



# Hidden Brain Patterns That Can Look Like ADHD—Why They Matter for Parents and Families

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## Our Goal Today

**To help you understand that sometimes  
ADHD-like symptoms are actually caused by  
hidden brain patterns**

**Treating these cases properly starts with looking at the brain itself — not just the behaviors.**

# Learning Objectives

## **Not all "ADHD" is truly ADHD**

Understand that similar symptoms can have different underlying causes in the brain.

## **Four brain patterns that mimic ADHD**

Recognize distinct EEG patterns that produce attention and behavior challenges similar to ADHD.

## **Why medications may fail**

Learn how treating the wrong condition can lead to poor outcomes or worsening symptoms.

## **How EEG testing helps**

Discover how brain-based testing provides objective data for more accurate diagnosis and treatment.

## **Ask informed questions**

Leave with specific questions to discuss at your next doctor appointment.

# ADHD or Something Else?

Many kids and adults struggle with attention problems that look like ADHD. But standard medications don't always help.

When medications fail, it often means there's a deeper brain-based reason for the symptoms.

**We must look at the organ we are treating — the brain!**



## Why Look at the Brain?

**Most psychiatric diagnoses are based solely on symptoms and behaviors**

**No imaging or lab test is typically done in standard evaluations**

**The brain can give us objective clues invisible to observation alone**

**EEG provides a window into real-time brain function**

**The EEG is like an EKG for the brain — it shows how your brain functions in real time**





# What is an EEG?

## Electroencephalogram:

### Safe & Non-invasive

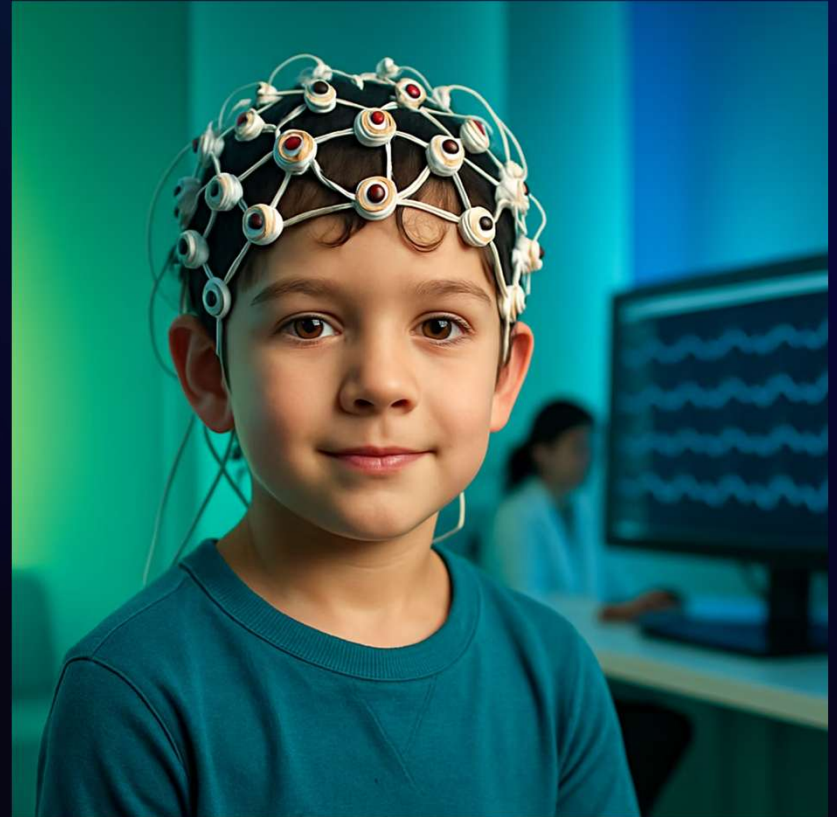
Painless procedure that measures electrical activity in the brain

### Quick & Accessible

Done in a doctor's office in about 1 hour

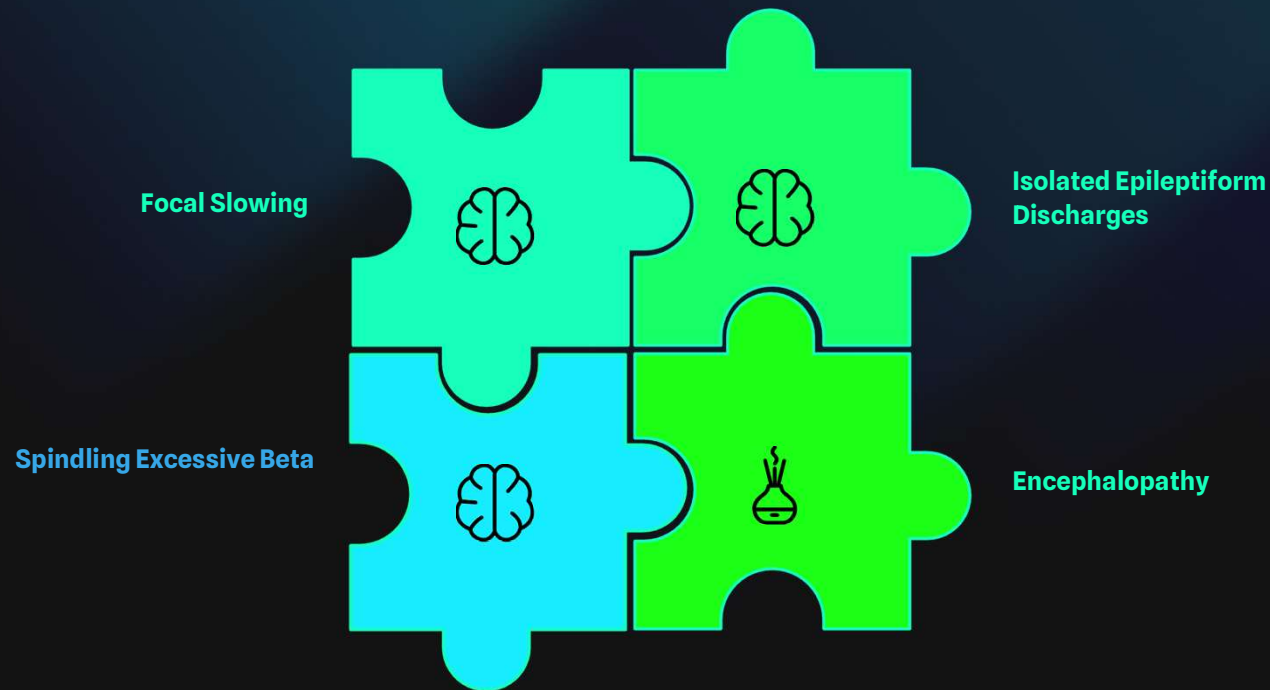
### Revealing

Shows patterns we cannot detect from behavior alone



The EEG provides objective data about how your brain is functioning

# Brain Patterns That May Look Like ADHD But Aren't



**These four distinct brain patterns can produce symptoms similar to ADHD but require different treatments.**

# Focal Slowing (FS)

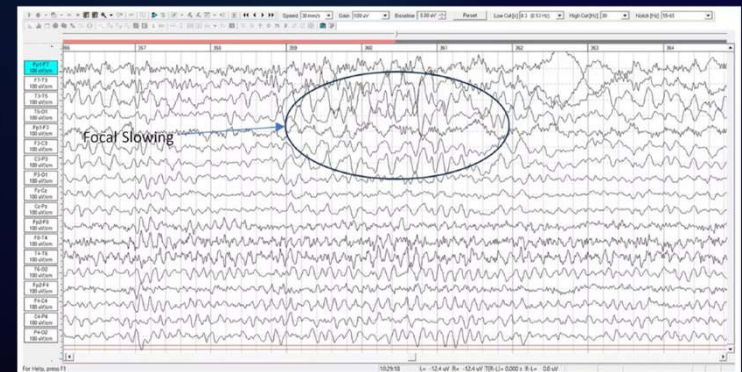
A "sluggish" brain area due to injury, infection, or stroke

Looks like ADHD because of:

- Trouble focusing and sustaining attention
- Difficulty with working memory
- Mental fatigue and inconsistent performance

## Why medications fail:

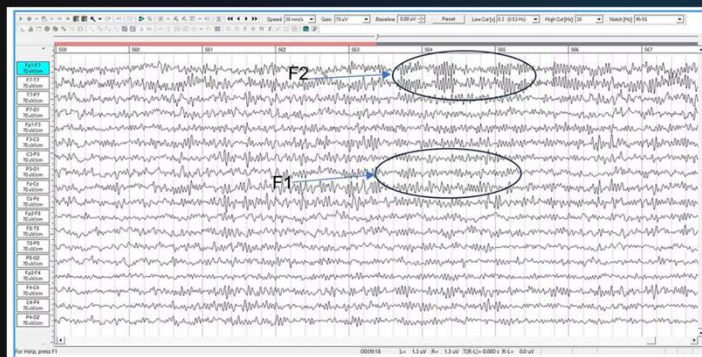
Standard ADHD medications treat the whole brain, not just the specific slow area that needs targeted intervention.





# Spindling Excessive Beta (SEB)

Brain is too "revved up" or hyperactive



EEG showing SEB in frontal regions (F1 & F2)

## Symptoms that mimic ADHD:

- Restlessness and difficulty sitting still
- Anxiety and racing thoughts
- Impulsivity and emotional reactivity
- Sensory overload and overwhelm



## Why medications fail:

Stimulant medications often make this pattern worse by further exciting an already overactive brain.

# Encephalopathy (EN)

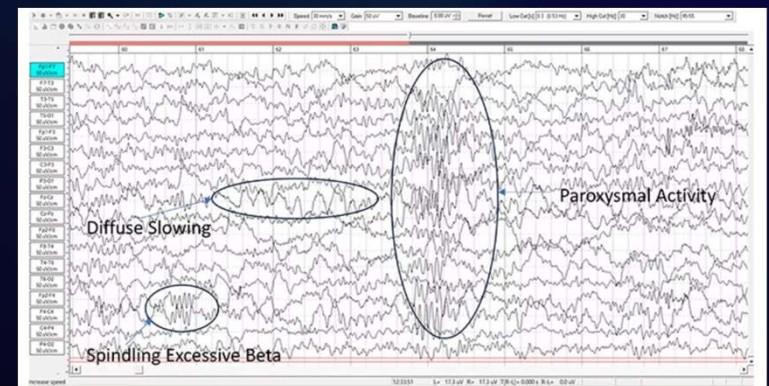
Brain is globally impaired — often due to toxins or injury

## How it presents:

- ADHD-like symptoms plus mood swings and emotional dysregulation
- Learning problems across multiple domains
- Trouble with clear thinking and processing speed

### Why medications fail:

The root issue is medical, not psychiatric — requires treating the underlying cause of brain dysfunction.



EEG showing "diffuse slowing" pattern

# Isolated Epileptiform Discharges (IEDs)

The brain "misfires" but doesn't cause full seizures



EEG showing spike-and-wave activity

## Commonly appears as:

- Hyperactivity and impulsive behavior
- Sudden rage outbursts that seem out of proportion
- "Zoning out" or brief staring episodes
- Inconsistent performance in school or work



## Why medications fail:

Stimulants may lower seizure threshold and potentially worsen these electrical discharges.



## Real-World Implications

**If symptoms are not improving or are getting worse, ask: Has the brain been tested?**

**Medications are often prescribed based solely on observed behavior – not actual brain function.**

**Some medications can actually worsen certain EEG abnormalities, making symptoms more severe.**

**Treatment resistance often signals a need for deeper investigation.**



## How the EEG Helps

### Identifies Root Causes

Reveals the underlying brain patterns causing medication failure or symptom persistence

### Prevents Misdiagnosis

Distinguishes between true ADHD and conditions that mimic it, preventing inappropriate treatment

### Guides Precise Treatment

Allows for targeted interventions based on specific brain patterns rather than general symptoms

**Personalized care starts with the right diagnosis**



# Key Takeaways



## **ADHD symptoms don't always mean ADHD**

Behaviors alone can mislead diagnosis



## **Four EEG patterns may mimic it**

FS, SEB, EN, and IEDs require different treatments



## **Medication-resistant cases deserve a second look**

Treatment failure often signals misdiagnosis



## **EEG is a safe, accessible way to look deeper**

Provides objective data for better care

**Be empowered to advocate for brain-based care**



# Questions to Ask Your Doctor During Your Next Visit



## Could this be something other than ADHD?

Ask if the symptoms could be explained by one of these brain patterns or another condition.



## Has an EEG ever been done?

If not, request one, especially if medications aren't working as expected.



## Could medications be worsening the symptoms?

Some brain patterns actually get worse with standard ADHD treatments.



## What are the next steps if the brain is involved?

Discuss referrals to specialists who can interpret EEG findings and adjust treatment.

# Thank You & Questions

🗨️ Open Q&A

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📄 Handouts available after the **presentation**

## Reference of Published Study

Swatzyna R. J., Morrow, L. M., Collins, D. M., Barr, E. A., Roark, A. J., & Turner, R. P. (2025). **Evidentiary Significance of Routine EEG in Refractory Cases: A Paradigm Shift in Psychiatry.** *Clin EEG Neurosci*, 56(5): 446-456. doi: 10.1177/15500594231221313

This groundbreaking study demonstrates how routine EEG testing can dramatically improve outcomes for patients with treatment-resistant psychiatric conditions, including those previously diagnosed with ADHD.

The research found that 62% of patients who failed to respond to standard treatments had identifiable EEG abnormalities that, when properly addressed, led to significant symptom improvement.

