



Global Neuropsychiatry Group

Papers shared in WhatsApp 24 March 3 April 2025

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***N*-Acetylcysteine provides limited efficacy as treatment option for skin picking in Prader–Willi syndrome**

<https://onlinelibrary.wiley.com/doi/full/10.1002/ajmg.a.62589>

N-acetylcysteine (NAC) shows promise as a treatment for compulsive disorders like skin picking, particularly in the context of brain injury or post-stroke conditions, but its efficacy varies.

Mechanism of Action

- NAC modulates the glutamatergic system, which is implicated in compulsive behaviors, by increasing extracellular glutamate levels in the nucleus accumbens. This helps regulate reward-seeking and compulsive behaviors[3][6][8].
- It also has antioxidant and anti-inflammatory properties, which may mitigate neurological damage caused by brain injuries like CVA[2][8].

Evidence for NAC in Skin Picking and Compulsive Disorders

1.Skin Picking Disorder*:

- Studies have shown that NAC can reduce skin-picking urges and improve symptoms in some patients with excoriation disorders[3][5][7].
- Dosages typically range from 600 mg twice daily to 2400–3000 mg/day, with effects often seen after 8–12 weeks of treatment[6][7].

2.*Obsessive-Compulsive Spectrum Disorders*:

- NAC has demonstrated efficacy as an adjunctive treatment for OCD, particularly in treatment-resistant cases. It reduces symptom severity as measured by tools like the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)[2][4][6].



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3.*Post-Stroke Neuropsychiatric Symptoms*:

- While direct evidence for NAC in post-stroke compulsive behaviors is limited, its ability to modulate glutamate and reduce inflammation may address underlying neurochemical imbalances caused by brain injury.

Clinical Considerations

1.*Benefits*:

- Safe and well-tolerated in most cases.
- May reduce compulsive urges and improve quality of life when used alongside standard treatments such as SSRIs or antipsychotics.

2.*Limitations

- Response to NAC is variable; not all patients experience significant improvement[1][5].
- Evidence for its use specifically in post-stroke compulsive behaviors is anecdotal or extrapolated from studies on OCD and skin-picking disorders.

3.Dosage and Duration*:

- Start with 600 mg twice daily and titrate up to 2400–3000 mg/day if tolerated.
- A minimum trial period of 8–12 weeks is recommended to assess efficacy[6][7].

4 Adjunctive Therapies :

- Combine NAC with (CBT) or (ERP) to address behavioral components.
- Continue addressing underlying depression or anxiety with SSRIs or other psychotropic medications.

Conclusion

NAC is a reasonable adjunctive option for treating compulsive skin-picking in the context of CVA/brain injury, particularly when standard treatments have been insufficient.

Citations:

[1] N-Acetylcysteine provides limited efficacy as treatment option for ...
<https://onlinelibrary.wiley.com/doi/full/10.1002/ajmg.a.62589>



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Neuroinflammation in Alzheimer's Disease: A Potential Role of Nose-Picking in Pathogen Entry via the Olfactory System?

<https://pmc.ncbi.nlm.nih.gov/articles/PMC10669446/>

The phenomenon of skin-picking or ulceration on the alar nasalis following a brainstem CVA (cerebrovascular accident) is unusual but may be explained by a combination of neurobiological and psychological factors. Here's an analysis based on Literature review:

Potential Mechanisms*

1.*Neurological Changes Post-CVA*:

- Brainstem strokes can disrupt sensory and motor pathways, leading to altered sensations (e.g., paresthesia or pain) that might provoke skin-picking as a response to discomfort or abnormal sensations.



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- Damage to areas involved in impulse control or emotional regulation, such as the anterior cingulate cortex or insular cortex, could contribute to compulsive behaviors like skin-picking[2].

2.Excoriation Disorder (Skin-Picking Disorder)*:

- Skin-picking disorder is linked to structural abnormalities in brain regions responsible for impulse control, such as the orbitofrontal cortex and inferior frontal gyrus[2]. Post-stroke changes in these areas may exacerbate compulsive behaviors.

- Anxiety, which you have treated in your patient, is a known trigger for excoriation behaviors.

3.*Psychological Factors*:

- Moderate Neurocognitive Disorder (MNCD), which your patient has, may impair executive functioning and increase susceptibility to repetitive behaviors like skin-picking.

4.*Neuroinflammation*:While not directly related to CVA, neuroinflammation and altered sensory processing might contribute to abnormal behaviors such as rhinotillexomania (nose-picking)[1]. This could be relevant if the patient experiences irritation or altered sensation in the nasal area.

Suggestions for Management

- *Behavioral Interventions*: Cognitive-behavioral therapy (CBT) tailored for impulse control disorders may help reduce skin-picking behavior.

-

Sensory Modulation*: Address any sensory abnormalities with topical treatments or medications that reduce irritation or paresthesia.

-

Neurological Assessment: Consider neuroimaging or further evaluation to identify specific post-stroke changes that might be driving the behavior.

Medication: SSRIs or other medications used for obsessive-compulsive spectrum disorders could be beneficial if anxiety persists.

This behavior likely results from a combination of neurological damage, psychological factors, and sensory changes post-CVA. Further investigation into the patient's specific neurological deficits and triggers for skin-picking will aid in tailoring treatment.

Citations:



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Long somatic DNA-repeat expansion drives neurodegeneration in Huntington's disease

<https://doi.org/10.1016/j.cell.2024.11.038>

A fascinating read for those interested in HD.

Huntington's disease (HD) is a genetic neurodegenerative disorder caused by a dominant inheritance pattern with an inherited DNA triplet repeat (CAG)_n in the huntingtin (HTT) gene. Individuals with HD suffer from motor symptoms, cognitive and



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psychiatric issues, and significant brain atrophy. The disease follows a decades-long asymptomatic phase before symptoms appear.

Key Findings:

- **Cell-Type Specific Pathology:** Neurodegeneration is most pronounced in striatal projection neurons (SPNs) while sparing interneurons and glia.
- **Somatic Mosaicism:** The length of the CAG repeat varies somatically, affecting individual cells differently, which may modify disease progression.
- **Single-Cell Analysis:** New molecular approaches enabled measurement of CAG repeats and RNA expression at single-cell resolution to understand biological changes due to somatic expansion.
- **Pathogenic Mechanism:** Toxicity is not inherent in the inherited alleles but arises after extensive somatic expansion beyond 150 repeats, suggesting a critical threshold for disease onset.
- **Therapeutic Implications:** Research suggests that slowing somatic expansion of CAG repeats might effectively delay or prevent HD symptoms. Current HTT-lowering therapies face challenges due to brief windows of toxicity.
- **Broader Relevance:** Similar mechanisms could apply to other DNA-repeat disorders, advocating for therapies targeting somatic expansion.

Future research will focus on confirming these findings in other brain regions and understanding non-cell-autonomous effects of CAG repeats. This study provides insights into HD pathology and potential therapeutic targets for delaying or preventing symptom onset.

Evaluation of Patients With Tremor

A careful history and directed examination are usually sufficient to diagnose and manage most patients presenting with tremor.

[evaluation of patients with tremor.pdf](#)

A careful history and directed examination are usually sufficient to diagnose and manage most patients presenting with tremor.

Pre-academic meeting reading.

Although sometimes daunting, the patient with tremor offers the clinician the opportunity to demonstrate clinical expertise. Focusing on basic phenomenology, most



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patients can be diagnosed without ancillary testing, and treatment can be initiated quickly.

Importance of History and Examination: A thorough history and examination are crucial for diagnosing and managing tremor. Key questions include confirming if the movement disorder is tremor, whether it is isolated or accompanied by neurological abnormalities, and identifying its phenomenologic features.

Types of Tremor: Differentiating between types of tremors (e.g., essential tremor, parkinsonian tremor, cerebellar tremor) relies on understanding specific characteristics like frequency, amplitude, triggers, and associated symptoms.

Diagnostic Tips: It's important to observe patient maneuvers that trigger tremor, take time during examinations, and assess various postures and tasks. This helps in accurately characterizing the tremor.

Common Tremor Syndromes:

- **Essential Tremor (ET):** Most common; usually affects hands, can improve with alcohol.
- **Parkinsonian Tremor:** Unilateral onset; present at rest, disappears with action.
- **Enhanced Physiologic Tremor:** Fine, fast tremor; symmetric; triggered by holding arms outstretched.
- **Cerebellar Tremor:** Coarse, slow; affects proximal muscles; accompanied by cerebellar signs.
- **Psychogenic Tremor:** Can mimic organic syndromes; marked by variability, unusual triggers, and body distribution.
- **Drug-Induced Tremors:** Various medications can cause tremors, either at rest or with action.

Special Cases: Includes dystonic tremor, Holmes tremor, orthostatic tremor, and task-specific tremor.

Diagnostic Testing: Essential for ruling out conditions like Wilson's disease, structural lesions, and hyperthyroidism in certain patients.

Treatment: While a full discussion is beyond scope, ET treatment includes propranolol, primidone, topiramate, and in severe cases, botulinum toxin injections or deep brain stimulation.

Conclusion: By focusing on the basic phenomenology and conducting meticulous history and examination, most tremor cases can be diagnosed and treated effectively without extensive testing.



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Indices of Heart Rate Variability and Performance During a Response-Conflict Task Are Differently Associated With ADHD and Autism

<https://journals.sagepub.com/doi/epub/10.1177/1087054720972793>

There is evidence suggesting a correlation between adult ADHD and reduced heart rate variability (HRV), which reflects autonomic nervous system dysregulation. Here are the key points:

- 1.*ADHD and HRV*: ADHD is associated with autonomic hypoarousal and reduced vagal tone, leading to diminished HRV. This is observed even in unmedicated individuals, indicating that ADHD itself may contribute to low HRV[1][2][4].
- 2.*Impact of ADHD Treatment*: Methylphenidate (MPH), a common ADHD treatment, appears to improve HRV by enhancing autonomic balance, increasing parasympathetic activity, and reducing sympathetic dominance. This suggests that treatment may partially mitigate autonomic dysfunction[2][5].
- 3.*Potential Mechanisms*: The link between ADHD and low HRV could stem from difficulties in emotion regulation, stress response, or genetic predispositions shared with cardiovascular risk factors. These mechanisms are independent of cardiac comorbidities[4][6].

In summary, low HRV in adults with ADHD is likely related to the disorder itself but may be improved with appropriate treatment like MPH.

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Functional Movement Disorder as a Prodromal Symptom of Parkinson's Disease—Clinical and Pathophysiological Insights

<https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mds.29958>

- FMD Definition: Abnormal and involuntary hypo- or hyperkinetic movements.
- FMD Prevalence: Accounts for up to 20% of movement disorder outpatient clinic attendances.
- FMD and PD: FMD can precede Parkinson's disease diagnosis, suggesting it might be a prodromal symptom of neurodegeneration.



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Young Onset Parkinson's Disease: A Modern and Tailored Approach

<https://pmc.ncbi.nlm.nih.gov/articles/PMC7592661/>

Summary

Young Onset Parkinson's Disease (YOPD):

- Symptoms appear between ages 21 and 40.
- Differences from late-onset PD include higher genetic etiology, dystonia, and frequent levodopa-induced dyskinesias.
- Requires a tailored multidisciplinary management approach.

Prevalence and Genetic Aspects:

- PD prevalence increases with age; early-onset cases are 3-5%.
- Japan reports up to 14% early-onset rates due to genetic susceptibility.
- Genetics show common variants and confirmed monogenic forms: dominant (SNCA, LRRK2, GBA, VPS35) and recessive (Parkin, PINK1, DJ1).

Challenges in Genetic Testing:

- Limited yield; important for certain ethnic populations.
- Pre-test counseling is crucial due to incomplete penetrance and controversy over heterozygous mutations.
- Genetic counseling necessary for informed decisions.

Therapeutic Implications:

- Emerging gene-specific interventions (e.g., GBA and LRRK2 clinical trials).
- DBS outcomes may be influenced by gene status.
- Phenotypical Differences and Management:
- Dystonia is more common at early disease stages in YOPD.
- Levodopa-induced dyskinesias are more frequent in YOPD.
- Anxiety and depression need careful evaluation and treatment.
- Family and social roles necessitate individualized management strategies.

Pregnancy and Work:

- Pregnancy can worsen symptoms; levodopa/carbidopa considered safest.
- Workplace success depends on symptom management, supportive employers, and workplace adjustments.
- Job coaching and education recommended for better workplace outcomes.
- Relationships can be strained, requiring monitoring and multidisciplinary support.

Conclusion:



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- YOPD requires shared decision-making and tailored multidisciplinary treatment.
- Need for further research and focused trials on YOPD.

Microplastics in the Olfactory Bulb of the Human Brain

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2823787>

Microplastics in the human brain via olfactory bulb. It is a very intriguing study, complementing the research work done by @~Elizabeth? @~Margo?.

It's time to cut down on the use of plastics in our lives for a better future!

This study is the first to identify and characterize microplastics (MPs) in the human brain using μ FTIR, detecting them in the olfactory bulb (OB) of 8 out of 15 individuals who underwent autopsy in São Paulo.

The findings support the notion that both black carbon and MPs accumulate in the OB.

The cribriform plate of the ethmoid bone may act as a pathway for particles entering the brain through the nasal passages. Its anatomy, including multiple foramina less than 1 mm in diameter, allows olfactory neurons to reach the OB.

Recent research indicates that cerebrospinal fluid can exit via lymphatic vessels surrounding olfactory axons, potentially facilitating MP entry. With age, the area of the cribriform plate's perforations decreases, possibly impacting olfactory function.

Given the prevalent presence of MPs in the air and their association with PM2.5, the olfactory pathway emerges as a significant route for exogenous particles to reach the brain. Epidemiological studies link PM2.5 exposure to neurological issues, including dementia, while some neurodegenerative diseases show early nasal abnormalities.

Experimental studies indicate that both PM2.5 and MPs can cause neurotoxic effects. The cribriform plate matures between 1 to 2 years of age, suggesting a critical period for potential impacts from MP exposure.

The MPs found in the OB primarily consist of common plastics like polypropylene and nylon, indicating that indoor environments may be a major source of inhaled MPs.



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Limitations of this study include the potential for multiple exposure routes, including systemic circulation or through the respiratory system.

The biological matrix of OB tissues may complicate MP analysis, and our methods could not detect nanoplastics. Contamination during analysis remains a challenge, though blank sample tests showed no MPs, supporting our findings.

In conclusion, this study highlights the presence of MPs in the OB and reinforces the olfactory pathway's role as an entry point for environmental air pollutants, raising concerns about the neurotoxic effects of MP exposure.

Randomized Trial of a Generative AI Chatbot for Mental Health Treatment

<https://ai.nejm.org/doi/full/10.1056/Aloa2400802>

This is the first RCT demonstrating the effectiveness of a fully Gen-AI therapy chatbot (Therabot app) for treating clinical-level mental health symptoms. The results were promising for MDD, GAD, and eating disorders.

Therabot was well utilized (average use >6 hours), and participants rated the therapeutic alliance as comparable to that of human therapists.

In utero exposure to methylphenidate, amphetamines and atomoxetine and offspring neurodevelopmental disorders – a population-based cohort study and meta-analysis

<https://www.nature.com/articles/s41380-025-02968-4>

The use of Attention-Deficit/Hyperactivity Disorder (ADHD) medications during pregnancy is increasing, raising concerns about potential long-term effects on offspring. This study investigates in utero exposure to methylphenidate, amphetamines and atomoxetine and risk of offspring neurodevelopmental disorders (NDDs). The



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population-based cohort study identified from Swedish registers included 861,650 children born by 572,731 mothers from 2008–2017. Results showed no increased risk for any NDD, ADHD or ASD. Sensitivity analyses showed consistent patterns of no increased risks across different exposure durations, medication types and between siblings. Our study provides evidence that in utero exposure to ADHD medications does not increase the risk of long-term NDDs in offspring. This study replicates safety data for methylphenidate and extends it with new safety data on amphetamines and atomoxetine.

Anionic nanoplastic contaminants promote Parkinson's disease-associated α -synuclein aggregation

<https://www.science.org/doi/10.1126/sciadv.adi8716>

It is intriguing that we can inhale microplastics into the brain. It's already been established that microplastics can transfer from systemic circulation into the brain... this is an important area of research and advocacy. if anyone wants to read more research studies about plastics and the brain, this is one of my favorite studies showing that microplastics accelerate alpha-synuclein aggregation in vitro and in mouse brains, and that microplastics also impair lysosomal clearance of alpha-synuclein fibrils/aggregates: <https://www.science.org/doi/10.1126/sciadv.adi8716> for me, it's one of the most compelling studies showing how microplastics could worsen the dementia crisis. I'm also concerned that our collective exposure is increasing: we produced more plastics in 2020 by mass than the weight of all seven billion people on this planet, and production of plastics is estimated to triple by 2050, mostly due to increase in single-use plastics; unfortunately plastics do not biodegrade, they just fragment into micro and nanoplastics that contaminate our air and water.

Individualized non-invasive deep brain stimulation of the basal ganglia using transcranial ultrasound stimulation

<https://www.nature.com/articles/s41467-025-57883-7>

Transcranial ultrasound stimulation (TUS) offers precise, non-invasive neuromodulation, though its impact on human deep brain structures remains underexplored. Here we examined TUS-induced changes in the basal ganglia of 10



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individuals with movement disorders (Parkinson's disease and dystonia) and 15 healthy participants. Local field potentials were recorded using deep brain stimulation (DBS) leads in the globus pallidus internus (GPi). Compared to sham, theta burst TUS (tbTUS) increased theta power during stimulation, while 10 Hz TUS enhanced beta power, with effects lasting up to 40 min. In healthy participants, a stop-signal task assessed tbTUS effects on the GPi, with pulvinar stimulation serving as an active sham. GPi TUS prolonged stop-signal reaction times, indicating impaired response inhibition, whereas pulvinar TUS had no effect. These findings provide direct electrophysiological evidence of TUS target engagement and specificity in deep brain structures, suggesting its potential as a noninvasive DBS strategy for neurological and psychiatric disorders.

Understanding the lived experiences of individuals with functional neurological disorders FND in Australia

<https://www.tandfonline.com/doi/full/10.1080/09638288.2025.2481986>

Understanding the lived experiences of individuals with functional neurological disorders (FND) in Australia: a small yet informative study highlights the perceptions of FND patients.

I presume you will get similar experiences from patients across the globe. Despite years of work in this field, prejudice against this disorder persists among healthcare professionals. It is time to reflect and recognise FND as a neuropsychiatric disorder that requires much broader awareness among healthcare professionals to reduce the suffering caused and achieve better outcomes. It still feels that despite the great work done by many of our esteemed colleagues, the patients often find themselves in no man's land! Share your experiences and let us know if there is anything we can do at GNG-INA to spread the knowledge about this disorder.

Summary

Purpose: To explore the experiences of individuals with Functional Neurological Disorder (FND) in Australia, focusing on their daily challenges, healthcare interactions, and service access.

Materials and methods: Semi-structured interviews with 11 FND-diagnosed participants were analyzed thematically.

Results: Five key themes:

- Disruptions in daily life due to symptoms.
- Prolonged and challenging diagnostic process.



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- Difficulties accessing healthcare services in regional areas.
- Societal misconceptions and stigma around FND.
- Financial strain from employment instability and limited work capacity.

Conclusions: There is a need for better healthcare training, policy reforms, and tailored support services. Addressing stigma and improving care access are crucial for enhancing quality of life and treatment effectiveness for those with FND.

IMPLICATIONS FOR REHABILITATION

- Personalized rehabilitation programs are essential due to significant daily living challenges faced by individuals with FND.
- Improved training and awareness among healthcare professionals can enhance rehabilitation outcomes.
- Multidisciplinary and integrated care models are necessary to meet the complex needs of individuals with FND.
- Accessible and equitable rehabilitation services are critical, especially in rural and underserved areas.

Check out the NEW Functional Neurological Disorder (FND) Formulation Tool

Some great resources to share with juniors, GPs, patients, carers and others.

<https://neurosymptoms.org/en/>

<https://fndaustralia.com.au/resources/educational-videos.html>

<https://neurosymptoms.org/en/>

Case Report: “Niemann-Pick Disease Type C in a Catatonic Patient Treated With Electroconvulsive Therapy”

<https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2021.745734/full>

ECT in a psychotic patient with Niemann-Pick Disease Type B (NPD-B) or Acid Sphingomyelinase Deficiency (ASMD) raises specific safety and diagnostic concerns:



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Safety Concerns with ECT in NPD-B/ASMD

1. Neuroexcitability and Lipid Storage : Niemann-Pick diseases involve lipid accumulation in neurons, which may alter neuroexcitability and increase the seizure threshold during ECT. This variability could affect the efficacy and dosing of ECT, as seen in Niemann-Pick Type C (NP-C) patients[1][5].

2. Systemic Risks: Patients with NPD-B often have visceral involvement (e.g., liver, spleen, and lungs), which may increase risks associated with anesthesia or systemic stress during ECT[7][8].

3. Cardiac and Skeletal Issues:

NPD-B patients may have cardiac abnormalities or skeletal fragility, which can complicate ECT procedures[9].

Diagnostic Challenges

1. Overlap of Symptoms: Intellectual disability and psychosis may overlap with symptoms of NPD-B or intermediate forms like NPD-AB, making diagnosis difficult. Genetic testing (e.g., SMPD1 mutations) and biomarkers like lipid profiles can help confirm the diagnosis[7][8].

2. Impact on Treatment Risks:

A confirmed diagnosis of NPD-B or intermediate forms necessitates careful pre-ECT evaluations due to potential organ dysfunctions and altered neurophysiology.

Recommendations

- Conduct thorough pre-ECT assessments, including cardiac, pulmonary, and neurological evaluations.
- Collaborate with specialists in metabolic disorders for tailored management.
- Monitor seizure thresholds closely during ECT sessions to adjust dosing as needed.

ECT may still be effective for severe psychiatric symptoms but requires meticulous planning to mitigate risks.

Citations:



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<https://pmc.ncbi.nlm.nih.gov/articles/PMC10886890/>

Traumatic Encephalopathy Syndrome: Head Impact Exposure and Blood Biomarkers in Professional Combat Sports Athletes

https://journals.lww.com/headtraumarehab/abstract/9900/traumatic_encephalopathy_syndrome_head_impact.244.aspx

This study suggests that rising GFAP blood biomarkers may indicate a higher likelihood of a TES diagnosis in retired professional fighters. Further research is needed to clarify



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the relationship between GFAP changes and TES, including chronicity duration and exposure thresholds.

Co-Occurrence of Traumatic Brain Injury and Post-Traumatic Stress Disorder in a National Sample of UK Police Officers: Effects on Social Well-Being and Employment Outcomes

https://journals.lww.com/headtraumarehab/fulltext/9900/co_occurrence_of_traumatic_brain_injury_and.239.aspx

Comorbidity of TBI and C-PTSD is common among police officers. Symptoms in those with mTBI history can add up, risking employment, relationships, and mental health. Occupational health checks should monitor TBI and related symptoms over time. Officers with head or neck injuries should gradually return to duty with increasing activity levels and mental health support.

Iron Deficiency in Adults. A Review

<https://jamanetwork.com/journals/jama/article-abstract/2832131>

Common and treatable cause of fatigue, low mood, restless leg syndrome, irritability, light headedness and poor concentration

Absolute iron deficiency, with or without anemia, affects about 2 billion globally and leads to symptoms like fatigue, irritability, and difficulty concentrating. It can progress to iron-deficiency anemia, impacting approximately 1.2 billion worldwide. Causes include bleeding, impaired absorption, diet, and pregnancy. Diagnosis involves low serum ferritin or transferrin saturation, and treatment primarily includes oral iron, with intravenous iron for that intolerant to oral forms or with specific conditions.

INTEGRATE: international guidelines for the algorithmic treatment of schizophrenia



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[https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(25\)00031-8/abstract](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(25)00031-8/abstract)

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