qEEG Brain Map Report Interpretation
Completed on: 05/21/2025

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BAILEY REID GWYN presents with a unique profile of **intense, vivid, and emotionally-laden autobiographical memory**, along with a **hx of complex trauma** (**diagnoses include PTSD, Suspected-ASD, BPD, and MDD**) with a **family hx of ASD and Bipolar Disorder**. A **Brain Map (qEEG)** was reviewed to assess whether these traits may reflect a combination of **Hyperthymesia-like memory patterns** and **trauma-related dysregulation**.

Neurologic issues in Ehlers-Danlos Syndrome(s)
https://youtu.be/K11wNtPn128
short video by: Dr. Clair

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qEEG Findings:

🧠 Brainwave Regulation:

***Frontal Lobes (F3/F4/Fz)**:*

- **Marked beta and high-beta excess indicating hyperarousal.**

- Strongly associated with **anxiety, emotional dysregulation, and hypervigilance**.

***Temporal Lobes (T3/T4)**:*

- **Overactivation**, especially in **high-frequency bands**.

- This may reflect **strong autobiographical memory storage/retrieval**, as well as **involuntary memory replay** (seen in PTSD).

***Alpha Suppression (Occipital/Parietal)**:*

- **Decreased alpha** suggests **impaired sensory gating and rest states**.

- May correlate with **difficulty inhibiting unwanted memories or sensory information**.

Coherence (Connectivity):

Hypercoherence in left hemisphere networks:

- Suggests **rigid connectivity**, which may support **structured memory encoding** but **limit cognitive flexibility**.

Hypocoherence in frontotemporal integration pathways:

- May **impair emotional processing of memory**, common in **CPTSD and dissociation**.

Theoretical Interpretation: Hyperthymesia + PTSD

The patient's EEG profile suggests a **dual-pattern brain function**:

Memory Enhancement Features:

1. **Elevated left-temporal activity** may support **exceptional memory encoding and vivid recall**, particularly autobiographical events.
2. Possible **SMR and theta involvement** in posterior regions supports **visual/spatial encoding and self-referential recall**.

- These findings are consistent with reports from individuals with **Hyperthymesia-like traits**, although **further neuropsychological testing** is recommended for confirmation.

Trauma-Based Dysregulation:

- **Frontal overactivation** and **coherence disruptions** reflect **chronic sympathetic arousal**, **emotional flooding**, and **diminished top-down control** of memory systems.

Suggests the memory system may be **emotionally dysregulated**, leading to **intrusive, emotionally charged recall** and possible **dissociation**—hallmarks of **CPTSD**.

Clinical Questions for Consideration

1. Do the patient's memory traits represent:
    - **Developmental or neurodivergent cognitive enhancement (ASD-based)?**
    - A **trauma-adaptive mechanism (hyperencoding)?**
    - Or a **rare memory phenotype such as Hyperthymesia?**
2. Could **neuropsychological testing** (e.g., **WMS-IV, AMI, CVLT**) confirm **specific memory strengths** and clarify **emotional valence**?

3. Would **structured EMDR, neurofeedback, or somatic therapy** help **decouple emotional intensity from memory recall**?

4. Could **autobiographical memory rehearsal or journaling** provide **structure for memory management**?

5. If appropriate, **structured observation of flashback vs. vivid recall phenomenology** to differentiate **PTSD from hypermemory**.

Patient Summary (for discussion)

"**My brain feels like it records everything — but not always in a controlled way.** I can recall many personal events in **extreme detail**, often **involuntarily** and with **intense emotional tone**. These memories can include **conversations, smells, what I was wearing**, or **exactly how someone looked at me**. It feels automatic, like a **constant background replay** or **archive** that I can't always choose to access or suppress.

I didn't realize this memory style was unusual until I was around **20 years old**. Until then, I assumed everyone experienced the past as vividly and consistently as I did. I often felt **confused or agitated** when others couldn't remember events that were **crystal clear to me** — and I sometimes felt a deep need to **'correct' or 'remind'** them, especially when they eventually did recall it once prompted.

After reviewing my **qEEG brain map**, **genetic data** (including **predispositions to early-onset Alzheimer's, prion disease, and sagittal degeneration**), and **imaging showing white matter density differences in the frontal lobe**, I started to consider that my memory patterns might not just be emotional or trauma-based — but possibly **structural or developmental** as well.

I now wonder: is this memory intensity a form of **hyperfunction or compensation**? Could it reflect an **atypical or enhanced encoding system**, similar to what's described in people with **hyperthymesia**? Or is it a **survival mechanism shaped by trauma and neurodivergence**? Possibly both?

What I want most is to **understand how my memory works** so that I can **find ways to regulate it — without shutting it off entirely**. This deep recall feels like a **core part of who I am**. But I also need **tools to manage the emotional and cognitive overwhelm** that sometimes comes with it."

Suggested Reading for Further Clinical Context

I've included a few sources that helped me put language to this experience. I don't expect you to read all of them, but they shaped how I'm thinking about my brain and memory:

1. **LePort et al. (2012)**
"Behavioral and neuroanatomical investigation of Highly Superior Autobiographical Memory (HSAM)."
Neurobiology of Learning and Memory, 98(1), 78–92.
https://doi.org/10.1016/j.nlm.2012.05.002
Why it matters: Foundational study showing **enlarged temporal lobes and striatum**, as well as **unique connectivity** in HSAM.

2. **McGaugh, J. L. (2013)**
"Making lasting memories: remembering the significant."
PNAS, 110(Supplement 2), 10402–10407.
https://doi.org/10.1073/pnas.1301209110
Why it matters: Links **emotional arousal and memory consolidation**, relevant to both **trauma and hyperthymesia**.

3. **Brewin, C. R. (2011)**
"The nature and significance of memory disturbance in PTSD."
Annual Review of Clinical Psychology, 7, 203–227.
https://doi.org/10.1146/annurev-clinpsy-032210-104544
Why it matters: Explains how **trauma leads to fragmented, involuntary, sensory-loaded memories**—useful for contrasting PTSD with HSAM.

4. **van der Kolk, B. A. (2014)**
The Body Keeps the Score *(Book)*
Why it matters: A clinical/popular framework for how **trauma alters brain activity, memory, and recall** — particularly **flashback patterns**.

5. **Thatcher, R. W. (2010)**
"Validity and reliability of quantitative EEG."
Journal of Neurotherapy, 14(2), 122–152.
https://doi.org/10.1080/10874201003773500
Why it matters: Scientific basis for interpreting **qEEG data** in relation to **cognition, memory, and pathology**.

6. **Jausovec, N., & Jausovec, K. (2000)**
"Differences in resting EEG related to ability."
Intelligence, 28(4), 329–344.
https://doi.org/10.1016/S0160-2896(00)00037-2
Why it matters: Shows how **gifted individuals may show unique qEEG patterns**, important for interpreting atypical readings.

7. **Williams, D. M., et al. (2006)**
"Autobiographical memory in autism spectrum disorder."

Development and Psychopathology, 18(1), 117–138.
https://doi.org/10.1017/S0954579406060077
Why it matters: Explores the link between **ASD, hyperfocus, and memory recall**, especially **personal narrative memory**.

8. **Prehn-Kristensen, A., et al. (2013)**
"Reduced sleep-associated consolidation of declarative memory in ADHD."
Frontiers in Human Neuroscience, 7, 586.
https://doi.org/10.3389/fnhum.2013.00586
Why it matters: Shows how **neurodivergence can alter memory consolidation**, relevant to understanding **ADHD/ASD vs memory disorders**.

Written: 6/17/25
I've received two forms of my brain map — a **'Pro' and a 'Jewel' version** — both of which reflect the same session. The second version (**'Jewel'**) helped confirm what I was already experiencing: **emotional intensity tied to memory**, **activity in sensory and temporal regions**, and **difficulty with regulation**. This reaffirmed my sense that my **memory system may be operating both as an adaptive strength and a source of overload**, especially under trauma-related stress.

🧠 Side-by-Side Brain Map Summary

Patient: Mr. Bailey R. Gwyn
Data Source: Same qEEG session, analyzed using two reporting formats

Column 2: Pro Version (technical, clinical-level detail)

Column 3: Jewel Version (visual-emotional overlay, simplified view)

Category	Pro Brain Map	Jewel Brain Map
Main Purpose	**Technical analysis for clinicians**: raw power, asymmetry, coherence	**Simplified, color-visual interpretation**: often used with patients or for **neurofeedback planning**
High Beta Activity	**Prominent in frontal and central regions** — associated with **anxiety, rumination, hypervigilance**	Also present in frontal regions, **color-coded as overactive** — reinforcing **emotional overdrive** and **"stuck-on" cognitive**

Temporal Lobe Activity	**High activity in both hemispheres** — indicates **vivid memory encoding** and **emotional association**	Highlighted as part of **limbic-emotional network** — tied to **emotional recall, flashbacks, and autobiographical memory**
Alpha Rhythm	**Suppressed in posterior (parietal/occipital) regions** — suggests **difficulty resting**, **poor sensory**	Still visible, though more abstracted — indirectly shown through **emotional overflow** and **rest**
Coherence (Connectivity)	**Mix of hypercoherence and hypocoherence — rigid communication in some areas**, **weak integration in others**	Less detailed but implies **right-left imbalance** and **poor emotion-regulation integration**
Frontal Asymmetry	**Left-right imbalance noted** — possibly tied to **mood instability or BPD features**	Not explicitly detailed but **indirectly implied** by **emotional regulation themes**
Emotional Regulation	**Likely disrupted** due to **high frontal activity** and **coherence imbalance**	**Core focus** — heavy emphasis on **limbic dysregulation** and **emotional overload**
Cognitive Flexibility	**Suggested difficulty** due to **over-coherence** — may relate to **obsessive recall** or **trouble shifting thought**	**Implied rigidity** and **emotional looping** — relevant for **trauma-based cognition**
Visual Processing	**Occipital underactivity noted**; possible **visual memory involvement**	Supports **"visual reactivation" of memory** (e.g., **vivid mental images, flashbacks**)
Interpretive Use	**Best for diagnostic integration** or **neuropsych planning**	Useful for **therapy engagement**, **neurofeedback strategy**, and **patient education**

- **Frontal overactivation (especially in high beta)**:
  → **Emotional intensity, anxiety, overprocessing**
- **Temporal lobe involvement**:
  → **Highly detailed, emotional, autobiographical memory**
- **Alpha suppression**:
  → **Inability to fully "shut down" or enter restful cognitive states**

- **Coherence imbalance**:
  → **Difficulty integrating emotion, memory, and executive function**

These two reports — though formatted differently — point to a **consistent core pattern**: a brain that **records and relives memories with exceptional detail and emotional weight**, but **struggles with filtering, regulation, and rest**. This may reflect a **unique combination of enhanced autobiographical memory function and trauma-related dysregulation**. **Both traits seem to coexist and potentially reinforce one another**.

⚠️ Clinical Clarification: Schizophrenia Exclusion ⚠️

Although some qEEG features (such as frontal asymmetries, limbic overactivation, or connectivity anomalies) may be **non-specifically present** in a wide range of neuropsychiatric conditions — including mood disorders, trauma, and even schizophrenia-spectrum — **a formal diagnostic evaluation has been completed**, and **schizophrenia has been ruled out** in this case.

- **Comprehensive psychiatric workup** performed by [insert provider/clinic name if desired]
- **No evidence of psychotic symptoms**, disorganized thought, delusions, or other schizophrenia-spectrum criteria
- Brain map findings are more consistent with:
  - **Anxiety-related hypervigilance**
  - **Trauma-based cognitive looping**
  - **Limbic dysregulation (e.g., BPD, PTSD features)**

This clarification ensures that **brain activity patterns are interpreted in context** and not pathologized beyond the current diagnostic picture.

While brain mapping and psychiatric assessments provide valuable insights, they represent **just one part of a much larger clinical picture**. It is essential to evaluate findings within the context of the **patient's full medical history, physical health, and lived experience**.

In this case, the patient presents with a **complex physical profile,** a few being**:**

- **Diagnosed connective tissue disorder (e.g., Ehlers-Danlos Syndrome, MCTD)**
- **Chronic pain from skeletal abnormalities and autonomic dysregulation.**

- **Documented neurodivergent traits and trauma history**

These physical and systemic conditions can significantly influence **neurological activity, stress response, and emotional regulation**. For example:

1. **Chronic pain** and dysautonomia can elevate beta activity and frontal lobe arousal
2. **Somatic hypervigilance** may amplify sensory gating issues seen on qEEG
3. **Neuroinflammation** or white matter changes can impact connectivity patterns and cognitive fatigue

Therefore, rather than interpreting brain findings in isolation or through a narrow psychiatric lens, **a whole-person approach** ensures a more accurate, compassionate, and integrative understanding of the patient's cognitive and emotional profile.

*This material was **reviewed and annotated by an outside expert** with **educational training in neuroscience and psychology**. While not a licensed clinician, the reviewer brings a **non-patient, academically grounded perspective** that integrates technical findings with broader biopsychosocial insight.*