

ADHD: A General Overview for the Integrative Practitioner

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London
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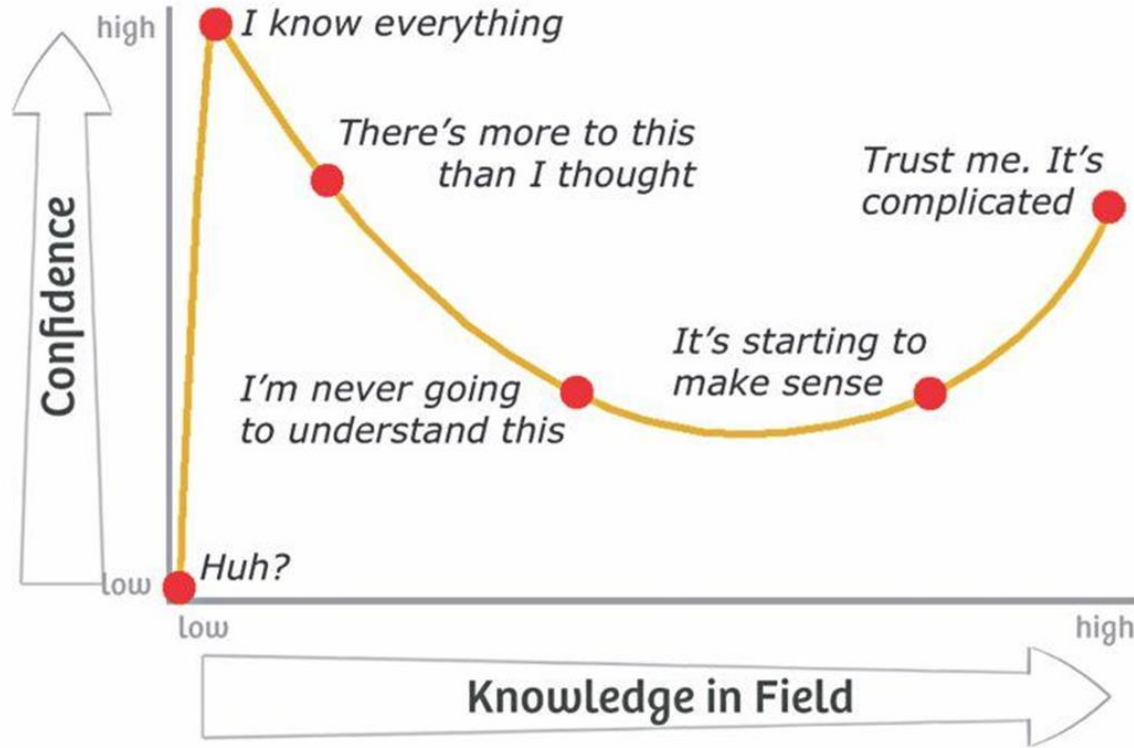


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Integrative
& Personalised
Medicine 24

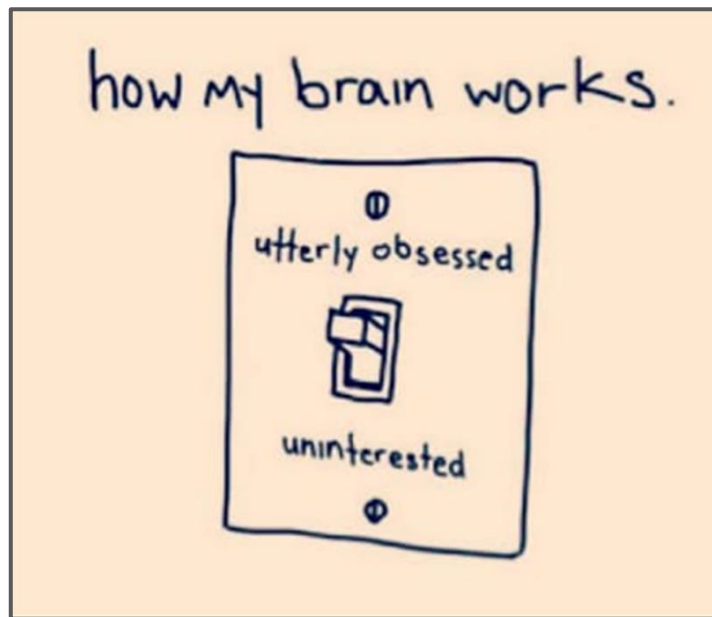
6 - 8 June 2024 • London UK

The Dunning-Kruger Effect



ADHD as a misnomer

Attention Deficit → Attention **Regulation**



Inattentive ADHD (5/9 required)

1. Lack of attention to details, careless mistakes
2. Difficulty sustaining attention
3. Does not seem to listen
4. Does not follow through on instructions
5. Difficulty organising tasks and activities
6. Avoids sustained mental effort
7. Loses and misplaces objects
8. Easily distracted
9. Forgetful in daily activities



DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS

FIFTH EDITION

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Hyperactive/impulsive ADHD (5/9 required)

1. Fidgetiness (hand or feet) / squirming in seat
2. Restless during activities (difficulty sitting still)
3. Feeling restless inside, difficulty relaxing (mind-wandering, ceaseless mental activity)
1. Excessively loud or noisy
2. Always “on the go”
3. Talks excessively
4. Blurts out answers
5. Difficulty waiting his or her turn
6. Tends to act without thinking

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3 ADHD subtypes:

1. Inattentive (5/9 criteria)
2. Hyperactive/impulsive (5/9 criteria)
3. **Combined ADHD**
(5/9 criteria in both subdomains)

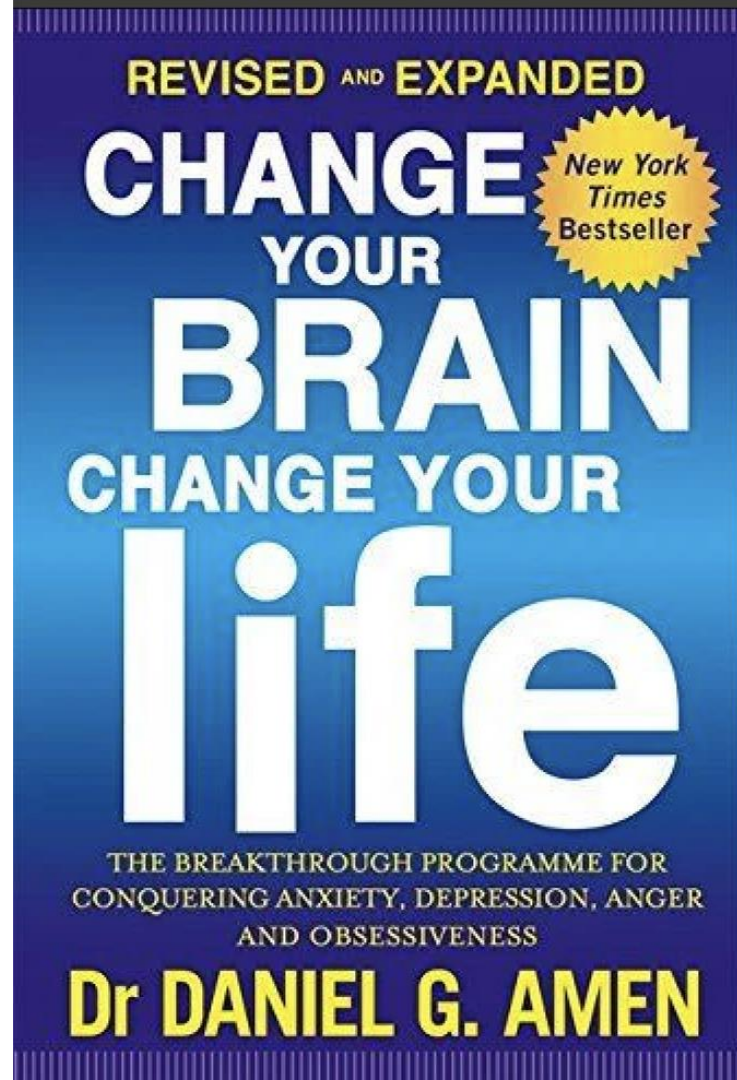


Dr Amen's 7 types of ADHD

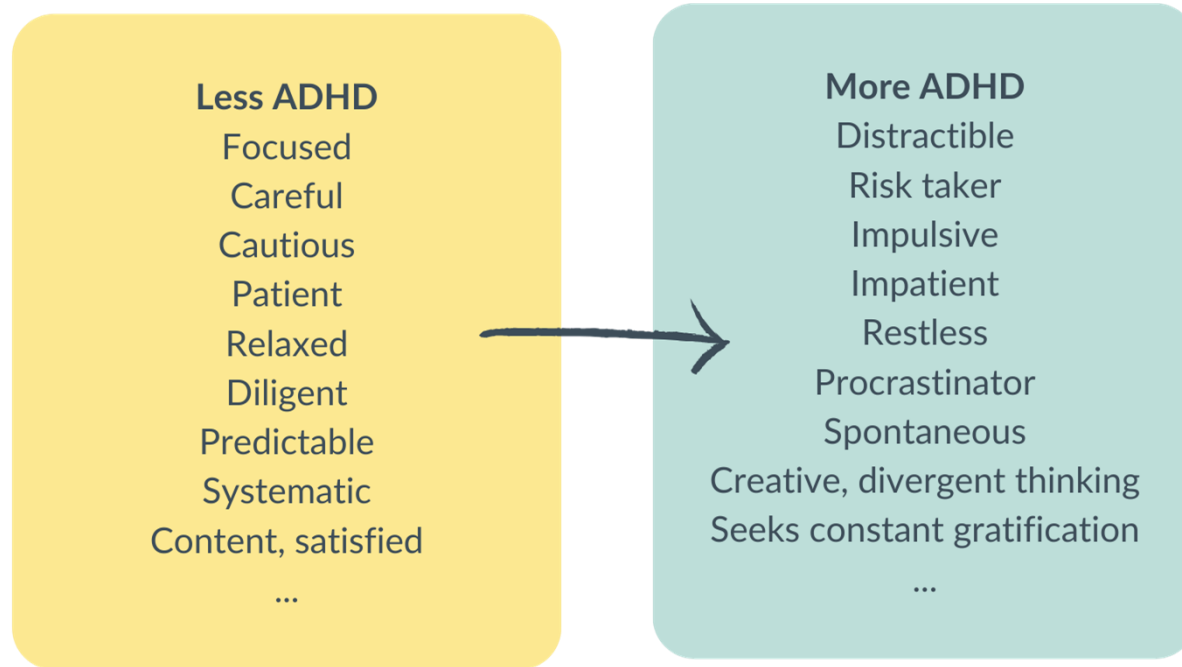
1. Classic ADD
2. Inattentive ADD
3. Over-Focused ADD
4. Temporal Lobe ADD
5. Limbic ADD
6. Ring of Fire ADD
7. Anxious ADD



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ADHD as a spectrum across multiple domains



ADHD is the
extreme 5% of a
spectrum of heritable traits
related to:

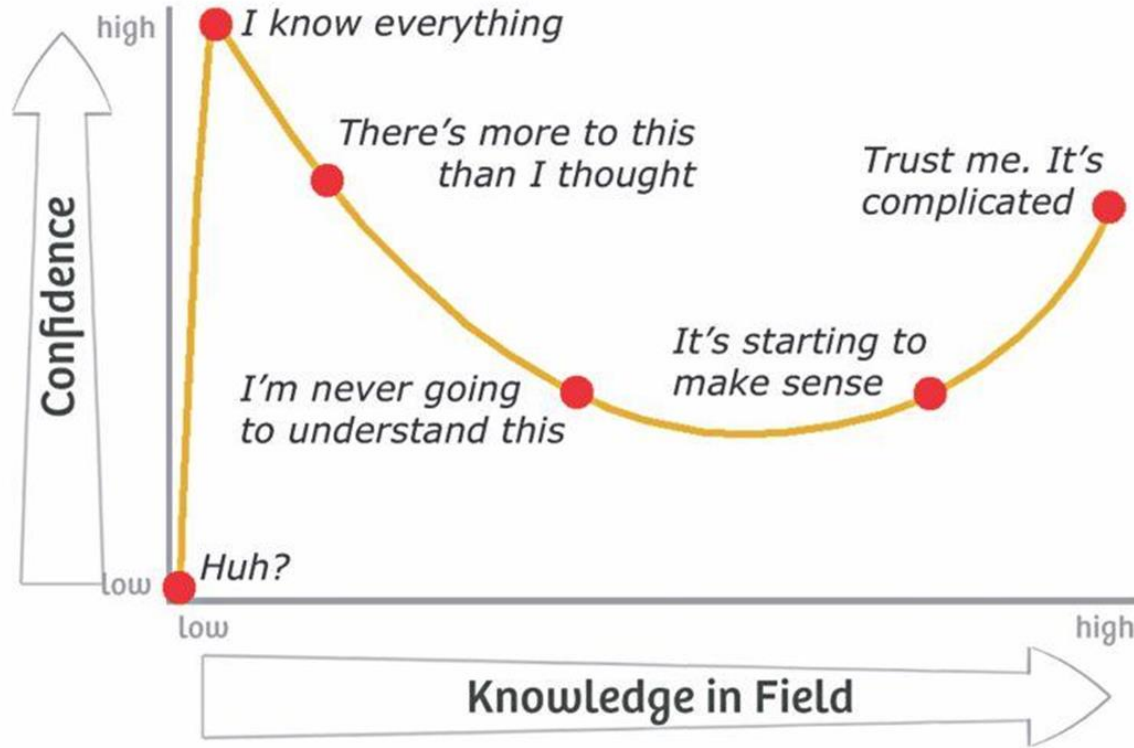
Attention | Impulse control
Emotional regulation | Hyperactivity

i'm not a procrastinator



i just prefer doing
all my work in a
deadline-induced panic

The Dunning-Kruger Effect





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Neuroscience and Biobehavioral Reviews

journal homepage: www.elsevier.com/locate/neubiorev



The World Federation of ADHD International Consensus Statement: 208 Evidence-based conclusions about the disorder

5. How is ADHD diagnosed?

ADHD can only be diagnosed by a licensed clinician who interviews the parent or caregiver and/or patient to document criteria for the disorder (American Psychiatric Association, 2013; Chinese Society of Psychiatry, 2001; Faraone et al., 2015; Feldman and Reiff, 2014; Pearl et al., 2001; Stein, 2008; World Health Organization, 2018). It cannot be diagnosed by rating scales alone, neuropsychological tests, or methods for imaging the brain.

Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist

Patient Name	Today's Date					
Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointment.		Never	Rarely	Sometimes	Often	Very Often
1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?						
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?						
3. How often do you have problems remembering appointments or obligations?						
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?						
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?						
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?						

Part A



londonpsychiatry.clinic/adhd-test-for-adults

Very high risk of ADHD (Score = 6/6)

Your ASRS test result is 6 out of 6, which means it's highly likely you have ADHD.

We know from scientific studies that people who score 4 or more on this test are likely to have a full ADHD diagnosis. This is because the ASRS has a very high predictive value in scientific studies. However, the only way to find out if you meet the diagnostic criteria for ADHD would be to have a full ADHD assessment with an ADHD specialist.

Should I have an ADHD assessment?


Given your high score, it would be advisable for you to have an ADHD assessment. However, please bear in mind that your score of 6 on the ASRS doesn't mean you definitely have ADHD. ADHD can only be diagnosed by a qualified medical professional.



[londonpsychiatry.clinic/adhd-test-for-adults](https://www.londonpsychiatry.clinic/adhd-test-for-adults)

Dopamine & reward deficiency in ADHD

- Lower dopamine receptor levels
- Reduced dopamine transporter density
- Blunted dopamine release response
- Dopamine gene polymorphisms



**TAME
THE
"DEMON"
OF ADHD**

16:17

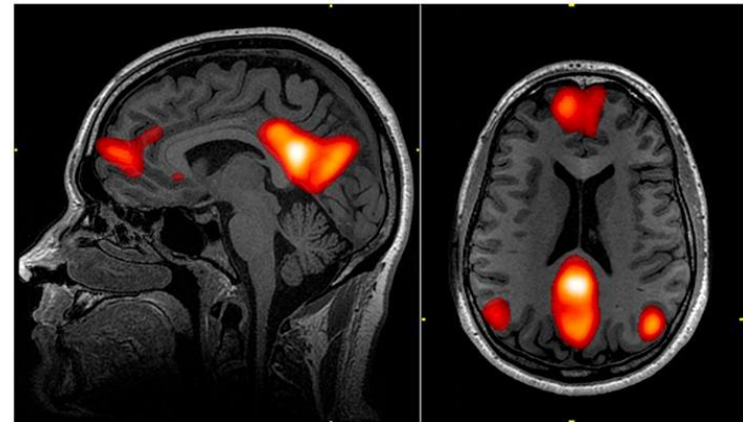


How to Cope with Rumination: Don't Feed the
"Demon" (Default Mode Network)

How to ADHD · 72K views · 4 days ago

Default Mode Network (DMN)

- Comprises 11 brain regions
- Active when the brain is at rest (not carrying out a task)
- Internal monologue (involves speech & language areas)
- Autobiographical memories, introspection
- Rumination, mind-wandering ("DeMoN" of the brain)
- **Shame** (moral judgement, self-criticism, guilt)



Default Mode Network (DMN) INSIDE YOUR MIND

Creative thinking
Revisiting previous events
Making connections
Ruminating



Task Positive Network (TPN) FLOW

Focused
In the moment
Getting things done
Dopamine

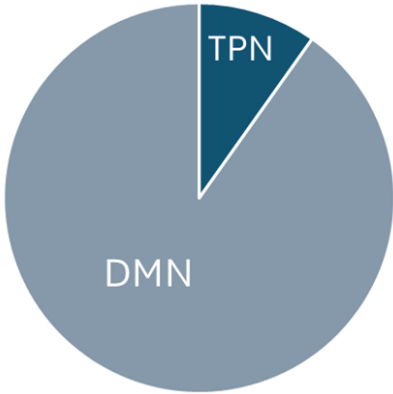


Benefits of Flow states

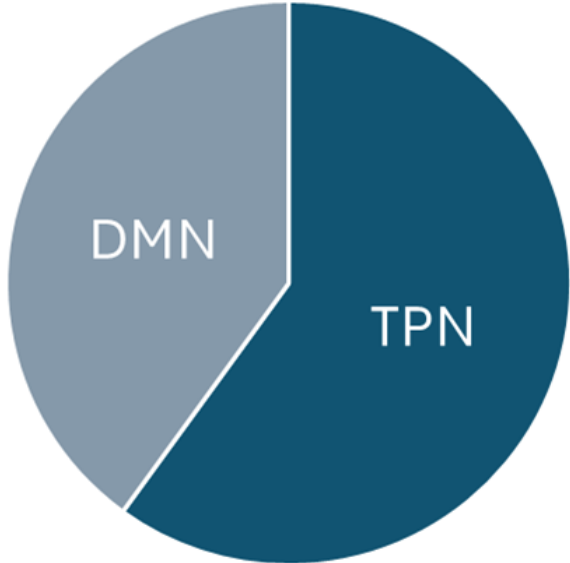
1. Flow reduces chronic **pain** and pain awareness
2. Enhances **emotional regulation** and reduces stress
3. Improves focus, performance & productivity
4. Boosts dopamine, leading to relaxation and happiness
5. Balances autonomic nervous system

Where is our attention?

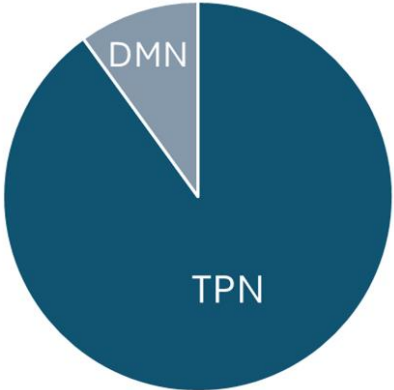
Tug of war between DMN & TPN networks



Ruminating



Focused state



Flow

The paradox of living with ADHD

- ★ Hyperfocus
- ★ Creativity
- ★ Divergent thinking
- ★ Entrepreneurial drive
- ❖ Chaotic personal life
- ❖ Consumed by dopamine-seeking behaviours
- ❖ Existential anxiety & lack of purpose
- ❖ Masking, shame

The NICE logo consists of a dark teal square containing the text 'NICE' in white, bold, sans-serif font. Below 'NICE' is the text 'National Institute for Health and Care Excellence' in a smaller, white, sans-serif font.

NICE

National Institute for
Health and Care Excellence

Attention deficit hyperactivity disorder: diagnosis & management

Last updated: 13 September 2019

1. Offer **Lisdexamfetamine or Methylphenidate** as **first-line** pharmacological treatment for adults with ADHD
2. Consider adding CBT if symptoms still causing impairment
3. No mention of Neurofeedback, Omega-3, Magnesium etc

Treatments for ADHD

Pharmacological:

Stimulants: methylphenidate, amphetamines

Non-stimulants: atomoxetine, guanfacine, clonidine, modafinil

Talking therapies:

Psychoeducation | CBT | Coaching | Mindfulness | Organizational skills training

Lifestyle:

Exercise | Sleep hygiene | Meditation | Keto

Diet & Supplements:

Omega-3 | Magnesium (+B6) | L-Theanine | Vit D...

Other: Neurofeedback | Cognitive training | Vagus N stimulation devices

KMT (ketogenic metabolic therapy) for ADHD

- Improved behaviours & focus in children with epilepsy treated with KMT
- Improved ADHD-related behaviors in dogs with ADHD + idiopathic epilepsy after 6 months of eating keto. *Packer et al, Epilepsy Behav 2016*
- “Ketogenic diet ameliorates attention deficit hyperactivity disorder in rats via regulating gut microbiota”. *Liu et al, PLoS One 2023*

Gut microbiome & ADHD

- Altered gut microbiome composition in ADHD
- Some bacterial taxa elevated (e.g. Bifidobacterium), others reduced
- Gut microbiome transplants induce ADHD-like behaviors in mice
- Probiotics show potential benefits but evidence still limited
- More research needed on mechanisms and causality

Supplements for ADHD

1. **Omega-3:** multiple RCTs
2. **Zinc:** reduces hyperactivity & impulsivity, especially in deficient individuals
3. **Iron:** improves ADHD symptoms, particularly in iron-deficient children
4. **Magnesium:** reduces ADHD symptoms, especially in magnesium-deficient individuals
5. **Vitamin D:** some studies show improvement in ADHD symptoms
6. **L-Theanine:** Some evidence of improved attention and concentration

Research

Open Access

Effects of an open-label pilot study with high-dose EPA/DHA concentrates on plasma phospholipids and behavior in children with attention deficit hyperactivity disorder

Paul J Sorgi¹, Edward M Hallowell¹, Heather L Hutchins² and Barry Sears^{*2}

“a daily dose between 8.1 g and 16.2 g of EPA/DHA concentrate may be appropriate to decrease the AA:EPA ratio to between 1.5 and 3 and to observe improvements in behavior in children with ADHD”

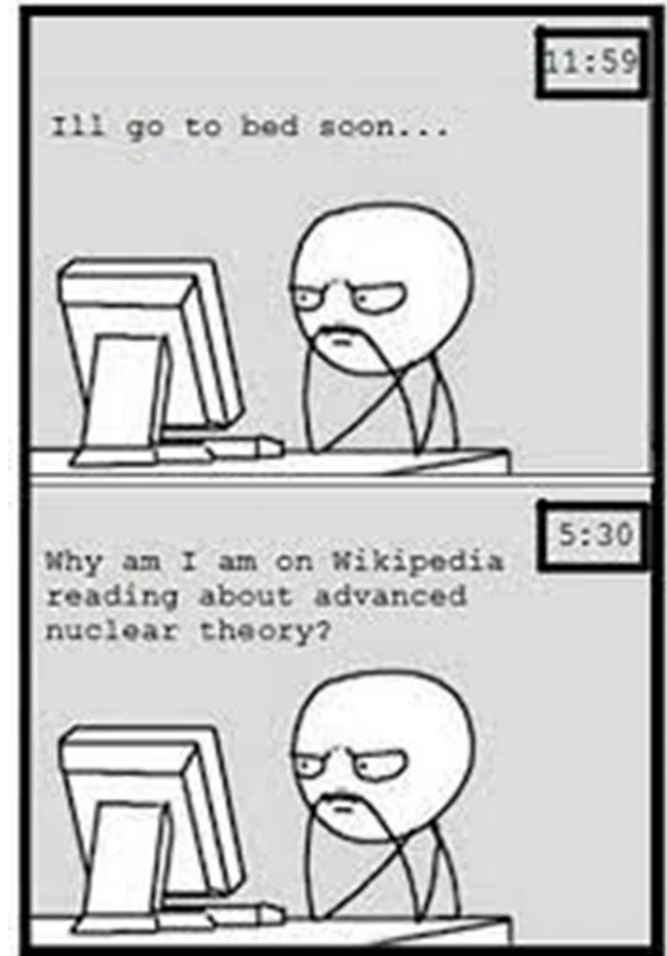
Neurofeedback treatment for ADHD

- Can improve inattention, hyperactivity & impulsivity
- Overall efficacy is controversial due to mixed findings and methodological issues



Sleep in ADHD

- >50% ADHDers have sleep problems
- Disrupted circadian rhythm (night owls)
- Overuse of cannabis, sleeping tablets



Magnesium for ADHD

“inverse relationship between serum magnesium deficiency and ADHD”

Inverse relationship between serum magnesium deficiency & ADHD

Nutritional deficiencies: insufficient magnesium intake due to consuming more processed foods and fewer fruits and vegetables

Impaired absorption: gastrointestinal disorders, inflammation, or genetic variations in magnesium transporters

Increased excretion: stress, hyperactivity, or metabolic disturbances may lead to higher rates of magnesium excretion through urine

Neurobiological mechanisms: Low magnesium levels may disrupt dopamine & noradrenaline systems

Genetic factors: Some genetic variations associated with ADHD may influence magnesium metabolism, transport, or utilization in the brain, leading to lower magnesium levels

Comorbidities: ADHD often co-occurs with anxiety, depression and sleep disorders, which may also be associated with magnesium deficiency

(Sources: Effatpanah et al., 2019; Elbaz et al., 2017; Kozielec & Starobrat-Hermelin, 1997)

Magnesium for ADHD

Type: Magnesium L-Threonate

Dose: 200-400 mg per day

Consider adding vit B6

Magnesium for ADHD

L-Threonic Acid Magnesium Salt Supplementation in ADHD: An Open-Label Pilot Study.

Gao et al, 2016, *Journal of Attention Disorders*

- 15 adults with ADHD
- Magnesium L-threonate supplementation
- Up to 12 weeks
- About 50% significant improvements in ADHD symptoms, including executive functioning.

Clonidine

- Centrally acting alpha-2 adrenergic agonist
- Reduces sympathetic tone
- Improves sleep onset
- Increases REM sleep (low doses): helps cognitive functions
- Improves sleep quality, reduces awakenings
- Can stabilize sleep architecture
- Helpful in ADHD, anxiety, trauma, withdrawals (off-license)
- 200-300 mcg at night

FINALLY FOCUSED

The Breakthrough Natural
Treatment Plan for **ADHD** That

- **RESTORES** Attention
- **MINIMIZES** Hyperactivity
- **HELPS ELIMINATE** Drug Side Effects



JAMES GREENBLATT, M.D.,
and Bill Gottlieb, CHC

Thanks!



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