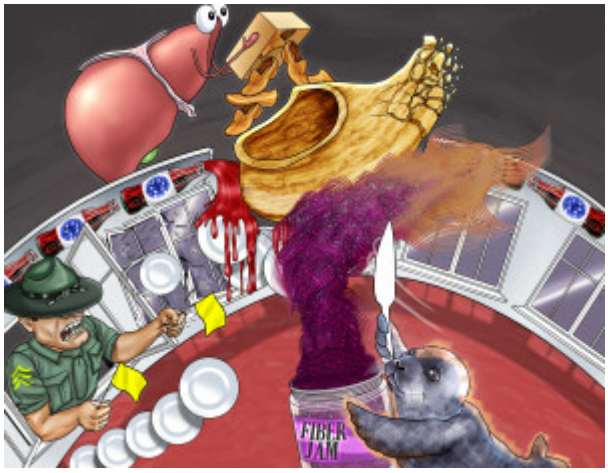
Clotting Overview

Clotting is the process of forming a blood clot, or thrombus, in the body to prevent excessive bleeding that occurs when vascular endothelial cells are damaged. Platelets in the blood respond to the exposed collagen from cells and stick to it. They then release recruiting factors that attract more platelets, forming a clump on the damaged area. Fibrinogen, found in the blood plasma, is converted by thrombin into fibrin. Fibrin is insoluble and seals the clot by linking platelets together in a web. Once the endothelial damage is repaired, the clot dissolves. Most of the clotting factors are produced in the liver.



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Characteristics

Endothelial Cells are Damaged
Window Cells Broken
Clotting begins when vascular endothelial cells are damaged. This damage can occur because of pre-existing health conditions, trauma, or randomly.

Platelets Respond to Exposed Collagen and Stick
Plates Stuck to Spilling Cola-gem
Platelets respond to endothelial cell damage by binding to the exposed collagen from the site of damage. This occurs through a cell adhesion ligand called von Willebrand factor.

Platelets Release Recruiting Factors
Plate Releasing Recruiting Flagger
Platelets recruit other platelets to aggregate at the site of damage through stimulation factors released during adhesion to the damaged endothelial cells.

More Platelets are Attracted
Plates Attracted to damage
More platelets are attracted to the site of damage, which allows the clot to form and grow in size. This prevents pathological loss of blood plasma through the damaged area.

Soluble Fibrinogen Turns to Insoluble Fibrin
Fiber-jam solidifies to Fiber
Fibrinogen is a blood plasma protein that is activated by thrombin and turned into fibrin which is insoluble. Fibrin helps link platelets together.

Fibrin Seals the Clot
Fiber Seal Covering Clog
Fibrin seals a clotted area by linking the platelets together. The appearance of fibrin is similar to a "mesh."

Clot Dissolves
Clog Dissolving
In order to prevent other pathological conditions, like infarction, the blood clot must dissolve once the endothelial cells have been repaired.

Liver Produces Clotting Factors
Liver Dumping Clogs
The liver produces many of the clotting factors that participate in the cascade resulting in fibrin activation and sealing of the blood clot.

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