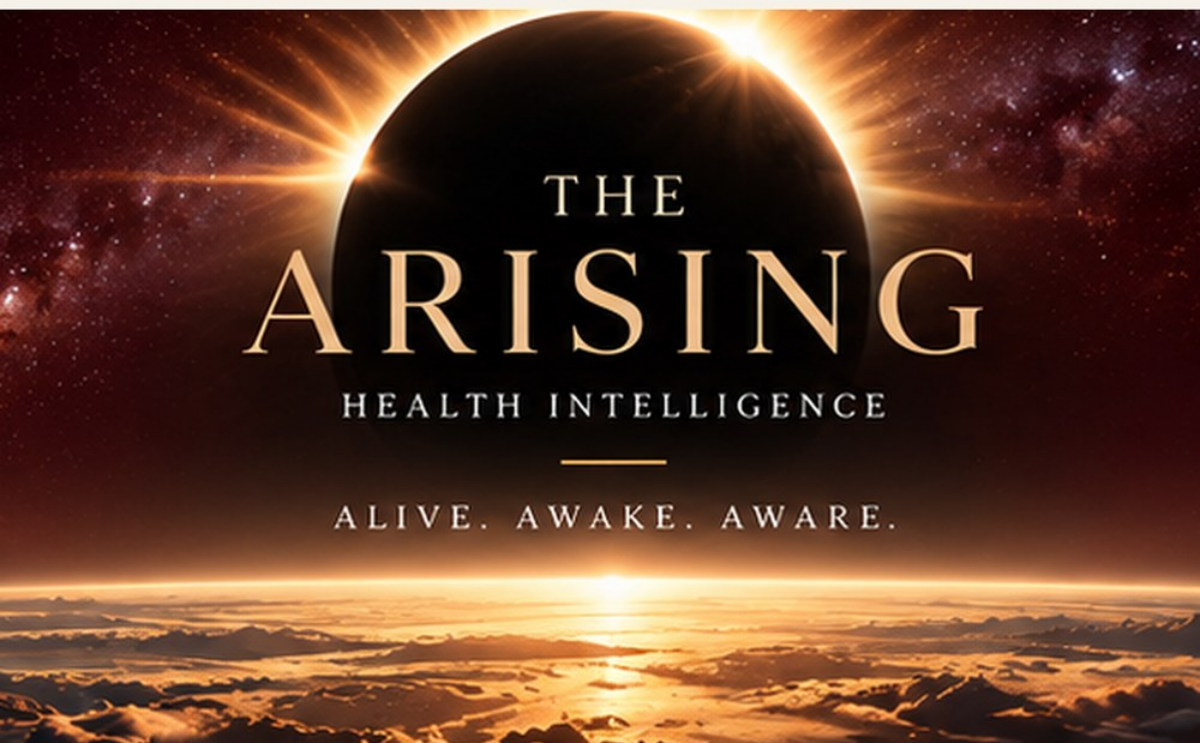
THE ARISING

HEALTH INTELLIGENCE / ARISING HEALTH

LIVING HANDBOOK / SELECTED READINGS

Sleep, in Context

Light, breathing, cognition, and the environment that makes room for rest.



Alive. Awake. Aware.

John Griffin, MD / Arising Health

READING EDITION / OCTOBER 25, 2026

How to read this companion

Four selected long-form stories. Earlier lighting/community-sleep copy retained with its prior verification scope; napping and sleep-ECG records/abstracts rechecked October 25.

Evidence is attached to the question it answers. Human clinical effects, observational associations, animal experiments, cellular measurements and computational proposals are kept distinct. This reading copy is not individual medical advice.

In this booklet

01 Read the connection, not a universal protocol

02 Can the light at home help the aging brain?

03 Modern life is changing the shape of sleep

04 When a nap becomes a clue

05 The heart signal hidden inside a night of sleep

Follow the evidence

Each chapter identifies the sources supporting its factual claims. Direct primary-source links and review limitations appear in the reference section. Study dates are retained even when older work provides context for a newer story.

01 / Read the connection, not a universal protocol

Evidence for this chapter: 1, 2, 3, 4. Source details and direct links appear at the end.

Sleep belongs in a healthspan conversation because it intersects with daily function, the environment and clinical disorders. The studies gathered here examine different questions: a lighting intervention, changing community sleep patterns, napping associations and a prediction model using data from sleep studies.

They should not be combined into one treatment claim. A later bedtime in an observational study does not prove a disease mechanism. A cardiovascular risk prediction does not show that acting on that prediction prevents an event. A small cognitive signal does not establish dementia prevention.

This companion assembles four complete research stories. It is a selected-reading edition, not an exhaustive sleep handbook. Each chapter retains its own study design, source date and limitations.

Use these chapters to identify better questions for an individual clinical conversation. They are not a replacement for evaluation of persistent insomnia, breathing abnormalities during sleep or excessive daytime sleepiness.

02 / Can the light at home help the aging brain?

Evidence for this chapter: 1. Source details and direct links appear at the end.

A small randomized trial offers a signal, with important limits

Light is part of the environment the body responds to every day. In people with mild cognitive impairment, a small randomized trial suggests that tailoring light at home may influence memory and sleep measures. The finding is promising enough to examine carefully, and too preliminary to turn into a dementia-prevention claim.

The study, published in the Journal of Applied Gerontology, enrolled 61 people with mild cognitive impairment. Participants received active or placebo light for 24 weeks. Researchers assessed cognition, sleep, depression and quality of life at baseline and at weeks 13, 25 and 37, including a follow-up after the intervention had ended.

Mild cognitive impairment describes changes in memory or thinking that exceed what is expected with ordinary aging but do not amount to dementia. It is a varied clinical state, and a change on one test does not establish that the underlying course of disease has changed.

The signal in the trial

People assigned to active light improved more on the memory component of the ADAS-Cog assessment than those assigned to placebo; the reported p-value was 0.035. The active group also had greater morning light exposure on the study's circadian measure by week 25.

Several sleep comparisons favored active light. But the values reported in the abstract need careful reading: they appear to describe changes rather than absolute sleep levels. Favoring the intervention can mean less worsening than in the comparison group, rather than clear improvement from the person's own starting point.

For example, the reported change in time awake after initially falling asleep was 2.19 minutes with active light versus 8.23 minutes with placebo. That is not evidence that participants gained eight minutes of sleep, and it is not a measure of dementia prevention.

A useful study is not a finished answer

The sample was small. The abstract does not provide enough detail to establish how clinically meaningful the memory difference was, whether findings persisted after the intervention, or what happened to all the mood and quality-of-life outcomes. Statistical significance alone cannot answer those questions.

This is also not a specification for buying a lamp. A tailored intervention involves timing and exposure, and its results should not be transferred automatically to any product sold as light therapy.

What deserves attention next

The important possibility is that the surroundings in which a person lives may be part of supportive care. Larger trials should test durability, meaningful daily function and the details needed to reproduce the intervention. For now, this is a human research signal about light, sleep and cognition–not proof of disease modification.

03 / Modern life is changing the shape of sleep

Evidence for this chapter: 2. Source details and direct links appear at the end.

A long study in Argentina reveals a shift that screens alone cannot explain

Over 12 years, researchers watched sleep change in Toba/Qom communities in northern Argentina. Bedtimes and sleep timing moved later, while rural participants slept less. The finding invites a broader question than whether a phone should stay outside the bedroom: what kind of day makes room for rest?

The peer-reviewed study in Current Biology followed communities between 2012 and 2024. Researchers analyzed more than 12,000 sleep events, recorded with actigraphy, from 156 participants measured at different times. Rural groups gained electricity during the study period; semi-urban groups had access earlier.

Actigraphy estimates sleep from movement. It can follow patterns in daily life, but it is not the same as recording every stage of sleep in a laboratory. The study's strength was its long observation of changing communities rather than a comparison made at one moment.

What changed

Both groups showed delays of close to one hour in sleep timing. Rural participants lost about 35 minutes of sleep over a decade.

Electricity, internet access and smartphones arrived across the observation period. It would be easy to assign the whole change to artificial light or devices. The researchers' analyses did not support that simple explanation: those factors alone could not fully account for the shift over time.

The authors suggest the results may also be consistent with wider processes of modernization and acculturation. That is an interpretation of the pattern, not proof that a particular social change caused it. The study cannot separate every influence on the way a community organizes its days.

The environment around a habit

Sleep is often discussed as though it were entirely an individual decision. This research broadens the frame. Technology enters a life already shaped by work, social expectations and daily routines. The paper does not establish which of those influences mattered most here, but it cautions against reducing a long change to one device.

These were specific communities, not a representative sample of all populations. Observational data cannot randomly assign the many changes occurring around people. The study also did not test a sleep intervention, measure lifespan extension or prove that a given bedtime produces better health.

What is worth carrying forward

The useful insight is that sleep patterns can shift noticeably within a decade. Understanding the surrounding environment may help future research ask better questions about protecting rest.

That is also an invitation for reflection: not simply whether sleep is valued, but whether the day has been arranged to allow it. The

difference between intention and opportunity may be one of the most practical questions in healthspan.

04 / When a nap becomes a clue

Evidence for this chapter: 3. Source details and direct links appear at the end.

A planned rest and an unintended lapse into sleep can look similar from across a room. They may tell different stories. A longitudinal study of older adults examined that distinction rather than treating all daytime napping as one habit.

The analysis followed 995 participants from the National Health and Aging Trends Study who were free of possible or probable dementia at baseline. Napping was self-reported in 2013, with follow-up extending through 2023. Dementia classification used a validated algorithm rather than the same kind of specialist diagnostic workup for every participant.

What was associated with later outcomes

Compared with non-nappers, frequent nappers had an adjusted hazard ratio of 1.48 for incident possible or probable dementia. Unintentional napping had a hazard ratio of 1.39. Both confidence intervals excluded one.

The study did not find the same association for infrequent or intentional napping. Duration results were not a simple “longer is worse” pattern, and one estimate weakened after additional adjustment for sleep variables.

These are relative associations. They do not provide a person’s absolute probability of dementia, and they do not measure the benefit of changing a napping habit.

Cause, consequence or shared signal?

Sleepiness can be influenced by multiple conditions, medicines and changes in health. Early disease may also alter sleep before a diagnosis becomes apparent. Statistical adjustment helps address measured differences but cannot settle every possibility of reverse causation or confounding.

No one in this analysis was assigned to stop napping. It therefore cannot tell us that resisting sleep would prevent dementia. That inference would turn a potentially useful clue into unsupported advice.

What to carry forward

The clinically sensible editorial question is whether a new pattern of unintended daytime sleep merits discussion in the context of the person's wider health. It is not a reason to become fearful of an intentional rest or to self-diagnose a neurological disorder.

For a sleep platform, the distinctions are valuable: intention, timing, frequency, night-time sleep and daytime function should not disappear into a single "nap minutes" score. A wearable's measurement can support a conversation without determining its answer.

The hopeful direction is better recognition of meaningful change. Observational research can help identify what to ask next, while intervention trials determine whether changing that factor improves health.

05 / The heart signal hidden inside a night of sleep

Evidence for this chapter: 4. Source details and direct links appear at the end.

A sleep study records more than breathing. It often contains a single-lead electrocardiogram–a stream of cardiac information collected while someone is asleep. A new modeling study asks

whether that already-recorded signal can reveal more about future cardiovascular risk.

This is an appealing idea because it begins with data already obtained for another clinical purpose. But using an existing measurement more efficiently is not the same as proving that an extra risk score improves care.

How the model was tested

Researchers fine-tuned a deep neural network on overnight ECG and sleep-stage data from 15,809 Massachusetts General Hospital patients. They then evaluated it in separate cohorts at Emory, with 9,810 patients, and Beth Israel Deaconess, with 12,576.

The model's output was associated with later atrial fibrillation, stroke, heart failure and mortality after adjustment for several conventional risk factors and sleep characteristics. For example, a one-standard-deviation increase in the output was associated with atrial-fibrillation hazard ratios of 2.03 and 2.72 in the two external cohorts.

Those ratios describe relationships between a score and later outcomes. They are not reductions in risk caused by using AI. Not every endpoint was equally consistent: the myocardial-infarction estimate in one validation cohort had a confidence interval crossing one.

Prediction is only part of the job

External validation is valuable, but clinical usefulness also requires reliable calibration, appropriate thresholds and a plan for the person receiving a high-risk result. A model can identify a statistical pattern without telling a clinician which action would improve that person's health.

The study used outcomes derived from health records, including diagnostic codes. Differences in coding, referral patterns and the populations sent for sleep testing can affect generalizability. This is

not evidence that every person needs a sleep study to screen for heart disease.

What would make the next study stronger

The next useful comparison would test what changes when clinicians receive the model's result: appropriate evaluation, treatment decisions, patient experience, unnecessary testing and ultimately clinical outcomes. The burden of a false alarm belongs beside the possible benefit of earlier recognition.

The opportunity is not merely to collect more data. It is to discover whether information already present can answer a better question. That is a promising role for AI–as long as the pathway from prediction to useful care remains visible.

Sources & review scope

1. Home-Based Tailored Light Therapy for Sleep, Mood, and Cognitive Outcomes in Mild Cognitive Impairment
July 29, 2026
Small randomized trial
PubMed · PMID 42527889
Retained from the earlier October 25 source-checked reading packet. No new full-text appraisal in this extension.

2. Longitudinal study of Toba/Qom communities reveals delay and shortening of sleep in real time
October 15, 2026
Longitudinal observational study
PubMed · PMID 42880258
Retained from the earlier October 25 source-checked reading packet. No new full-text appraisal in this extension.

3. Napping characteristics and incident dementia: National Health and Aging Trends Study
September 5, 2026
Prospective observational association
PubMed · PMID 42638356
Primary record and complete abstract checked October 25, 2026; full-text/supplement appraisal not completed in this pass.

4. Prediction of cardiovascular outcomes using electrocardiography from overnight polysomnography
October 9, 2026
Retrospective prediction-model development and external validation
PubMed · PMID 42852996
Primary record and complete abstract checked October 25, 2026; full-text/supplement appraisal not completed in this pass.

Illustrations are conceptual editorial art, not photographs of study results or anatomical diagrams. The Horizon and supporting celestial themes are reused from the approved Arising visual collection.