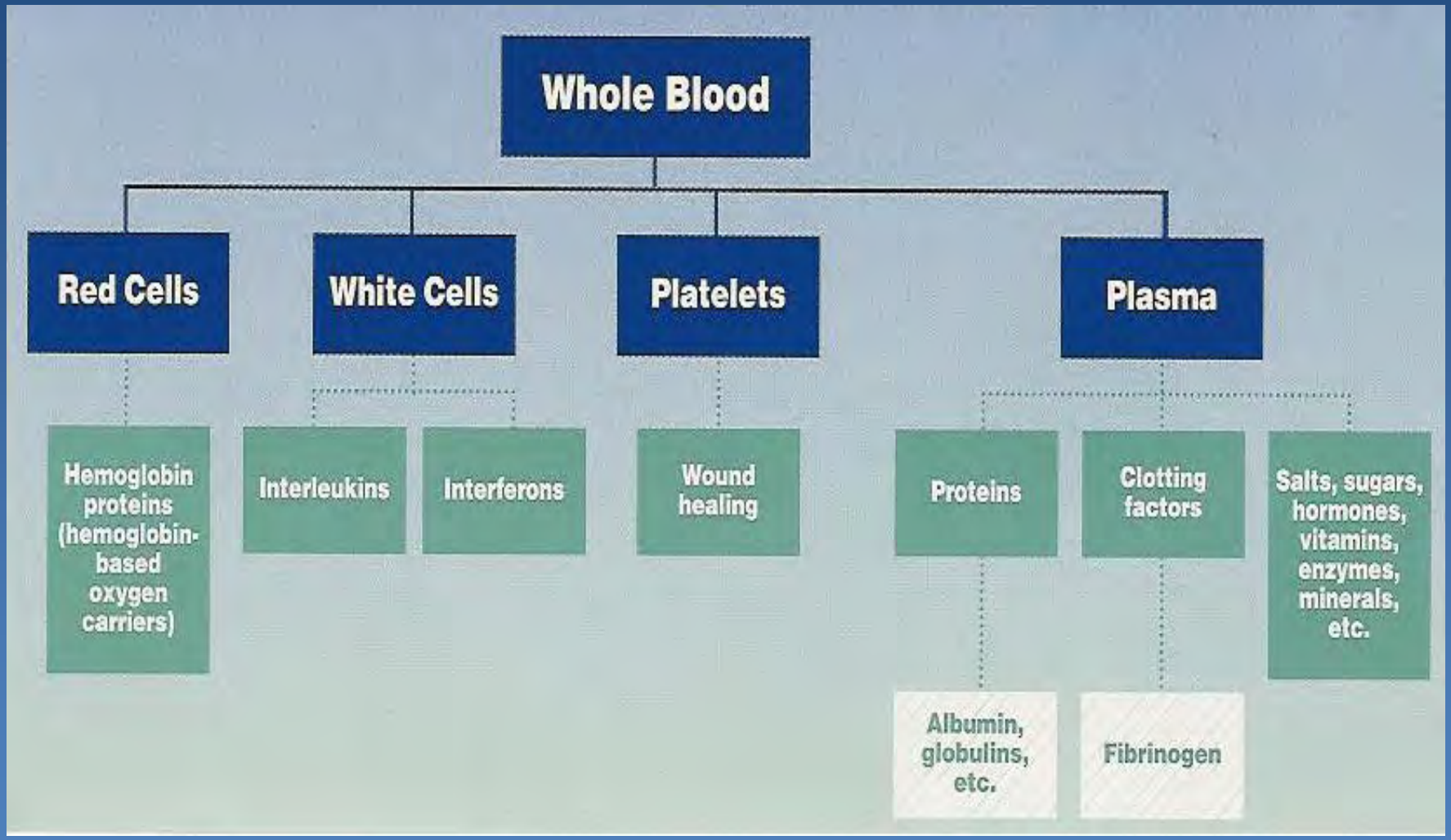
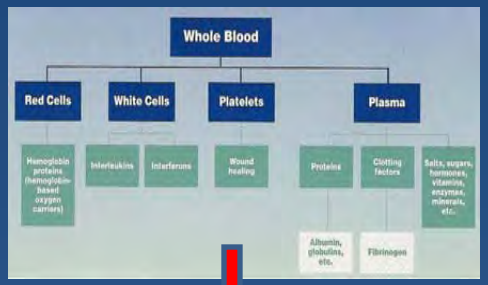
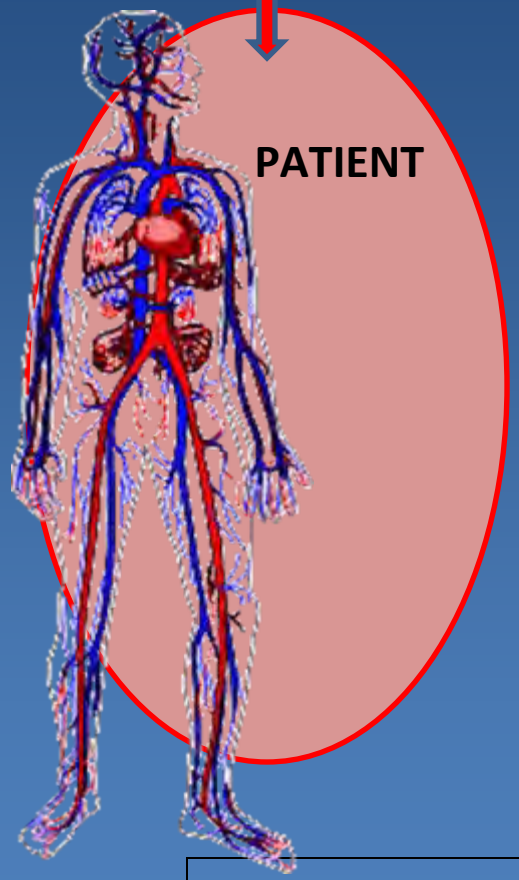
The Big Picture about Whole Blood

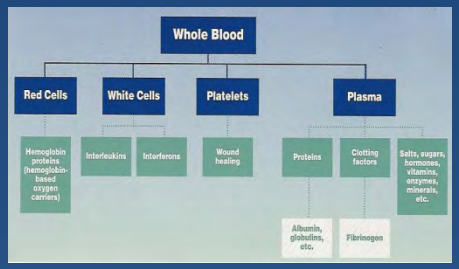


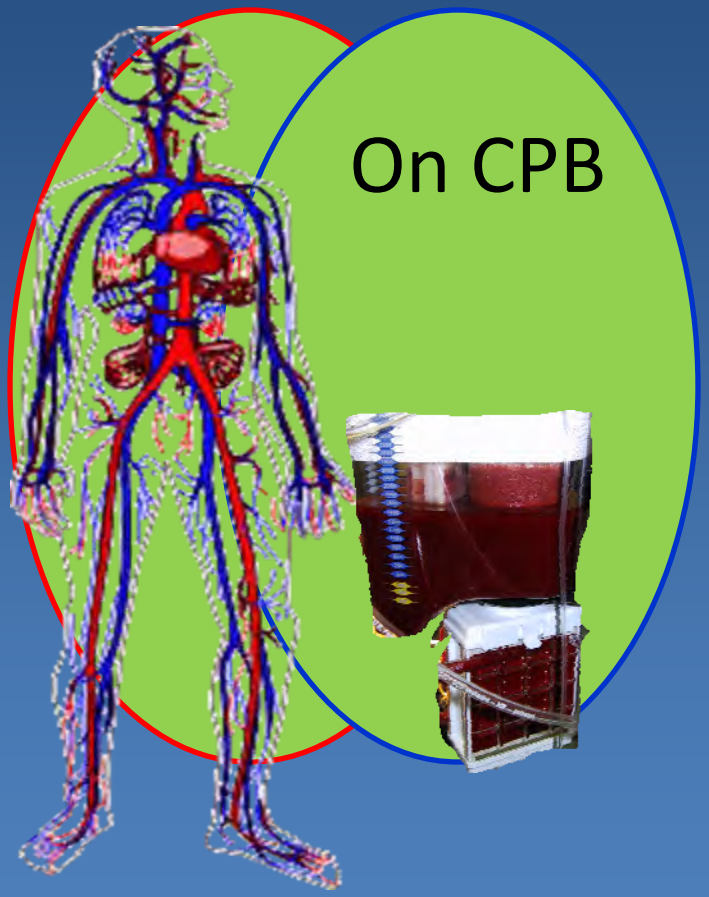


Priming Volume Generally Crystalloid Fluid

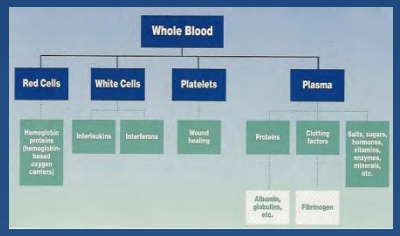


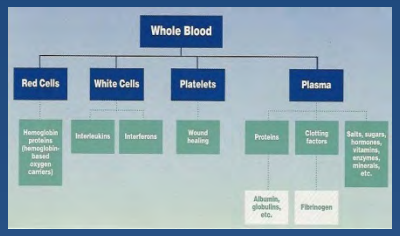
2 Separate Circuits
with
2 Different Volume Types





Now Only 1 (ONE) Circuit
with the
Same Volume Type





PATIENT
Once
Disconnected
from CPB

CPB CIRCUIT
Once
Disconnected
from the
PATIENT
Primed with
Whole Blood

2 Separate Circuits Now
with
Exactly the Same Blood (No Difference!)

Processing Residual CPB Circuit Whole Blood
How You Process this Blood Changes Outcomes
Fluid overload is an independent predictor of mortality

Three re-infusion methods

- Direct
- Cell-Wash
- Ultrafiltration

Fluid Shifts in Microcirculation, COP, Lymphatics and Organ Edema are the "New Frontier" for Improving Patient Outcomes by Perfusionists in Cardiac Surgery, along with Hemostasis when dealing with diluted blood, Plasma Volume Contraction and pushing Renal Function for fluid balance.

Fluid overload is an independent predictor of Mortality in Cardiac Surgical patients as well as an indirect Trigger for Transfusions, which carries its own Evidence for Morbidity and Mortality.

CPB CIRCUIT Once Disconnected from the PATIENT Primed with Diluted Whole Blood

Processing Residual CPB Circuit Whole Blood

Three re-infusion methods

- Direct *Ann Thorac Surg*. 1993;56(4):938-43.
- Cell-Wash *JECT*. 1996;28(3):134-9.
- Ultrafiltration *Perfusion*. 2005;20(6):343-9.

Final Infusion Volume Contents

Technique Volume cc	% HCT	Plt Cnt 10^9/L	[Fib] mg/dL	% Clot Factors
Direct 700-1800+	17-25	50-140	80-135	15-40
Cell-wash 225-450	40-58	5-25	10-30	2-10
Ultrafiltration 450-1000	45-55	125-325	225-385	85-259

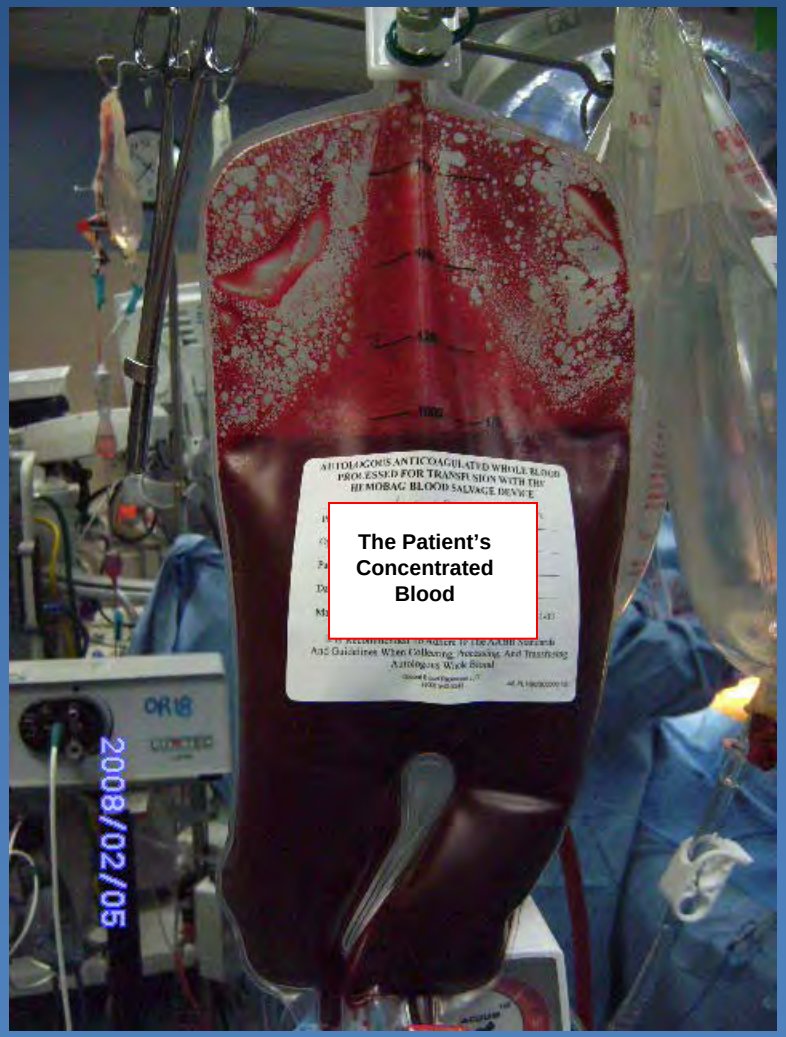
Note: 90 percent confidence limits for pre-protamine infusion volumes and blood component values (*Proc Amer Soc Extra Corpor Technol.* 2006)

Hemobag®

www.mybloodfirst.com/

J Extra Corpor Technol. 2004;36(2):162-5.

Hemobag® Processed End-CPB Whole Blood Volume
The Ideal End Product Given Back to the Patient



- Easy & reproducible each and every time
- High HCT
- High Albumin
- High Total Protein
- High Platelets
- Normal Electrolytes
- Very High Fibrinogen
- 8-10 Minute Procedure
- QC/QA Sampling Ports
- Keeps the CPB Circuit **Safety primed for added Security at all times!**
- All Autologous Cells are returned back to the patient

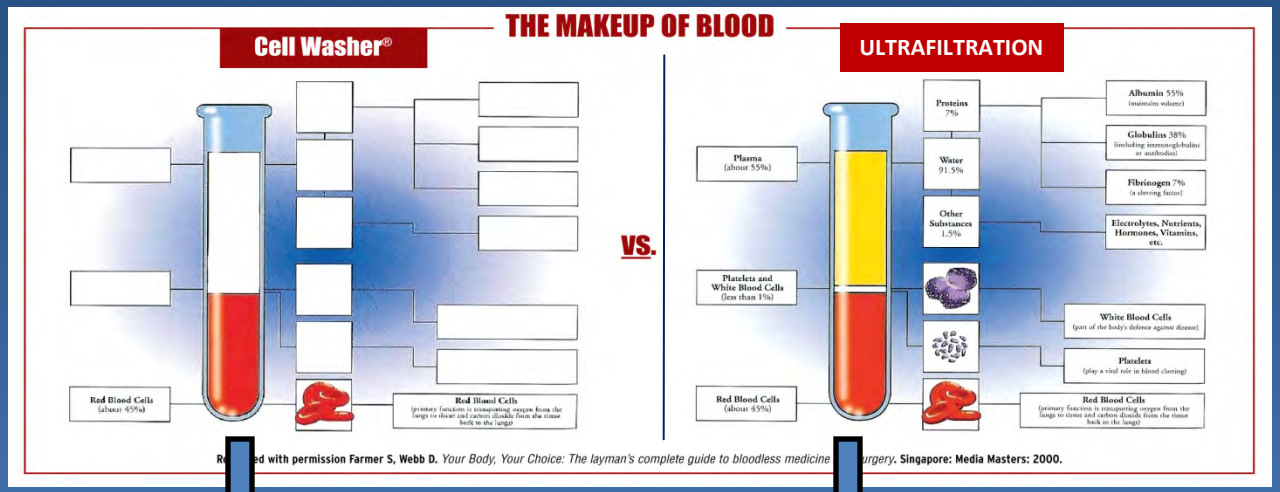
Improved Coagulation

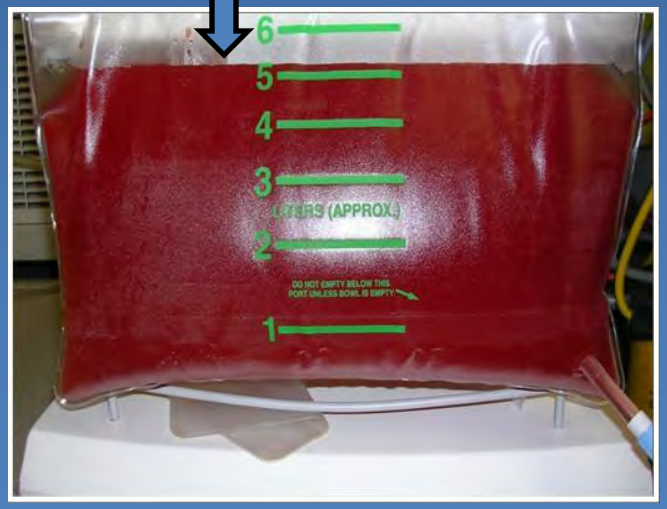
Example of typical results when the ECC is returned with the Hemobag®

	PRE-OP	INTRA-OP	POST- INFUSION
HCT	35%	25%	33%
PT	9.9 sec.	↑	11.2 sec
PTT	27 sec	↑	33 sec
INR	1.0	↑	1.1
ACT	155 sec	480+ sec	142 sec
PLT. COUNT	276,000	↓ ↓	241,000 (Functional)

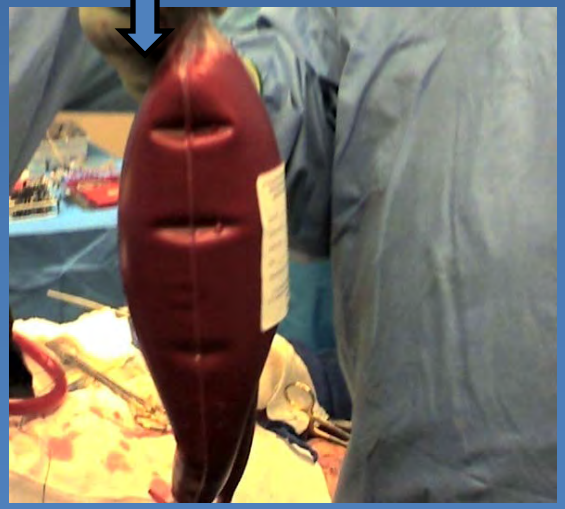
Typically the Total 24 hour Chest Tube Drainage is 100- 300 mL of Serous Fluid
Patients are discharged with No Blood Products and No Complications

What is the Next Evolution of Blood Processing for the Post-CPB Circuit in CV Surgery





Cell Washer Waste



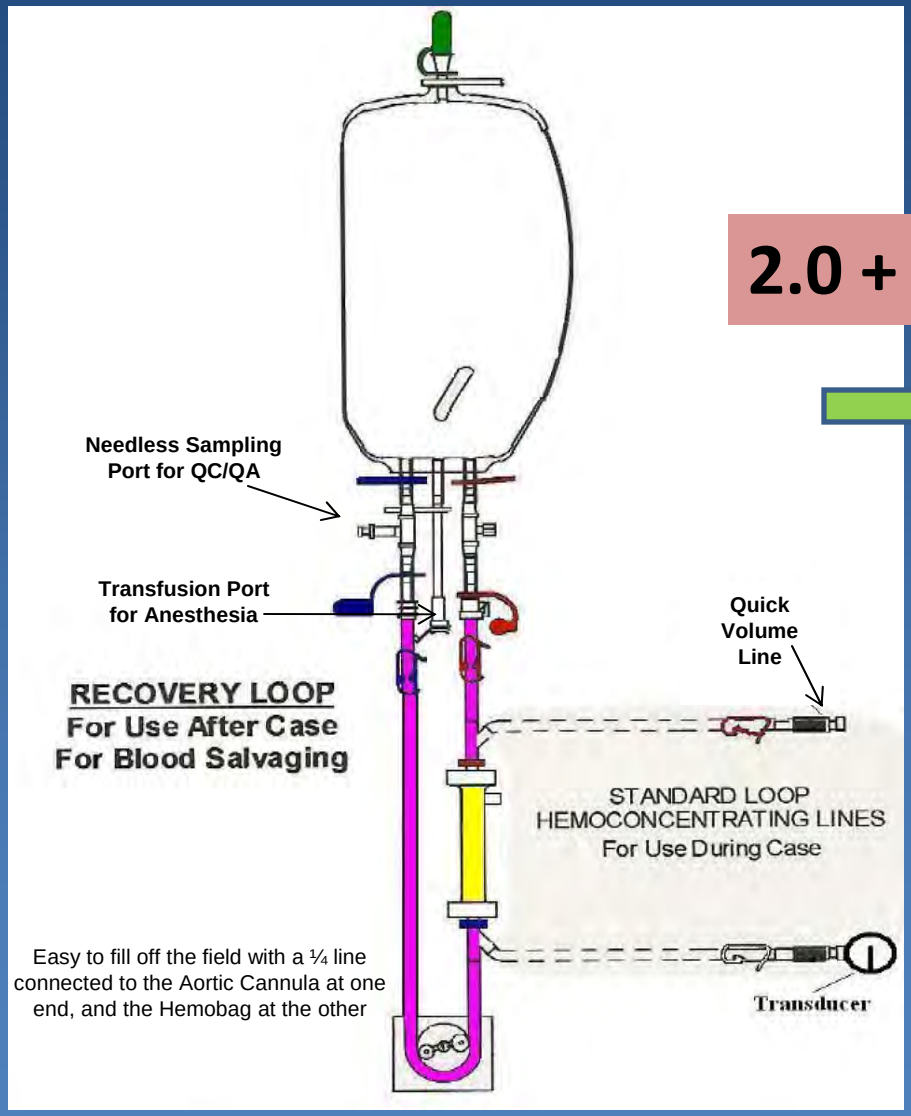
Whole Blood

ULTRAFILTRATION

has the benefit of Concentrating Whole Blood Quickly & Easily Saving All the Plasma as well as the RBCs

So How Can We Make It Really Easy?

HEMOBAG®



2.0 + Liters

Global Blood Resources

HEMOBAG®

Technology focused on the preservation of Whole Blood Components in Heart Surgery

We'll help make it easy for you to become the Leader at your Program

The Hemobag® Filled with Post-CPB Whole Blood

Finished Product Concentrated in 8 – 10 Minutes

Call or Email us to get you started
(800) 942-9243
www.Hemobag.com

The Next Evolutionary Step in Processing Post-CPB Circuit Whole Blood for Improved Patient Outcomes!

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