Post Mentoring Session Summary

Prepared exclusively for: Emma Sternberg Consultation date: 03 June 2025
By: Janaya Karloci, Naturopath

This information is provided for educational purposes as part of our professional mentoring relationship and should not be considered direct clinical advice for your client.

Key Findings We Discussed

*(with added detail following my review of both tests together post our session**:***

PRIORITY 1: Neurotransmitter Imbalance

Serotonin Pathway Dysfunction

- **5-HIAA: 0.71** (Reference: ≤ 2.9) - Below optimal
- Low serotonin metabolism = Poor mood regulation, increased rumination

Dopamine/Norepinephrine Disruption

- **HVA: 0.91** (dopamine metabolite) - Low-normal
- **VMA: 0.87** (norepinephrine metabolite) - Low
- **HVA:VMA Ratio: 1.04** - Concerning pattern

Biochemical Understanding - Root Cause Analysis:

Vitamin C Deficiency → Dopamine/Norepinephrine Dysfunction:

- Dopamine beta-hydroxylase enzyme converts dopamine → norepinephrine
- **Vitamin C is the primary cofactor** for this critical enzyme
- With severe deficiency (0.37), this enzyme cannot function properly
- Results in: Dopamine accumulation + Poor norepinephrine production = Concerning HVA:VMA ratio

Vitamin B6 Deficiency → Serotonin Synthesis Impairment:

- Serotonin synthesis pathway: Tryptophan → 5-HTP → **Serotonin (requires B6/P5P)** → 5-HIAA
- Suboptimal B6 (1.8) creates a bottleneck at the 5-HTP → Serotonin conversion
- Less serotonin produced = Less 5-HIAA metabolite detected

Why This Matters for Health Anxiety:

- Imbalanced neurotransmitters can contribute to hyperfocus on bodily sensations
- Poor stress response and difficulty assessing real vs. perceived threats
- Catastrophic thinking and rumination loops

- **Positive note:** Nutritionally-driven patterns often respond well to targeted intervention when root causes are addressed

PRIORITY 2: Neuroinflammation

- **Quinolinic Acid: 2.0** (Reference: 0.52-2.4) - Upper range
- Neurotoxic metabolite that may contribute to brain fog and anxiety

PRIORITY 3: Gut Dysbiosis (from 18 months ago)

- **Elevated Clostridium species: 104.0** (Range: 5.0-50.0) - Significantly elevated
- **Severely depleted beneficial bacteria**: Bifidobacterium (1.7 vs >6.7), Lactobacillus rhamnosus (0.5 vs 8.3-885)
- **Low Secretory IgA** - Compromised gut immune function
- **Blastocystis hominis elevation** - Parasitic organism present

Important Clinical Note on Clostridium Interpretation:

The elevated Clostridium count with normal OAT bacterial metabolites (HPHPA, 4-Cresol) suggests overgrowth of **non-pathogenic Clostridium species** rather than the toxic-producing strains (*C. sporogenes*, *C. difficile*). However, even "beneficial" Clostridium overgrowth can significantly impact health by:

- **Causing nutrient malabsorption** (potentially explaining the severe nutritional deficiencies)
- **Creating immune dysfunction** (evidenced by low sIgA)
- **Crowding out essential beneficial bacteria** (Bifidobacterium, Lactobacillus)
- **Disrupting gut-brain axis communication**

Key Clinical Questions Post-Treatment:

After 18 months following a period of antibiotics and gut restoration protocol:

- Has the Clostridium overgrowth resolved to normal levels?
- Are beneficial bacterial populations now restored?
- Has nutrient absorption capacity improved?
- Is gut immune function (sIgA) now adequate?

⚠ Nutritional Deficiencies (from approximately 18 months ago)

- **Vitamin C: 0.37** (Reference: 10-200) - Severely low at time of testing
- **Vitamin B6: 1.8** (Reference: ≤ 26) - Suboptimal at time of testing
- Both are crucial cofactors for neurotransmitter synthesis

💉 **Genetic Factor: MTHFR C677T Heterozygous Variation –** *(Emma please correct me if I have this variation wrong)*

- Reduces methylation capacity by ~35%, affecting neurotransmitter metabolism
- Impairs ability to utilise standard folate forms efficiently
- Creates increased need for methylated B vitamins (methylfolate, methylcobalamin)

The Health Anxiety Connection We Explored:

Potential physiological patterns that may influence symptoms:

1. **Nutritional cofactor deficiencies** preventing efficient neurotransmitter synthesis

2. **Chronic stress/anxiety cycle** - depletes B vitamins and Vitamin C rapidly, creating a self-perpetuating cycle
3. Neuroinflammation contributing to brain fog and unclear thinking
4. Difficulty with stress response regulation due to impaired norepinephrine production

The "Perfect Storm" Pattern Often Observed:

- Severe Vitamin C deficiency → Impaired norepinephrine synthesis
- B6 deficiency → Reduced serotonin production
- Chronic health anxiety → Accelerated nutrient depletion

Clinical presentations often observed:

- Normal bodily sensations interpreted as concerning symptoms
- Difficulty trusting medical reassurance
- Compulsive body checking and symptom monitoring
- Catastrophic interpretation of normal body functions

Clinical Significance: This appears to be a nutritionally-driven neurotransmitter dysfunction pattern. Understanding the interplay between genetic factors (C677T), nutritional status, and neurotransmitter metabolism provides valuable insights for developing targeted support strategies alongside conventional treatment approaches.

Educational Recommendations for Consideration:

Assessment Considerations:

- **Re-testing OAT is priority** - to assess current nutritional and metabolic status after 18+ months of comprehensive treatment – Patient Information
- **Consider concurrent microbiome retesting** - original test (18 months ago) showed significant dysbiosis including elevated Clostridium species, low beneficial bacteria (Bifidobacterium, Lactobacillus), and compromised gut immunity (low sIgA)
- Evaluate effectiveness of current protocol post-antibiotic treatment and gut restoration
- Consider additional cofactor assessment: full iron studies, magnesium, vitamin D, blood glucose, full thyroid panel, RBC folate, Serum VitaminB12, homocysteine, full lipid count zinc/copper ratio if current status, unclear through standard pathology via GP

Clinical Note: Given 18+ months of comprehensive treatment including:

- Antibiotic therapy and gut restoration protocol (following microbiome findings)
- Targeted nutritional supplementation (methylated B complex, NAC, fish oil, Vitamin D, Vitamin C, Ginkgo, B12, magnesium and 5-HTP), **no prescribed medication and no allergies** – *Emma please note if I have missed something here.*

Retesting will provide valuable insight into:

- Resolution of previous gut dysbiosis and its impact on nutrient absorption
- Current effectiveness of interventions across both gut and nutritional domains
- Whether genetic factors (C677T) require further protocol modifications
- Integration of gut-brain axis restoration with neurotransmitter support.

Some Interesting Reading/Watching

written by Dr. William Shaw (helped to originally create the OAT test)

1. Inhibition of the Beta-oxidation Pathway of Fatty Acids and Dopamine- Beta-hydroxylase by Phenyl Derivatives of Short- Chain Fatty Acids from Gastrointestinal Clostridia Bacteria is a (the) Major Cause of Autism - PMC
2. Dopamine Excess and/or Norepinephrine and Epinephrine Deficiency in Autistic Patients Due to Prenatal and/or Postnatal Deficiency of Dopamine Beta-Hydroxylase - ISOM
3. Episode 2: Bill Shaw, Ph.D – Clostridia and Autism – Functional Medicine Doc Talk

Supplementation Recommendations

- As discussed in the meantime given these tests were done 18 months ago, he has undergone various support, and we are unsure of current levels it is suggested your client keep to the same supplement regime as he is currently on. With possible addition of additional NAC and Probiotics, starting with Mood FX.
- When increasing NAC – this should be done slowly: -
    - Week 1 - moving the current dose at night-time to midday
    - Week 2 – doubling current morning dose (total 1200mg + 600mg = 1800mg)
    - Week 3 – doubling midday dose (total 1200mg + 1200mg = 2400mg)
    - Efficacy and safety of N-acetylcysteine as add-on therapy in the treatment of obsessive-compulsive disorder: A systematic review and meta-analysis - ScienceDirect
    - Try this higher dose for 12 weeks and then slowly reduce back to original dose i.e. drop additional midday dose for 1 week then the additional morning dose the week after
        - And watch for changes – can always be increased again down the track if necessary.

Therapeutic Support Options to Explore:

- Evaluation by OCD specialist for evidence-based therapy approaches
    - My recommendation – Mona Matter of Lighthouse Therapeutic
        - She offers discovery calls.
- **Cognitive-Behavioural Support techniques** (as educational information):
    - Uncertainty tolerance practice: "I can sit with not knowing"
    - Body sensation education: Understanding normal vs. concerning symptoms
    - Reassurance reduction strategies: Limiting excessive medical consultations

Important Safety Considerations - When to Refer Immediately:

- Suicidal ideation related to health fears
- Complete inability to function due to health anxiety
- Rapid deterioration in mental state
- Signs of psychosis or complete loss of insight

Professional Collaboration Opportunity:

I'm happy to arrange re-testing through RN Labs if this would be beneficial for your practice. However, I believe it's important that once results are available, we conduct a thorough consultation together (ideally with all parties present if your client is comfortable) to incorporate the findings appropriately and develop any supplement, dietary, or lifestyle recommendations in the most safe, ethical, and effective way possible. – I would be happy to offer this at my practitioner mentoring rate i.e. $80/hr and we could come up with a treatment plan together – My initial consultations are 1.5hours therefore $120.

Important Professional Disclaimers:

- This information is provided as part of our professional mentoring relationship and is for educational purposes only
- This does not constitute direct clinical advice for your client
- All treatment decisions should be made within your scope of practice and in collaboration with appropriate healthcare providers
- Any interventions should be implemented only after proper assessment and consultation within appropriate professional boundaries
- I strongly recommend involving the client's existing healthcare team in any treatment planning

Continuing Professional Development:

If you'd like to explore this case further or discuss implementation strategies within your scope of practice, I'm available for additional mentoring sessions. I can also provide relevant research references and educational materials to support your professional development in this area.

If you have any questions regarding your post mentoring session summary, please email me at wellness@janayakarlocinaturopath.com.au.

This guide complements but doesn't replace any medical advice. Always keep your healthcare team informed of your wellness journey.

Janaya Karloci

NATUROPATH & DIRECTOR

+61 415 575 788

wellness@janayakarlocinaturopath.com.au

www.janayakarlocinaturopath.com.au

NSW, Australia

JANAYA KARLOCI Naturopath