IPF

- Immature platelet fraction (IPF) is an index of thrombopoiesis and can help determine the mechanism of thrombocytopenia.
- An increased IPF in the presence of thrombocytopenia is indicative of platelet destruction or consumption.
- A decreased/low normal IPF in the presence of thrombocytopenia is indicative of decreased marrow production.
- The reference range for IPF is $0.9-7.0\%$. 
ITP, TTP, and DIC patients demonstrate the highest IPF, indicating active platelet production.

ITP and TTP patients in remission have normal IPF results.

Patients with regenerating marrows also have high IPF.

Patients with decreased production, including those undergoing cytotoxic chemotherapy, have IPF in the low or low normal range.
IPF

- IPF is an indirect means to better evaluate the necessity or timing of platelet transfusion.
- IPF can be used to distinguish between
  - thrombocytopenia due to bone marrow failure, where bleeding is more likely to occur, and
  - thrombocytopenia due to peripheral destruction, where bleeding episodes are less common at any particular platelet count unless infection is present.
- IPF may be also be used as an indicator of imminent platelet recovery after cytotoxic therapy or post transplant
  - IPF increases before the platelet count.
IPF

- Monitoring IPF in patients undergoing a prolonged course of treatment.
- IPF reflects the severity of platelet destruction. There is a significant inverse correlation of platelet count with IPF; the lower the platelet count, the higher the IPF.
- IPF can be used to monitor patient response, particularly when changing immunosuppressive therapy.
In patients with TTP, after a variable period of plasma exchanges, the IPF falls as the platelet count rises. While the IPF remains high there will be no recovery in platelet count and treatment needs to be continued.
In a patient with ITP, a persistently elevated IPF reflects the period of severe thrombocytopenia followed by normalization of the IPF as the platelet count recovers.

A high IPF at presentation supports a peripheral immune destruction rather than bone marrow failure.

IPF may potentially avoid the need for marrow examination.

![Graph showing serial platelet and IPF% results of a patient undergoing treatment for AITP.](image-url)