

Understanding Olivia's Test Results

A Complete Guide for Parents - Updated Based on Consultation

Prepared exclusively for: Olivia Parbery
Practitioner: Janaya Karloci, Naturopath

Consultation date: 23 September 2025

This confidential document contains personalised health recommendations based on individual assessment. If found, please respect privacy and contact Janaya Karloci Naturopath Pty Ltd at wellness@janayakarlocinaturopath.com.au for details on how to return.

THE BIG PICTURE: What We Found

Olivia's functional test results may help explain some of the challenges she's been experiencing. These are measurable patterns that can be supported through targeted interventions.

Key Findings Summary:

Heavy Metal Burden

- **Above upper limit**
 - Lead 1.3 µg/g (ref <0.80), Mercury 0.61 µg/g (ref <0.40), Silver 0.67 µg/g (ref <0.18), Nickel 0.37 µg/g (ref <0.30)
- **Close to upper limit**
 - Antimony 0.061 µg/g (ref <0.066), Barium, 1.3 (ref <1.5), Tin 0.28 (ref <0.30), Aluminium 5.1 (ref <8.0)

What this suggests: These metals may interfere with brain function, particularly processing speed and attention while also adding to detoxification load.

Nutritional Imbalances - Complex Mineral Disruptions:

- **Copper very high:** 84 µg/g (ref 11-37) - more than double the upper limit, which may be linked to bedtime anxiety and sleep disruption. Copper excess causes "wired but tired" feelings and interferes with calming brain chemicals.
- **Molybdenum very deficient:** 0.017 µg/g (ref 0.030-0.090) - critical deficiency suggesting why copper is so elevated. Molybdenum is essential for the enzyme - sulphite oxidase that eliminates copper from the body. Without adequate molybdenum, copper accumulates regardless of intake.

The Self-Perpetuating Cycle: This creates a vicious cycle where high copper burden demands molybdenum for elimination, but low molybdenum can't eliminate copper effectively, so copper accumulates further, increasing molybdenum demand. Meanwhile, other metals accumulate because detox systems are overwhelmed. This cycle continues until molybdenum is adequately repleted - which is why molybdenum support is so critical.

- **Zinc paradoxically elevated but functionally deficient:** While zinc appears high in hair (260 vs Ref 120-220), this likely indicates zinc wasting and cellular deficiency. High copper displaces zinc from proteins, creating functional zinc deficiency despite elevated hair levels.
 - The zinc/copper ratio of 3.1 (optimal 4-20) confirms this imbalance.
- **Magnesium elevated** (140 v Ref 25-90) **but possibly maldistributed:** High hair Olivia's magnesium likely indicates stress-induced maldistribution rather than excess. Given chronic stress pattern and toxic burden, magnesium is likely not reaching cellular targets where it's needed for enzyme function.
- **Sodium severely depleted:** 6 µg/g (ref 18-180) suggests possible electrolyte imbalance associated with adrenal stress from chronic toxic burden but may also not be clinically significant – testing via blood test required to determine actual level. Low sodium often correlates with emotional stress patterns
- **Phosphorus deficient:** 133 µg/g (ref 150-220) - affects cellular energy production (ATP synthesis), bone health, and membrane function. May contribute to fatigue and processing difficulties.
- **Selenium deficient:** 0.63 µg/g (ref 0.70-1.1) - important antioxidant that protects against heavy metal damage, supports thyroid function.
 - **The selenium-mercury connection is important:** mercury uses up selenium stores as part of the body's natural protection mechanism. When selenium is adequate, it helps protect against mercury's effects.
- **Rubidium deficient:** 0.006 µg/g (ref 0.008-0.080) - this trace element is involved in neurotransmitter function and cellular potassium regulation. Rubidium deficiency can contribute to emotional regulation difficulties and sleep disturbances, which directly correlates with her severe bedtime anxiety and emotional reactivity at home.
- **Zirconium deficient:** 0.020 µg/g (ref 0.030-0.40) - trace element with unclear clinical significance but indicates widespread mineral depletion.
- **Iron at low normal:** 7.9 µg/g (ref 7.0-16) - crucial for BH4 synthesis (discussed further in the next session) and processing speed
- **Potassium at minimum threshold:** 10 µg/g (ref 10-90) - technically adequate but at the very bottom of the range. Combined with severely low sodium, this may indicate significant electrolyte stress patterns affecting nervous system regulation; however, testing via blood test required to determine actual level.

What this suggests: These aren't simple deficiencies but complex disruptions where the molybdenum-copper cycle is broken, creating a cascade of mineral imbalances that prevent normal cellular function despite adequate food intake.

Critical Nutritional Deficiencies - The Tetrahydrobiopterin (BH4) Connection:

The combination of low iron (HTMA test) and B-vitamin deficiencies (OAT test) despite adequate food intake, along with low brain chemical metabolites - dopamine (HVA: 2.1), norepinephrine (VMA: 1.1), and serotonin (5-HIAA: 1.2) all shown in the OAT test - suggests Olivia is not making enough tetrahydrobiopterin (BH4), a crucial compound needed to produce these important brain chemicals.

- **Iron and B-vitamins are required to make BH4**
- **Without adequate BH4,** Olivia's brain cannot make neurotransmitters properly regardless of protein intake
- **Heavy metal impact:** Lead and mercury impair the body's ability to make BH4, creating a double problem - damaged machinery and insufficient raw materials
- **May suggest why stimulant medications failed:** Olivia's brain has been trying to function without adequate neurotransmitters due to this BH4 bottleneck

Gut-Brain Disruption:

- Elevated Arabinose (78 [<56] OAT test) suggest possible gut imbalance (specifically candida); however, given only minimally raise may be from regular consumption of berries, apples and carrots rather than severe overgrowth.
- All other bacterial markers (OAT test) are within normal ranges
- Signs of neuroinflammation affecting how tryptophan is processed in the brain
What this suggests: Some absorption challenges affecting nutrient utilisation, contributing to the nutritional deficiencies above.

Impaired Detoxification:

- Heavy metal burden is understood to be overwhelming Olivia's body's natural cleanup systems
What this suggest: The toxic load is greater than her system's current capacity to eliminate, leading to accumulation

HOW THESE RESULTS MAY LINK TO WHAT WE ARE SEEING

What You've Seen	Why It's Happening
Processing speed challenges (5th percentile)	Lead and mercury are understood to impact brain processing areas + copper excess disrupting dopamine pathways + iron deficiency directly affecting processing speed and preventing BH4 synthesis + B-vitamin deficiencies affecting neurotransmitter production
Bedtime anxiety and sleep disruption	Copper excess directly causing "wired but tired" state and blocking calming brain chemicals + toxic burden overwhelming nervous system + low serotonin from impaired BH4 synthesis
Morning fatigue despite adequate sleep	Body working overtime to manage toxin load + specific possible sign of mercury excess, copper interfering with energy production + iron deficiency affecting BH4 synthesis for energy neurotransmitters
Focus/attention difficulties	Heavy metals blocking normal neurotransmitter function + copper excess affecting concentration and mental clarity + iron/B-vitamin deficiencies preventing BH4 synthesis for dopamine production
Emotional regulation issues at home	Using all energy to cope at school, system crashes at home + specific possible sign of mercury excess + copper excess causing irritability and emotional volatility + inadequate neurotransmitter production from BH4 deficiency
Medications not helping	Copper excess blocking stimulant effectiveness + underlying toxicity preventing normal brain chemistry + nutritional deficiencies blocking BH4-dependent neurotransmitter synthesis
Subtle digestive patterns (BMs every 1-2 days)	Possible hidden gut dysfunction affecting absorption + copper disrupting digestive enzyme function + low selenium reducing antioxidant protection in gut + phosphorus deficiency affecting cellular energy for digestive processes - appears "normal" but may be compromising nutrient uptake
Sensory sensitivities (historical)	Heavy metal nervous system impacts creating hypervigilance

The Interconnected Web:

The severely low molybdenum (0.017 vs 0.030-0.090) creates a broken copper elimination pathway, allowing copper to accumulate to extraordinarily high levels (84 vs 11-37). This copper excess then blocks BH4 synthesis, preventing her brain from making adequate dopamine, norepinephrine, and serotonin for focus, mood, and sleep. It also disrupts cellular energy production and interferes with how medications work.

Meanwhile, other critical deficiencies compound the problem: iron deficiency further limits BH4 production, phosphorus deficiency prevents cells from making adequate energy (ATP), rubidium deficiency disrupts emotional regulation and sleep, selenium deficiency removes antioxidant protection against the metals, and possible low electrolytes (sodium/potassium) depletes nervous system resources.

Heavy metals damage the very enzymes needed to fix these problems, while the body's attempts to detoxify use up even more nutrients. This creates a self-perpetuating cycle where each deficiency makes the others worse, leaving her brain unable to function optimally despite her intelligence and your family's best efforts.

Important Understanding: Olivia's maintained intelligence and personality despite these challenges suggests her body has been working hard to protect essential brain functions. The nutrient deficiencies may reflect increased demands from detoxification processes rather than simply poor absorption. This indicates that her systems are fundamentally sound - they're working harder than normal and need appropriate support.

UNDERSTANDING THE FOUNDATION

You might wonder how this pattern developed - what came first, the exposure to metals or the deficiencies? While we can't know for certain, her health history provides some context.

Despite possible mould exposure and regular ear infections in her early years (mould is understood to compromise immune function, making children more susceptible to infections), she has maintained normal developmental milestones and average intelligence.

These early stressors and possible genetic factors/vulnerabilities (which have not yet been explored) may have put additional demands on her developing detoxification systems, potentially making it harder for her body to eliminate environmental toxins efficiently over time.

However, the most encouraging finding is that she's showing excellent responsivity to simple interventions like L-Theanine and Sleep X, proving that her systems can respond beautifully to appropriate support.

Rather than focusing on what may have contributed to these patterns, the key is that we now have clear information about what's happening and specific ways to support her recovery.

WHY MEDICAL INVOLVEMENT IS NECESSARY

Safety Considerations:

- Heavy metal levels require medical monitoring to ensure safe treatment approaches
- Wilson's disease screening essential given very high copper (84 µg/g vs 11-37 reference)
- Liver and kidney function need assessment before detoxification approaches

Possible Medical Treatment Options (Based on GP's Assessment):

- **Medical chelation** may be more appropriate for her toxicity levels
- **Specialist assessment** for comprehensive evaluation
- **Blood work confirmation** - HTMA shows long-term patterns but is not diagnostic and blood/urine testing needed for current status

Comprehensive Care:

- Educational accommodations based on documented processing deficits
- Coordination between medical and naturopathic teams
- Long-term monitoring and support planning

This doesn't mean naturopathic care isn't important - it means working together gives Olivia the best chance to THRIVE.

ENVIRONMENTAL INVESTIGATION PRIORITIES

Why Source Identification Is a Must:

Critical Priority: With 4 elevated metals, Olivia's body is currently absorbing toxins faster than any program can eliminate them. Finding and stopping the sources makes all other interventions possible.

Your Specific Investigation Focus:

HIGHEST PRIORITY: Pool Assessment Your mineral salt pool with heating and professional maintenance is a prime suspect for copper exposure:

- Interview pool caretaker about copper-based algaecides or antimicrobial products
- Heated pools increase metal absorption through skin
- Daily summer swimming could provide significant copper exposure

HIGH PRIORITY: Water System Assessment Your drinking water is filtered but bathing water is not:

- Contact filtration company to confirm which metals are removed
- Daily hot showers from unfiltered water = potential metal exposure through skin and steam
- One bathroom may have 1940s plumbing materials (lead/copper pipes)

MODERATE PRIORITY: Historical Exposures

- Hair highlights 8-10 months ago: **Outside HTMA reading window** - not contributing to current results
- Cheap cosmetics/hair products: **Recently eliminated** - good preventive measure
- Personal care products: Continue using higher quality options

Immediate Actions:

1. **Interview pool caretaker** - get specific chemical product names and MSDS sheets
2. **Contact water filtration company** - confirm metals removed, testing capabilities
3. **Document older bathroom plumbing** - photos of visible pipes, any staining
4. **Start bottled water** for drinking and cooking until assessments are done
5. **Reduce shower temperature/duration** until water assessment complete

Detailed environmental investigation guide provided separately with specific questions to consider asking.

OUR WELLNESS APPROACH: Detailed 3-Month Plan

I have developed a comprehensive 3-month to 6-month wellness plan that takes into account all the findings discussed above. This plan provides a week-by-week roadmap that:

- Systematically addresses the extraordinary copper excess
- Prioritises BH4 cofactor restoration through targeted nutrition
- Optimises gut health to enhance nutritional absorption, including gentle antimicrobials if needed for any candida that may be present
- Supports gentle detoxification at an appropriate pace
- Builds long-term health foundations

The complete wellness timeline will be provided progressively, evolving based on Olivia's individual response and improvements. This personalised approach ensures we can adjust specific supplements, dosages, dietary changes, and monitoring schedules for each phase of her recovery

SUPPORTING OLIVIA ON THIS WELLNESS JOURNEY

The tests showed that Olivia's amazing brain has been working extra hard because of some things in her body that don't belong there. We're going to help her body get rid of those things so her brain can work even better. She is not sick or broken – she's just getting targeted support to help her feel her best.

- **Celebrate current improvements** - she's already asking for extra work and started sleeping better!
- **Maintain consistency** with supplements and protein intake - family has seen clear correlation
- **Use her strengths** - leadership, organisation, creativity remain intact and are emerging more
- **Stay connected** with teachers about positive changes happening
- **Be patient but hopeful** - she's already showing excellent responsivity to minimal intervention.

Family Care:

- **Acknowledge your efforts** - you've been doing your best with available information
- **Take breaks** - this is a marathon requiring sustainable pacing
- **Celebrate small wins** - sleep improvements and academic engagement are huge victories
- **Stay hopeful** - her rapid response to simple interventions indicates excellent recovery potential

REMEMBER

Olivia's core intelligence, creativity, and wonderful personality are unchanged - we're simply removing the obstacles that may have potentially been holding her back. Think of this journey as helping her reach her full potential rather than "fixing" something broken.

You have answers now. You have a plan. Most importantly, you have a child who's going to get the comprehensive support she needs to flourish.

We'll take this one step at a time, at a pace that supports Olivia's healing and your family's well-being.

If you have any questions regarding these results, please contact me.

Janaya Karloci

NATUROPATH & DIRECTOR

+61 415 575 788

wellness@janayakarlocinaturopath.com.au

www.janayakarlocinaturopath.com.au

NSW, Australia

