



# Vascular Access Hemostasis

---

## External Vascular Access Hemostasis

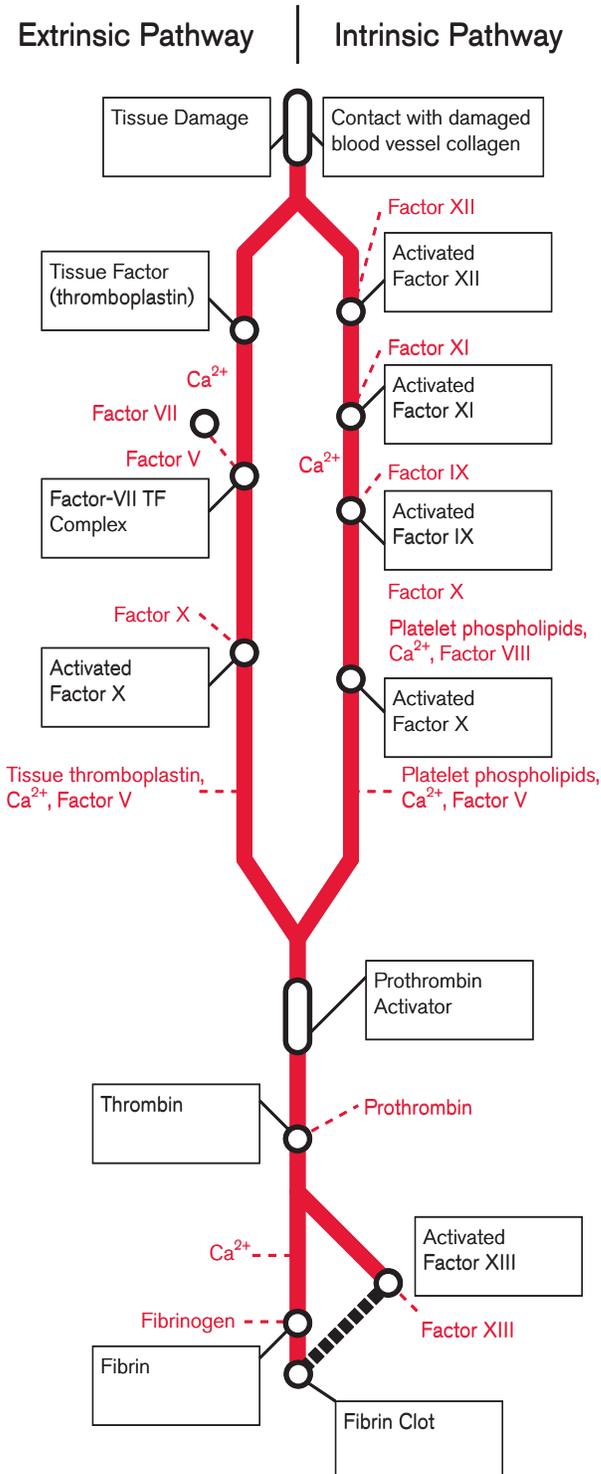
Hemostasis is a natural process – given enough time, the body heals itself. But when anticoagulation therapy or other conditions impair the blood's ability to clot, achieving hemostasis is a challenge that adds unnecessary risk. Syvek® topical dressings employ highly concentrated strands of the poly-N-acetylglucosamine (p-GlcNAc) polymeric fiber we call Syvek® S3D. This fiber has a unique three-dimensional structure that presents a vast array of bonding sites for the natural clotting agents in blood, accelerating hemostasis.



**Syvek**®  
Hemostasis Innovation™

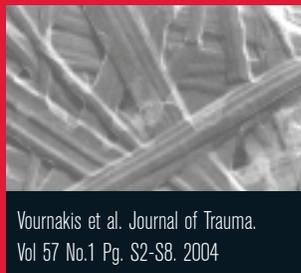
# The Coagulation Cascade

Two biochemical pathways lead to the formation of a fibrin clot; intrinsic and extrinsic. The **intrinsic pathway** is a response to blood vessel abnormalities, while the **extrinsic pathway** is triggered by the tissue injury. Though initiated by distinct mechanisms, they converge along a common pathway that leads to clot formation.



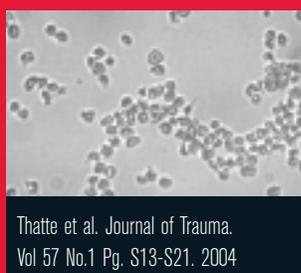
Adapted from *Medical Biochemistry, 2nd Edition*, Baynes & Dominiczak, p. 70. © 2005, with permission from Elsevier.

Syvek<sup>®</sup> dressing is applied by external pressure to the surface of the wound.



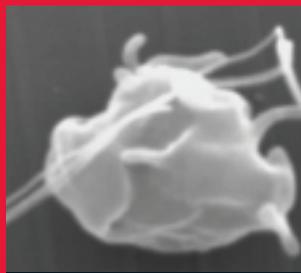
Vournakis et al. Journal of Trauma. Vol 57 No.1 Pg. S2-S8. 2004

Blood comes in contact with Syvek<sup>®</sup> S3D fiber on the surface of the Syvek<sup>®</sup> dressing.



Thatte et al. Journal of Trauma. Vol 57 No.1 Pg. S13-S21. 2004

Protein molecules in the blood plasma rearrange to bond with S3D fibers, exposing surfaces that attract platelets.



Thatte et al. Journal of Trauma. Vol 57 No.1 Pg. S13-S21. 2004

Bound platelets trigger vasoconstrictors, agents that limit the amount of blood flow in capillaries, slowing blood loss.

As platelets bind, more fibrin is produced, which attracts more platelets.



Scanning Electron Micrograph courtesy of Thomas H. Fischer, PhD, Dept. of Pathology and Laboratory Medicine, University of North Carolina, Chapel Hill, NC

Successive fibrin networks attract more platelets expediting clot formation.

**Syvek<sup>®</sup>**



Marine Polymer Technologies, Inc.  
107 Water Street  
Danvers, MA 01923  
1-888-666-2560  
fax: 877-270-8500