



**A Plethora of Purposes for Prehospital Plasma: Latest Experience in Sepsis, Burns and Other Critical Conditions
Gathering of Eagles 2026**



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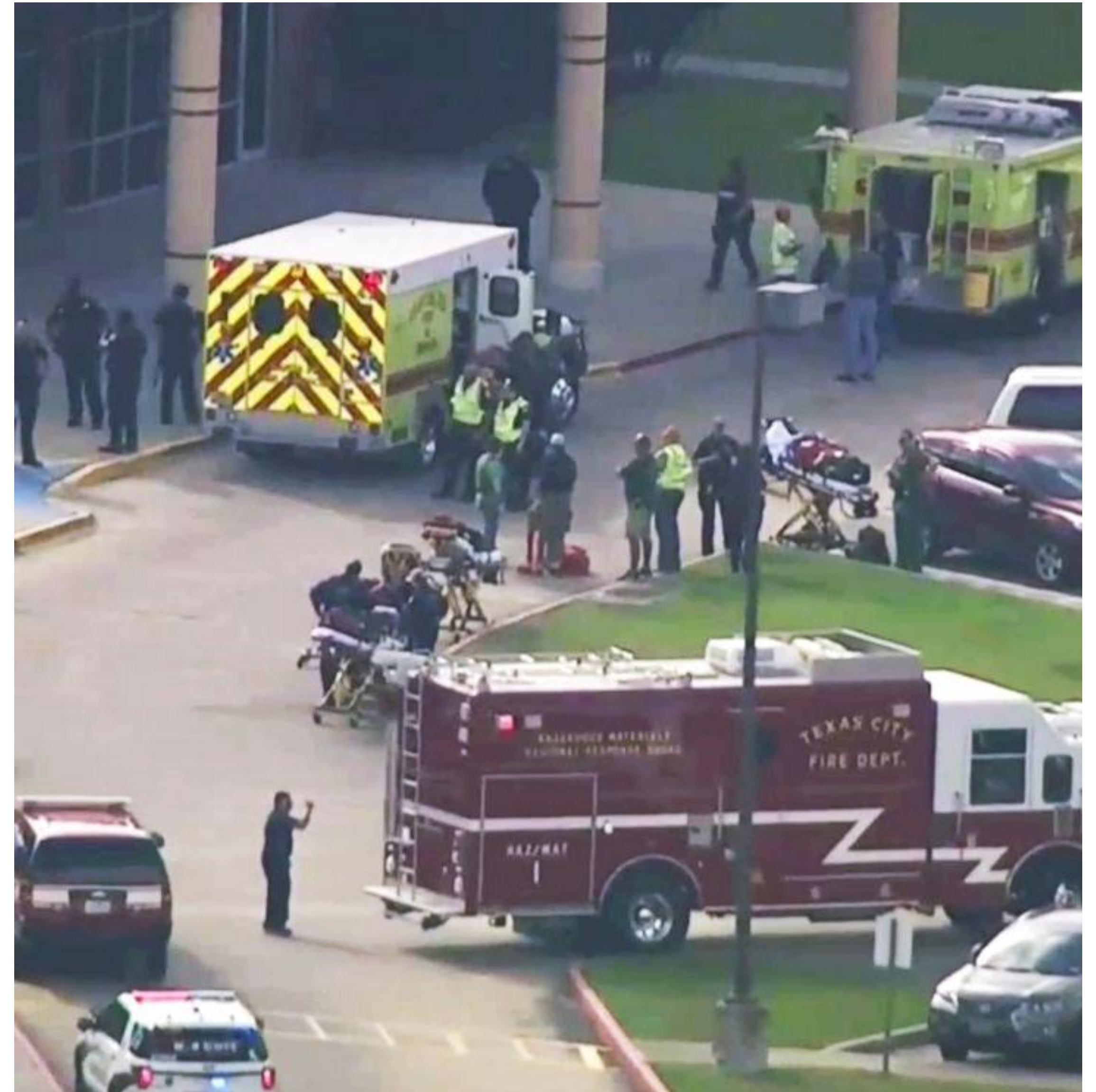
Disclosures

1. No Financial Disclosures
2. I do mention some products we use, myself or ESD 48 do not receive any funding for these items



What We Can't Control in the EMS Space

- We can't control the uncontrollable
 - The event brought us here, we did not choose the event
- We can however bring order to the chaos
 - Provide calm direction and care
 - Mitigate the circumstances
 - Remember overall we can't control the cause, we can dictate the solution



What does Plasma Do?

- Contains and delivers clotting factors
- Replaces proteins and rebuilds the Glycocalyx
- Volume Expansion without 3rd spacing
- Ok , so makes it the swiss army knife for EMS ?
 - Endothelium Inflammation and Failure AKA Leaky Barriers
 - By Healing and regenerating the Glycocalyx we care for the Patient and prevent inflammation

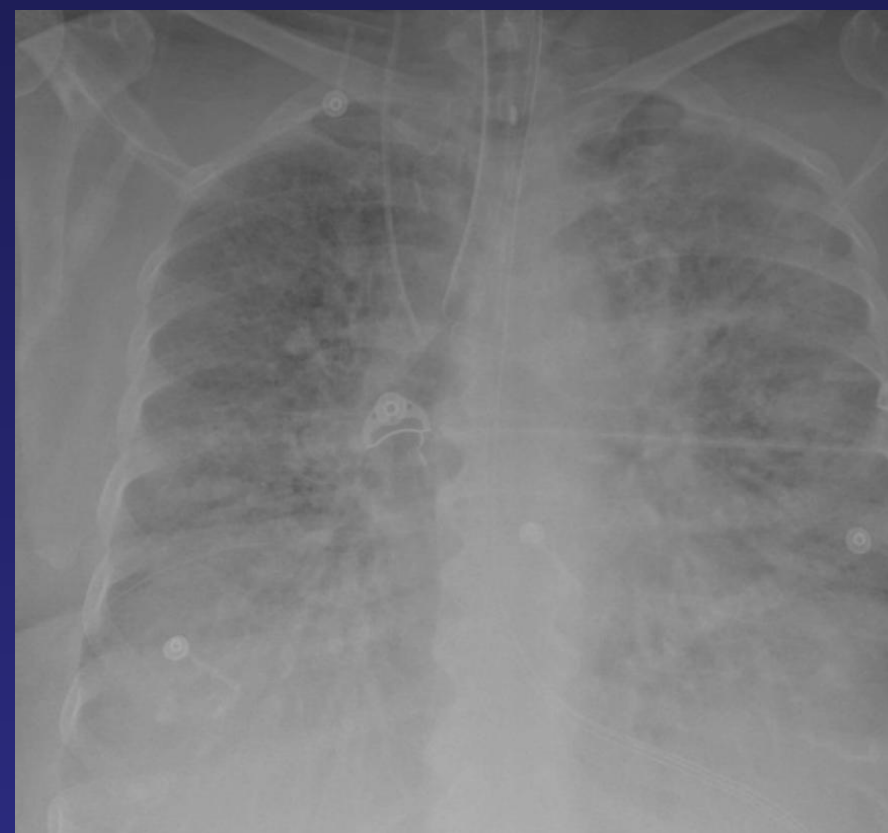


Vascular Compromise results in Edema in Trauma
There are few therapies to prevent edema

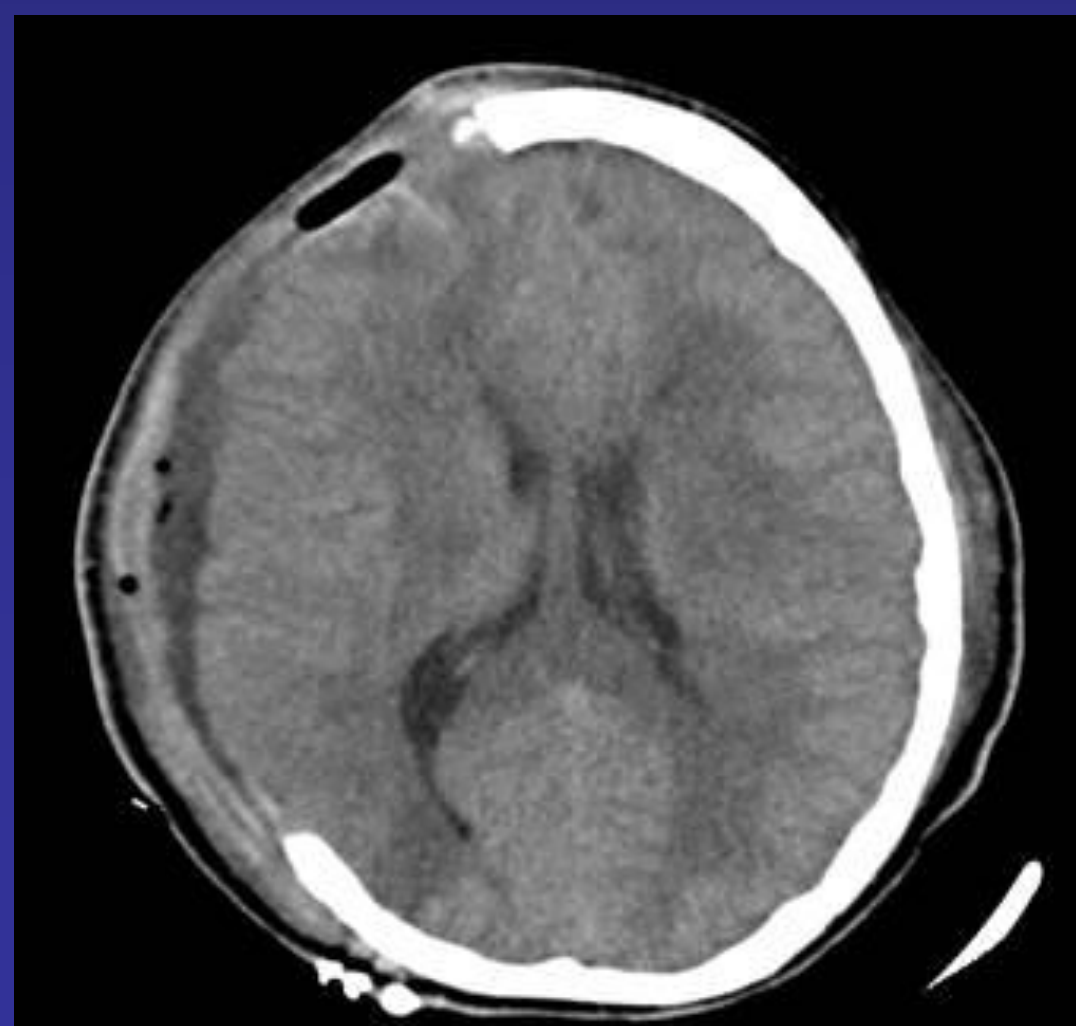
Crystalloid fluid induced bowel edema



Crystalloid induced Lung Edema - ARDS



TBI induced Cerebral Edema



Major causes of death in acute TBI is Hemorrhage and cerebral edema

Guyton Physiology

- Evolution and permeability
- Preserved physiologic response of autoregulation
 - Intracellular and interstitial to the intravascular space
- Over millennia
- Only in the last 150 years have we placed IV / IO catheters and pushed fluid in the opposite direction, causing edema

The Glycocalyx:

- Is the “sugar coat” located on the outer surface of the outer leaflet of the Cell membrane.
- Is responsible for the “fuzziness” seen on Electron Microscope.
- Composition: Consists of polar oligosaccharide side chains covalently linked to proteins and some lipids of the plasma membrane.
- Functions:
 - (a) The glycocalyx aids in **attachment of some cells** to extracellular matrix components.
 - (b) It **binds** antigens and enzymes to the cell surface.
 - (c) It facilitates **cell-cell recognition and interaction**.
 - (d) It **protects** cells from injury by preventing contact with inappropriate substances.
 - (e) It assists T cells and antigen-presenting cells in **aligning with each other**.

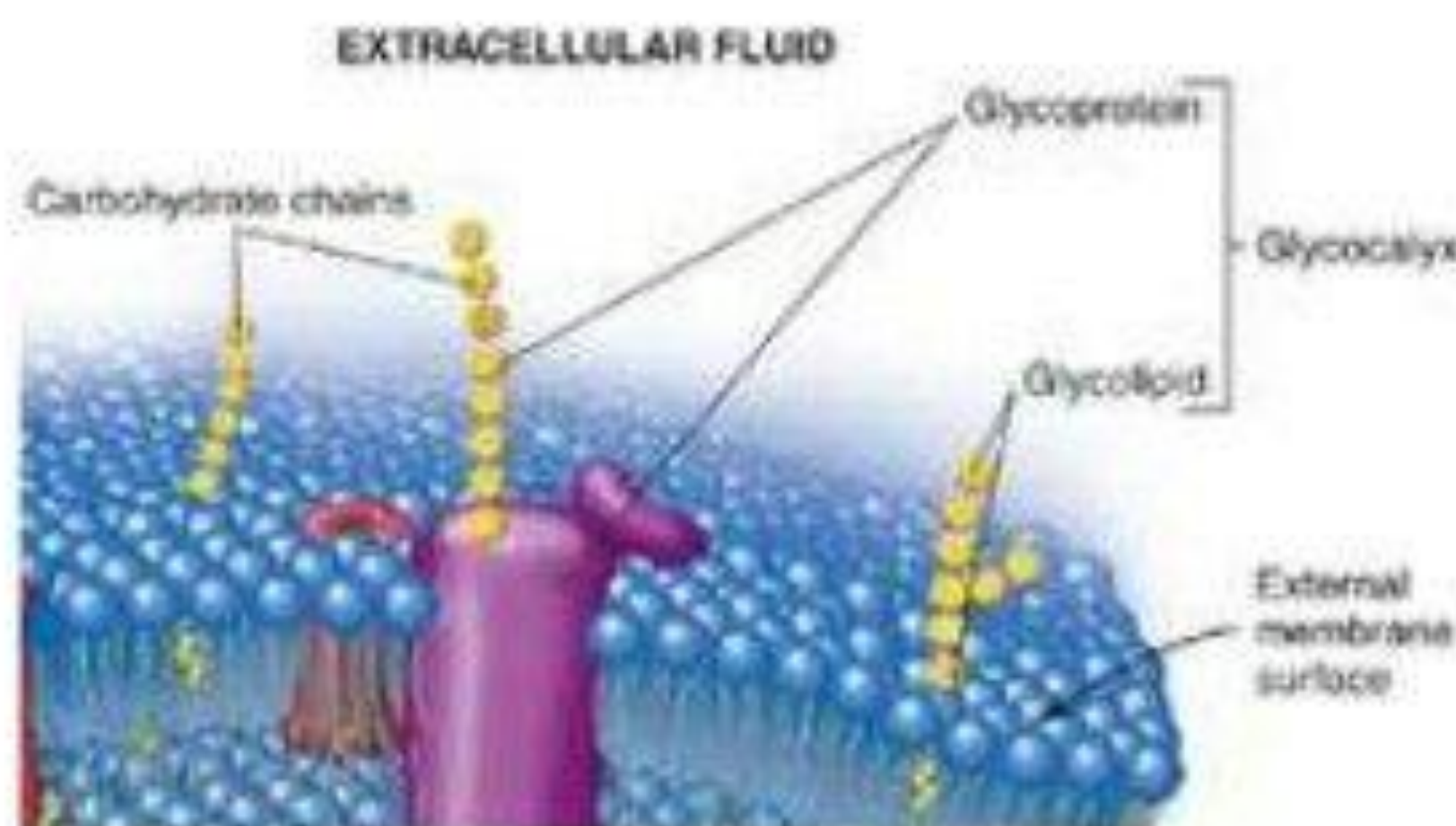
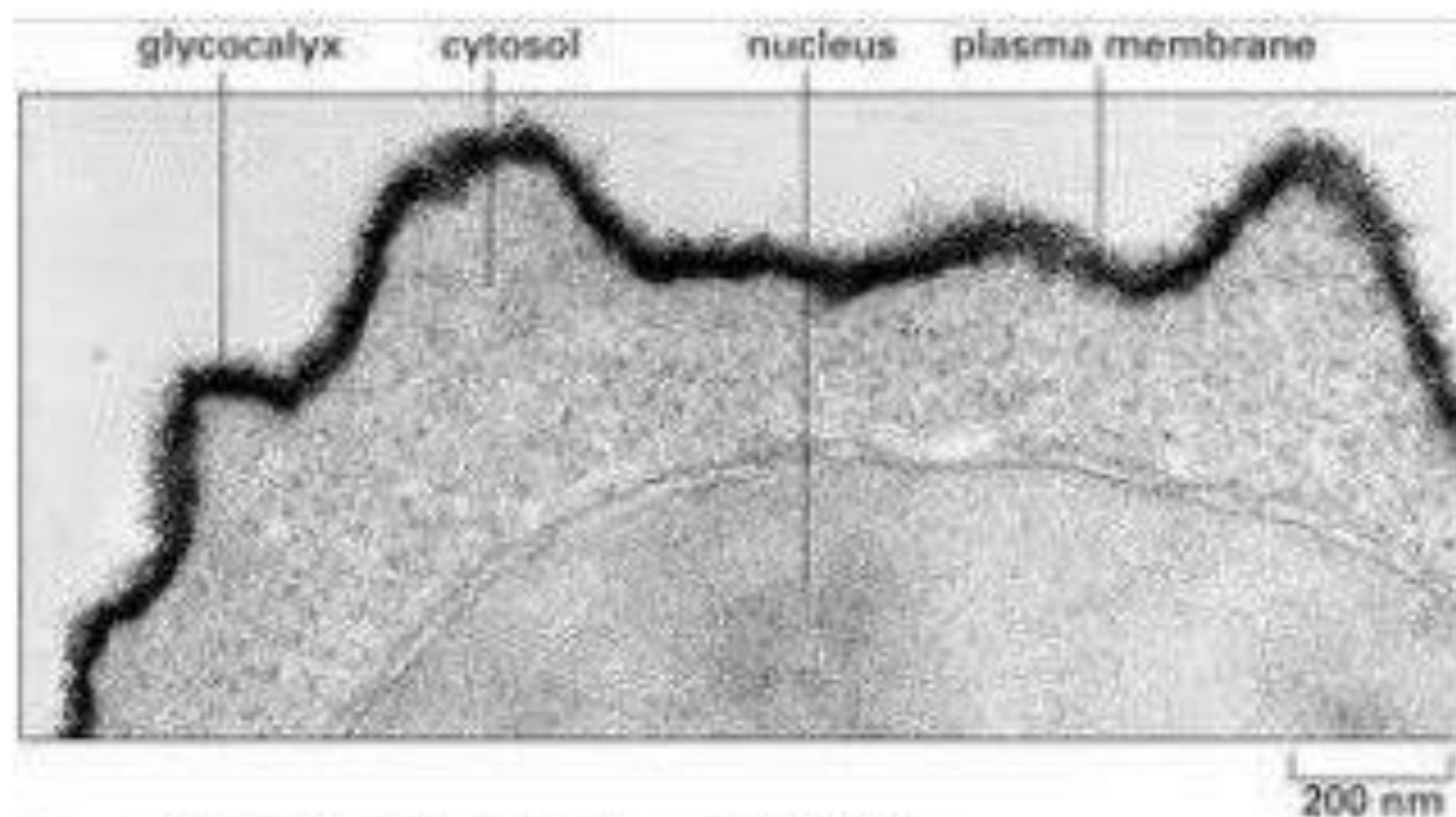
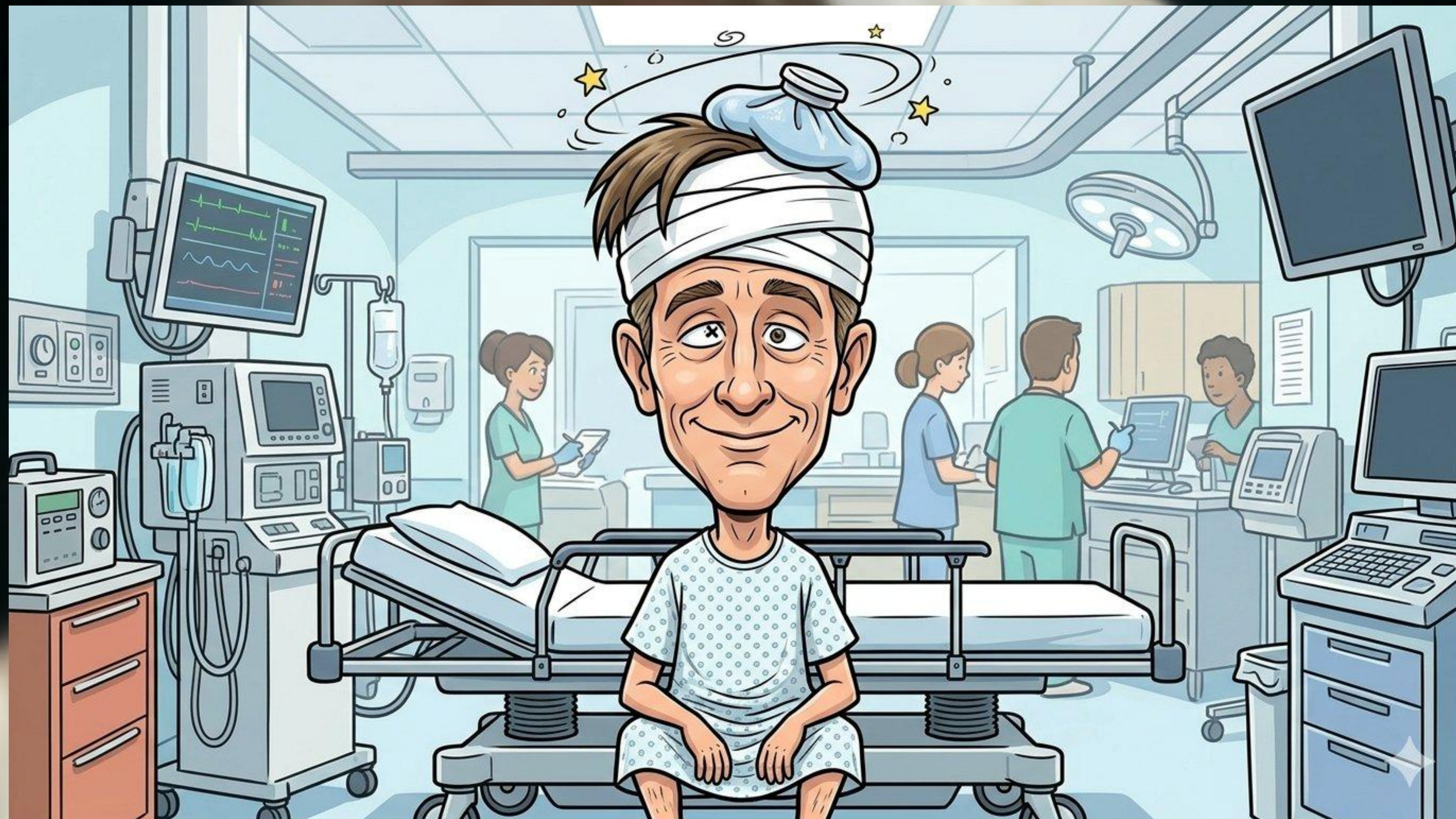


Figure 10-44. Molecular Biology of the Cell, 4th Edition.

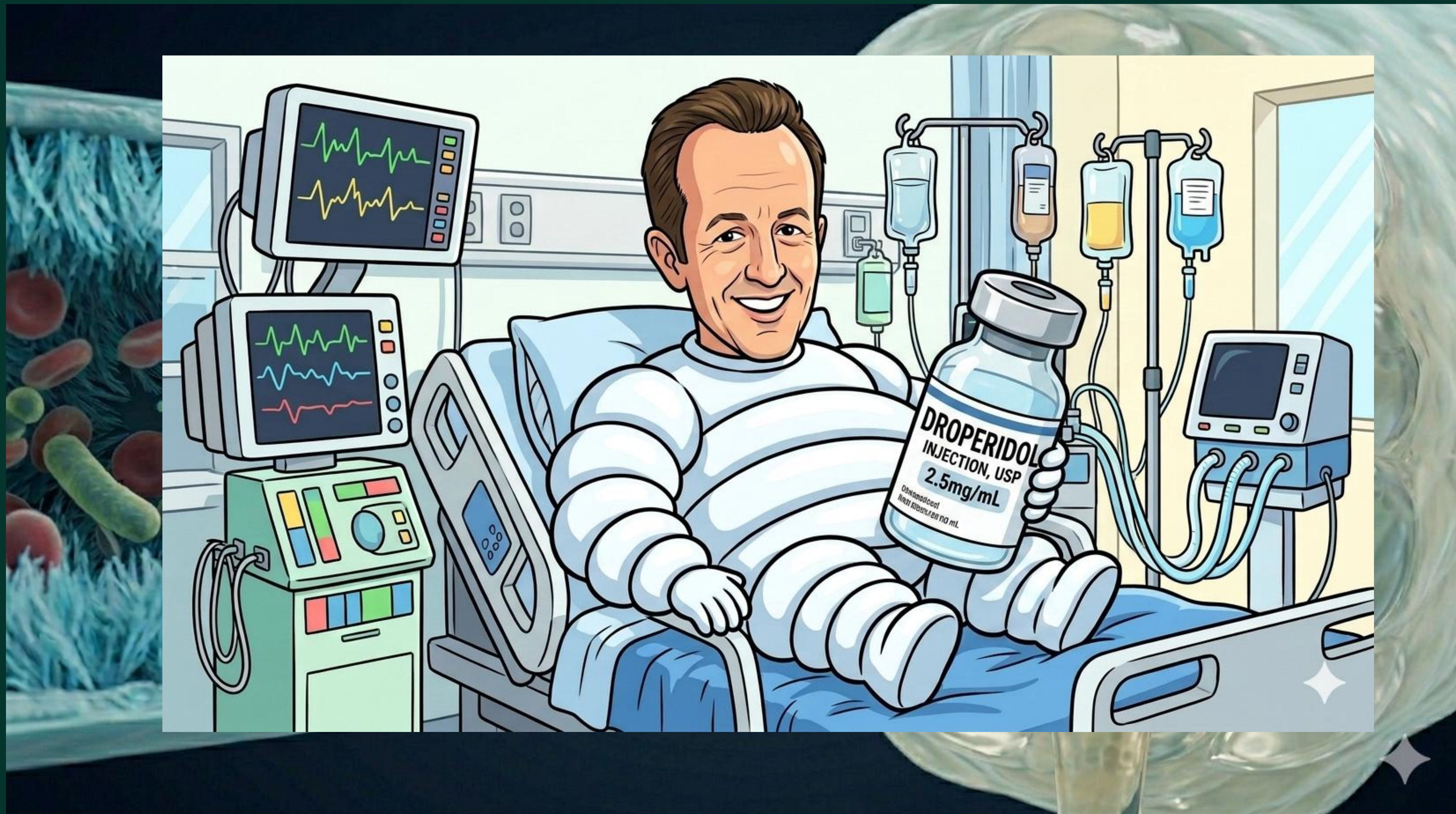
Plasma for Burns



Plasma for **Traumatic Brain Injury**

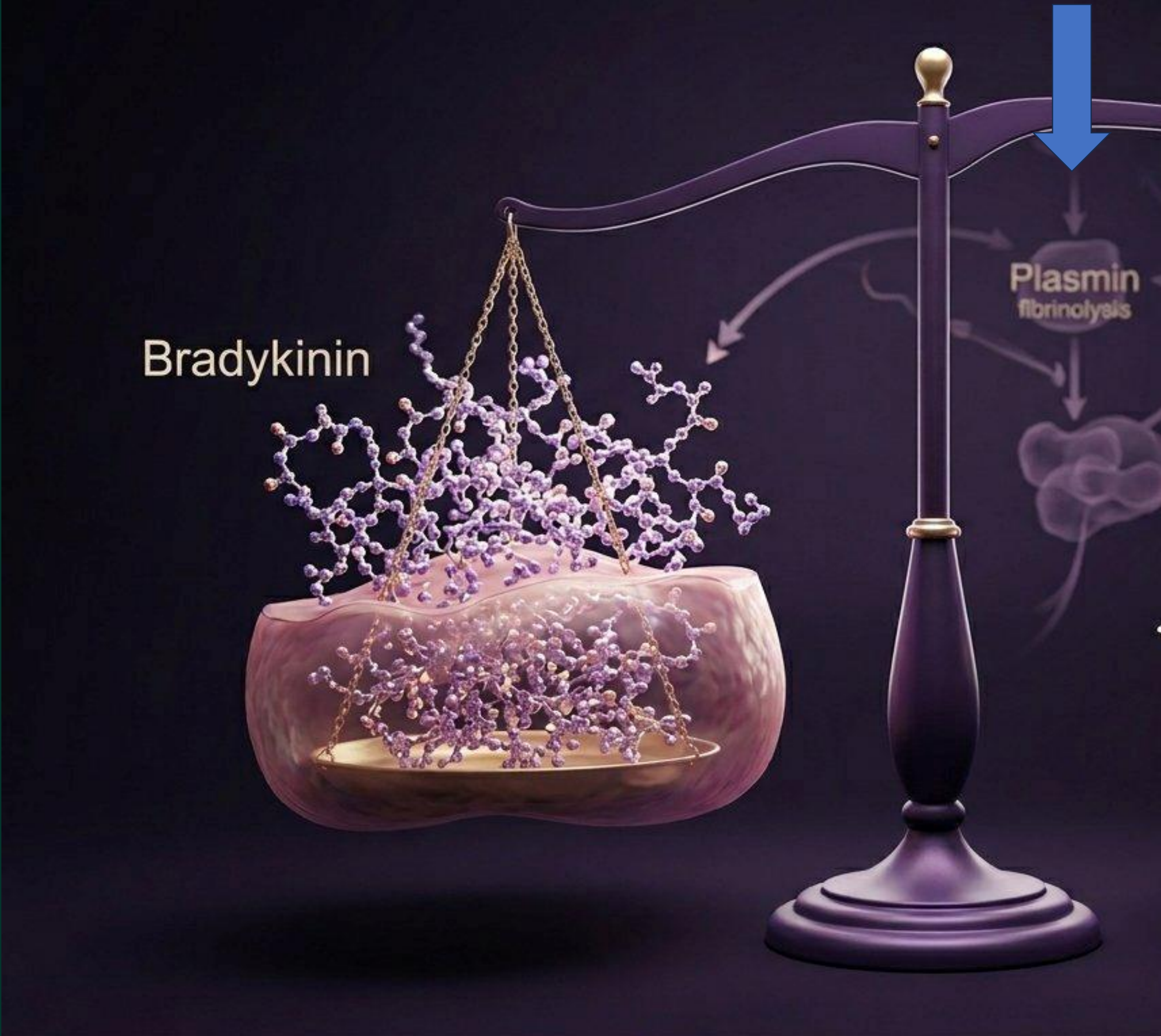


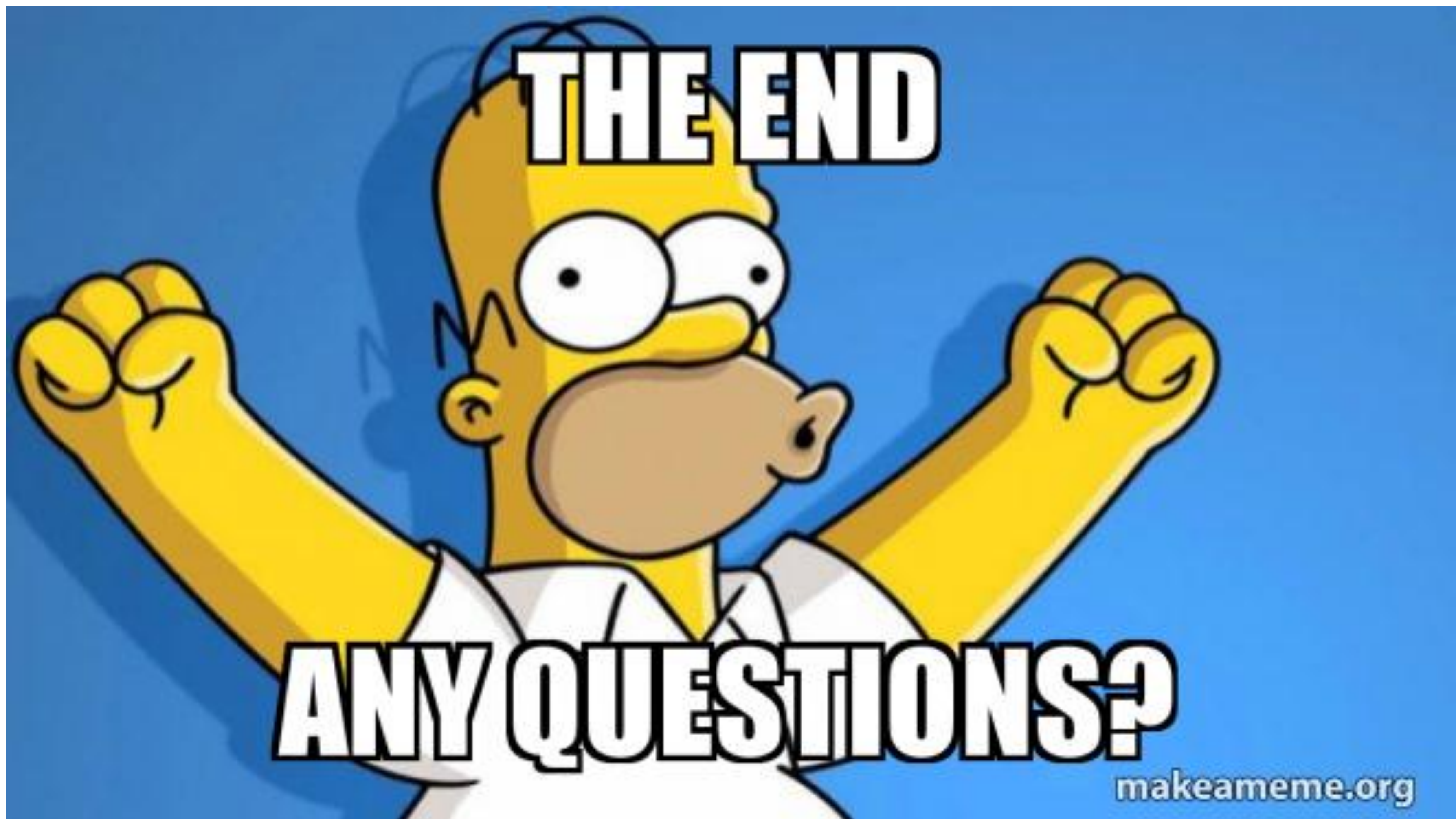
Plasma for Sepsis



Plasma for ACE-Inhibitor Angioedema

TXA





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