THE PAEDIATRIC SLEEP SOS

Sleep SOS: An Integrated Roadmap for Childhood Sleep Problems

Dr Venita Patel

Community Paediatrician & Nutritional Therapist

Clinical Update Presentation | 10-Minute Roadmap

The 3 AM Club: UK's Kid Sleep Crisis

64%

Young People (Ages 17-23)

34%

Children (Ages 7-16)

The Scale of the Insomnia Issue

These age bands suffer from active, disruptive sleep problems **three or more times** every single week, according to NHS Digital's database.

The Mental Health Connection

Over **70% of young patients** with a probable clinical mental health diagnosis suffer concurrently from persistent sleep disturbances.

Source: NHS Digital Mental Health Survey (England)

Wired but Tired: Sleep in Autism & ADHD

Neurodevelopmental Blocks

Up to **80% of children with ASD and ADHD** experience chronic insomnia, circadian phase delays, and major night-waking issues.

These challenges are driven by altered endogenous melatonin pathways, sensory hyper-reactivity, and dysregulated central dopamine circuits.

Melatonin & Specialist Care

Judicious Pharmacological Use: In the UK, melatonin support is initiated strictly by specialist paediatricians when behavioural and nutritional measures fail.

Commissioning rules ensure it is restricted to neurodevelopmental cohorts under active clinical observation to guarantee ongoing safety.

Referenced from: Mindell & Owens (2015) & UK Clinical Commissioning Guides

More Than Bedtime Stories: Integrated EBNT

NICE Standard First-Line

Primary Behavioural Interventions: Correcting sleep environment hygiene, setting strict bedtime guidelines, and executing parent-led limits.

Highly effective for primary behavioural sleep issues, but leaves underlying physiological biochemical blockers unaddressed.

The Integrated EBNT Pathway

Evidence-Based Nutritional Therapy: Resolves core nutrient deficiencies, supports the gut-brain loop, and introduces targeted natural therapeutics.

Rather than just treating symptoms, this method works systematically to address underlying dietary and physiological causes.

Reference: NICE Clinical Knowledge Summary (CKS) - Insomnia

Symphony of Sleep: Micronutrient Conductors

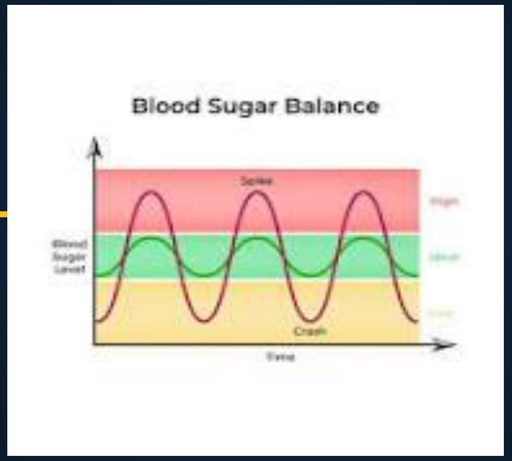
CONDUCTOR (NUTRIENT)	BIOCHEMICAL ORCHESTRATION ROLE	UK DIETARY SOURCES FOR CHILDREN
Iron (Ferritin)	Essential dopamine synthesis cofactor. Low levels trigger Restless Legs Syndrome (RLS) & fragmented sleep architecture.	Red meat, fortified cereals, dark green lentils, beans, spinach.
Magnesium	The natural cell tranquilliser. Blocks NMDA receptors to relax muscles, soothe nerves, and assist melatonin release.	Almonds, pumpkin seeds, whole grains, bananas, leafy greens.
Tryptophan	The vital amino acid building block of serotonin, converting directly into night-time melatonin.	Turkey, chicken, milk, hard cheeses, porridge oats, bananas.
Calcium	Assists enzyme pathways that utilize tryptophan to synthesise melatonin.	Yogurt, milk, cheese, calcium-fortified plant milks.

Carb-Pairing for Sleep: The Tryptophan Shuttle

- **The Biochemical Shuttle:** Combine tryptophan-rich proteins with complex carbohydrates. Carbs release insulin, clear out competing amino acids, and allow tryptophan to cross the blood-brain barrier.
- **Meal Timing Matrix:** Finish the primary dinner at least 2 to 3 hours before sleep. This stops the body from prioritizing digestion over sleep onset.
- **The Afternoon Stimulant Rule:** Limit high-sugar treats, fizzy drinks, and hidden caffeine in the afternoon to avoid blood sugar crashes and midnight waking.

Reference: Moore, M., et al. (2014) Treatment of Behavioral Insomnia in Children

Stabilising the Spike: Blood Sugar & Sleep



The Nocturnal Crash

High glycaemic index carbs or sugary evening snacks stimulate rapid insulin release, leading to a late-night blood glucose crash.

This triggers a surge of counter-regulatory stress hormones (cortisol, adrenaline), waking the child in a physical "fight-or-flight" state.

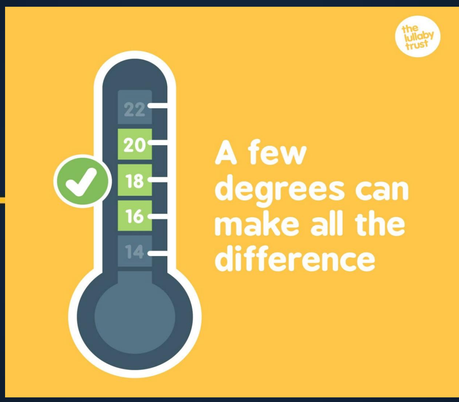
Glycaemic Variability

Continuous glucose monitoring (CGM) studies show high glycaemic variability (frequent sugar spikes and dips) is a primary driver of micro-arousals.

Stable glucose pathways prevent sympathetic nervous system hyper-arousal, preserving restorative deep slow-wave sleep cycles.

References: Diabetologia (2021) & EMJ Sleep-Glucose cohort study (2024).

Cooling Down to Sleep: Thermoregulation



Core Temperature Decline

A physiological drop in core body temperature is a primary biological trigger for sleep initiation, heavily linked to natural melatonin release.

Warm Epsom salt baths promote vasodilation in extremities; when exiting, rapid heat loss triggers a cooling signal that prepares the brain for deep sleep.

The Thermal Environment

The 16-18°C Standard: Keeping the bedroom environment cool prevents micro-arousals and promotes uninterrupted sleep architecture.

Heavy blankets combined with high ambient room temperatures disrupt autonomic cardiac cycles and suppress restorative slow-wave sleep phases.

Reference: Harding et al. (2025) Temperature Regulation & Melatonin Secretion

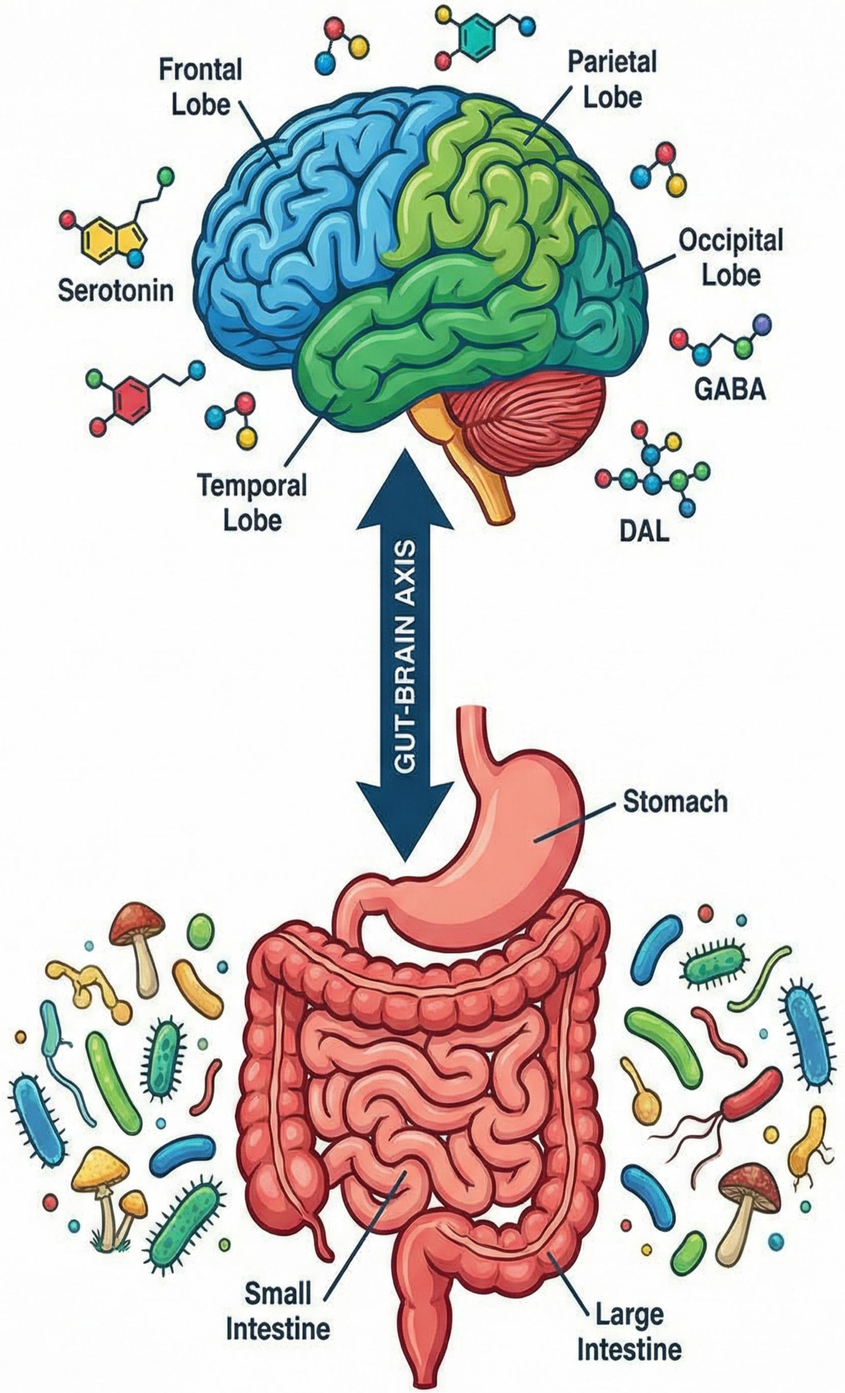
Sleep in the Soil of the Microbiome

↔ The Gut-Brain Loop

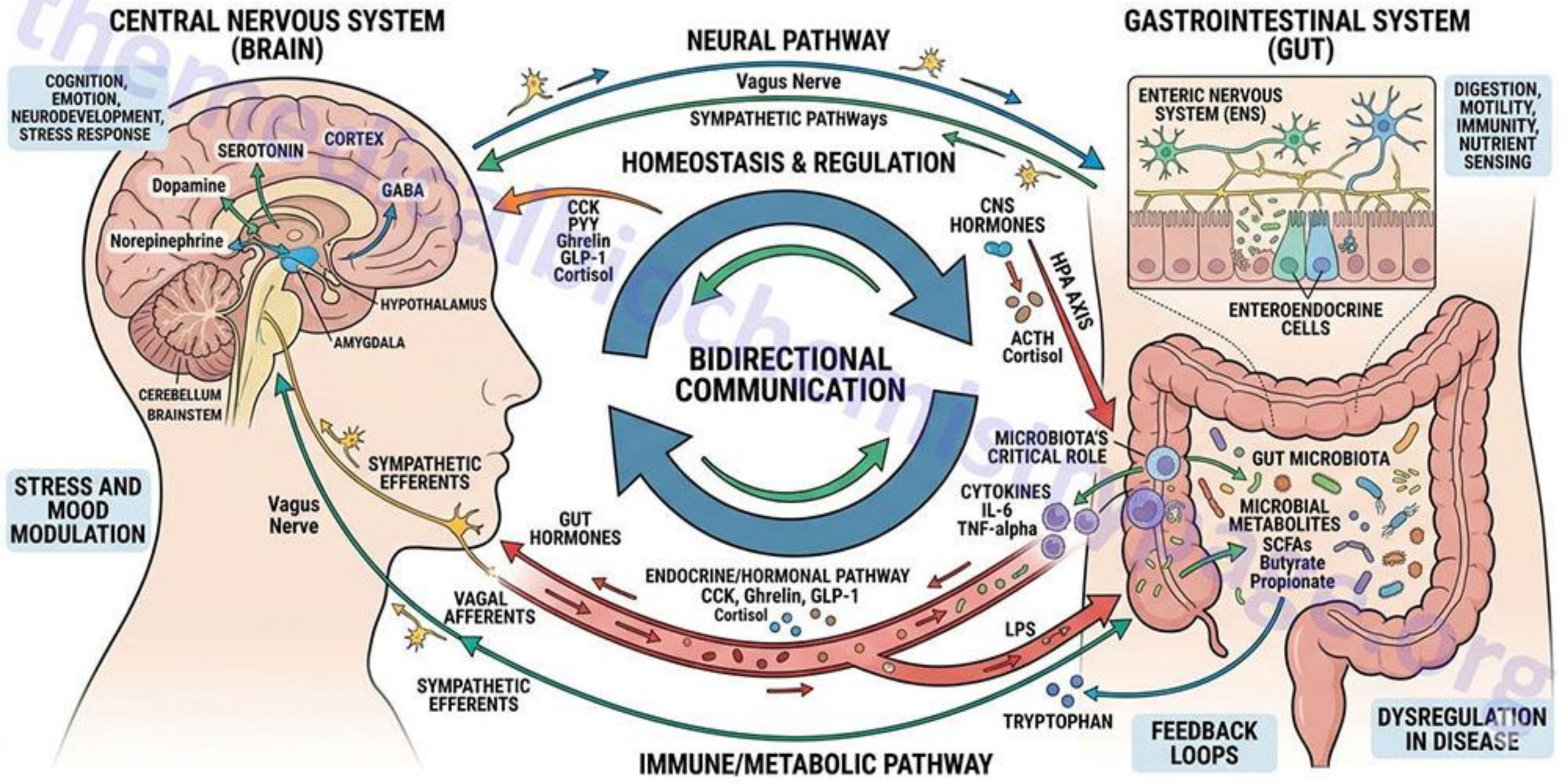
Low bacterial diversity directly mirrors sleep fragmentation. The central nervous system and GI tract communicate bi-directionally via the vagus nerve and bacterial biochemical metabolites.

Visceral Pain & Dysbiosis

Abdominal Discomfort & Arousals: Children are frequently woken by nocturnal abdominal discomfort, bloating, or altered motility. This is often linked to underlying gut dysbiosis or IgE/non-IgE food intolerances, inducing low-grade mucosal inflammation.



THE GUT-BRAIN AXIS: CORE PRINCIPLES OF GI-CNS INTERACTIONS



Nature's Nightcaps: Botanical Sleep Allies

Chamomile

(Matricaria chamomilla)

Apigenin binds to central GABA-A receptors. Excellent for toddlers with somatic restlessness, teething discomfort, or colic tension.

Lemon Balm

(Melissa officinalis)

Rosmarinic acid inhibits GABA transaminase to preserve calming neurotransmitters. Helps school-aged children with busy, over-anxious minds.

Valerian Root

(Valeriana officinalis)

Valerenic acid increases synapse GABA levels. Suited for adolescents or neurodivergent kids suffering from long sleep-onset delays.

Sleep Safe: Navigating Herbal Standards & Safety

⚠ Botanical Contraindications

Asteraceae Sensitivity: Avoid chamomile in children allergic to ragweed, daisies, or chrysanthemums to prevent allergic reactions.

Co-Prescribing Rules: Never recommend active GABA-acting botanicals alongside prescription anticonvulsants or sedatives.

✓ Manufacturing Controls

Alcohol-Free Extractions: Recommend organic, child-safe glycerite extractions instead of standard alcohol-heavy tinctures.

Verify THR Marks: Ensure all botanical supplements carry the UK MHRA's Traditional Herbal Registration (THR) to guarantee zero heavy metal contamination.

Guideline Check: UK MHRA Regulations & Safety Standards

The Quiet Night: Snorers, Mouth Breathers & ENT Red Flags

Pathology of Airway Blockage

Adenotonsillar Overgrowth: Swollen adenoids and tonsils physically obstruct the airway, driving paediatric snoring and Obstructive Sleep Apnoea (OSA).

Chronic Mouth Breathing: Bypasses natural nasal filtering and nitric oxide production, and can alter facial/dental arch development.

Integrative Actions

Reduce Mucosal Congestion: Try removing dairy and highly refined foods under clinical supervision to decrease swelling.

Daily Support: Use hypertonic saline nasal sprays before bedtime and guide children in simple myofunctional exercises while waiting for ENT assessment.

Turn Off the Alarm: Somatic Hyper-Arousal Protocols

- **Controlled Diaphragmatic Breathing:** Slow, deep belly breathing calms the fight-or-flight nervous response and improves Heart Rate Variability (HRV).
- **Progressive Muscle Relaxation (PMR):** Systematically tensing and releasing muscle groups clears physical anxiety before bed.
- **The Magnesium Soak:** Add magnesium-rich Epsom salts to warm bathwater for transdermal muscular relaxation.
- **The 60-Minute Screen Curfew:** Shutting off screens protects natural melatonin levels and prevents midnight waking.

Your Blueprint: Chronological Sleep SOS Pathway

Step 1: Clinical Check

Rule out medical causes like apnoea, reflux, and airway blockages as detailed in the guidelines.

Step 2: Digital Blackout

Enforce a strict 60-minute screen-free curfew before bedtime to allow melatonin levels to rise.

Step 3: Integrated EBNT

Integrate calming magnesium suppers, thermoregulation, iron checks, and gentle wind-down practices.

Step 4: Melatonin Strategy

Reserve prescription melatonin specifically for diagnosed neurodevelopmental children when needed.

Clinical SOS: Dr Venita's Golden Rules

1. Test Ferritin

Screen ferritin levels in children with high nocturnal movement or restless legs before assuming behavioural insomnia.

2. Circadian Curfew

Implement a strict 60-minute screen curfew before bed. Blue light strongly suppresses melatonin release and elevates cognitive arousal.

3. Thermal Rest

Combine warm magnesium baths, rapid cooling, and cool bedroom environments (16-18°C) to lock in circadian sleep cycles.

CONNECT & COLLABORATE

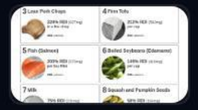
Dr Venita Patel

Let's build a brighter, healthier, and sleep-filled future for UK families together.

www.healthvianutrition.co.uk

hvnutrition@gmail.com

Image Sources



http://googleusercontent.com/image_collection/image_retrieval/6208576251773984852_0

Source: High Tryptophan Foods Infographic & Clinical Nutrient Guide

---

http://googleusercontent.com/image_collection/image_retrieval/10925819746634337844_0

Source: Gut-Brain Axis Medical & Digestive System Bidirectional Illustration

---

http://googleusercontent.com/image_collection/image_retrieval/8494427984283937930_0

Source: Child Sleeping Peacefully under Bedside Warm Lighting

Clinical Practice References

Source	Clinical Focus & Evidence
NICE CKS (2025)	Insomnia management: Prioritizing behavioral over pharmacotherapy.
NHS Digital (2024)	Prevalence data on adolescent sleep disruption (64% cohort).
Harding et al. (2025)	Thermoregulation: Distal-proximal gradients in sleep latency.
BMJ Open Diabetes (2026)	Glycaemic impact (eGDR) and the 7h 18m metabolic "sweet spot."

Nutritional Science References

Source	Clinical Focus & Evidence
Caldart et al. (2025)	Investig Innov Clin Quir Pediatr: Tryptophan-rich cereals and sleep efficiency.
CACAP Study (2026)	Safety/Efficacy of L-tryptophan for pediatric parasomnias.
MDPI Nutrients (2020)	PROTMORPHEUS: Tryptophan/LNAA ratio & Blood-Brain Barrier transport.
The Sleep Charity	Evidence-based guidelines on complex carbohydrate/protein pairing.