

C

Catheter Engagement

A

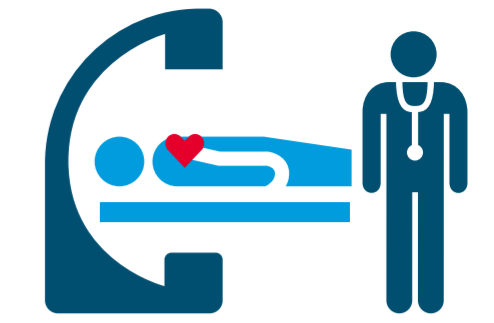
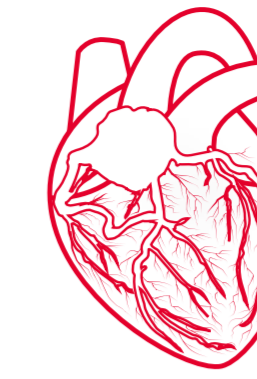
Advance Wire

T

Transit Time at Rest

H

Hyperemic Transit Time



C

Coronary Flow Reserve (CFR)

M

Index of Microcirculatory Resistance (IMR)

D

Diagnosis

- Flush thoroughly<sup>1</sup>
- Coaxial guide engagement<sup>1</sup>
- Ensure no damping<sup>1</sup>

- Interrogate LAD unless there is a specific territory of interest<sup>2</sup>
- Advance wire sensor 2/3 distally in vessel<sup>3</sup>
- Administer GTN/NTG<sup>1</sup>

- Flush/purge pre-Tmn<sub>rest</sub> to clear any blood and contrast<sup>3</sup>
- Room temperature saline<sup>3</sup>
- Brisk 3 mL x 3 injections<sup>3</sup>
- Address outliers ( $\pm 0.15s$ ) before proceeding<sup>4\*</sup>

\*Repeat measurement of Tmn<sub>rest</sub>

- Induce hyperemia<sup>5</sup>
- Confirm hyperemia<sup>6</sup>
- Flush/purge pre-Tmn<sub>hyp</sub> to clear any blood and contrast<sup>6</sup>
- Room temperature saline<sup>6</sup>
- Brisk 3 mL x 3 injections<sup>6</sup>
- Address outliers ( $\pm 0.15s$ ) before proceeding<sup>4\*\*</sup>

\*Decrease in pressure, patient symptoms, FFR drop

\*\*Repeat measurement of Tmn<sub>rest</sub>

- CFR  $<2.5^{*4}$
- CFR grey zone 2.0-2.4<sup>\*</sup>

\*Evolving consensus

- IMR  $\geq 25^2$
- Use IMRcorr if FFR  $\leq 0.80^7$

- Diagnosis of CMD based on IMR  $\geq 25$  and CFR  $<2.5^{2,4}$
- CFR grey zone 2.0-2.4<sup>\*</sup>
- Refer to guidelines and consensus document<sup>2,4,8-9</sup>

\*Evolving consensus

GTN (glyceryl trinitrate) | NTG (nitroglycerin) | LAD (left anterior descending) | FFR (fractional flow reserve) | IMRcorr (IMR corrected) | CMD (coronary microvascular dysfunction) | Tmn<sub>rest</sub> (resting transit mean time) | Tmn<sub>hyp</sub> (hyperemic transit mean time)

References:

1. Berry C. Fractional Flow Reserve, Coronary Flow Reserve and the Index of Microvascular Resistance in Clinical Practice. *Radcliffe Cardiology*. 2014; 1-6. 2. Kunadian V, et al. EAPCI Expert Consensus Document on Ischaemia with Non-Obstructive Coronary Arteries. *EHJ*. 2020; 0, 1-21. 3. Fearon W, et al. Invasive Assessment of the Coronary Microvasculature: The Index of Microcirculatory Resistance. *Circ Cardiovasc Interv*. 2017; 10:e005361 4. Perera D, et al. Invasive coronary physiology in patients with angina and non-obstructive coronary artery disease. *Heart*. 2022; 0, 1-8. 5. Ford T, et al. Stratified Medical Therapy Using Invasive Coronary Function Testing in Angina: *The CorMicA Trial*. *JACC*. 2018; 72, 2841-55. 6. Ang D, et al. Interventional Diagnostic Procedure: a Practical Guide for the Assessment of Coronary Vascular Function. *JOVE* 2022; 181, e2265. 7. Yong A, et al. Calculation of the Index of Microcirculatory Resistance Without Coronary Wedge Pressure Measurement in the Presence of Epicardial Stenosis. *JACC: Cardiovasc Interv*. 2013; 6, 53-8. 8. Knuuti J, et al. ESC guidelines. *EHJ*. 2020; 41, 407-477. 9. Gulati M, et al. 2021 Chest Pain Guideline, *Circulation*. 2021; 144, e368-e454.

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