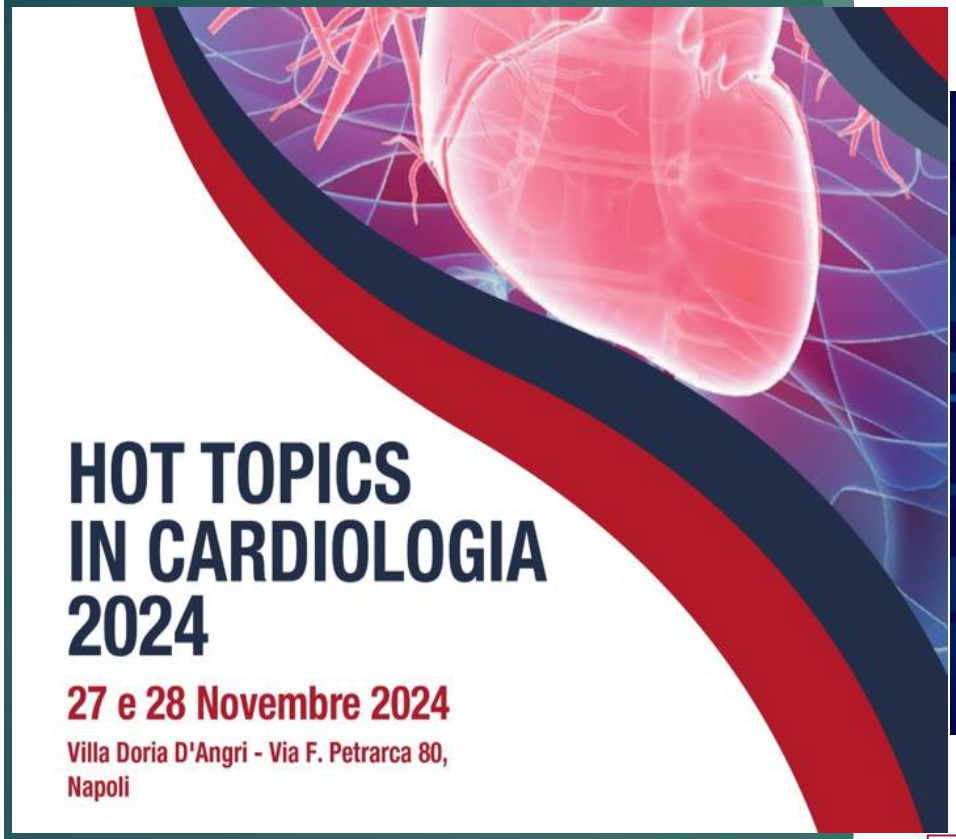

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STATE-OF-THE-ART REVIEW

International Consensus Statement on Platelet Function and Genetic Testing in Percutaneous Coronary Intervention

2024 Update

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TABLE 2 Clinical Phenotypes Identified by Genetic Testing

Metabolizer Phenotypes	Prevalence (%)	Response to Clopidogrel
Ultrarapid *17/*17	1-5	Normal or increased
Rapid *1/*17	10-30	Normal or increased
Normal *1/*1	25-60	Normal
Intermediate *1/*2, *1/*3, *2/*17, *3/*17	20-45	Reduced
Poor *2/*2, *3/*3, *2/*3	2-15	Significantly reduced

The prevalence of loss-of-function alleles is highest in Oceanian biogeographical group may present up to metabolizer.

FIGURE 1 Therapeutic Window and Platelet Reactivity Levels Commonly Associated With Specific $P2Y_{12}$ Inhibitor Therapy in Patients Undergoing Percutaneous Coronary Interventions

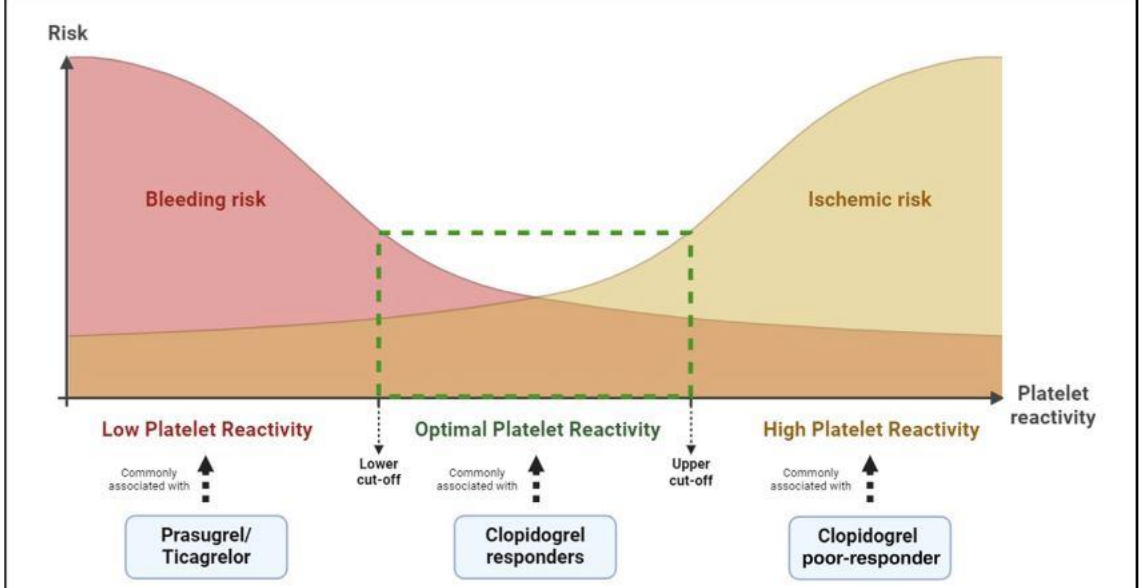
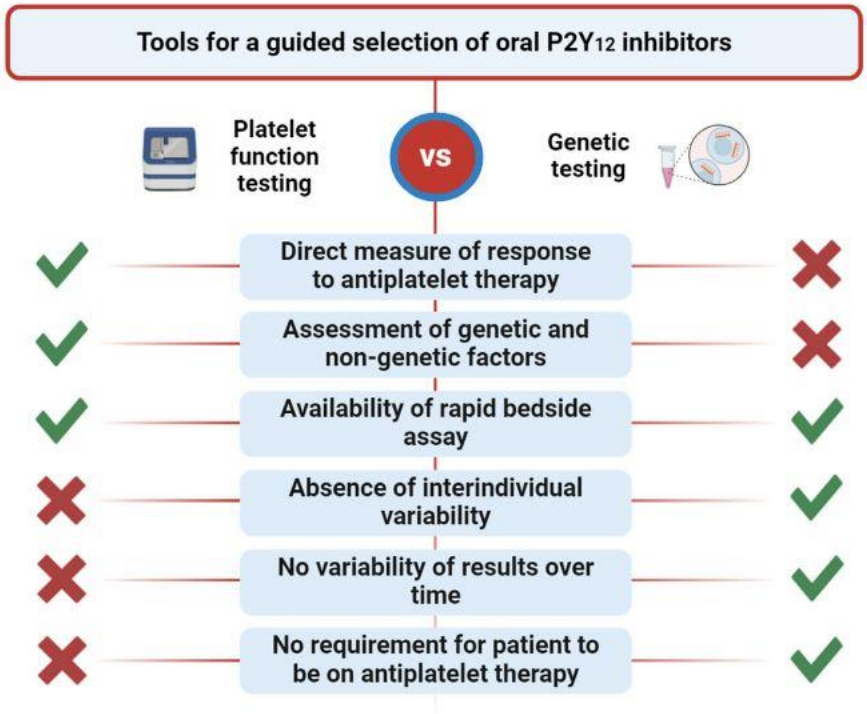
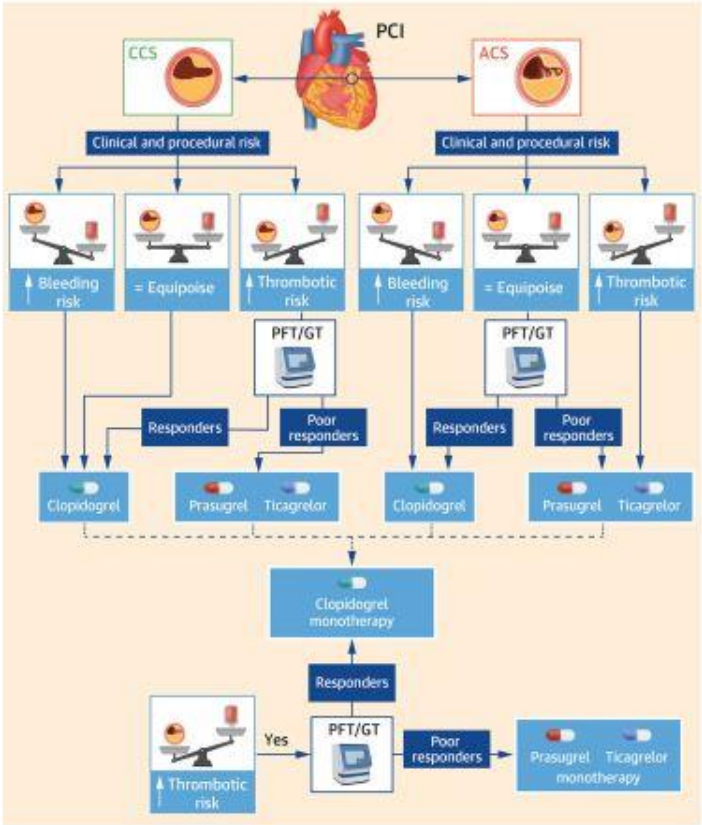


FIGURE 2 Advantages and Disadvantages of Platelet Function Testing vs Genetic Testing



Platelet function testing provides a direct measure of platelet aggregation accounting for both genetic and non-genetic factors but is characterized by a large interindividual variability, often requiring multiple testing over time and needing to be performed while the patient is on antiplatelet treatment. Genetic testing has the advantage that the genetic makeup of an individual remains unvaried and does not require a patient to be on antiplatelet treatment. However, genetic testing contributes only in part to antiplatelet drug response, with other variables, including clinical factors, playing a contributing role.

CENTRAL ILLUSTRATION **Consensus Recommendations on the Use of Platelet Function and Genetic Testing for Guiding Oral $P2Y_{12}$ Inhibitor Treatment in PCI**



Angiolillo DJ, et al. JACC Cardiovasc Interv. 2024;17(22):2639–2663.

Among chronic coronary syndrome (CCS) patients undergoing percutaneous coronary intervention (PCI), patients should undergo the guideline-recommended dual antiplatelet therapy (DAPT) with clopidogrel. However, among patients at high clinical and/or procedural ischemic risk and without increased bleeding risk, or in patients with a history of recurrent ischemic events, platelet function testing (PFT) or genetic testing (GT) should be used to escalate $P2Y_{12}$ inhibition with prasugrel or ticagrelor among clopidogrel poor responders. Among acute coronary syndrome (ACS) patients undergoing PCI, patients at high bleeding and low ischemic risk should undergo DAPT with clopidogrel, while those with high ischemic and low bleeding risk should undergo guideline-recommended DAPT with prasugrel or ticagrelor. PFT or GT should be considered in the subgroup of patients who are at both increased risk of bleeding and ischemic events, aiming at de-escalating $P2Y_{12}$ inhibition (ie, switching from prasugrel or ticagrelor to clopidogrel among clopidogrel responders). Among patients treated with $P2Y_{12}$ inhibitor monotherapy, PFT or GT should be considered in patients treated with clopidogrel monotherapy, particularly if at high clinical and/or procedural ischemic risk or with a history of recurrent ischemic events.

Management of Coronary Vulnerable Plaque With Medical Therapy or Local Preventive Percutaneous Coronary Intervention

Hoyun Kim, MD, Jung-Min Ahn, MD, Do-Yoon Kang, MD, Jinho Lee, MD, Yeonwoo Choi, MD, Seung-Jung Park, MD, Duk-Woo Park, MD

Preventive percutaneous coronary intervention versus optimal medical therapy alone for the treatment of vulnerable atherosclerotic coronary plaques (PREVENT): a multicentre, open-label, randomised controlled trial

Seung-Jung Park, Jung-Min Ahn*, Do-Yoon Kang, Sung-Cheol Yun, Young-Keun Ahn, Won-Jang Kim, Chang-Wook Nam, Jin-Ok Jeong, In-Ho Chae, Hiroki Shiomi, Hsien-Li Kao, Joo-Yong Hahn, Sung-Ho Her, Bong-Ki Lee, Tae Hoon Ahn, Ki-Yuk Chang, Jei Keon Chae, David Smyth, Gary S Mintz, Gregg W Stone, Duk-Woo Park, for the PREVENT Investigators†*

› Eur Heart J Cardiovasc Imaging. 2024 Nov 8:jeae289. doi: 10.1093/ehjci/jeae289.
Online ahead of print.

High-risk features in non-culprit lesions and clinical outcome after NSTEMI versus STEMI

Rick H J A Volleberg [1], Jan-Quinten Mol [1], Anouar Belkacemi [2], Renicus S Hermanides [3], Martijn Meuwissen [4], Alexey V Protopopov [5] [6], Peep Laanmets [7], Oleg V Krestyaninov [8], Casper F Laclé [9], Rohit M Oemrawsingh [4] [10], Jan-Peter van Kuijk [11], Karin Arkenbout [12], Dirk J van der Heijden [3] [13], Saman Rasoul [14] [15], Erik Lipsic [16], Laura Rodwell [17], Cyril Camaro [1], Peter Damman [1], Tomasz Roleder [18], Elvin Kedhi [19], Maarten A H van Leeuwen [3], Robert-Jan M van Geuns [1], Niels van Royen [1]

Figure 1 Study flowchart

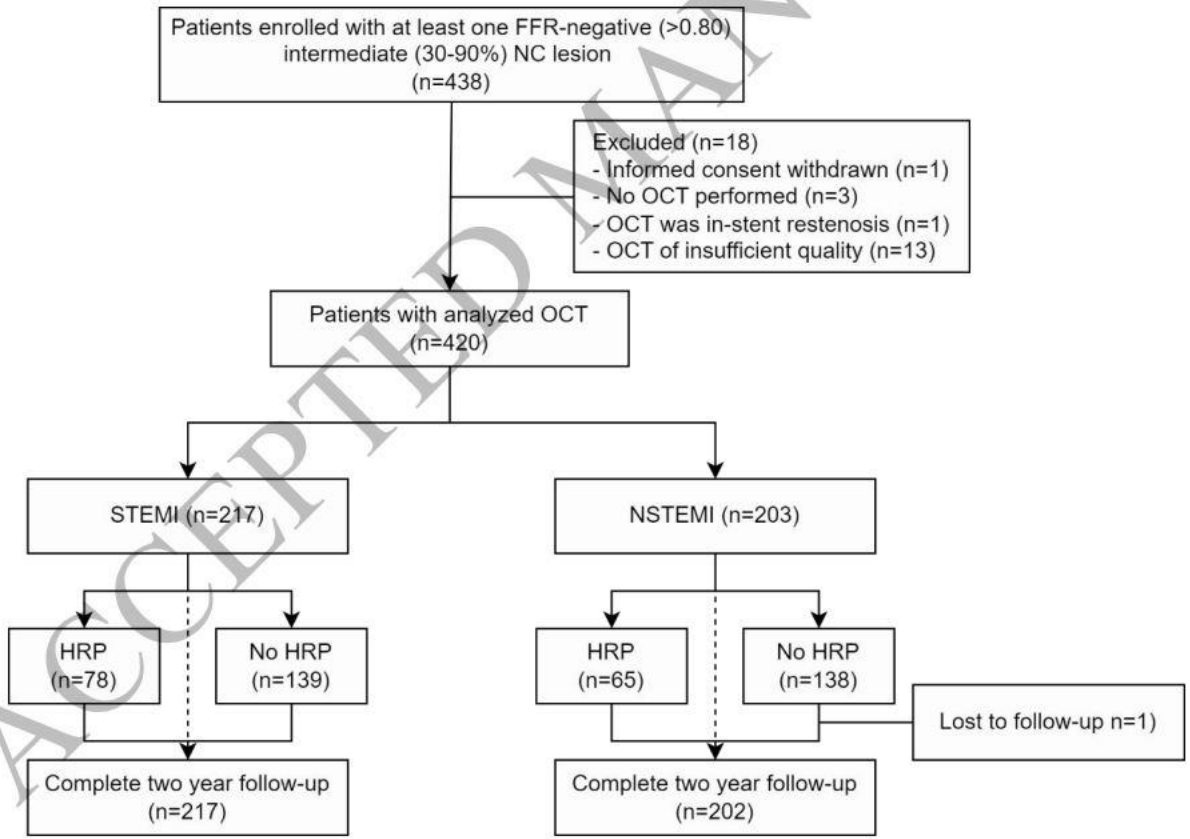
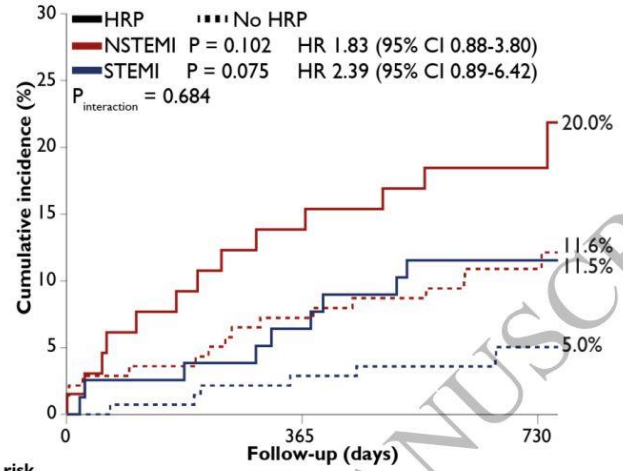
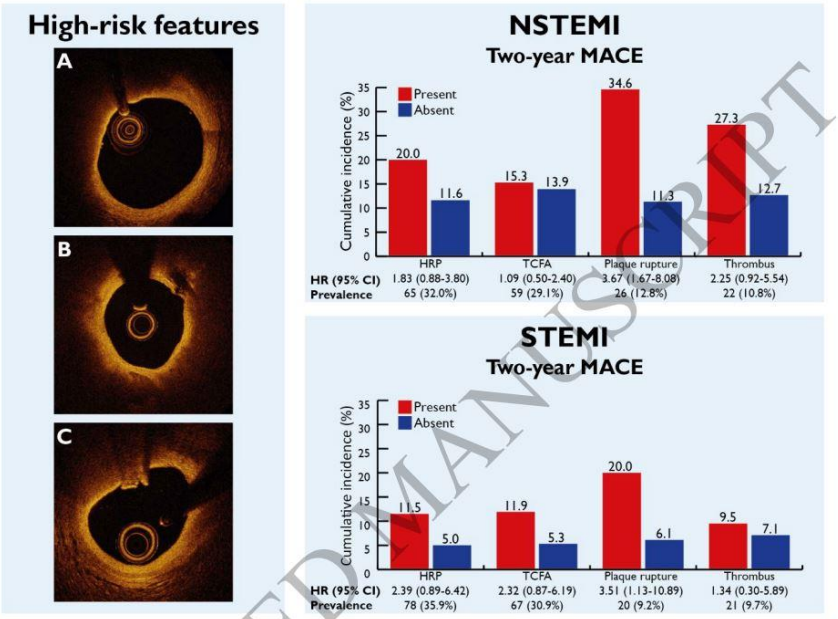


Figure 3 Two-year major adverse cardiovascular events and presence of high-risk plaques



Number at risk

NSTEMI HRP	65	56	53
NSTEMI no HRP	138	128	122
STEMI HRP	78	73	69
STEMI no HRP	139	135	130



Icosapent ethyl following acute coronary syndrome: the REDUCE-IT trial

Neila Sayah [1]*, Deepak L. Bhatt [2], Michael Miller [3], Eliot A. Brinton [4], Terry A. Jacobson [5], Steven B. Ketchum [6], Lixia Jiao [6], Armando Lira Pineda [6], Ralph T. Doyle Jr. [6], Jean Claude Tardif [7], Christie M. Ballantyne [8], and Ph. Gabriel Steg [1,9]; on behalf of the REDUCE-IT Investigators†

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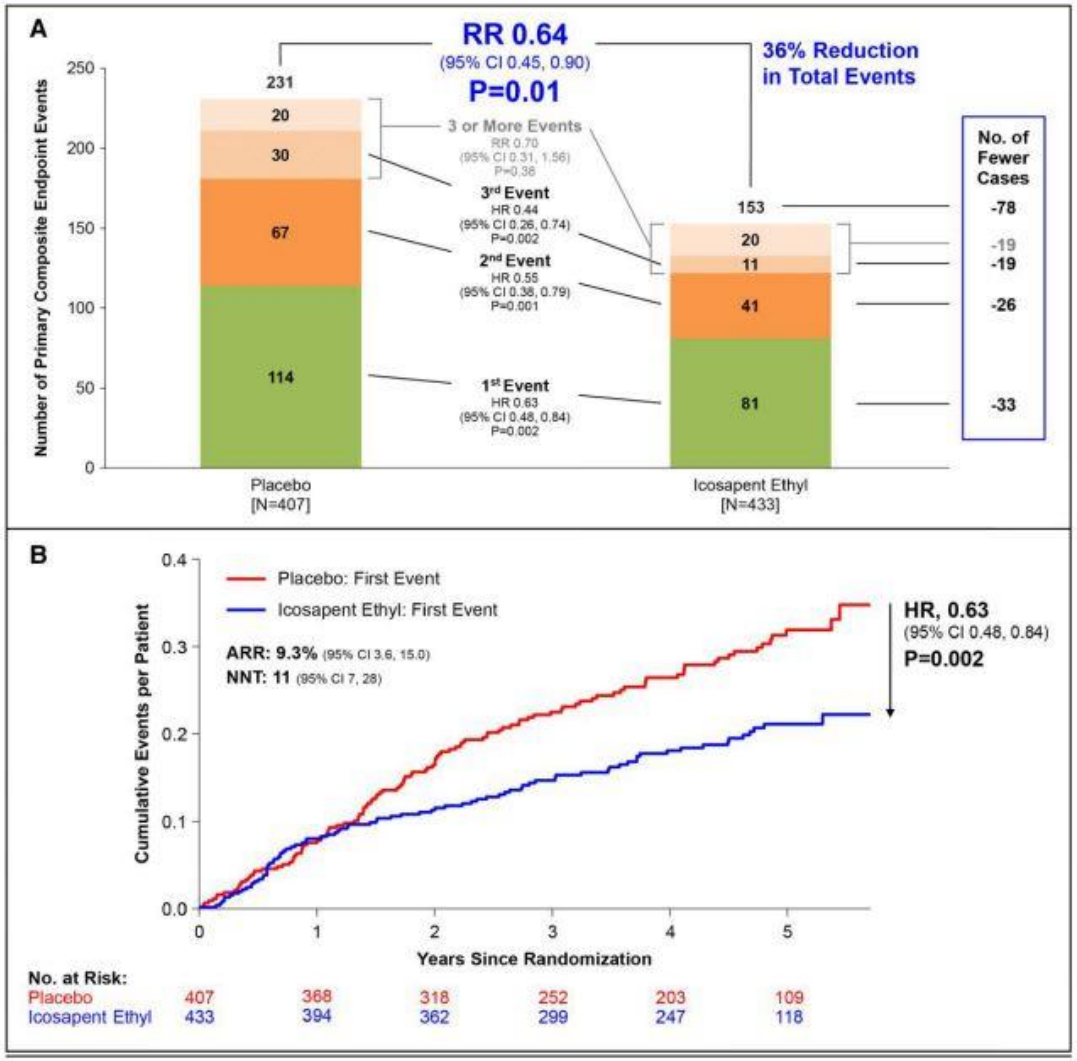

Figure 1 (*A*) First and subsequent events for the primary composite outcome in patients with recent ACS. (*B*) Cumulative incidence curves of the primary composite outcome in patients with recent ACS

Coronary bypass surgery for multivessel disease after percutaneous coronary intervention in acute coronary syndromes: why, for whom, how early?

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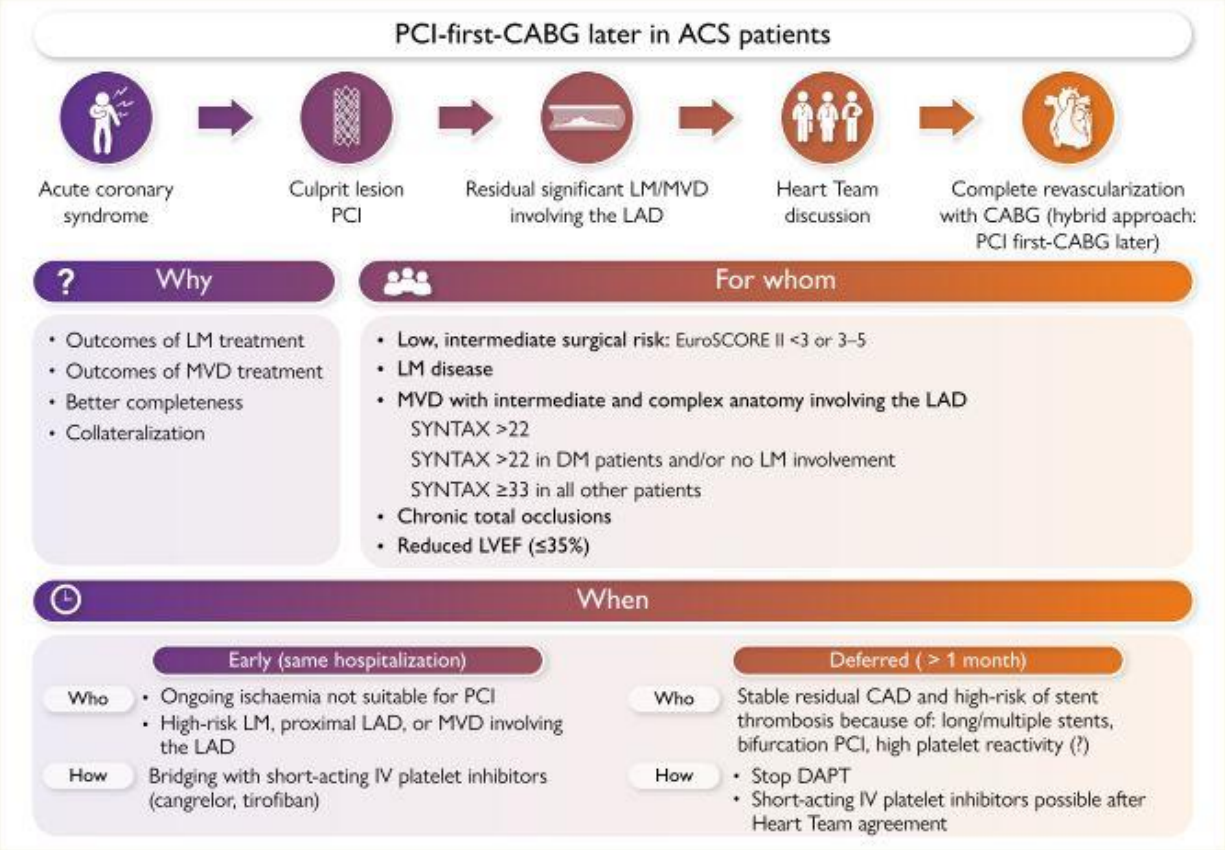
Graphical Abstract



'PCI first-CABG later' in acute coronary syndrome patients. Patients with an acute coronary syndrome should receive immediate treatment of the culprit lesion with percutaneous coronary intervention. In cases of residual significant left main disease or multivessel disease involving the left

Moderate-intensity aerobic exercise inhibits cell pyroptosis to improve myocardial ischemia-reperfusion injury

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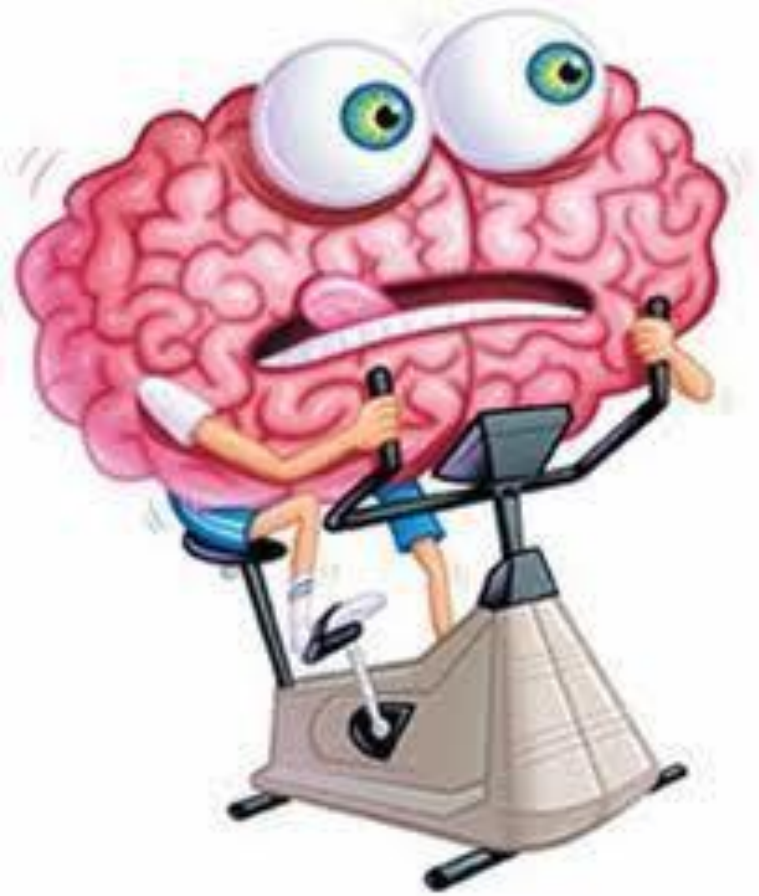

Mens sana in corpore sano


BREAKING NEWS
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