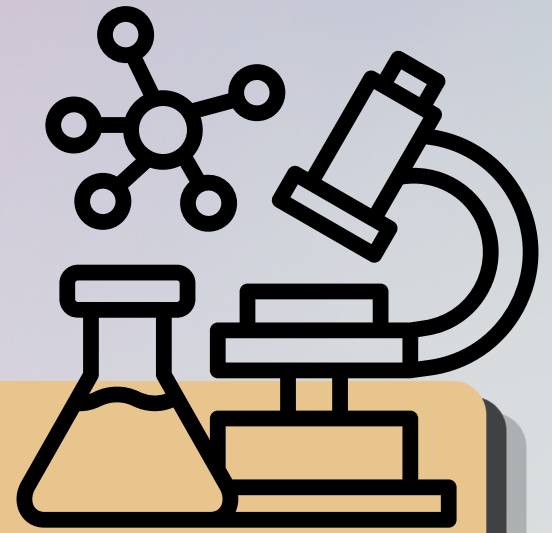
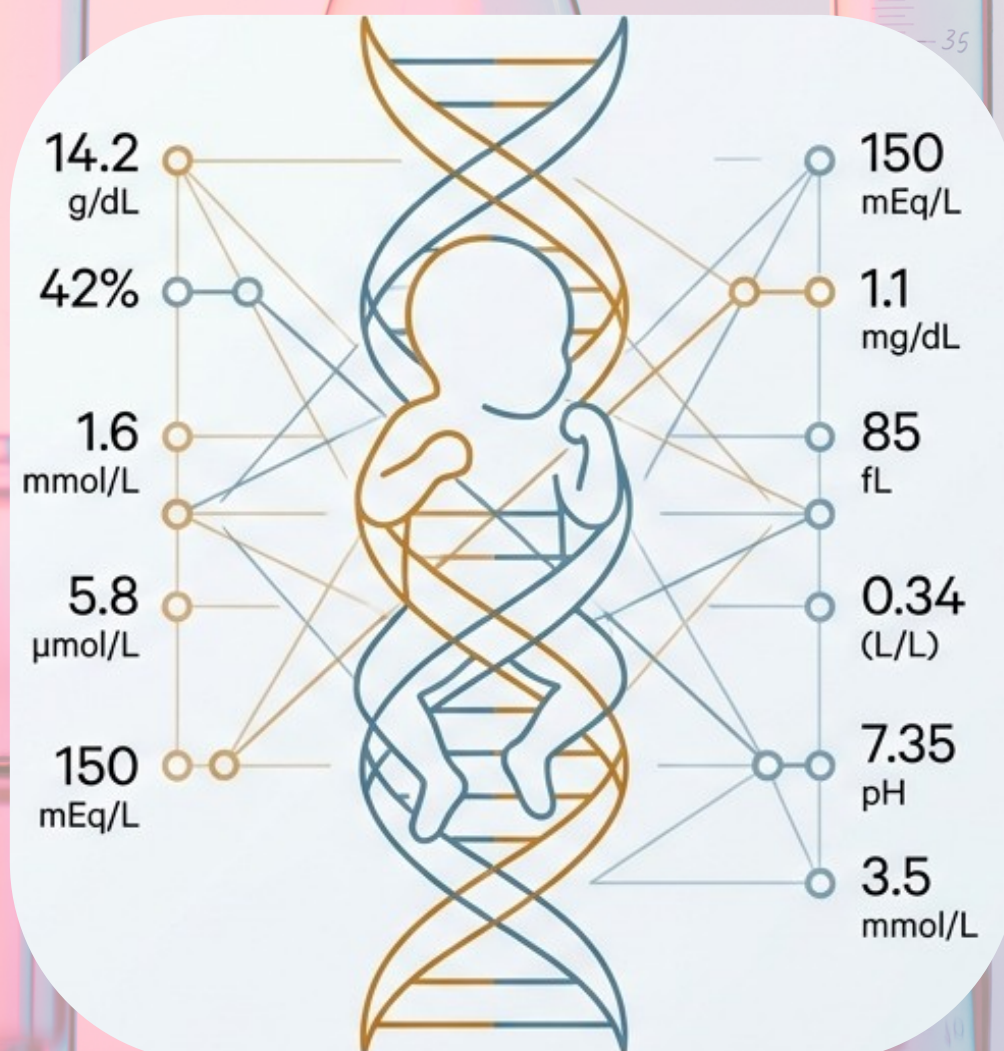




Clinical editorial Reference guide

The Neonatal Blueprint: Complete Laboratory Reference Intervals

A comparative clinical data dashboard for
Term and Preterm neonates.



Navigating the Neonatal Dashboard

Legend

Data Color Coding



Term Neonate Data
(Full maturation)



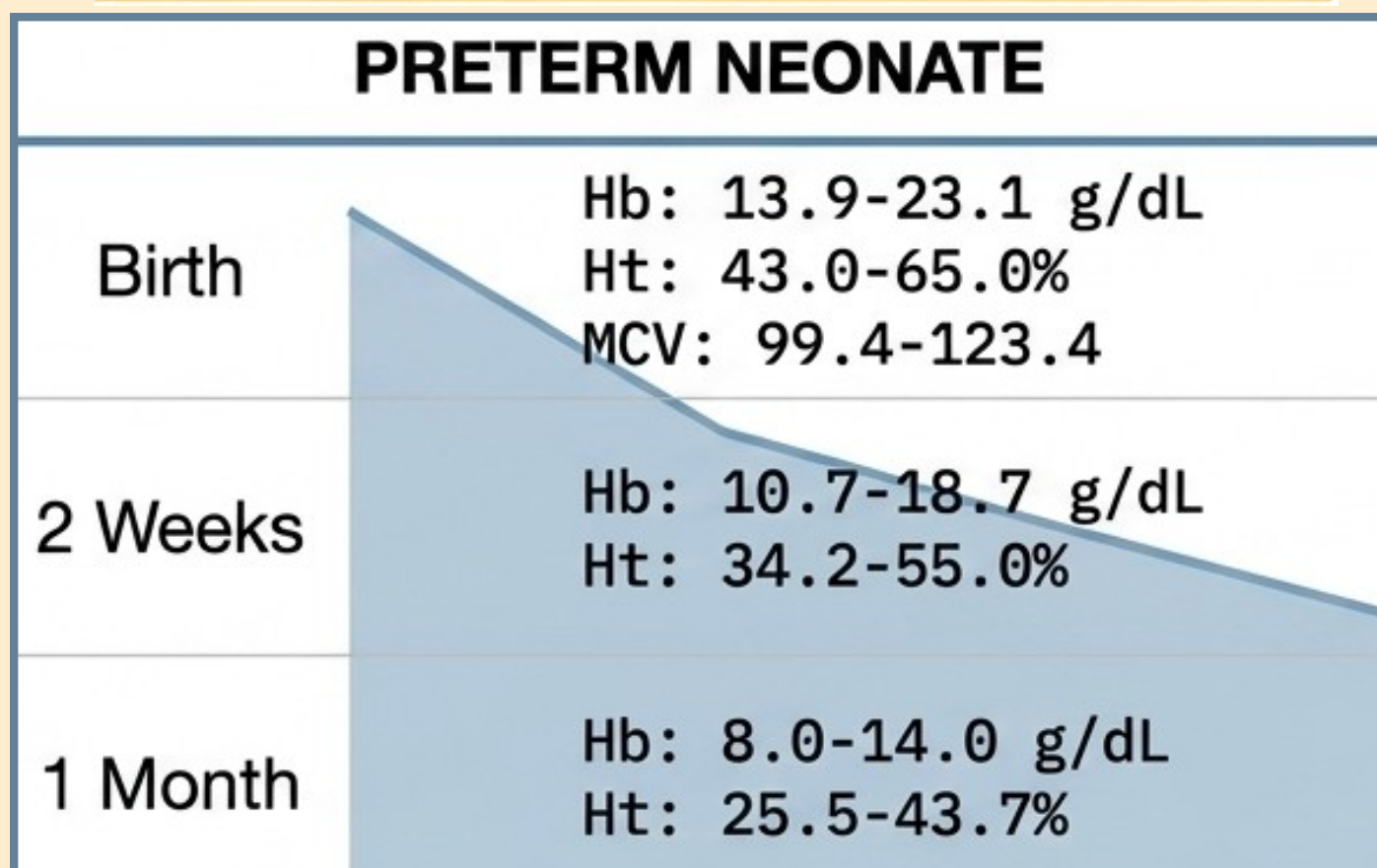
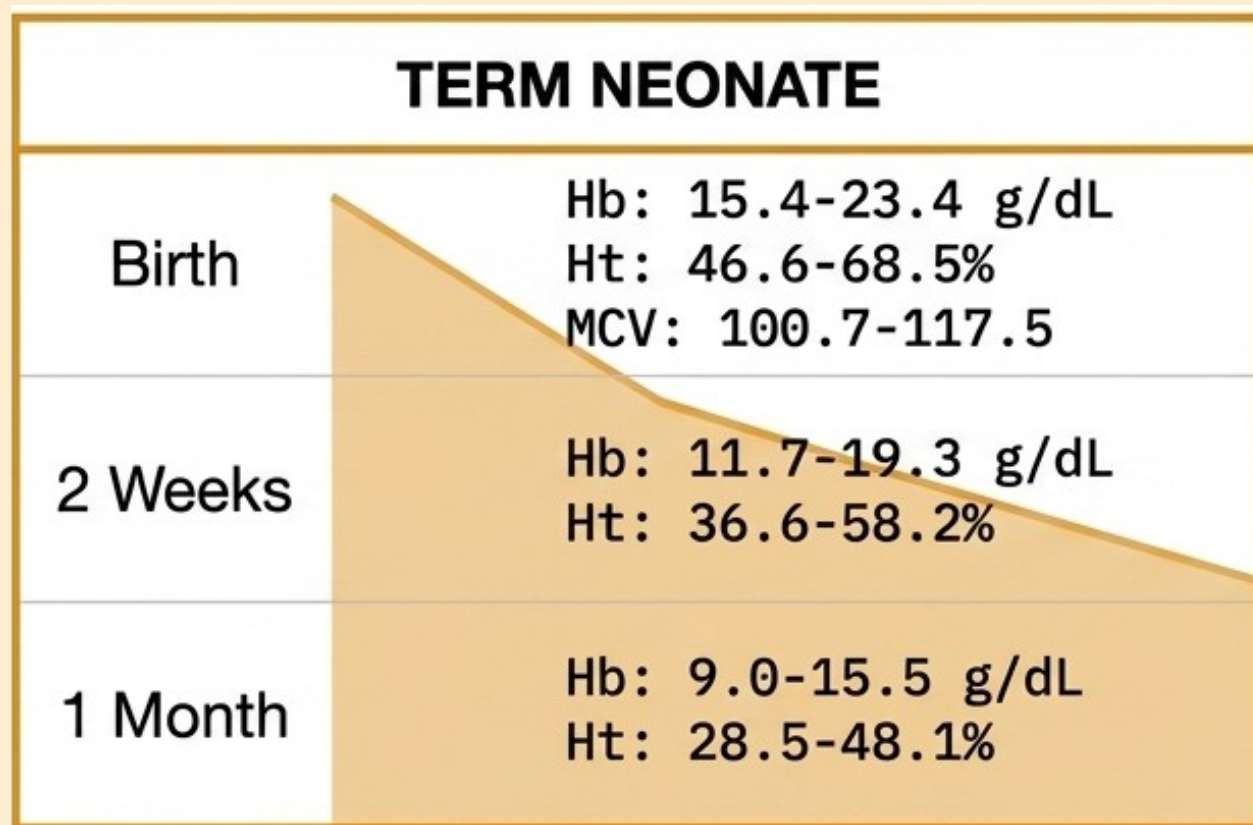
Preterm Neonate Data
(In-development)

Neonatal reference values are not static.
They represent a dynamic adaptation from
intrauterine to extrauterine life.

Gestational Timeline



Erythroid Lineage & Physiological Anemia Trajectory



Reticulocyte Trajectory: Drops rapidly from cord blood values (<7% Term, <10% Preterm) to <3% by day 7.

Leukocyte Differentials and Thrombotic Baselines

White Blood Cell (WBC) Differentials (Birth -> 14 Days)

Total Leukocytes	Neutrophils	Eosinophils	Lymphocytes	Monocytes
9k-30k → 5k-20k	6k-26k → 1k-9k	20-850 → 70-1k	2k-11k → 2k-17k	400-3.1k → 200-2.4k

Platelet Ranges

Birth:	100k – 280k
7 Days:	80k – 320k
14 Days:	150k – 450k

 **Rodwell Score Flag**
Immature to Total Neutrophil ratio (I:T) > 0.2 is a critical indicator of infection/sepsis.

With **NeoFast** it is easy and practical to calculate this score.

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Rodwell score - Neonatal sepsis

Does the patient have leukocytosis or leukopenia?

Leukocytes $\leq 5,000/\text{mm}^3$ or $\geq 25,000/\text{mm}^3$ at birth.
Leukocytes $\geq 30,000/\text{mm}^3$ in 12-24h of life.
Leukocytes $\geq 21,000/\text{mm}^3$ after 48h of life.

Yes

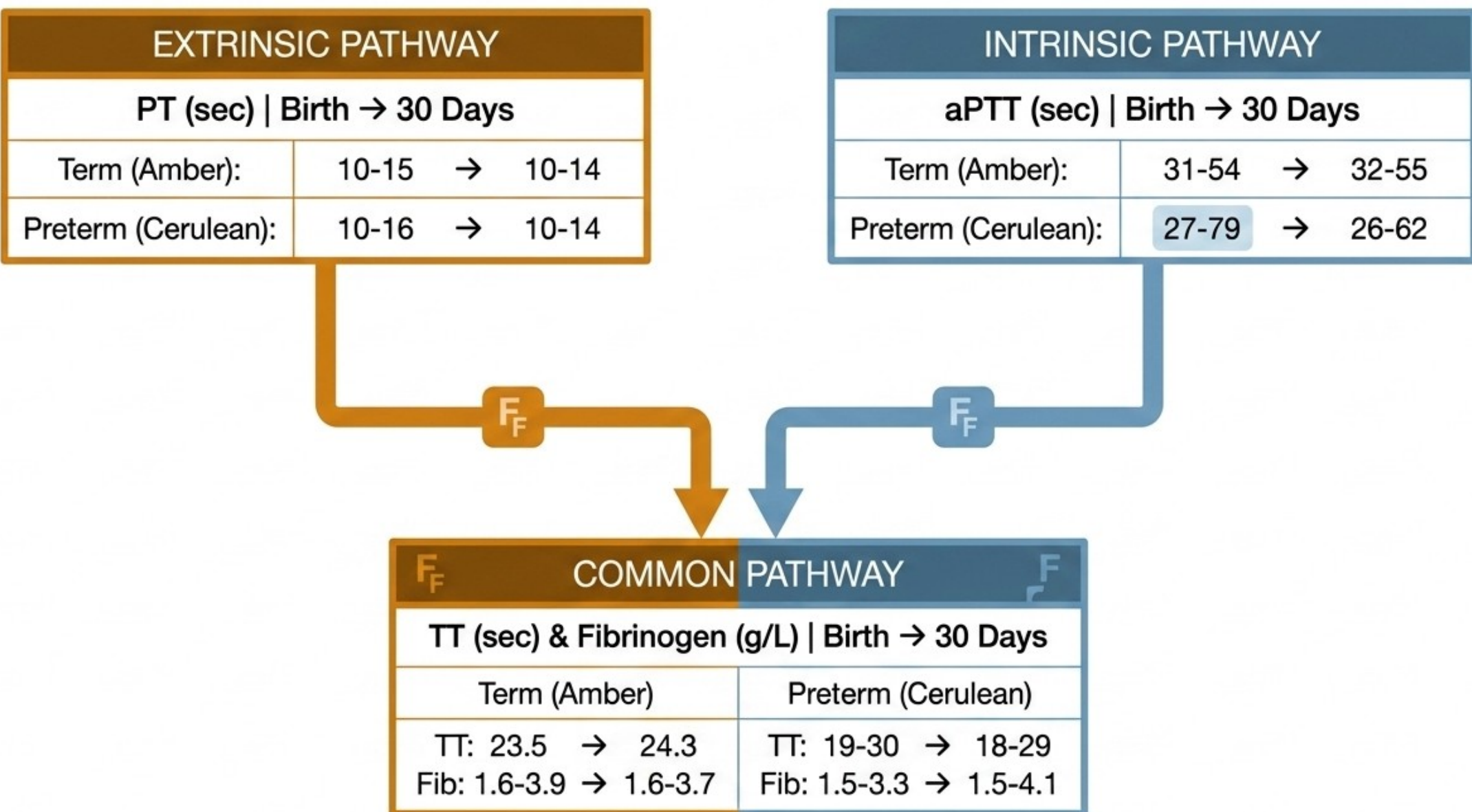
No

Does the patient have neutropenia or neutrophilia?

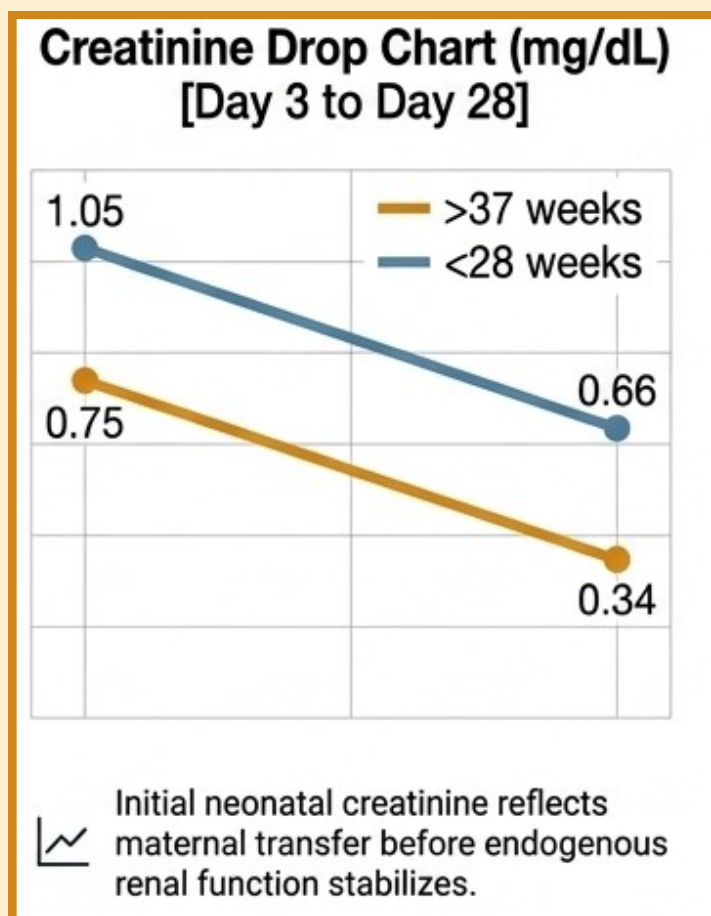
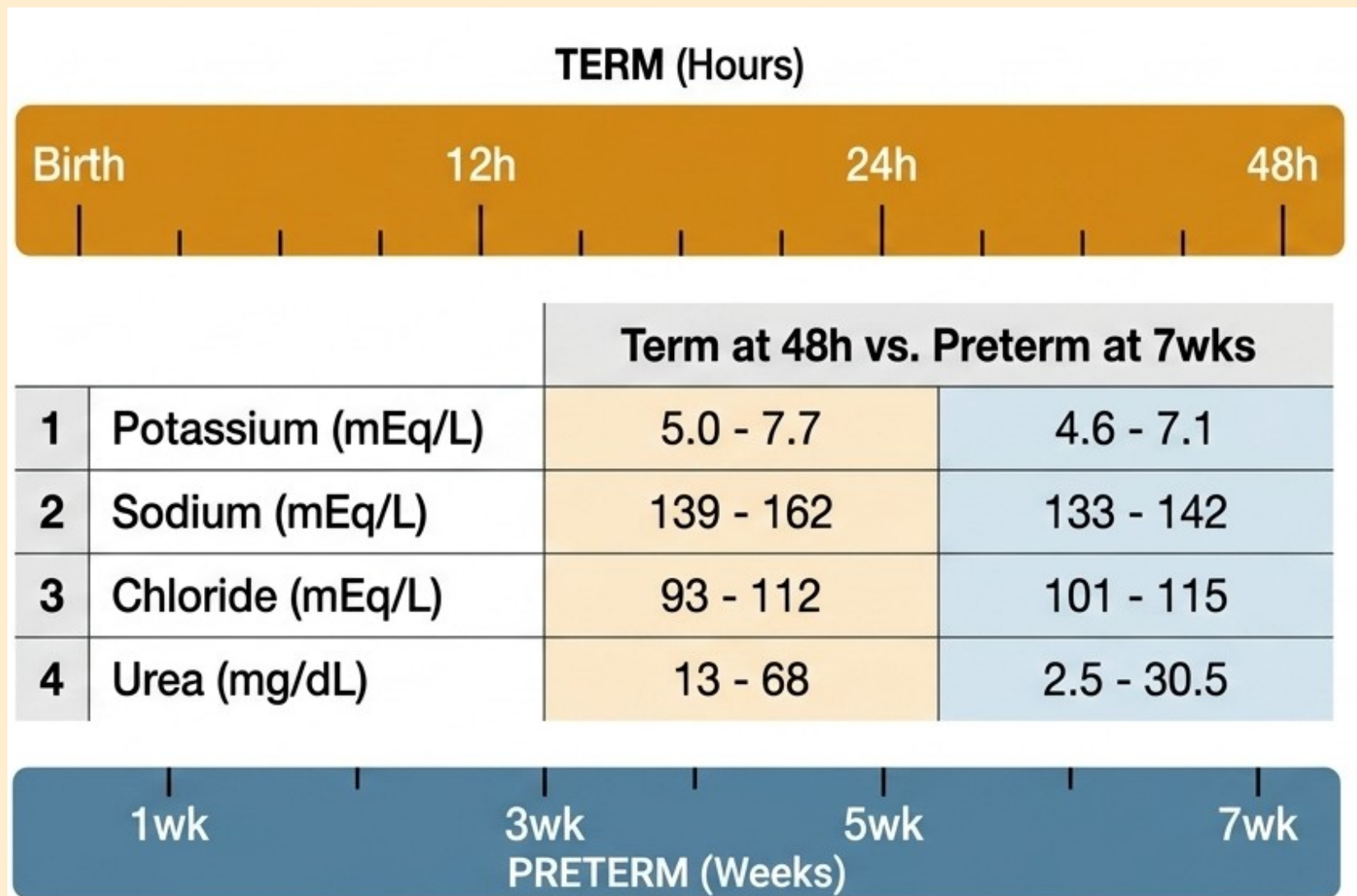
Neutropenia: consider below $7,800/\text{mm}^3$ up to 60 hours of life and below $1,750/\text{mm}^3$ after.
Neutrophilia: consider above $14,500/\text{mm}^3$ up to 60 hours of life and $5,400/\text{mm}^3$ after.

Yes

Hemostasis Development and the Coagulation Cascade



Renal Maturation and Electrolyte Stabilization



Energy Homeostasis and Bone Mineralization

Glucose (mg/dL)

Term (Birth:	45-96 -> 48h: 40-90)
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WARNING: Values < 40 mg/dL trigger immediate hypoglycemia protocols. Ideal is > 45-50 mg/dL.

Calcium (Total mg/dL)

Term (Birth -> 48h):	8.2-11.1 → 5.9-9.7
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Preterm (1wk -> 7wks):	6.1-11.6 → 8.6-10.8
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Lactic Acid (mg/dL)

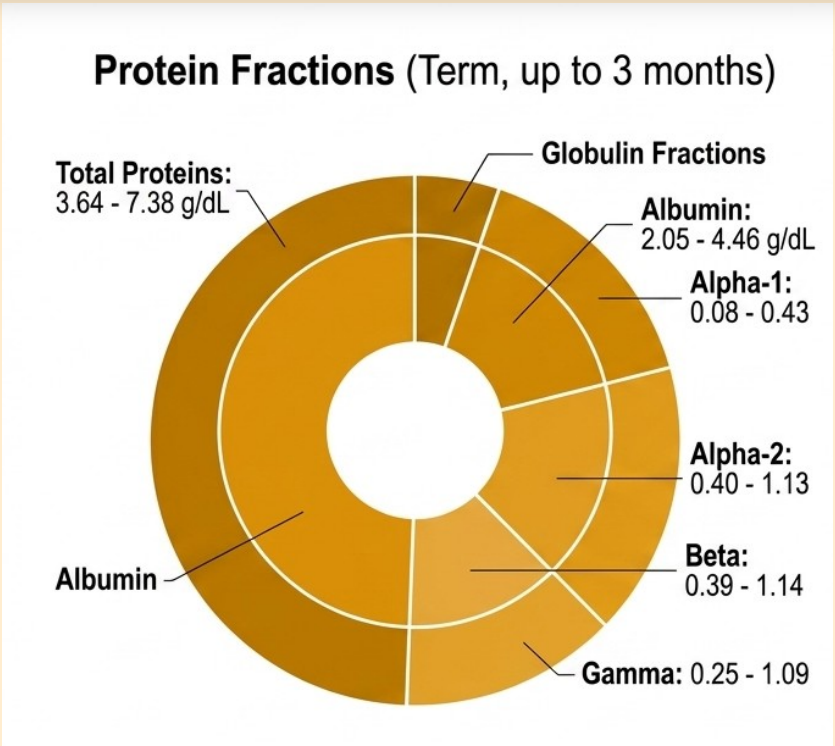
Term (Birth:	11-30 -> 48h: 7-21)
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Phosphorus (mg/dL)

Term (Birth -> 48h):	3.7-8.1 → 6.0-8.5
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Preterm (1wk -> 7wks):	5.4-10.9 → 4.2-8.2
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Hepatic Synthesis and Clearance Profiles



Clearance & Enzymes

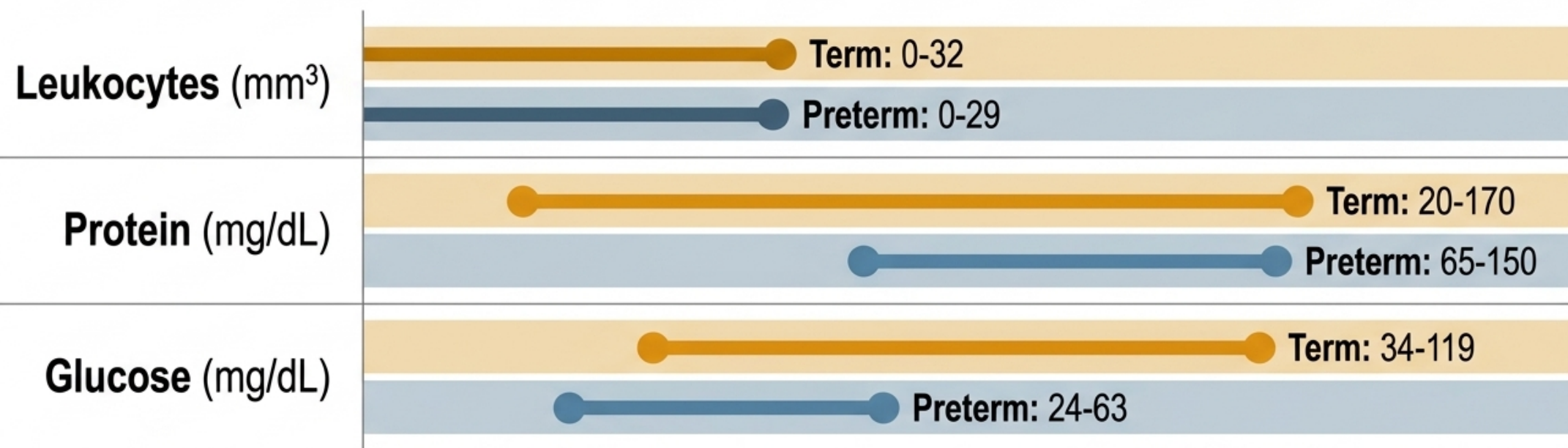
Hepatic Enzymes (U/L)

Marker	Term Range	Preterm Range
AST	24 - 81	--
ALT	10 - 33	--
GGT	14 - 131	--
Alkaline Phosphatase	96 - 232	147 - 462

Ammonia (umol/L)

Timing	Term	Preterm
Cord Baseline	36 - 54	45 - 97
Birth to 3 months	17 - 31	24 - 60

Central Nervous System: Cerebrospinal Fluid (CSF)



Insight: Preterm infants exhibit **tighter, lower CSF glucose** ranges and **higher baseline CSF protein floors** compared to term infants.

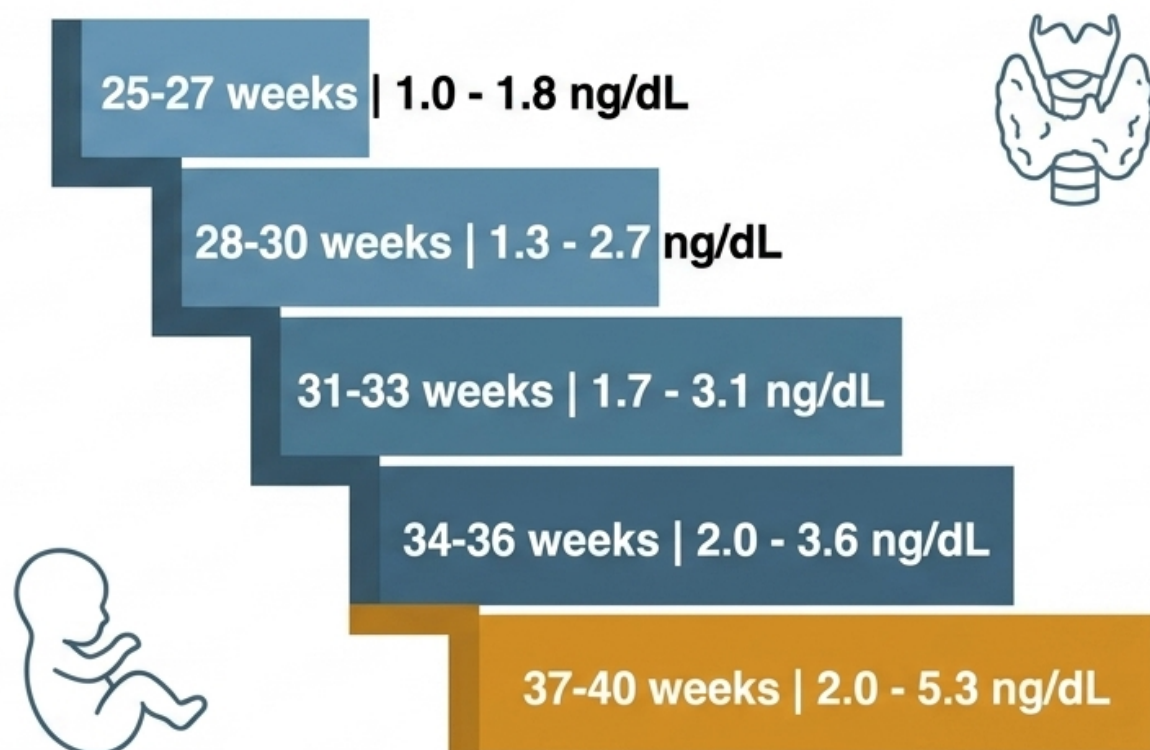
Endocrine Adaptation: Thyroid Function

TSH & T4 Total (Term)

TSH (uUI/mL):	
Cord:	2.4 - 20.0
24-72h:	2.5 - 16.3

T4 Total (ug/dL):	
Cord:	7.0 - 13.0
24-72h:	12.4 - 21.9

Gestational Escalator



The Preterm Divergence Map

Physiological Marker	Term Range	Preterm Range	Clinical Implication
aPTT Upper Limit	Up to 54s	Up to 79s	Prolonged physiological hemostasis.
Alkaline Phosphatase	Up to 232 U/L	Up to 462 U/L	Accelerated bone turnover risk (osteopenia).
Baseline Ammonia	Up to 31 umol/L	Up to 60 umol/L	Immature hepatic clearance.
CSF Glucose	34 - 119 mg/dL	24 - 63 mg/dL	Altered CNS metabolic baseline.



A normal laboratory value for a preterm infant is often a critical alert for a term infant.

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Prescription

