

D-Dimer and Thromboembolism

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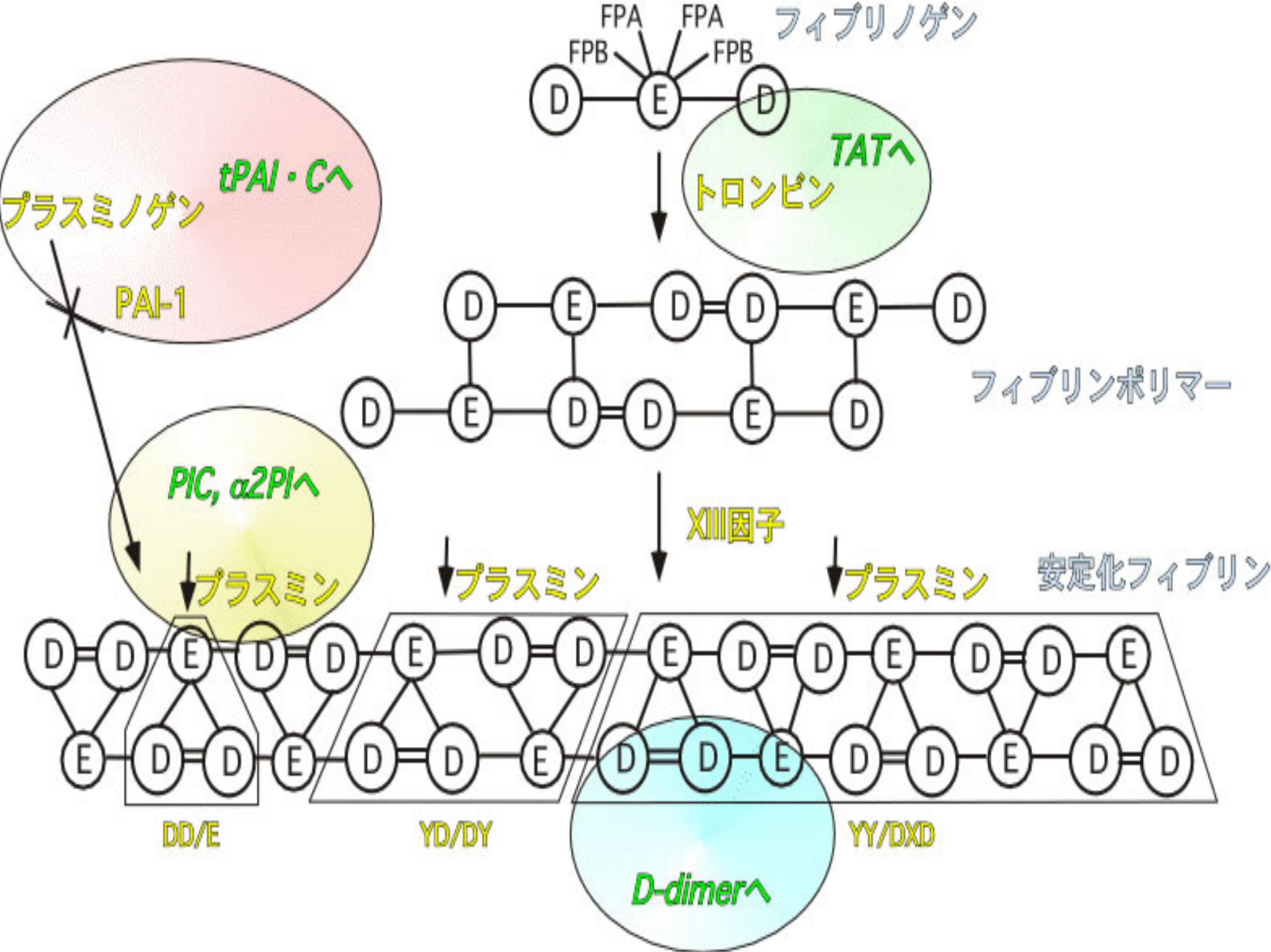
APMG

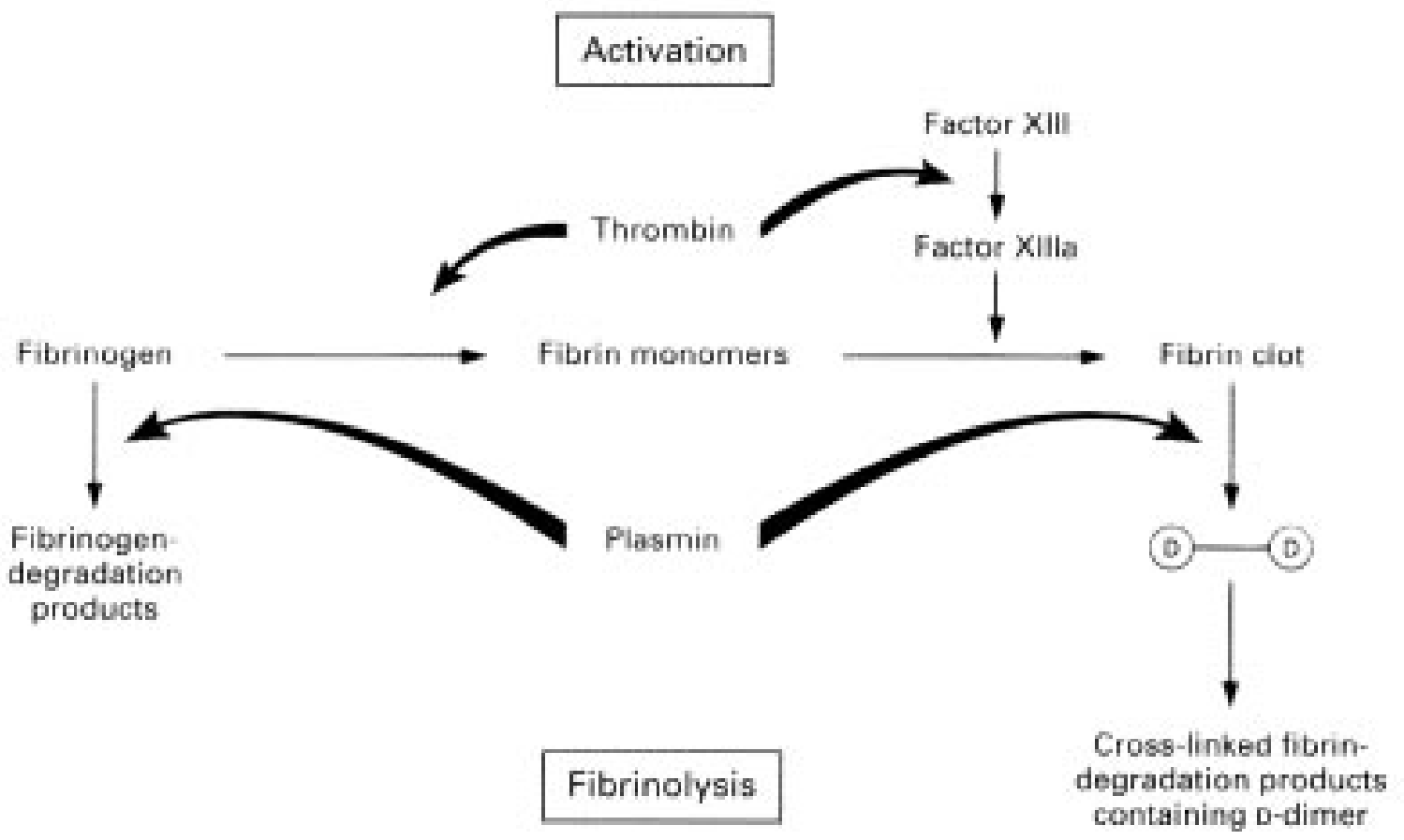
VTE Background

- 200,000-600,000 Americans/year
- 60,000-200,000 deaths
- 25% high risk for PE

D-Dimer

- Clot aggregates platelets
- Clotting cascade activates fibrin
- Plasmin breaks the cross-linked fibrin and degrades the clot
- D-Dimer results





False Positive D-Dimer

- Pregnancy
- Trauma
- Postoperative recovery
- Inflammation
- Cancer

False Negative D-Dimer

- Heparin

Clin Chem 2003;49:1483-1490

D-Dimer Assays

- ELISA
- Latex turbidimetric
(Automated latex immunoassays)
- Enhanced Microlatex immunoassays
- Latex-enhanced photometric immunoassays

D-Dimer Assays

Assay	Trade Name
ELISA	VIDAS*
Turbidimetric	Roche Tina-quant*
Latex Turbidimetric	MDA D-Dimer

*500 FEU ng/mL

How Good?

Test	Sensitivity	Specificity
ELISA	94%	45%
Turbidimetric	93%	51%

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Which Patients?

- Patients with low probability of other disorders which may suggest thrombosis

- Wells Model
Lancet 1997;350:1795-1798

High Test Probability

- Venogram most sensitive and accurate
 - 5% allergic rxns
 - 1-2% thrombophlebitis
- D-Dimer?
 - NEJM 2003;349:1227-1228

Summary

Prevalence	Probability of Disease
Low	1%
Moderate to High	3-5%