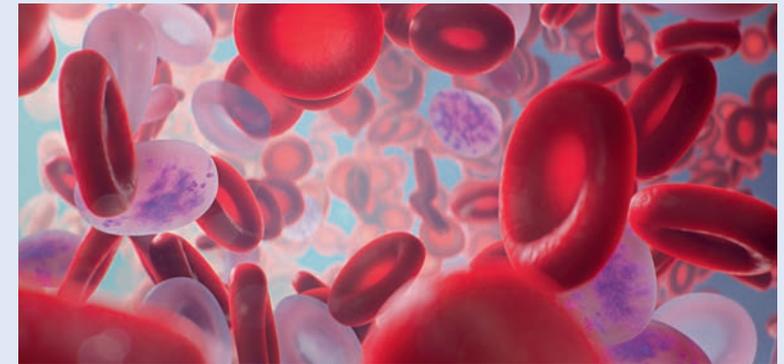




Identifying poor antiplatelet drug response and adverse cardiovascular events risks early on

Coronary artery disease is the foremost cause of death in the Western world, for which platelet inhibition remains the focus of medical therapy. For most patients, predicting the risk of future complications and evaluating the efficacy of antiplatelet therapy is essential. Immature, newly released platelets are more reactive than mature ones and have increased prothrombotic potential. Studies show that they play an important role in the risk assessment and therapy management of coronary artery diseases. The IPF# (immature platelet count) parameter helps to address these issues.



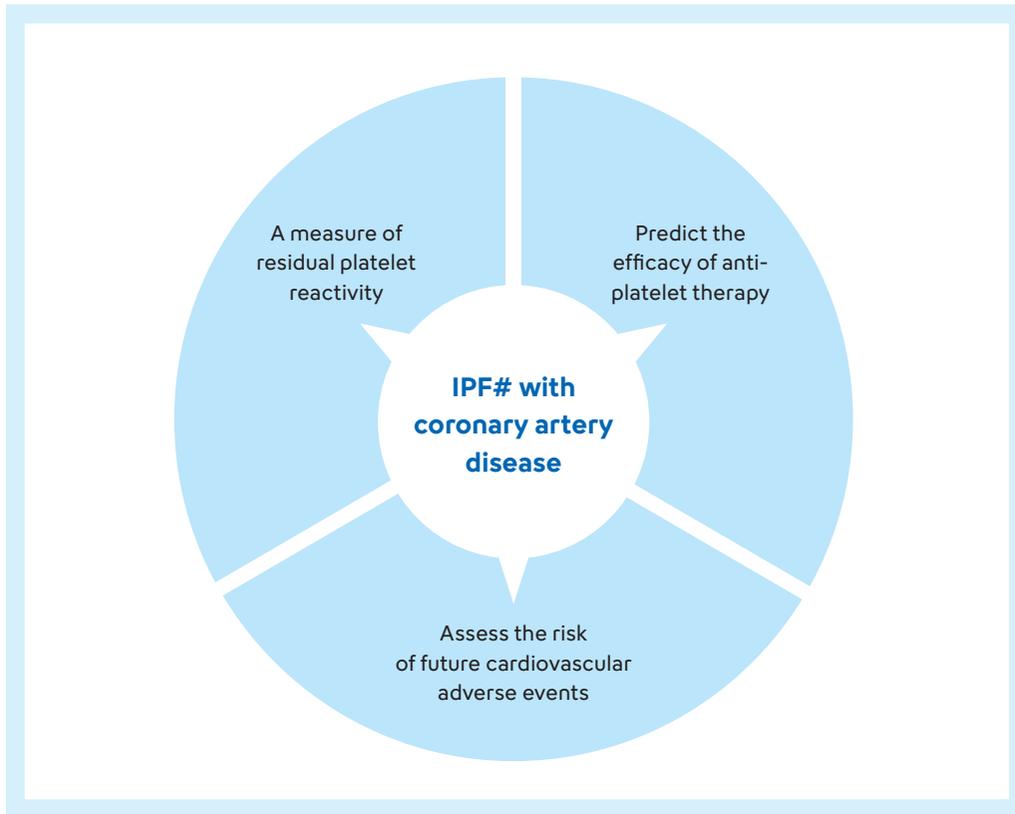
IMMATURE PLATELETS CLINICAL USE

Know more.
Decide with confidence.
Act faster.

A 63-year-old man with acute coronary syndrome has percutaneous coronary intervention with two drug-eluting stents in the left anterior descending coronary artery. Four days after completion of dual antiplatelet medication (75 mg aspirin and 75 mg clopidogrel once per day) he presents with an ST segment elevation myocardial infarction (classic heart attack). Coronary angiography and intravascular ultrasound demonstrate thrombotic occlusion of the stent. Although the platelet count is normal, the immature platelet count (IPF#) is moderately elevated ($13 \times 10^9/L$) due to the compensation of platelet consumption. This suggests that the patient is at risk for cardiovascular thrombotic events because it indicates ineffective inhibition and poor antiplatelet drug response. Consequently, his clopidogrel dose is increased to 300 mg after which the IPF# count normalises to $5 \times 10^9/L$ within three days.

What is the immature platelet count, or IPF#?

- The absolute count of immature platelets, determined from a patient's peripheral blood sample and independently from the total platelet count.
- Immature or reticulated platelets are newly released from bone marrow reflecting its activity, and their high amount of RNA is measured by a specific fluorescence method.
- The platelet analogue of reticulocytes in red cell populations.
- IPF# reference range: $3.1-18.7 \times 10^9/L$ [1]
- IPF# is readily available from a routine laboratory analysis of an EDTA blood sample.



Clinical use of IPF# with coronary artery diseases

Patients with acute coronary syndromes often have high immature platelet counts that the body produces to compensate for platelet loss caused by platelet aggregation due to atherosclerosis [2,3]. Immature platelets are more reactive than mature ones and have an increased prothrombotic potential:

- They are more resistant to functional inhibition by aspirin and P2Y12 receptor antagonists. Consequently, many studies have shown that the immature platelet count (IPF#), as a measure of residual platelet reactivity, is a predictor of the efficacy of antiplatelet therapy [4–7].
- The immature platelet count was found to be used to assess the risk of future cardiovascular adverse events [8–10].

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For references to independent publications, please visit www.sysmex-europe.com/academy/library/publications or contact your local Sysmex representative.

Your benefits

- The diagnostic parameter IPF# is readily available from a routine laboratory blood test and may be ordered and processed together with the complete blood count.
- The IPF# parameter has been shown to have additional value compared to traditional platelet function tests [11]. As such, it may help to evaluate the current status of platelet inhibition more reliably.
- IPF# is a valuable supportive parameter for effective risk assessment and therapy management of coronary artery diseases.

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