Date of Visit: 05-05-2025
Child's Name: Zahraa Albayati
Date of Birth: 26-07-2015
Age: 117 months
Gender: Female
Guardian: Aqeel

Overview:

Zahraa Albayati was assessed in person at our center for developmental evaluation. The findings from the assessment reveal **significant information processing delays** and **acquired features of autism**, primarily resulting from **intellectual developmental delays**. These developmental challenges are attributed to a **confirmed pathogenic variant in the SCN2A gene**, previously identified in genetic analysis performed by the family.

The **SCN2A gene** encodes a voltage-gated sodium channel that plays a vital role in the generation and propagation of action potentials in neurons. Mutations in this gene, particularly pathogenic variants, are strongly associated with **early-onset epileptic encephalopathies, global developmental delays, cognitive impairment, and in many cases, features of autism**. In Zahraa's case, the variant contributes to her neurodevelopmental condition by disrupting cortical connectivity, white matter maturation, and neurological signaling.

Although Zahraa does not fully meet the criteria for classic autism spectrum disorder, she demonstrates acquired traits consistent with **secondary autistic features** linked to the underlying neurological delay. These include difficulties in expressive communication, slowed cognitive integration, and social behavior that appears to stem from disrupted sensory processing and information relay.

The child has shown areas of preserved potential and responsiveness to intervention, and with continued targeted therapy, **neuroplasticity-driven improvement is expected**.

Recommended Plan:

1) Development Protocol for Information Processing

- A structured developmental protocol should be followed for a **minimum of 4 months**.
- This will include cognitive stimulation activities and tailored neurorehabilitation strategies that target white matter connectivity and delayed pathways.
- Reassessment is recommended **after 4 months**, preferably in person, to evaluate progress and update the therapeutic plan.
- The initial goal is to establish a new **functional baseline** and track improvements in processing speed, memory, communication, and adaptive functioning.

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2) Recommended Tests

Further genetic or metabolic analysis is not immediately required unless indicated by clinical regression or therapy resistance. However, periodic functional tracking is advised:

- **Optional Based on Progress:**
  - Additional mitochondrial or epigenetic studies depending on future outcomes.

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3) Recommended Therapy

- **Neuroplasticity Therapy – Intensive Program**
  Frequency: **2 to 3 sessions per week**
  Focused on enhancing cortical remapping, improving processing delays, and stabilizing neurological rhythm disrupted by SCN2A dysfunction.

  This therapy will use neurocognitive stimulation technologies to maximize Zahraa's developmental trajectory and reduce the risk of regression.

- **Additional therapies may include:**
  - **Speech and Language Therapy** (if expressive/receptive delays persist)
  - **Occupational Therapy** (for executive function, fine motor skills, and sensory regulation)

Conclusion:

Zahraa is a bright child with high neurodevelopmental potential. Despite current challenges, she has shown the capacity to improve with intervention. Her condition is **not a fixed diagnosis**, and consistent neurorehabilitation, combined with an individualized care plan, will continue to offer positive outcomes.

The assessment remains **open for change** depending on her response to therapy, and the recommended strategies are designed based on **Neurazon's protocols and AI-guided analysis**, adapted to Zahraa's unique neurological profile.

Signature:
EICADD Center Director