Blood Volume Analysis in Long COVID Patients

Jenny's Story: When Anemia is Masked

A previously healthy woman in her 30s presented with progressive Long COVID symptoms - dysautonomia and fatigue - unresponsive to standard care.

Years of testing (hemoglobin, ferritin, tilt table, exercise testing) revealed nothing actionable.
Her hematocrit appeared normal at 38.3%.

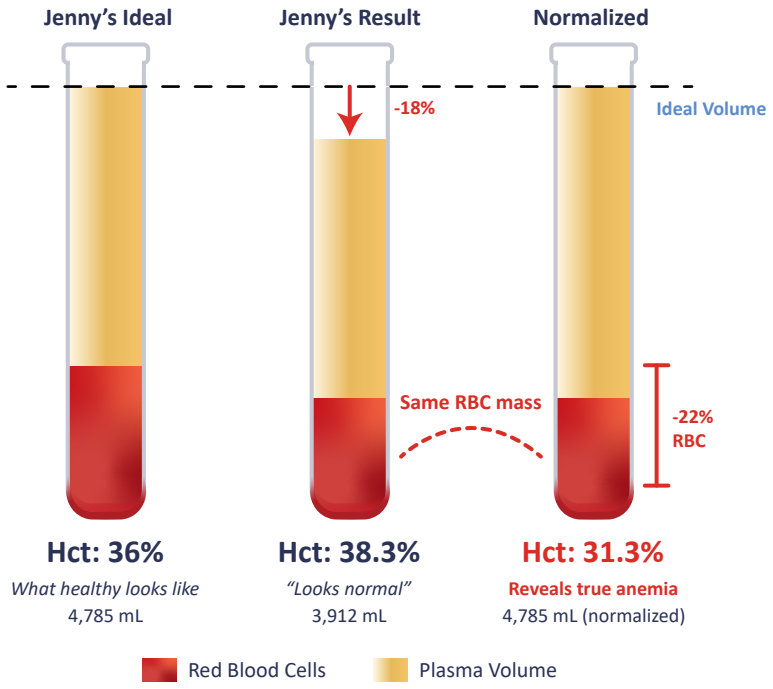
BVA revealed the truth:
Simultaneous **hypovolemia** (−18%) and **anemia** (−22%).

Her normal hematocrit masked both deficits — a ratio that looked fine while absolute volumes were low.

With BVA phenotyping as an anchor, her team initiated targeted volume repletion and hematologic investigation. Improved exercise tolerance and reduced orthostatic symptoms followed.

Why Hematocrit Misled

Long COVID Patient: Jenny's Blood Volume Analysis

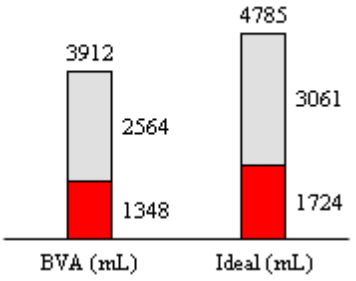


Blood Volume Analysis Results

	BVA Result	Patient Ideal	Deviation From Ideal	Excess/Deficit %
Total Blood Volume	3912 mL	4785 mL	-873 mL	-18.2% Moderate Deficit
Red Blood Cell Volume	1348 mL	1724 mL	-376 mL	-21.8% Moderate Deficit
Plasma Volume	2564 mL	3061 mL	-497 mL	-16.2% Moderate Deficit

Blood Volume Interpretation Guideline

	Normal	Mild	Moderate	Severe	Extreme
BV, PV Deviation (± %):	0 to 8	>8 to 16	>16 to 24	>24 to 32	>32
RCV Deviation (± %):	0 to 10	>10 to 20	>20 to 30	>30 to 40	>40



Additional Analysis

Hematocrit Analysis

	Patient Result	Normal Female
Peripheral Venous Hct	38.3%	37-41%
Normalized Hct (nHct)	31.3%	37-41%

mL/kg Analysis

	Patient Result	Patient Ideal
Total Volume	54.6	66.8
Plasma Volume	35.8	42.7
RBC Volume	18.8	24.1

Albumin Transudation Analysis/Slope (%/min)

Patient Result
0.08

Reference Range	
Normal:	0 to 0.25
Elevated:	0.25 to 0.4
High:	0.4 to 0.5
Very High:	>0.5

BVA: Moving from Guesswork to Precision in Long COVID

The Diagnostic Challenge

Long COVID presents a unique hurdle in modern medicine: it lacks objective biomarkers. Currently, clinicians must rely on patient-reported symptoms like dizziness, tachycardia, and fatigue. However, these symptoms are often ambiguous because **autonomic dysfunction (such as POTS) can mimic or mask true volume derangements,** leaving providers to manage volume status "blind" through trial-and-error.

What is BVA?

BVA (Blood Volume Analysis) provides the missing diagnostic piece as the gold standard for **volume status measurement.** BVA moves beyond clinical estimation to provide 3 critical data points that cannot be obtained through standard assessments:

- **True blood volume status** measured as a % deviation from the patient's specific ideal
- **Separate plasma and red cell volumes** to identify discordant phenotypes
- **Normalized hematocrit** quantifies the hematocrit adjusted for normal volume

Why BVA is The Gold Standard:

BVA transforms Long COVID management by replacing subjective guesswork with clinical certainty in several key scenarios:

Understanding Drivers in Syncope:

BVA provides objective data that can give greater insight into what is driving syncope and POTS

Managing Autonomic Dysfunction:

Determine whether a patient really needs volume or is already euvolemic

Identifying Masked Anemia:

The gold standard for revealing actual red blood cell mass, unmasking hidden anemia

Measure Volume Expansion:

Monitor volume expansion therapies objectively, rather than relying on surrogate markers

In a patient population desperately seeking answers, BVA delivers certainty. It allows you to track objective phenotypes and provide targeted, effective treatments for a condition where almost every other metric is subjective.

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