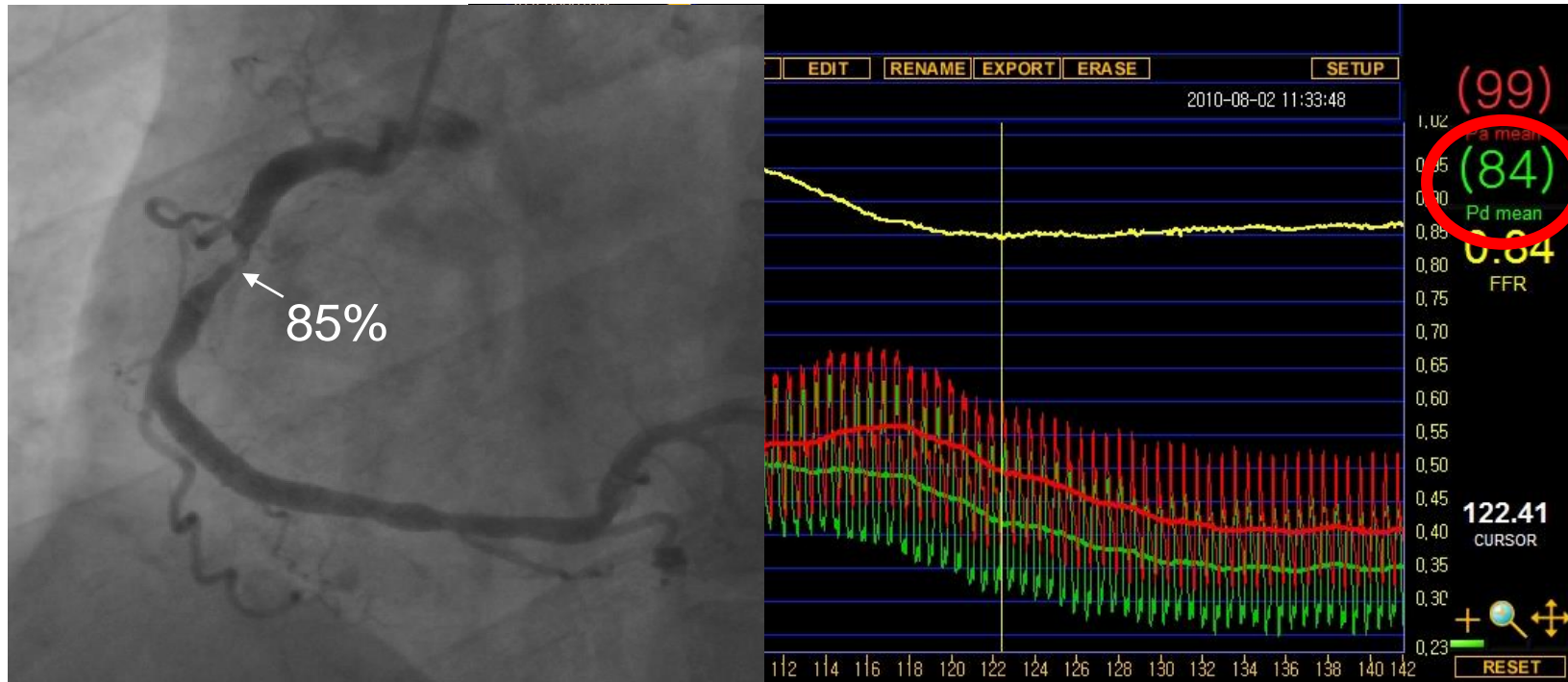


Why FFR ?

Main Issue Is,
There are Many Mismatches
Between Angiographic (%)DS and
FFR In Real World Practice.

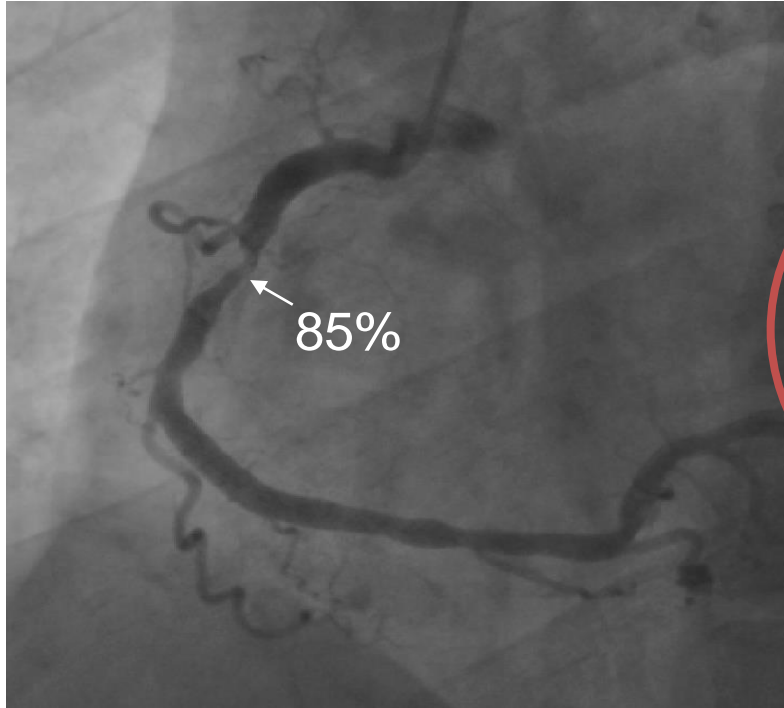
**85%
Stenosis**

**0.84
Negative FFR**



Visual *Functional* Mismatches !

Visual Functional Mismatches !



FFR 0.84

Negative Treadmill test
Normal Thallium Spect
Normal Stress Echo

I Became a FFR Believer !

FFR-Guided PCI Means
Ischemia Guided PCI !

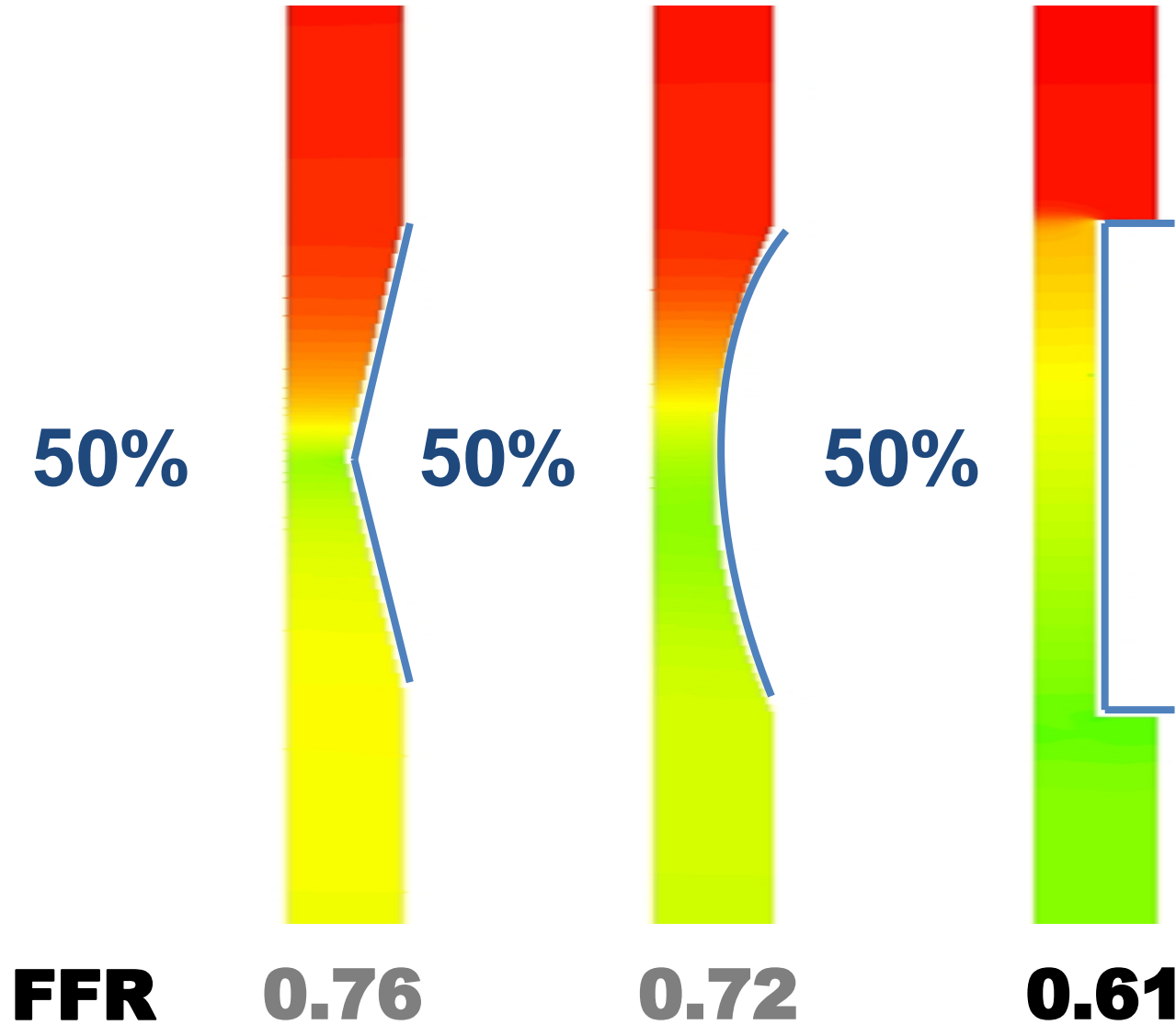
Surprisingly,
Angiographic % Diameter Stenosis
Has No Ischemic threshold !

Why Mismatches ?
Angiographic DS(%) vs. FFR

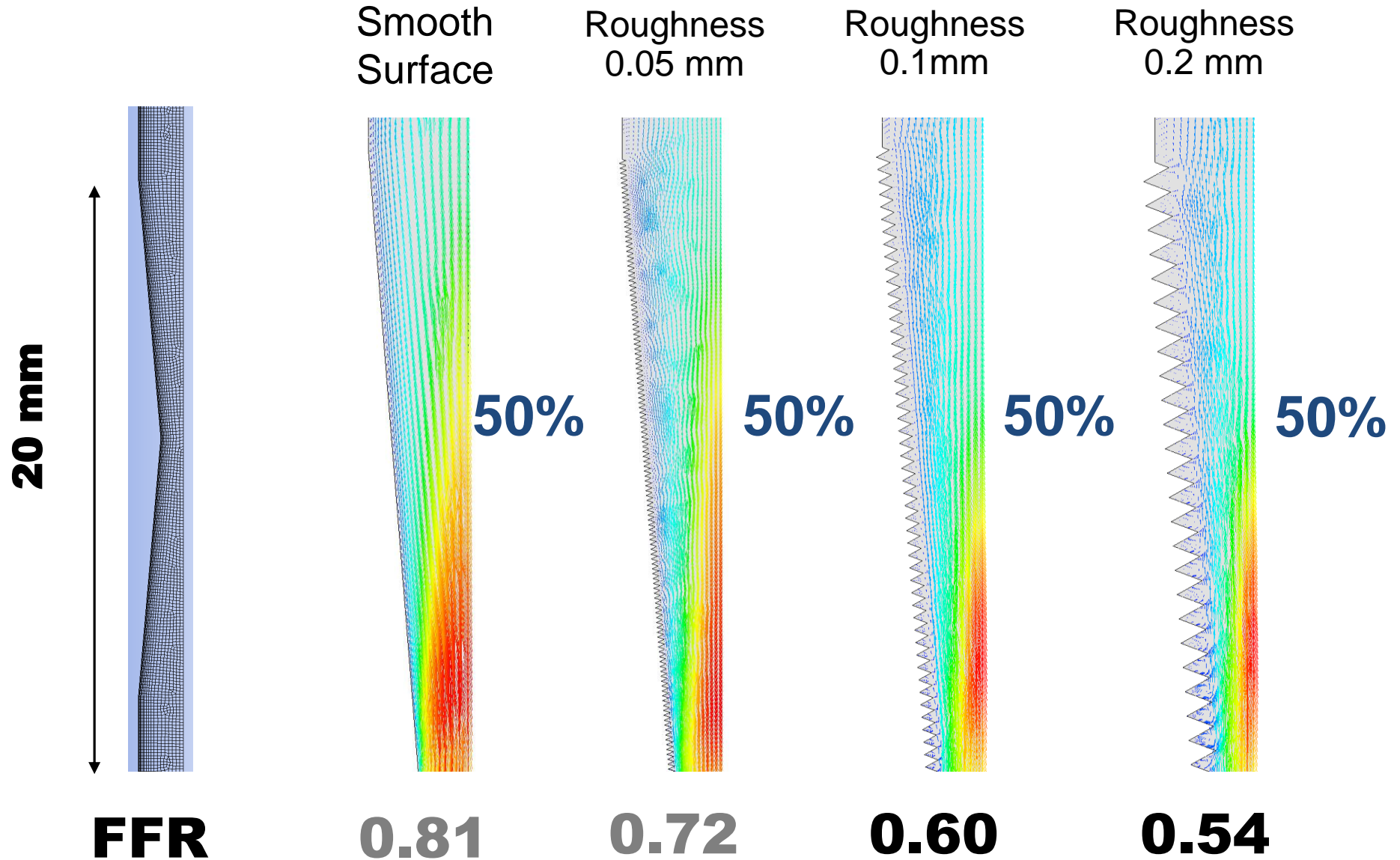
FFR is Mainly Determined by,

- 1. Degree of stenosis**
- 2. Size of myocardium**
- 3. Lesion specific morphologies**

Different Lesion Morphology



Different Surface Roughness



FFR is Mainly Determined by,

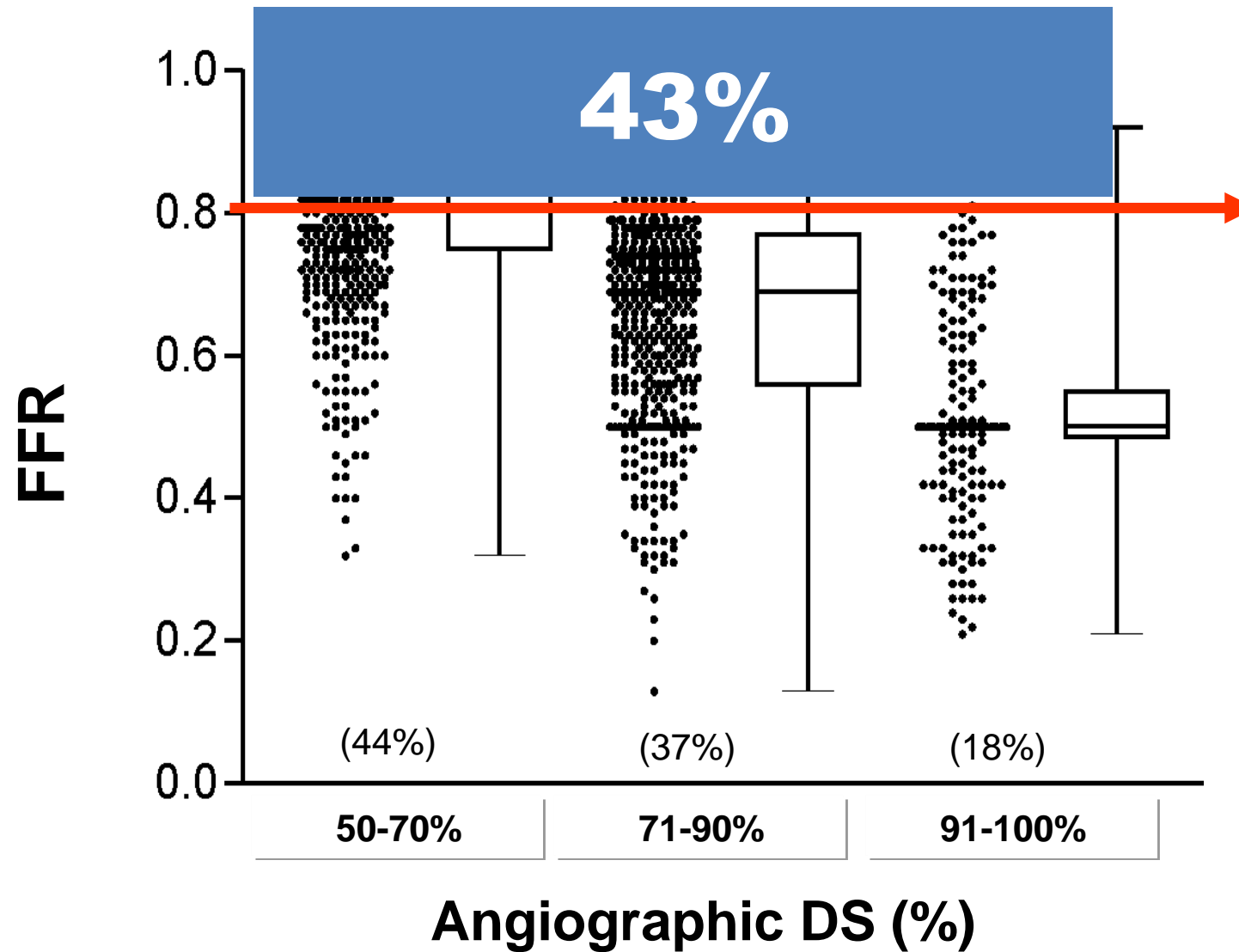
- 1. Degree of stenosis**
- 2. Size of myocardium**
- 3. Lesion specific morphologies**

(surface roughness, lesion length, eccentricity, plaque rupture, plaque burden, viscous friction, flow separation, turbulence and eddies...)

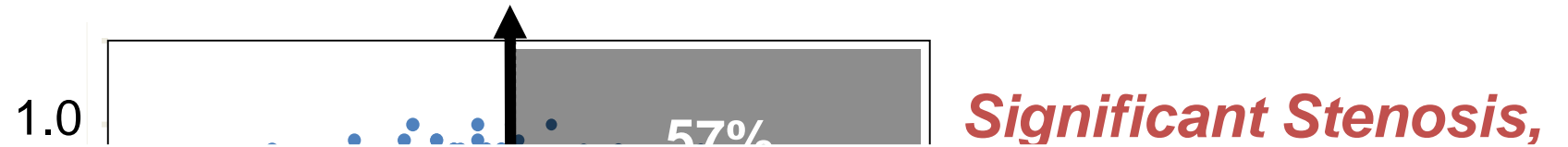
How Many Mismatches ?
In Real World

FAME Study

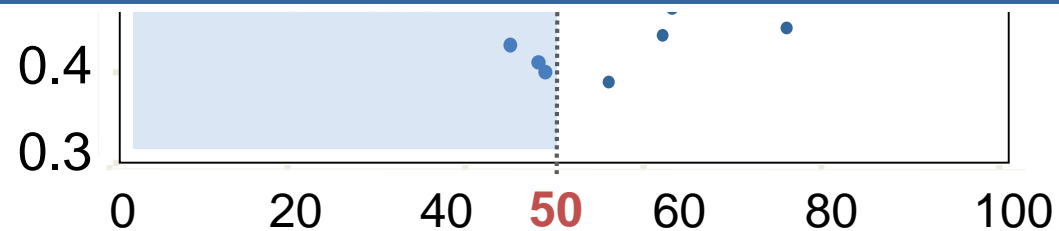
1329 lesions in the FFR-guided arm



Many Mismatches, Non-LM lesions (n=1066)



*Among the Intermediate Stenosis (50~80%),
More than Half of them are Negative FFR !*



Angiographic DS (%)

Current Guideline of FFR

**2018 ESC Guidelines,
2021 ACC/AHA/SCAI Guideline**

Class	Level
I	A

2018 ESC Guidelines **for FFR**

Class	Level	
I	A	When evidence of ischemia is not available, <u>FFR or iFR are recommended to assess the hemodynamic relevance of intermediate-grade stenosis.</u>
I	B	<u>Revascularization of stenosis with FFR <0.80 is recommended in patients with angina symptoms or a positive stress test.</u>
IIa	B	FFR-guided PCI should be considered in patients with multi-vessel disease undergoing PCI.
III	B	Revascularization of an angiographically intermediate stenosis without related ischemia or without FFR <0.80 is not recommended.

2021 ACC/AHA/SCAI Guideline **for the Use of Coronary Physiology** **to Guide Revascularization With PCI**

Class	Level	
I	A	In patients with angina or an anginal equivalent, undocumented ischemia, and angiographically intermediate stenoses, <u>the use of fractional flow reserve (FFR) or instantaneous wave-free ratio (iFR) is recommended</u> to guide the decision to proceed with PCI (1-6).
III	B	<u>In stable patients with angiographically intermediate stenoses and FFR >0.80 or iFR >0.89, PCI should not be performed (7-10).</u>

Rule 1

**In Any Lesion
With FFR < 0.80**

Revascularization !
(Operator's discretion)

Rule 2

**In Any Lesion
With FFR \geq 0.80**

Don't Touch !

**When Do We Have To Consider
FFR Measurement In Real Practice ?**

- 1. Visual Estimation, 50-80 % Without Evidence of Non-Invasive Stress Test.**
- 2. Multi-Vessel Disease Evaluation.**

Consider FFR First !

In order to
Avoid Unnecessary PCI,
Improve the Clinical Outcomes,
And Save the Money !