



Herbal Approaches to Pediatric Sleep Disorders: Dravyaguna, Medhya Rasayana and Modern Evidence

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Abstract

A child who takes a long time to fall asleep, wakes often or feels sleepy at school needs an assessment of the problem before treatment is chosen. Bedtime habits, worry, illness and breathing problems can all disturb sleep. Families may also ask about Ayurvedic herbs, especially when poor sleep occurs with restlessness or difficulty concentrating. This narrative review examines that interest through the concepts of *Nidra*, *Dravyaguna* and *Medhya Rasayana*. It considers classical descriptions alongside clinical research, with particular attention to the age of participants and the outcomes measured. The available studies answer different questions. Research on *Bacopa monnieri* and *Centella asiatica* in children mainly concerns memory, attention and behaviour. Trials of *Ashwagandha* for sleep have largely involved adults. These findings do not establish that the same preparations safely treat childhood insomnia. Evidence is also insufficient to recommend *Shankhapushpi*, *Yashtimadhu*, *Guduchi* or *Jatamansi* as routine sleep treatments for children. Care should begin with a clear diagnosis, an age-appropriate sleep routine and behavioural support. Any proposed herbal treatment needs a defined preparation, a sound safety assessment and clinical supervision. Future trials should measure sleep

directly, report adverse events carefully and give both study groups the same basic sleep advice. Ayurvedic concepts can help frame research questions, but treatment claims must rest on evidence from the children and conditions being treated.

Keywords: *Pediatric sleep; Nidra; Dravyaguna; Medhya Rasayana; Herbal medicine; Insomnia.*

Introduction

Parents may describe a sleep problem in very different ways. One child resists bedtime, another lies awake despite wanting to sleep, and a third wakes repeatedly or struggles to stay alert in class. These complaints can affect daily life, but they do not necessarily share a cause or require the same treatment. Childhood insomnia also needs to be considered alongside anxiety, developmental conditions and other health problems.^[1]

A useful assessment asks what happens before, during and after sleep. Late screen use, an irregular schedule, discomfort or worry may explain part of the problem. Snoring and pauses in breathing suggest a different concern. Treating all of these situations with a calming preparation could delay the care the child actually needs.^[2]

Ayurveda places *Nidra* within its account of health, nourishment and mental function. The classical description gives sleep a broader role than relief from tiredness.^[3] *Medhya Rasayana* refers to preparations described in relation to intellect and memory, including *Mandukaparni*, *Yashtimadhu*, *Guduchi* and *Shankhapushpi*.^[4] These ideas explain the interest in using such herbs when poor sleep occurs with stress or difficulty concentrating. Whether they improve a defined sleep disorder in children remains a separate clinical question.

Aim and objectives

This review examines how selected Ayurvedic herbs relate to childhood sleep complaints. Its objectives are to explain the relevant classical concepts, assess the human evidence for sleep and related outcomes, and identify the safety requirements and research gaps that matter in pediatric practice.

Materials and methods

The article uses a narrative review approach. Classical passages concerning *Nidra* and *Medhya Rasayana* were considered alongside published studies of childhood sleep, behavioural treatment and selected medicinal plants. Targeted checks of PubMed records, publisher pages and professional or government guidance were used to confirm key findings and reference details. Search terms included childhood insomnia, pediatric sleep, *Bacopa monnieri*, *Centella asiatica*, *Ashwagandha* and herbal sleep treatment.

Greater weight was given to studies involving children and to clinical outcomes measured directly. Adult trials and traditional descriptions were kept distinct from pediatric treatment evidence. This was not an exhaustive systematic search, and no pooled analysis or formal risk-of-bias assessment was performed. The discussion therefore identifies the limits of the cited evidence rather than claiming to cover every published study.

Ayurvedic understanding of sleep

In *Charaka Samhita*, sleep is linked with strength, nourishment, knowledge and well-being. The account of *Nidra* also considers the withdrawal of mental and sensory activity. *Kapha* and *Tamas* appear in the classical explanation of sleep, while fear, worry and disturbance of *Vata* are discussed in relation to sleeplessness.^[3] These terms belong to the Ayurvedic

account of body and mind; they should not be treated as direct names for modern brain pathways.

For a child who cannot settle at night, this perspective draws attention to daily habits, mental strain and physical comfort. It may help a clinician discuss routine and the child's wider health. It does not, however, distinguish obstructive sleep apnea from insomnia or show that a particular herb is effective. Modern diagnosis remains necessary when the symptoms suggest a specific sleep or medical disorder.

Clinical assessment and established care

The first consultation should clarify how long the difficulty has been present, when the child goes to bed, how long sleep takes, and what the family does during awakenings. School-day and weekend schedules may differ. Daytime sleepiness, mood changes and effects on school work also matter. A sleep diary can make these patterns easier to discuss, although it remains a report from the child or caregiver.^[1]

Persistent snoring, witnessed breathing pauses, gasping, unusual nighttime events or marked daytime sleepiness warrant medical evaluation. A child with these features should not simply receive a sleep aid. Existing medicines, chronic illness, developmental history and emotional difficulties should also be reviewed.^[2]

For otherwise healthy children with bedtime resistance or night waking, the American Academy of Sleep Medicine places behavioural interventions first.^[5] A meta-analysis found benefits for several sleep outcomes, with the strongest evidence in young children; the authors also identified gaps for older children and other groups.^[6] More recent work describes behavioural approaches for school-aged children and adolescents, including cognitive behavioural therapy for insomnia.^[7] Basic sleep advice is useful, but persistent insomnia may need a structured treatment plan and follow-up.

Dravyaguna and selection of herbs

Dravyaguna describes a medicine through *Rasa*, *Guna*, *Virya*, *Vipaka* and *Karma*, or its taste, qualities, potency, post-digestive effect and actions. In an Ayurvedic assessment, age, *Prakriti*, digestion, appetite and associated symptoms help guide the

discussion. This is more specific than choosing a product because it is advertised as a brain tonic.

The four *Medhya Rasayana* preparations named in the cited Charaka passage are not interchangeable. The passage describes *Mandukaparni* juice, *Yashtimadhu* powder with milk, *Guduchi* juice and *Shankhapushpi* paste.^[4] Their traditional use supports the reason for studying them. It does not establish a pediatric sleep indication, a safe dose or equivalence to a modern commercial extract.

Selected herbs and the available evidence

Brahmi and Mandukaparni

In this review, *Brahmi* refers to *Bacopa monnieri* and *Mandukaparni* to *Centella asiatica*. Keeping the botanical names visible matters because findings for one plant cannot be transferred to another. Much of the interest in these herbs comes from studies of cognitive performance rather than sleep.

Kean and colleagues reviewed five studies of *Bacopa monnieri* in children and adolescents. Some cognitive and behavioural measures improved, but the evidence required better designed and repeated trials.^[8] Their later review examined combinations in which *Bacopa* was a major ingredient. It found modest support for some outcomes, alongside weaknesses in study methods and safety reporting.^[9] Results from a mixture cannot show how much benefit came from *Bacopa* alone.

A 2025 trial compared *Brahmi* and *Mandukaparni* in healthy boys aged 8–10 years. Memory and intelligence measures improved during the study, but sleep was not its main outcome.^[10] The findings are relevant to cognitive research in a defined group. They do not demonstrate treatment of insomnia, and they should not be extended automatically to other ages, girls or children with sleep disorders.

Shankhapushpi

Shankhapushpi is included in the classical *Medhya Rasayana* group and is especially noted for its *Medhya* action.^[4] Its association with mental function makes it a reasonable subject for research when bedtime difficulty occurs with worry or restlessness. The cited evidence does not establish that it shortens sleep onset or reduces night waking in children. A study must identify the botanical material and preparation before its findings can guide practice.

Yashtimadhu and Guduchi

Yashtimadhu, identified here as *Glycyrrhiza glabra*, has a classical role within *Medhya Rasayana*. That classification does not make it a general treatment for a tired child who sleeps poorly. The available evidence does not establish a pediatric sleep benefit. Safety also requires attention: glycyrrhizin-containing licorice can cause important cardiovascular effects, and interactions with other medicines have been reported.^[11]

Guduchi, or *Tinospora cordifolia*, is another member of the classical group. Its *Rasayana* use should not be presented as proof of a sleep-promoting effect. Reports of liver injury associated with Giloy use add a specific reason for caution.^[12] Such reports do not define the risk of every preparation or a pediatric dose, but they do argue against assuming that traditional use alone establishes safety.

Jatamansi

Jatamansi, or *Nardostachys jatamansi*, is discussed in Ayurvedic practice for restlessness and disturbed sleep. It is separate from the four herbs named in the cited Charaka passage. Its traditional reputation needs to be tested in children with a clearly defined sleep complaint. The evidence considered here is insufficient to support routine treatment of childhood insomnia with *Jatamansi*.

Ashwagandha

Ashwagandha, or *Withania somnifera*, has attracted clinical interest because of its traditional *Rasayana* and *Balya* uses. Cheah and colleagues combined five randomized trials involving 400 adults and reported an overall improvement in sleep measures with *Ashwagandha* extracts.^[13] This finding supports further investigation, but the participants were adults and the preparations differed. It does not establish that a child will obtain the same benefit from a powder, milk preparation or extract.

Safety information also needs to be read alongside the benefit claims. NCCIH notes possible drowsiness and digestive symptoms, rare reports of liver injury, and concerns involving thyroid disease and interactions with medicines such as sedatives and anticonvulsants.^[14] These cautions are relevant when deciding what additional evidence is needed before pediatric use.

Table 1 summarises the main distinctions between the herbs. It is an evidence overview, not a prescribing guide.

Table 1. Selected herbs and the limits of their relevance to childhood sleep

Herb and botanical name	Main basis for interest	Limit for pediatric sleep care
<i>Brahmi</i> <i>Bacopa monnieri</i>	Cognitive and behavioural studies in children. ^[8,9]	These outcomes do not establish an insomnia treatment.
<i>Mandukaparni</i> <i>Centella asiatica</i>	Classical <i>Medhya</i> use and a pediatric memory trial. ^[4,10]	Direct sleep benefit remains unproven in the cited studies.
<i>Shankhaphusi</i> <i>Convolvulus pluricaulis</i>	Classical <i>Medhya</i> <i>Rasayana</i> description. ^[4]	Botanical identity and sleep outcomes need clear study.
<i>Yashtimadhu</i> <i>Glycyrrhiza glabra</i>	Classical <i>Medhya</i> <i>Rasayana</i> description. ^[4]	No established pediatric sleep benefit; glycyrrhizin requires caution. ^[11]
<i>Guduchi</i> <i>Tinospora cordifolia</i>	Classical <i>Rasayana</i> and <i>Medhya</i> use. ^[4]	No established pediatric sleep benefit; liver safety needs attention. ^[12]
<i>Jatamansi</i> <i>Nardostachys jatamansi</i>	Traditional use for restlessness and sleep complaints.	Adequate pediatric sleep evidence is lacking in this review.
<i>Ashwagandha</i> <i>Withania somnifera</i>	Adult trials measuring sleep. ^[13]	Adult results and doses cannot establish pediatric use. ^[14]

The botanical names specify the plants discussed here. Traditional labels describe their Ayurvedic use and should not be read as confirmed sleep indications.

What adult studies and proposed mechanisms can tell us

Adult sleep research can identify questions worth testing, but it cannot supply missing pediatric evidence. Valerian illustrates the uncertainty even in the wider herbal sleep literature. An earlier review suggested a possible benefit but found important study limitations.^[15] A later umbrella review also questioned the strength and consistency of the evidence.^[16] A familiar history of use is therefore an incomplete basis for treatment.

Several explanations could be explored for the herbs discussed here. A preparation might change perceived stress, reduce discomfort or alter alertness, with an indirect effect on bedtime behaviour. These are hypotheses. A laboratory finding about antioxidant activity or a change in a memory score cannot confirm such a pathway in a child. Sleep trials need to measure the proposed mechanism and the sleep outcome separately. Daytime drowsiness should also be distinguished from better nighttime sleep.

Sleep routine and a combined approach to care

The classical discussion includes attention to physical comfort, a suitable place to sleep and a settled mental state.^[3] These themes can support a conversation about daily routine. They should be adapted to the child's age and circumstances rather than applied as a fixed set of adult practices.

Families need a plan they can follow. A regular waking time, a predictable wind-down period and less stimulating activity near bedtime are useful starting points. Screens, late meals, daytime activity and school-related worry should be discussed in relation to the actual sleep pattern. Behavioural care works best when the family understands what to change and has a chance to review progress with the clinician.^[7]

A combined assessment may record *Prakriti*, *Vikriti*, *Agni* and the child's emotional state alongside the medical history. These observations can describe the Ayurvedic reasoning, but they should not postpone evaluation of breathing problems, unusual movements or marked daytime impairment. If an herbal option is considered, the clinician should discuss what is known, what remains uncertain, and how benefit and harm would be checked. Individual selection alone does not resolve a lack of evidence.

Safety in children

A product's plant origin says little about the dose a child can tolerate. Age, body size, other medicines and the concentration of the preparation all matter. Reducing an adult dose by a simple formula does not establish pediatric safety. The product record should identify the species, plant part, extraction method, strength and batch so that the treatment can be assessed and repeated accurately.

Follow-up should ask about digestive symptoms, allergy, excessive sleepiness and any new complaint

after treatment begins. Multiple products make it harder to identify which ingredient helped or caused harm. The licorice, *Guduchi* and *Ashwagandha* concerns described above should be considered specifically rather than hidden within a general statement that a preparation is safe.^[11,12,14] Longer use requires evidence that short studies cannot provide.

Critical appraisal and research needs

The main gap is between the outcomes studied and the outcomes claimed. Some pediatric Bacopa studies concern attention or behaviour, while the cited *Brahmi–Mandukaparni* trial concerns memory. *Ashwagandha* sleep trials largely concern adults. Bringing these findings together is useful only if their differences remain visible. A child becoming calmer or performing better on a test is not sufficient evidence that insomnia has improved.

A future study could recruit children aged 6–12 years with a clearly defined problem initiating sleep. This is a proposed study group, not an established indication for treatment. Appropriate assessment should first exclude conditions requiring other care. Both groups should receive the same behavioural advice, while one receives a well-characterised preparation and the other an appropriate comparator. Pediatric safety work should guide the dose and treatment period.

One primary outcome should be chosen in advance, such as change in the time taken to fall asleep. Total sleep time, awakenings, sleep efficiency and daytime function could be secondary outcomes. Sleep diaries provide structured reports; actigraphy estimates sleep from movement and has its own limitations. Using both, where feasible, may help explain differences between reported and measured change. Adverse events and withdrawals need the same attention as improvements.

Ayurvedic measures, including *Prakriti* and *Agni*, can be recorded with a clear assessment method. Any planned subgroup analysis should be specified before the results are known. Small subgroups should not be used to make firm claims about which constitution responds best. Studies also need suitable consent and assent, independent ethics review and follow-up long enough to examine whether any improvement lasts.

Future work should first resolve product identity, pediatric tolerability and direct sleep outcomes. Trials of combinations will be easier to interpret once the

evidence for individual ingredients is clearer. Children with neurodevelopmental conditions may need separate studies because their sleep complaints and other treatments can differ. This review is limited by its narrative selection of sources and should not be read as proof that no other pediatric study exists.

Conclusion

Herbal treatment for childhood sleep problems needs a clearer evidence base. Ayurveda offers a way to discuss *Nidra*, routine and the traditional use of *Medhya Rasayana*, but these concepts do not establish that a preparation treats pediatric insomnia. The cited child studies mainly address cognition and behaviour, and the better known *Ashwagandha* sleep findings come from adults. Clinical care should start with assessment of the cause and appropriate behavioural treatment. Carefully designed pediatric trials are needed before specific herbs, doses or combinations can be recommended for routine sleep care.

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