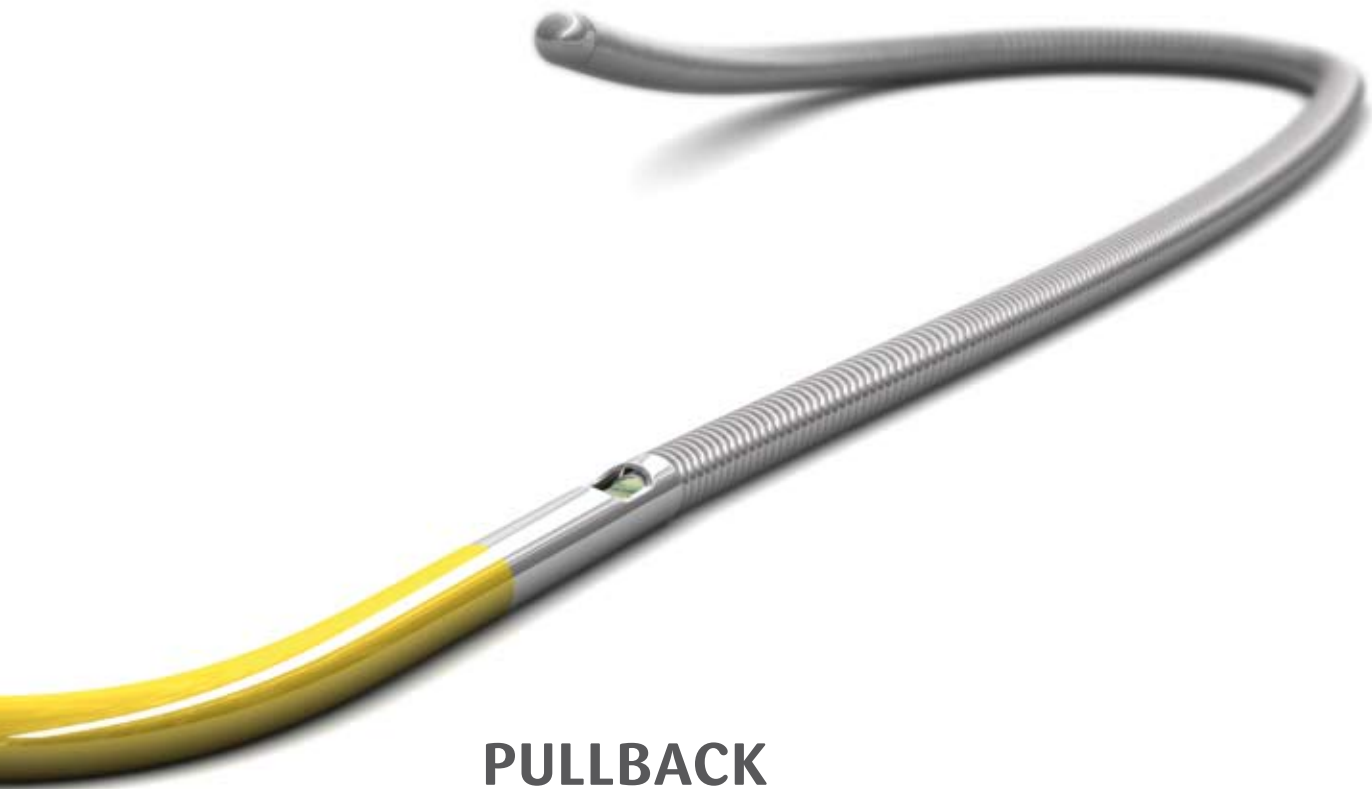


# PressureWire®



**PULLBACK**  
DISCOVER THE FULL POTENTIAL  
OF FFR AND PRESSUREWIRE®

## Background

The pressure pullback curve is a reproducible determination of the exact location and severity of coronary stenosis. It is a very useful technique when utilizing PressureWire® in patients with complex coronary artery disease and/or multivessel disease (MVD).

### Identifying culprit lesions in MVD

The pullback curve is obtained by first placing PressureWire® sensor distal in the coronary artery of interest and then inducing long-lasting maximum hyperemia. With PressureWire® sensor in the distal position, the FFR measurement informs the operator if the total disease in the artery is inducing ischemia and warrants treatment. Thereafter, by slowly pulling back the sensor under fluoroscopic guidance, the recorded pressure identifies which individual lesions are contributing to the ischemia and their exact location. If desired, the wire can be pushed down or pulled back a little bit as soon as a pressure drop is observed in order to confirm the location of the pressure drop and the corresponding lesion. Coronary pressure measurement by pullback curve is unique. The detailed spatial information cannot be obtained by any other invasive or non-invasive method.

### Ostial lesions

The pressure pullback is also particularly useful for evaluating difficult ostial lesions which are often hard to recognise and interpret on the coronary angiogram. In such a case, PressureWire® sensor is placed in the coronary artery across the ostium, hyperemia is induced and the guiding catheter is slightly pulled out of the ostium. Thereafter, the sensor can be slowly pulled back, revealing the severity of the ostial lesion.

## Procedure

1. Place PressureWire® sensor distal in the coronary artery.
2. Induce long-lasting maximum hyperemia (check literature for suitable drugs and dosages).<sup>1)</sup>
3. Open hemostatic valve slightly so that PressureWire® can be pulled back without any major friction. (Check that the proximal pressure is not affected by opening the valve).
4. Start recording procedure with RadiAnalyzer®/RadiAnalyzer® Xpress (press REC).
5. Pull back PressureWire® slowly under fluoroscopy. During this maneuver, the individual contribution of every segment and spot to the extent of disease can be studied.
6. The marker function can be used to indicate areas of interest during the pullback procedure.
7. If desired, the wire can be pushed up or pulled back a little bit as soon as a pressure drop is observed in order to confirm the location of the lesion.

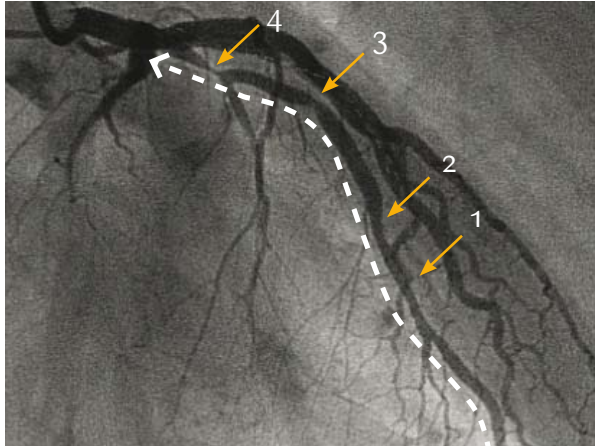
**⚠ Caution:** Before using PressureWire® and RadiAnalyzer®, read the instructions for use which accompany the product for indications, contraindications, warnings and precautions.

THE PULLBACK CURVE IS VERY SUITABLE IN THE FOLLOWING SITUATIONS:

- ➔ Multivessel disease (MVD).
- ➔ Serial lesions in the same artery.
- ➔ Diffuse disease.
- ➔ Left main disease or ostial lesions.
- ➔ Across stents, after stent deployment.

### Case example no. 1

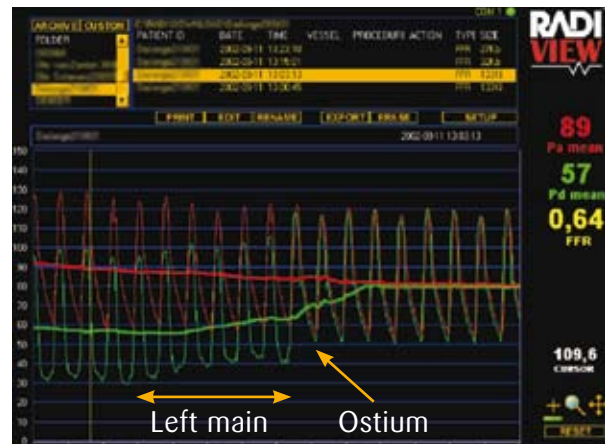
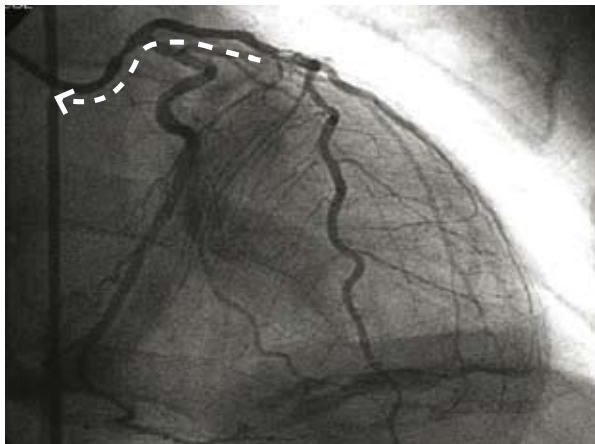
Several stenoses in the same artery



The pressure recording reveals first that the total disease in the vessel is causing ischemia with an FFR of 0.63. The pullback recording then reveals two major pressure drops, at position 1 and 4, which are related to two focal lesions. After treatment of the two culprit lesions, a repeated pullback curve confirmed that the suspected areas around 2 and 3 did not cause a pressure drop and could therefore be left out for further investigation.

### Case example no. 2

Ostial left main stenosis



The pressure pullback recording revealed that there is slow decrease in pressure in the left main, followed by a sudden pressure drop at the ostium. This leads to the conclusion that there is some diffuse disease in the left main but that the major flow limitation comes from a focal ostial left main lesion. The disease is significant and causes ischemia since the FFR is 0.64.

#### References:

- 1) Pijls NHJ. Optimum Guidance Of Complex PCI By Coronary Pressure Measurement. Heart 2004;90:1085-1093.  
Case courtesy of Catharina Hospital, Eindhoven, Netherlands.

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