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Review Article

Ayurveda and the Digital Age: *Swasthavritta* Principles for a Screen-Dominated Lifestyle

Dr. Deepali Manoharrao Deshmukh[1], Dr. Saili Suresh Shelake[2], Dr. Sachinkumar Vishwanath Tale[3]

[1] Assistant Professor, Department of Swasthavritta & Yoga, Dhanwantari Ayurved Medical College and Charitable Hospital, Degloor Road, Udgir, Maharashtra, India.
Email: deepalirtayade76@gmail.com

[2] Assistant Professor, Department of Swasthavritta & Yoga, Dhanwantari Ayurved Medical College and Charitable Hospital, Degloor Road, Udgir, Maharashtra, India.
Email: shelakesaili@gmail.com

[3] HOD & Associate Professor, Department of Swasthavritta & Yoga, Dhanwantari Ayurved Medical College and Charitable Hospital, Degloor Road, Udgir, Maharashtra, India.
Email: sachinkumartale@gmail.com

ABSTRACT:

Background: Digital devices support work, education, healthcare and social connection, but their use can extend sitting, delay sleep, interrupt meals and sustain visual and cognitive demands. An assessment based only on total screen time overlooks these different pathways.

Objective: To examine the relevance of *Swasthavritta* to a screen-dominated lifestyle and develop an evidence-informed interpretation of its principles for contemporary health maintenance.

Methods: A targeted narrative review considered classical Ayurvedic passages, experimental studies, controlled trials and authoritative guidance concerning sleep, sedentary behaviour, visual comfort, eating and attention. Classical concepts and modern mechanisms were interpreted separately, with proposed applications distinguished from interventions supported by direct evidence.

Discussion: *Dinacharya*, *Nidra*, *Vyayama*, *Ahara Vidhi* and *Sadvritta* offer a framework for protecting daily routines, restorative sleep, movement, attentive eating and considered conduct. Contemporary research supports attention to the timing and continuity of device use, not simply its duration. Experimental evidence links evening light-emitting device use with circadian effects, while trials show that changing screen colour alone may not improve sleep. Interrupting prolonged sitting can improve acute metabolic responses. Visual breaks may relieve symptoms, although fixed schedules and blue-blocking lenses should not be presented as universally effective solutions. Digital restriction and app-delivered mindfulness studies illustrate both the potential benefits of changing use and the importance of adherence and context.

Conclusion: The practical contribution of *Swasthavritta* is to organise digital activity around health-maintaining behaviours. This is a contemporary application of classical principles, not a validated treatment package. Its effectiveness should be tested through behavioural, functional and clinical outcomes in clearly defined populations.

Keywords: *Swasthavritta*; digital health; screen time; *Dinacharya*; sleep; sedentary behaviour; digital eye strain; Ayurveda.

Introduction

The health effects of digital life arise partly from what happens around the screen. Work continues into the evening, a meal becomes an opportunity to answer messages, or several hours pass without leaving a chair. These patterns connect a contemporary problem with an enduring preventive question: how should ordinary activities be organised to maintain health? The *Charaka Samhita* identifies preservation of health and alleviation of illness as the purposes of Ayurveda (*Sutra Sthana* 30/26).[1]

Swasthavritta, the Ayurvedic discipline concerned with health maintenance, provides a framework for addressing that question. Its relevance does not depend on claiming that classical authors anticipated smartphones. It lies in examining how daily conduct, food, rest and activity are affected when digital tasks occupy a large part of the day. Modern guidance on physical activity and sedentary behaviour similarly recognises the importance of the pattern of activity across everyday settings.[2]

Digital use nevertheless needs a specific description. An evening spent in distressing online exchanges differs from daytime computer work with regular movement, even if the recorded duration is similar. The purpose of this review is to connect relevant Ayurvedic principles with contemporary evidence while preserving those distinctions. The aim is a workable pattern of digital use that protects health and retains the benefits of access, communication and learning.

Review approach

A targeted narrative search considered PubMed-indexed studies, journal websites, official guidance and accessible classical editions available. Search concepts included screen use, sleep, sedentary behaviour, digital eye strain, distracted eating, notifications, digital restriction, *Swasthavritta* and *Dinacharya*. Primary experiments and controlled trials were prioritised for contemporary causal claims. Classical passages were checked for chapter and verse.

The review focuses mainly on adults, including working adults and students. It does not establish screen-use limits for children or provide a systematic review of digital addiction. No registered protocol, duplicate screening or quantitative pooling was undertaken. The synthesis distinguishes classical descriptions, contemporary findings and the practical applications proposed by the author.

Interpreting *Swasthavritta* in a digital setting

Dinacharya concerns the organisation of daily health-maintaining activities. Applied to digital life, it directs attention to the sequence of the day: when work begins and ends, whether meals receive attention, and whether movement and sleep retain a place in the schedule. This application is more useful when it accommodates work, caregiving and health needs. A routine that repeatedly reduces sleep to satisfy another prescribed activity would defeat its preventive purpose.

The classical discussion of sensory engagement adds a related perspective. *Charaka Samhita*, *Sutra Sthana* 11/37–38 and 43, describes excessive, insufficient and inappropriate contact between the senses and their objects within the account of *Asatmya Indriyartha Samyoga*.[3] This can inform questions about prolonged viewing or repeated stimulation. It does not establish a biochemical explanation of screen-related symptoms or supply a medically validated daily exposure threshold.

The appropriate comparison is therefore functional. Does the pattern of use interfere with recovery, nutrition, movement, attention or relationships? That question can be investigated without assigning each device, application or symptom to a particular *Dosha*. It also prevents a broad traditional concept from becoming a diagnosis for every complaint associated with modern work.

Daily rhythm and restorative sleep

Sleep has a substantial place in the classical account of health. *Charaka Samhita*, *Sutra Sthana* 21/35–38,

discusses *Nidra* and relates appropriate or disturbed sleep to strength, nourishment, cognition and well-being.[4] These passages establish the importance of sleep within the historical framework. The mechanisms by which evening light and interactive content affect sleep require contemporary evidence.

Chang and colleagues provided experimental evidence in a crossover study comparing evening reading on a light-emitting device with reading a printed book. Device exposure affected melatonin, circadian timing, sleep and next-morning alertness under the tested conditions.[5] The result supports attention to evening exposure. It does not mean that every brief interaction has the same effect; duration, light intensity, timing and the individual's circumstances remain relevant to interpretation.

Changing display colour addresses only part of the problem. Duraccio and colleagues randomised 167 young adults to evening smartphone use with Night Shift enabled, use without Night Shift, or no smartphone use during the hour before bed for seven nights. The full sample showed no significant differences in sleep outcomes across groups.[6] This limits claims that a warmer display reliably protects sleep. It also reminds clinicians that bedtime use involves behaviour and time allocation as well as emitted light.

The practical objective is sufficient sleep opportunity and a routine that supports it. The American Academy of Sleep Medicine and Sleep Research Society recommend that adults regularly obtain at least seven hours of sleep, while recognising individual circumstances.[7] A contemporary *Dinacharya* plan can protect a consistent sleep period and reduce nonessential interactions during the transition to bed. For shift workers and caregivers, the plan needs adaptation rather than a universal clock time. The relevant outcome is restorative sleep and daytime functioning, not compliance with an inflexible schedule.

Movement and the design of screen-based work

The classical account of *Vyayama* emphasises activity intended to improve stability and strength, performed in appropriate measure. *Charaka Samhita*, *Sutra Sthana* 7/31–34, describes benefits of exercise and cautions against excess.[8] In a screen-dominated routine, this supports planned activity suited to the person. Brief stretching between tasks can be useful, but it should not be assumed to provide the same training stimulus as sustained aerobic or strengthening activity.

WHO guidance recommends 150–300 minutes of moderate-intensity aerobic activity, or the vigorous-intensity equivalent, each week for adults, together with muscle-strengthening activity on at least two days. It also recommends limiting sedentary time and replacing it with movement.[2] These are complementary goals. A workday may contain a planned exercise session and still include long uninterrupted periods of sitting. An adult screen-hours rule alone cannot identify that pattern or determine whether it meets activity recommendations.

Dunstan and colleagues demonstrated a relevant short-term effect in a crossover trial involving 19 overweight or obese adults. Interrupting sitting with brief walking bouts reduced postprandial glucose and insulin responses compared with uninterrupted sitting.[9] This supports investigating movement breaks as part of sedentary work. Because the experiment measured acute responses, it does not establish that a particular break schedule prevents diabetes or substitutes for regular exercise.

The workstation also affects physical demand. Rempel and colleagues found benefits from a forearm-support intervention combined with ergonomic training among computer operators.[10] The finding supports adapting the work environment rather than attributing discomfort solely to an individual's posture. In practice, equipment arrangement, task duration and opportunities to change position should be reviewed together. A recommendation to “sit correctly” is incomplete when the worker cannot adjust the desk or leave the task.

Sustained near work and eye comfort

Breaks from near work are reasonable to investigate, but the precision of a popular rule should not be mistaken for certainty about its optimal dose. Talens-

Estarelles and colleagues studied reminders based on the 20-20-20 rule in 29 symptomatic computer users. After two weeks, digital eye strain and dry-eye symptoms improved, while ocular surface and tear-film measurements did not. Symptom improvement was not maintained after the reminders stopped.[11] The study supports repeated interruption of near work, with limits concerning duration and objective findings.

The rule can be used as a simple reminder: periodically look away towards a distant object, commonly described as approximately six metres away for 20 seconds every 20 minutes. It should remain a practical aid rather than a guarantee of protection. Persistent symptoms require attention to possible refractive, ocular surface or binocular-vision problems. Their assessment should not be replaced by a screen-time target alone.

Blue-blocking spectacles offer another example of why an intervention needs direct testing. In a double-masked trial of 120 symptomatic computer users, Singh and colleagues found no benefit of blue-blocking lenses over clear lenses for the measured signs or symptoms of eye strain during a computer task.[12] This finding concerns that intervention and setting. It supports discussing expectations accurately and directing attention towards the actual visual task, symptoms and working conditions.

Meals, attention and the organisation of eating

Ahara Vidhi, the classical guidance concerning how food is consumed, offers a clear point of application. *Charaka Samhita*, *Vimana Sthana* 1/24, describes appropriate quantity, pace, setting and attention during eating.[13] A screen-free meal is a contemporary way to protect that attention. It is an adaptation of the principle, rather than an instruction about a technology described in the text.

Modern experimental work supports a role for distraction. Higgs and Woodward compared eating lunch with and without television in 16 young women. Television viewing was associated with less vivid recall of the meal and greater snack intake later that afternoon.[14] The study does not establish the effects of every device or meal setting, nor does it demonstrate long-term weight change. It does show that distraction during eating can affect behaviour after the meal has ended.

A practical plan can therefore protect opportunities to eat without simultaneous work or entertainment. This does not require every family meal to be silent or every timetable identical. It requires enough attention to the food and eating process to avoid treating meals as background activity. For people with irregular work or clinical duties, access to an adequate meal may be the first issue to address before more detailed behavioural advice becomes realistic.

Attention, boundaries and considered conduct

Digital interruption can occur even without active phone use. Stothart and colleagues found that receiving phone notifications disrupted performance on an attention-demanding laboratory task.[15] The finding provides a reason to examine notification settings and expectations of immediate response. It does not establish that ordinary notification exposure causes a psychiatric disorder. The relevant initial question is whether repeated interruption is interfering with the task or with the person's ability to disengage afterwards.

More recent intervention evidence extends beyond a laboratory attention task. Castelo and colleagues tested blocking mobile internet on smartphones for two weeks while allowing calls, messages and internet access on other devices. The trial reported improvements in sustained attention, mental-health measures and subjective well-being. Adherence was a substantial limitation: 119 of 467 participants who committed to the intervention met its prespecified compliance criterion.[16] The result supports studying changes in constant connectivity, while showing why feasibility must be part of the appraisal.

Complete mobile-internet blocking may be impractical for people who depend on it for work, navigation, accessibility or care. More proportionate options include disabling nonessential notifications, defining response periods and protecting focused work or personal time. These are proposed applications whose success should be assessed against the person's responsibilities and outcomes. They should not become another source of blame

when workplace systems require constant availability.

Sadvritta, the Ayurvedic account of considered personal and social conduct, offers a broader ethical context. *Charaka Samhita*, *Sutra Sthana* 8/17, links health-maintaining conduct with thoughtful action and appropriate engagement of the senses and mind.[17] Applying this to online communication can encourage accuracy, respect and awareness of consequences. The translation to digital behaviour is contemporary ethical reasoning; it does not establish that following a conduct code prevents a specific mental-health disorder.

Digital technology can also support health-maintaining practice. Bostock and colleagues randomised 238 employees to a mindfulness app or a wait-list control and reported improvements in well-being and work-related psychological outcomes.[18] The trial supports the potential of a defined digital intervention. It does not establish equivalent benefit from every wellness application or validate an Ayurvedic programme. It does illustrate why the health value of digital use depends on its purpose and implementation as well as its duration.

Translating principles into a workable routine

The most useful clinical starting point is a short account of the actual day. When does device use begin and end? Which tasks are obligatory? How long are sitting periods? Are meals interrupted, and what happens before sleep? This identifies specific points for change. A generic instruction to reduce screen time can miss the late-evening activity that matters most or overlook an adjustable work demand.

Table 1. Classical principles and their proposed contemporary applications

Principle	Relevant classical emphasis	Proposed digital-life application	Boundary of the claim
Dinacharya	Organisation of daily health-maintaining conduct	Protect time for sleep, meals, movement and work transitions	The adapted package requires direct evaluation
Nidra[4]	Appropriate sleep supports health and function	Preserve sleep opportunity and review bedtime device habits	Classical descriptions do not identify melatonin mechanisms
Vyayama[8]	Physical activity in an appropriate measure	Combine planned exercise with interruptions to sitting	Short breaks and exercise fulfil different purposes
Ahara Vidhi[13]	Appropriate pace, quantity and attention during eating	Reduce simultaneous scrolling or work during meals	Attentive eating alone does not establish weight-loss efficacy
Appropriate sensory engagement[3]	Avoid excessive, insufficient or inappropriate use	Review sustained viewing, repetitive stimulation and interruption	The concept does not specify a universal screen-hours threshold
Sadvritta[17]	Thoughtful personal and social conduct	Use considered communication and realistic digital boundaries	Ethical relevance is distinct from proven clinical efficacy

Changes are more likely to be usable when they are attached to existing routines. A movement break can follow a completed task, a meal can become a protected pause, and the end of work can include a deliberate change in notification settings. These are suggested implementation choices, not an experimentally validated dose. Their value should be judged by whether the intended behaviour and outcome improve.

Table 2. An illustrative daily framework for adult screen users

Part of the day	Practical action	Intended purpose	What to review
Beginning the day	Identify necessary digital tasks and protect planned movement	Make device use deliberate within the day's responsibilities	Whether the plan is feasible and followed
Work or study periods	Adjust the workstation, vary position and interrupt prolonged sitting	Reduce sustained physical and visual demands	Comfort, movement opportunities and uninterrupted task duration
Meals	Set aside nonessential scrolling or work	Allow attention to eating	Meal regularity, distraction and practical barriers
Focused work or personal time	Reduce unnecessary alerts and agree realistic response expectations	Limit avoidable interruption	Concentration and impact on essential communication
Transition to sleep	Protect sleep opportunity and reduce nonessential engagement	Support a consistent wind-down routine	Bedtime, sleep duration, perceived rest and daytime function

This framework primarily concerns adults. Children require age-appropriate guidance, family participation and consideration of development and educational use. Adult exercise or sleep recommendations should not be copied into a paediatric plan. Similarly, persistent insomnia, visual symptoms, pain or substantial loss of control over use warrants assessment beyond lifestyle advice.

Research priorities and limitations

An integrated *Swasthavritta* programme should be tested as a defined intervention rather than assumed effective because its components are individually plausible. TIDieR guidance provides a framework for describing an intervention's procedures, provider, delivery, dose and modifications.[19] Researchers should specify which classical principles informed the programme and which actions participants actually performed. This would allow both replication and assessment of adherence.

The outcomes should match the proposed mechanism. Sleep duration and timing address a bedtime intervention; movement and sitting patterns address sedentary behaviour; validated symptom measures and relevant examination address visual complaints. Total screen time can be recorded, but it should not be the only measure. Occupational and recreational use, timing, content and use on other devices may change differently during an intervention.

Trials also need to account for replacement activities. Reducing mobile access may improve outcomes because people sleep, exercise or socialise more, while another person may simply move to a different device. A comparison group, adequate follow-up and transparent reporting of adherence are needed to distinguish these possibilities. Workplace and family constraints should be assessed as determinants of implementation rather than treated only as participant noncompliance.

This review is limited by targeted narrative retrieval and the diversity of exposures and outcomes across the selected studies. Several experiments were small, short or conducted in specific adult populations. Classical principles provide historical and interpretive context; they are not direct evidence for a digital-health intervention. No conclusion about the effectiveness of the complete proposed framework can be drawn from agreement between individual concepts and modern findings.

Discussion

The practical strength of a *Swasthavritta* approach lies in considering the whole routine. A single screen-related behaviour may affect several activities at once: evening work can delay eating and sleep, while an extended online task can interrupt movement. Addressing only one symptom or buying a device accessory may leave the underlying pattern unchanged. A useful assessment therefore connects the complaint with the organisation of the day.

At the same time, different problems require different evidence. Circadian effects cannot be inferred from eye-strain symptoms, and better concentration cannot establish improved metabolic health. The studies reviewed support specific changes under particular conditions. Their findings should guide proportionate, measurable interventions rather than a uniform prescription for all screen users.

Responsibility is also shared. An employee cannot consistently protect recovery time if after-hours responses are required, and a student cannot adjust equipment that is unavailable. Prevention therefore involves task design, access to suitable workspaces and realistic expectations, alongside individual choices. This wider view makes the classical concern with daily conduct more applicable to contemporary life while avoiding an exclusively moral explanation of digital overuse.

Conclusion

Swasthavritta offers a framework for organising digital life around restorative sleep, appropriate movement, attentive eating and considered conduct. Its relevance is strongest when translated into specific actions suited to the person's work and health needs. Modern evidence supports attention to timing, uninterrupted exposure and displaced activities, while discouraging reliance on a single screen-hours target or technological accessory. The combined framework remains a proposed application that requires direct evaluation. Its success should be measured through improved behaviour, comfort, functioning and health, rather than assumed from classical terminology alone.

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