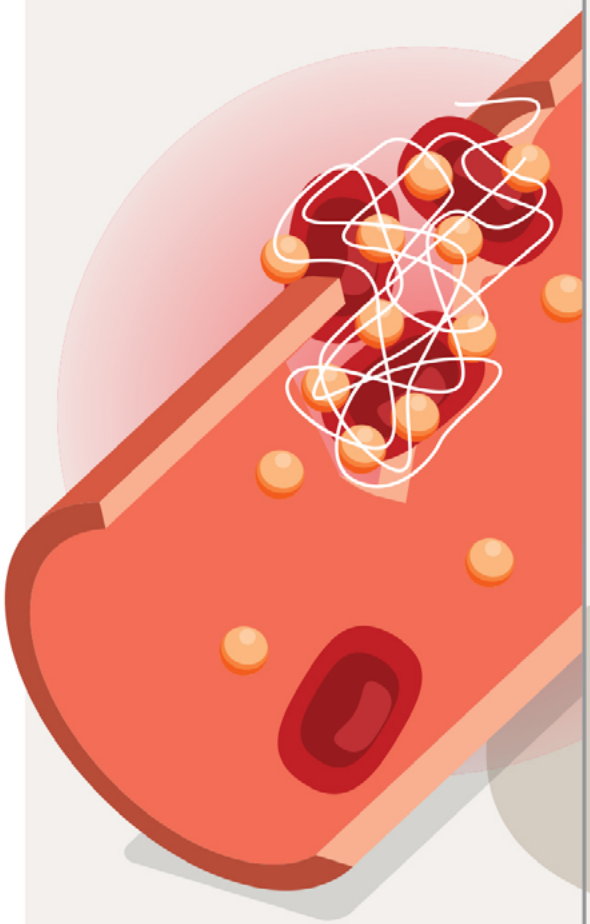
Stago

Diagnostics
is in our blood.



Quick Guide to **Hemostasis**

Summary

Factors	Normal values[1]	Minimum level for low bleeding risk	Influence on coagulation tests[2]		
			PT[3]	aPTT[4]	TT[5]
Fibrinogen	2.0-4.0 g/L	0.5-1.0 g/L	N or ↑	N or ↑	↑
VWF	50-160%	40%	N	N or ↑	N
Antithrombin	80-120%	Not applicable	N	N	N
Protein C	70-130%	Not applicable	N	N	N
Protein S	60-140%[6]	Not applicable	N	N	N

1. Approximate level in the case of a single factor deficiency. These levels may vary according to different clinical settings, e.g., hemophilia patients undergoing a surgery will require higher levels of FVIII.
2. Results vary as a function of reagent sensitivity and single or multiple factor levels.
3. PT (sec.): Prothrombin Time.
4. aPTT (ratio): activated Partial Thromboplastin Time.
5. TT (sec.): Thrombin Time.
6. Sex and age-dependent
7. Sensitivity to factor VII deficiency varies across reagents

- **Fibrinogen level**
  - Quantitative assay of fibrinogen level.
  - Clauss fibrinogen activity assay is the gold standard method for fibrinogen level measurement.
  - Usual normal range: 2-4 g/L (200-400 mg/dL).
  - Elevated fibrinogen levels are observed in inflammatory syndrome (acute or chronic).
- **Platelet count**
  - Number of circulating platelets.
  - Usual normal range: 150-400 x 10^9/L.

Screening assays for disseminated intravascular coagulation (DIC)

PT, aPTT and fibrinogen levels, as well as D-dimer levels, are generally abnormal in acute DIC, but may be normal in chronic and subacute DIC. These screening tests are thus of limited specificity and sensitivity for the diagnosis of DIC (see section on DIC).

FIGURE 3: STRATEGY FOR THE LABORATORY DIAGNOSIS OF DEFECTS IN CLOT STABILIZATION AND FIBRINOLYSIS

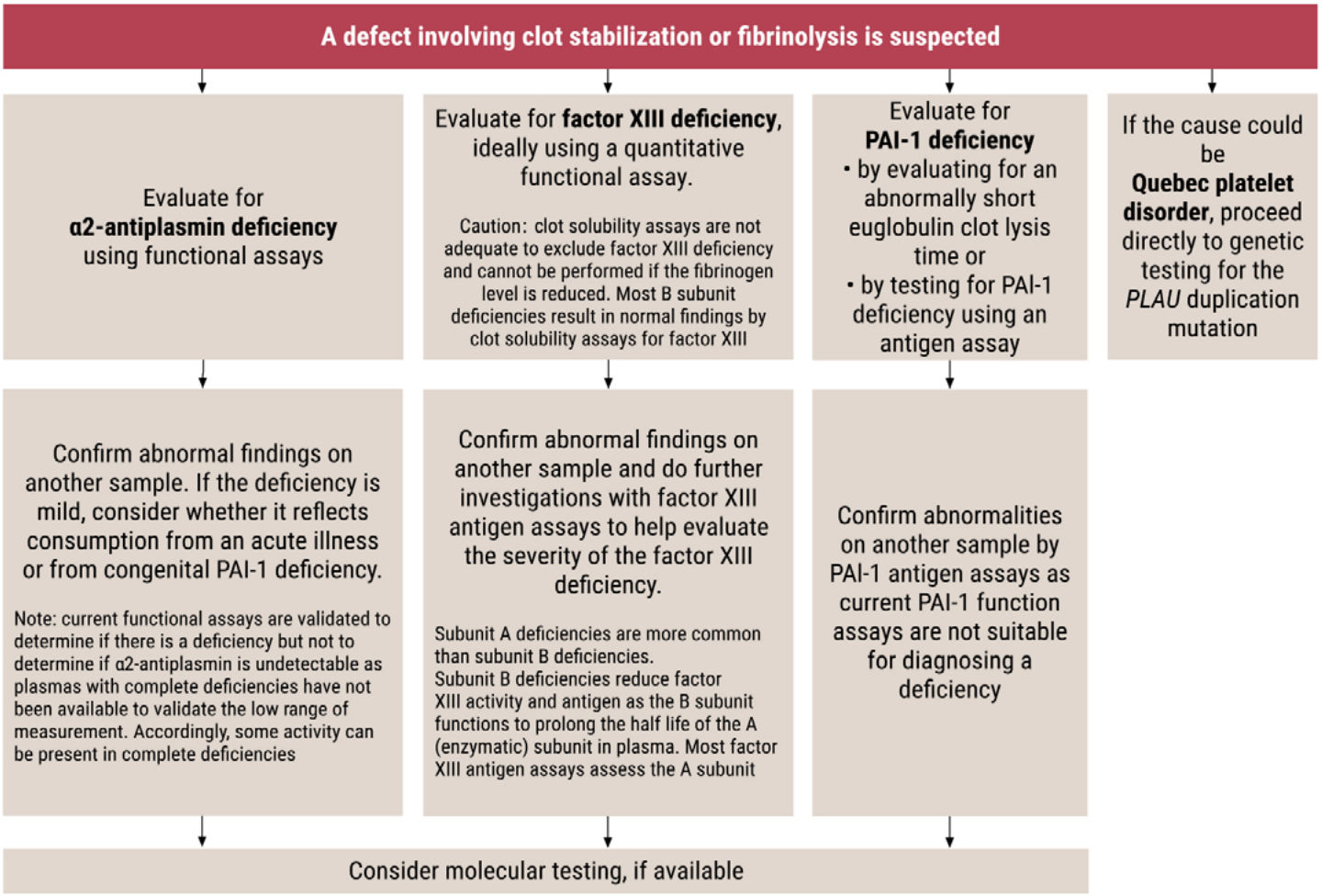


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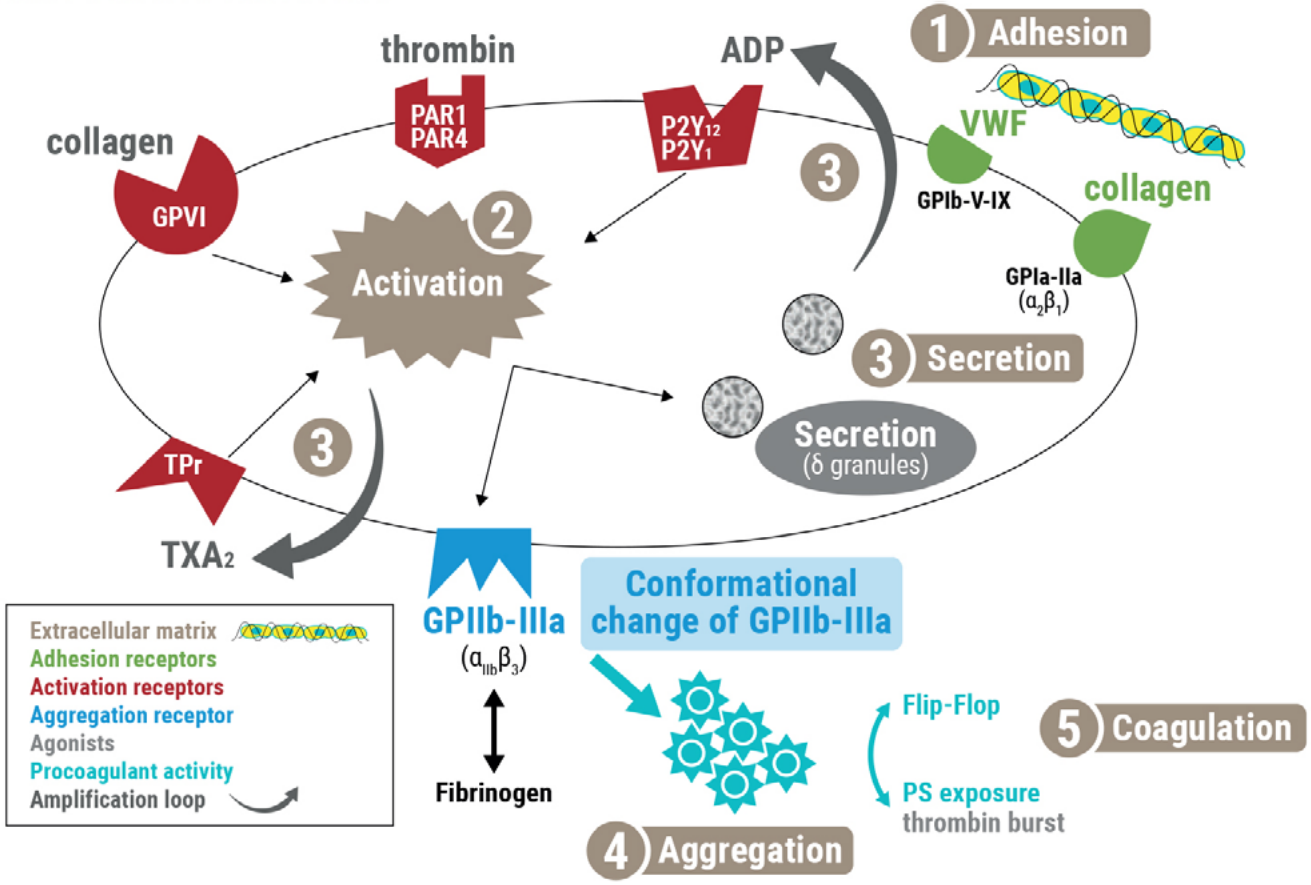
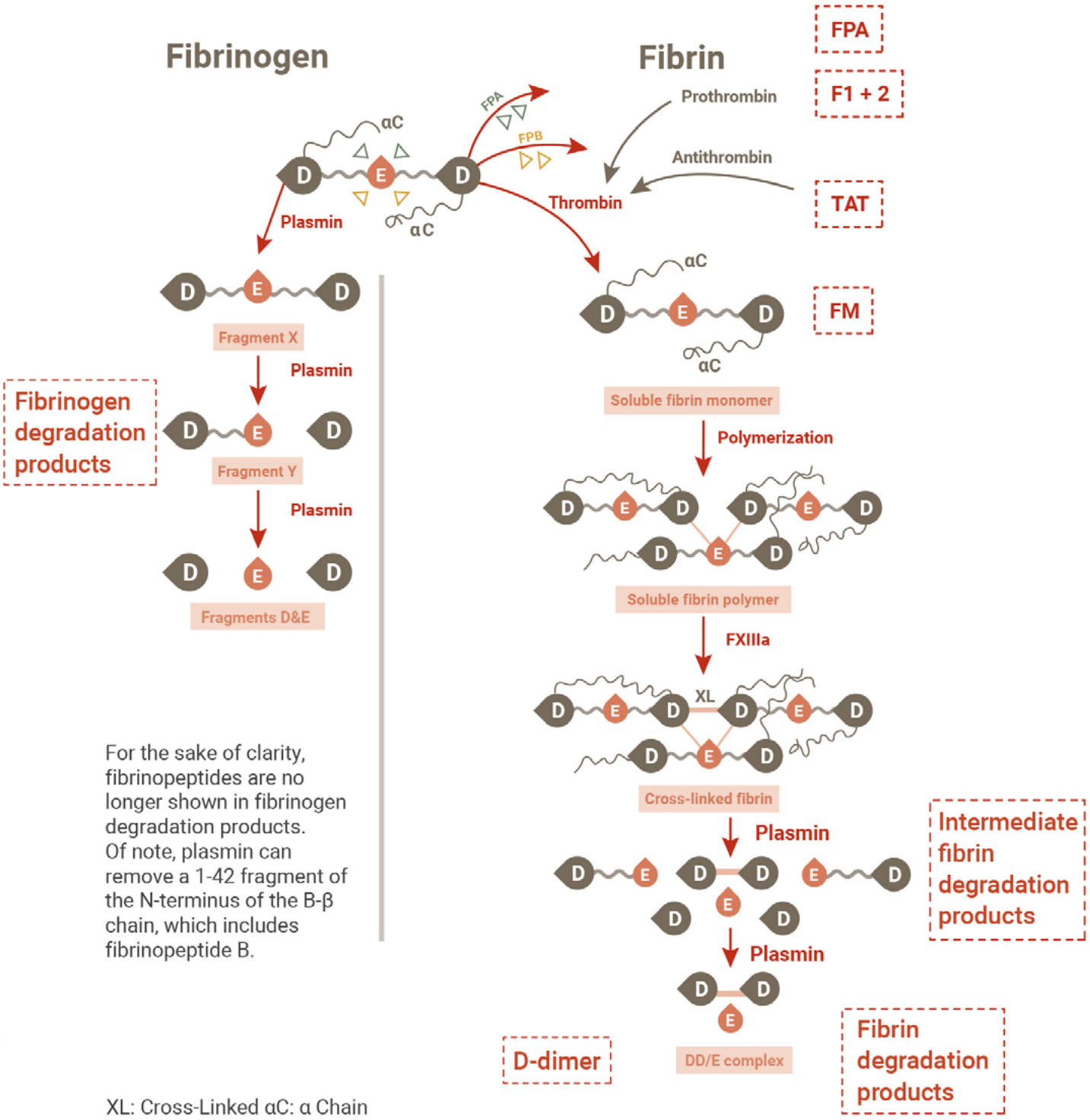
FIGURE 4: MOLECULAR MECHANISMS OF PLATELET ACTIVATION AND AGGREGATION



- **Clinical evaluation:**
  - Personal and family history and bleeding, in particular unexplained or extensive bruising, epistaxis, menorrhagia, and bleeding during childbirth, following invasive procedures and dental extractions.
  - If preliminary laboratory investigations (CBC, routine coagulation tests and VWF screening) are normal, then investigate platelet function disorders.
- **Complete blood count (CBC):** to estimate platelet count, platelet size (mean platelet volume - MPV) and other hematological abnormalities that can indicate complications from a platelet disorder.
- **Blood film review:** to assess the size, the number and the staining.
- **Platelet aggregometry**
  - **Sample collection and treatment**
    - Samples collected into 3.2% sodium citrate anticoagulant.
    - Reject any abnormal samples, i.e., those appearing coagulated, hemolyzed, icteric or lipemic.
    - The SSC ISTH guidelines do not recommend adjusting the

FIGURE 5: FIBRIN FORMATION, FIBRIN(OGENO)LYSIS AND FIBRIN-RELATED MARKERS



For the sake of clarity, fibrinopeptides are no longer shown in fibrinogen degradation products. Of note, plasmin can remove a 1-42 fragment of the N-terminus of the B-β chain, which includes fibrinopeptide B.

XL: Cross-Linked αC: α Chain