Lab Synthesis Integration Map (The "Triad of Synthesis" Worksheet)

Client Name: _____ Date: ___

Primary Goal: To move from isolated lab reading to clinical synthesis by identifying the "ghosts in the machine" across the OAT, DUTCH, and GI-MAP.

Section 1: The Biotransformation Node (Estrogen-Gut-Detox)

Use this section to determine if hormone imbalances are being driven by gut dysbiosis or detoxification blocks.

Source Lab	Marker	Value	Finding (Check if Out of Range)
GI-MAP	Beta-glucuronidase		[ ] High (Risk of Estrogen Reabsorption)
DUTCH	4-OH / 2-OH Ratio		[ ] High 4-OH (Toxic Pathway/Phase 1)
DUTCH	2-MeOE1 / 2-OH		[ ] Low Methylation (Phase 2 Block)
OAT	Pyroglutamate		[ ] Low/High (Glutathione Depletion)

Synthesis Note: If Beta-glucuronidase is high AND 4-OH is high, prioritize **Gut Foundation** and **Calcium D-Glucarate** before direct hormone therapy.

Section 2: Genotype vs. Phenotype Verification

Check if the client's genetic predispositions (SNPs) are actually expressing in their current biochemistry.

Genetic SNP	Correlating Lab Marker	Current Lab Value	Is the Gene Expressing?
MTHFR	OAT: Methylmalonate / DUTCH: Methylation		[ ] Yes [ ] No
COMT	DUTCH: 2-MeOE1 / OAT: HVA & VMA		[ ] Yes [ ] No

Genetic SNP	Correlating Lab Marker	Current Lab Value	Is the Gene Expressing?
GST/GPX	OAT: Pyroglutamate		[ ] Yes [ ] No

Section 3: Mitochondrial-Endocrine Axis (Power Save Mode)

Identify if the HPA axis is downregulating production to protect mitochondria from oxidative stress.

- [ ] **OAT Check:** Are Succinate, Fumarate, or Malate elevated? (Indicates Kreb's Cycle blocks)
- [ ] **DUTCH Check:** Is Total Cortisol or DHEA-S low? (Indicates downregulated output)
- [ ] **GI-MAP Check:** Is Calprotectin > 150? (Indicates high metabolic cost of inflammation)

Clinical Conclusion: [ ] **True Adrenal Dysfunction** (Mitochondria are clear, HPA is the primary driver) [ ] **Power Save Mode** (Mitochondria are blocked; adding adrenal stimulants may cause a crash)

Section 4: The "Silent Four" Metabolic Drift Tracker

Track these markers to identify systemic drift before symptoms manifest.

Marker	Functional Range	Client Value	Status
hs-CRP	< 1.0 mg/L		[ ] Optimal [ ] Simmering
GGT	< 20 U/L		[ ] Optimal [ ] Glutathione Drain
Ferritin	30 - 150 ng/mL		[ ] Optimal [ ] Inflammatory Reactant
Uric Acid	3.5 - 5.5 mg/dL		[ ] Optimal [ ] Mitochondrial Stress

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Section 5: Clinical Narrative & Synthesis

The "Single Story" of this Client's Health: *(Example: "Sarah's brain fog is driven by a Phase 2 Methylation block (OAT) exacerbated by Estrogen recycling in the gut (GI-MAP), leading to Mitochondrial 'Power Save' mode (DUTCH).")*

Next Steps / Priority Intervention:

1. _____
2. _____
3. _____

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