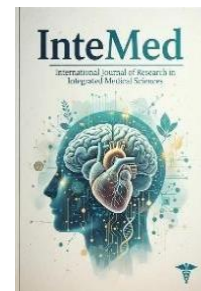




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Review Article

Kshudha Adharaniya Vega: An Updated Critical Narrative Review of Hunger Suppression, Meal Timing, Chrononutrition and Structured Fasting

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Abstract

Background

Ayurveda describes *Kshudha* (hunger) among the naturally occurring physiological urges that should not be voluntarily suppressed (*Adharaniya Vega*). Classical texts associate suppression of an arisen hunger urge (*Kshudha Vega Dharana*) with manifestations including *Karshya* (emaciation), *Daurbalya* (weakness), *Vaivarnya* (alteration in normal complexion), *Angamarda* (bodily discomfort or aching), *Aruchi* (aversion towards food) and *Bhrama* (giddiness). Contemporary lifestyles frequently involve postponement of meals because of occupational schedules, commuting, shift work and weight-control practices. At the same time, structured fasting and time-restricted eating (TRE) have emerged as areas of metabolic research, making it necessary to distinguish deliberate fasting from habitual suppression of physiological hunger.

Objective

To critically reassess the Ayurvedic concept of *Kshudha Adharaniya Vega* in relation to contemporary evidence concerning hunger physiology, meal omission, meal timing, chrononutrition and structured fasting, while avoiding direct equivalence between Ayurvedic constructs and individual biomedical mechanisms.

Methods

A critical narrative review was conducted using verse-level examination of relevant passages from *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya*. Contemporary biomedical literature was examined through PubMed/MEDLINE and bibliographic verification from journal sources up to 17 August 2026. Search concepts included hunger, appetite regulation, ghrelin, meal skipping, breakfast omission, delayed eating, meal timing, chrononutrition, circadian eating, intermittent fasting and time-restricted eating. Human randomized controlled trials, systematic reviews and meta-analyses were prioritized. Studies of planned fasting were treated as comparative evidence rather than direct tests of *Kshudha Vega Dharana*.

Results

Classical Ayurvedic sources consistently regard hunger as a physiologically meaningful urge whose inappropriate suppression may produce adverse symptoms, although descriptions vary among texts. Modern physiology confirms that subjective hunger emerges from integrated neural, gastrointestinal, endocrine, metabolic and learned signals; preprandial ghrelin elevation is one measurable component but cannot be considered equivalent to *Kshudha*. Controlled studies indicate that meal omission and late eating can modify glucose regulation, appetite

and energy metabolism, but findings are context-dependent. Randomized evidence does not establish that every skipped meal is harmful. Similarly, TRE trials are heterogeneous: some early-TRE interventions have improved selected metabolic outcomes, whereas other randomized trials have not demonstrated clinically important superiority over conventional meal timing. Recent meta-analyses suggest that timing—particularly earlier rather than later eating—may influence metabolic outcomes.

Conclusion

Current biomedical evidence does not directly validate the classical doctrine of *Kshudha Vega Dharana*, because modern studies rarely measure deliberate suppression of an already manifested hunger urge. Nevertheless, contemporary hunger physiology and chrononutrition provide biologically plausible domains in which the classical observation can be investigated. *Kshudha Vega Dharana* should not be regarded as synonymous with planned fasting or TRE. Its contemporary relevance may instead lie in avoiding habitual, contextually inappropriate disregard of genuine physiological hunger and chronically disordered meal timing. Prospective studies using a validated operational definition of hunger suppression are required.

Keywords: *Kshudha*; *Adharaniya Vega*; *Vega Dharana*; hunger; appetite; meal timing; chrononutrition; meal skipping; fasting; time-restricted eating; Ayurveda.

1. Introduction

Ayurveda places preservation of health alongside treatment of disease and consequently gives considerable importance to food, sleep, activity, daily routine and appropriate responses to naturally generated bodily urges. Within this preventive framework, *Vega* refers to physiological impulses that arise naturally and require an appropriate response. Classical Ayurvedic literature distinguishes urges that may be consciously regulated from *Adharaniya Vegas*, which should not be forcibly suppressed.

Kshudha, broadly translated as hunger, is included among these non-suppressible urges. *Charaka Samhita*, in *Naveganadharaniya Adhyaya*, describes a characteristic group of manifestations following suppression of hunger and recommends appropriately unctuous, warm and light food for its management.[1] Related descriptions occur in *Sushruta Samhita* and *Ashtanga Hridaya*. [2,3]

The subject acquires particular contemporary relevance because human eating is increasingly governed by factors other than immediate physiological hunger. Work schedules, prolonged commuting, shift duties, social circumstances, dieting, intentional caloric restriction and fixed eating windows can all alter the interval between the appearance of hunger and food consumption. Conversely, contemporary metabolic research has shown that periods without food are not necessarily harmful. Intermittent fasting and TRE can, under some circumstances, produce favorable metabolic outcomes.[13-18]

This creates a conceptual problem for simplistic interpretations of *Kshudha Adharaniya Vega*. If every period in which hunger is present without immediate food intake is defined as pathological *Vega Dharana*, beneficial or neutral findings from structured fasting would appear contradictory. Ayurveda itself also contains therapeutic strategies such as *Langhana*, emphasizing that reduction or restriction of intake may be appropriate under selected circumstances.[1]

A previous review by Shinde and Randive examined *Kshudha Vega Dharana* primarily from a classical Ayurvedic perspective.[4] Since that publication in 2019, substantially more randomized and synthesized evidence on meal timing, chrononutrition and TRE has accumulated. The present article is therefore intended as a **substantially updated critical reappraisal**, rather than a repetition of the earlier review.

The central question is not whether contemporary biomedicine can be used to “prove” a classical Ayurvedic proposition. Such an approach risks forcing conceptual equivalences that neither discipline supports. The more scientifically useful questions are:

1. What precisely do the classical texts describe as *Kshudha Vega Dharana*?
2. Which aspects of contemporary hunger physiology are conceptually relevant to that description?
3. What does controlled evidence show about meal omission and meal timing?
4. How should habitual suppression of hunger be distinguished from structured fasting?
5. How can the classical concept be transformed into a testable behavioral-health hypothesis?

2. Aim and Objectives

2.1 Aim

To critically evaluate the Ayurvedic concept of *Kshudha Adharaniya Vega* in relation to contemporary scientific understanding of hunger, meal timing and fasting.

2.2 Objectives

The specific objectives were:

1. To examine the classical description of *Kshudha* as an *Adharaniya Vega*.
2. To compare descriptions of hunger suppression across major Ayurvedic texts.
3. To critically interpret the manifestations attributed to *Kshudha Vega Dharana* without assigning unsupported biomedical diagnoses.
4. To review contemporary physiological evidence concerning hunger and appetite regulation.
5. To examine randomized and synthesized evidence concerning meal omission and delayed eating.
6. To review evidence concerning chrononutrition and TRE.
7. To distinguish habitual or inappropriate suppression of hunger from planned dietary restriction and therapeutic fasting.
8. To identify limitations in the existing evidence.
9. To propose an operational framework for future clinical research.

3. Materials and Methods

3.1 Review design

This study was designed as a **critical narrative review**. It was not conducted as a systematic review or meta-analysis, and therefore no claim of exhaustive literature retrieval is made.

The purpose was to integrate classical Ayurvedic descriptions with carefully selected contemporary human evidence while explicitly examining contradictions, limitations and problems of interpretation.

3.2 Classical literature

Relevant passages were examined from:

- *Charaka Samhita*, Sutrasthana, particularly *Naveganadharaniya Adhyaya* and the discussion of *Langhana*;

- *Sushruta Samhita*, Uttaratanttra, *Udavarta Pratishedha Adhyaya*; and
- *Ashtanga Hridaya*, Sutrasthana, *Roganutpadaniya Adhyaya*. [1-3]

Greater importance was given to the wording of the primary classical passages than to retrospective biomedical interpretations of those passages.

3.3 Contemporary literature

A focused search of PubMed/MEDLINE was supplemented by bibliographic verification from primary journal sources. Literature available up to **17 August 2026** was considered.

Search concepts included combinations of:

- hunger;
- appetite regulation;
- ghrelin;
- meal initiation;
- meal skipping;
- breakfast omission;
- delayed eating;
- late eating;
- meal timing;
- chrononutrition;
- circadian eating;
- fasting;
- intermittent fasting;
- time-restricted eating; and
- early time-restricted eating.

Human randomized controlled trials, systematic reviews and meta-analyses were given priority. Mechanistic studies were included when necessary to clarify physiological principles.

3.4 Interpretive approach

Modern studies of meal skipping or fasting were **not regarded as direct tests of *Kshudha Vega Dharana***, because most do not determine:

- whether substantial subjective hunger had arisen;
- whether hunger was consciously suppressed;
- how intensely hunger was perceived;
- for how long the urge was disregarded; or
- whether the behavior was habitual, involuntary or therapeutically planned.

Studies of structured fasting were therefore used mainly to test the proposition that all periods without eating can be treated as physiologically equivalent.

No new pooled statistical analysis or formal certainty-of-evidence grading was performed.

4. Classical Concept of Kshudha as an Adharaniya Vega

In *Charaka Samhita, Sutrasthana 7/20*, suppression of hunger is described as follows:

कार्श्यदौर्बल्यवैवर्ण्यमङ्गमर्दोऽरुचिर्भ्रमः।
क्षुद्रेगनिग्रहात्तत्र सिग्धोष्णं लघु भोजनम्॥

The manifestations described include:

- *Karshya* — emaciation or loss of body mass;
- *Daurbalya* — weakness;
- *Vaivarnya* — alteration in normal complexion or appearance;
- *Angamarda* — generalized bodily discomfort or aching;
- *Aruchi* — aversion towards food or impaired desire to eat; and
- *Bhrama* — giddiness.[1]

The recommended response is *Snigdha, Ushna, Laghu Bhojana*: appropriately unctuous, warm and relatively light/easily manageable food.[1]

Sushruta Samhita, Uttaratanttra 55/16, also describes adverse manifestations associated with suppression of hunger, including *Tandra, Angamarda, Aruchi* and *Vibhrama*, together with an adverse effect on vision described in the verse. The management described later in the chapter (55/34) again emphasizes a small quantity of warm, unctuous food.[2]

Ashtanga Hridaya, in *Roganutpadaniya Adhyaya*, similarly describes manifestations including *Angabhanga, Aruchi, Glani, Karshya, Shula* and *Bhrama*, followed by advice concerning light, warm, unctuous and limited food.[3]

The terminology is not completely identical across the three texts. This variation is important. It suggests a family of clinical observations rather than a standardized biomedical syndrome.

The consistent underlying proposition is narrower: **an arisen physiological hunger urge should not be repeatedly or inappropriately obstructed.**

5. What Does “Suppression of Hunger” Actually Mean?

A major methodological problem in studying this concept is the tendency to equate *Kshudha Vega Dharana* with “not eating.”

These are not necessarily synonymous.

A person may go without food because:

- hunger has not yet arisen;
- a structured fasting intervention is being followed;
- the individual is accustomed to a particular eating window;
- food is unavailable;
- illness has reduced appetite;
- occupational circumstances prevent eating; or
- hunger is consciously ignored despite becoming strong and persistent.

Only the last situations most directly resemble the literal behavioral concept of suppression of an already manifested urge.

For contemporary research purposes, *Kshudha Vega Dharana* may therefore be provisionally conceptualized as:

A recurrent pattern in which a subjectively meaningful physiological hunger signal has arisen and food intake is deliberately or circumstantially postponed despite that signal, outside a clearly defined therapeutic or nutritionally planned context.

This is proposed as a **research construct**, not as an established diagnostic definition.

No validated threshold currently exists for the required intensity of hunger, duration of postponement or frequency of episodes. These variables should therefore be measured rather than assumed.

6. Critical Reinterpretation of the Classical Manifestations

The classical symptoms should not be converted directly into modern diagnoses.

6.1 Karshya

Sustained intake below physiological requirements can produce weight and tissue loss. This provides general biological plausibility for associating repeated inadequate intake with *Karshya*.

However, occasional postponement or omission of a meal does not necessarily result in emaciation. The classical observation is more plausibly relevant to recurrent behavior that ultimately compromises adequate energy or nutrient intake.

Accordingly:

Karshya should not be interpreted as evidence that an isolated episode of hunger suppression causes weight loss.

6.2 Daurbalya and Glani

Weakness and fatigue can accompany inadequate food intake, but they are nonspecific symptoms. Sleep deprivation, dehydration, anaemia, infection, endocrine disorders, medication and numerous other conditions may produce similar complaints.

The presence of *Daurbalya* in a classical description therefore cannot identify a unique metabolic pathway.

6.3 Vaivarnya

Vaivarnya is commonly interpreted as alteration of normal complexion or appearance. Attempts to equate this term with a specific nutritional deficiency, anaemia or dermatological disorder are not justified by the classical verse alone.

6.4 Angamarda and Angabhanga

These expressions refer broadly to bodily discomfort, aching or a sense of physical distress. They remain clinically nonspecific and cannot presently be assigned to a single biochemical consequence of fasting.

6.5 Aruchi

Aruchi is noteworthy because the symptom appears paradoxical: repeated disregard of hunger is followed by impaired desire for food.

Contemporary appetite is influenced by internal energy signals, gastrointestinal signalling, habitual meal timing, circadian patterns, environmental cues and reward-related processes. It is therefore plausible that repeated modification of eating schedules could alter subjective appetite patterns.

Nevertheless, no current study demonstrates that classical *Aruchi* following *Kshudha Vega Dharana* corresponds to a particular appetite hormone.

6.6 Bhrama

Giddiness may occur during prolonged food deprivation in some individuals, but *Bhrama* should not automatically be translated as “hypoglycaemia.”

Dizziness has many possible causes. Recurrent or clinically significant episodes require appropriate

investigation rather than retrospective attribution to *Vega Dharana* alone.

7. Modern Physiology of Hunger: A Conceptual Parallel, Not an Equivalence

Contemporary physiology treats food intake as the product of interacting central and peripheral systems. Neural circuits integrate information concerning nutrient availability, gastrointestinal activity, adiposity and hormonal signals, while sensory, reward-related, learned and environmental factors also influence eating behavior.[5]

Ghrelin is one extensively studied component of this system.

Cummings and colleagues demonstrated that circulating ghrelin concentrations rise before habitual meals, supporting a possible role in meal initiation.[6] In a subsequent experiment in which participants initiated meals voluntarily without ordinary food- or time-related cues, plasma ghrelin concentrations were associated with subjective hunger and meal initiation.[7]

These observations are relevant because they establish that hunger is not merely an abstract preference: subjective appetite can accompany measurable physiological changes.

They do **not** justify the equation:

Kshudha = ghrelin.

Ghrelin represents one signal within a much larger appetite-regulatory system. Classical *Kshudha*, meanwhile, is a clinical-experiential construct situated within Ayurvedic physiology.

The scientifically defensible connection is therefore one of **conceptual plausibility**:

Both frameworks recognize hunger as a meaningful physiological state, but they define and measure that state differently.

8. Meal Omission: What Does Contemporary Evidence Actually Show?

Meal skipping is frequently used as an approximate modern analogue of hunger suppression. This comparison must be made cautiously.

8.1 Experimental breakfast omission

Ogata and colleagues investigated six days of breakfast omission in healthy young Japanese men. Breakfast skipping altered daily glucose profiles,

while 24-hour energy expenditure was not significantly changed under the controlled conditions of the study.[8]

Nas and colleagues compared breakfast skipping with dinner skipping in a randomized crossover design and identified differences in subsequent metabolic responses, including less favorable postprandial glucose-related responses after breakfast omission.[9]

These studies demonstrate that **the timing of meal omission can alter acute physiological responses**.

They do not establish that a skipped meal inevitably causes disease.

8.2 Evidence synthesis

Bonnet and colleagues conducted a systematic review and meta-analysis of randomized trials investigating breakfast skipping. Seven trials involving 425 participants were included.[10]

Breakfast omission was associated with a modest short-term decrease in body weight but also an increase in LDL cholesterol. Several other measured cardiometabolic outcomes, including fasting glucose, insulin and blood pressure, did not show consistent significant differences.[10]

This mixed evidence is important because observational studies frequently associate breakfast skipping with unfavorable health profiles, yet observational associations can reflect differences in sleep, diet quality, socioeconomic conditions, smoking, physical activity and other behaviors.

The stronger conclusion is therefore:

Meal omission produces context-dependent physiological effects; randomized evidence does not support the universal statement that every skipped meal is harmful.

This conclusion substantially limits any attempt to use breakfast-skipping research as direct “proof” of *Kshudha Adharaniya Vega*.

9. Meal Timing and Chrononutrition

Increasing evidence suggests that metabolic responses depend not only on food composition and quantity but also on **when food is consumed**.

9.1 Late eating

Gu and colleagues compared an earlier dinner with a late dinner in a randomized crossover trial involving healthy adults. The late meal produced less favorable overnight glucose handling and altered lipid-related metabolic responses.[11]

Vujović and colleagues subsequently investigated early versus late isocaloric eating under controlled conditions in adults with overweight or obesity. Late eating increased subjective hunger, increased the ghrelin-to-leptin ratio, decreased waking energy expenditure and altered molecular pathways in adipose tissue.[12]

These studies demonstrate that meal timing can influence measurable metabolic and appetitive processes even when energy intake is controlled.

However, both represent controlled experimental conditions and relatively limited study populations. Their findings should not be generalized into the claim that every late meal is clinically harmful.

9.2 Evidence from randomized trials collectively

A 2024 systematic review and meta-analysis by Liu and colleagues included 29 randomized clinical trials and 2,485 participants examining meal-timing strategies lasting at least 12 weeks.[16]

TRE, lower meal frequency and earlier caloric distribution were associated with modest improvements in selected anthropometric outcomes. However, intervention effects were generally modest and evidence was heterogeneous.[16]

Chrononutrition therefore provides one of the more credible contemporary parallels with the Ayurvedic emphasis on appropriate timing of food intake.

Nevertheless:

Chrononutrition does not constitute proof of Ayurvedic concepts such as Kshudha or Agni.

It demonstrates independently that temporal organization of eating can have physiological significance.

10. The Central Distinction: Kshudha Vega Dharana Versus Structured Fasting

The most important conceptual question is whether deliberately fasting despite hunger should automatically be classified as *Kshudha Vega Dharana*.

The available evidence argues against such a simple equivalence.

10.1 Ayurveda itself permits context-dependent restriction

Ayurvedic therapeutics includes *Langhana*, a broader group of reducing or lightening approaches selected according to clinical context.[1]

Accordingly, an interpretation stating that Ayurveda universally prohibits remaining without food whenever hunger is experienced would be difficult to reconcile even with the classical tradition itself.

10.2 Early time-restricted eating

Sutton and colleagues conducted a small controlled proof-of-concept crossover study in men with prediabetes. Participants completed an early time-restricted feeding schedule with food consumed within a six-hour period ending in the afternoon. Despite the absence of weight loss, improvements were reported in insulin sensitivity, β -cell responsiveness, blood pressure and oxidative-stress-related measures.[13]

The study was small, and its findings should not be generalized to all individuals or all fasting protocols.

Nevertheless, it establishes an important principle:

A prolonged daily fasting interval can occur within an intervention associated with favorable metabolic changes.

10.3 Not all TRE trials show superiority

Evidence in favor of fasting interventions is not uniform.

The TREAT randomized clinical trial included 116 adults with overweight or obesity and compared a 16:8 TRE schedule with consistent meal timing. TRE was not significantly superior for weight loss or several cardiometabolic outcomes under the trial conditions.[14]

By contrast, Jamshed and colleagues studied early TRE combined with energy restriction in adults with obesity. Over 14 weeks, early TRE produced greater weight loss than the comparison condition, although the difference in body-fat loss—one of the prespecified outcomes—was not significant.[15]

These differing results demonstrate that “TRE” is not a single physiological exposure. Outcomes may depend on:

- timing of the eating window;

- duration of intervention;
- energy intake;
- baseline metabolic health;
- adherence;
- sleep timing;
- individual chronotype; and
- comparison diet.

10.4 Higher-level evidence

An umbrella review and network meta-analysis published in 2024 found that several intermittent-fasting approaches can improve selected metabolic outcomes, while magnitude and certainty vary according to intervention and outcome.[17]

A 2026 systematic review and network meta-analysis focusing on the timing and duration of TRE similarly reported improvements in several metabolic outcomes and suggested that **earlier TRE generally performed more favorably than late TRE**. The optimal duration of the eating window was less consistent.[18]

Collectively, these findings make it scientifically inappropriate to regard all fasting as pathological suppression of hunger.

A more defensible distinction is:

Kshudha Vega Dharana concerns inappropriate or habitual suppression of an arisen physiological hunger signal, whereas structured fasting is a deliberately organized dietary exposure whose effects depend on timing, nutritional adequacy, metabolic context and therapeutic purpose.

The two can overlap behaviorally, but they should not be assumed to be biologically identical.

11. Does Respecting Hunger Mean Eating Immediately Whenever One Wants Food?

No.

The opposite oversimplification would be to interpret *Adharaniya Kshudha* as a recommendation to eat whenever any desire for food appears.

Subjective desire to eat can arise from:

- homeostatic hunger;
- learned meal timing;
- sensory exposure to food;
- reward-related appetite;

- emotional states;
- social cues; and
- habitual eating behavior.[5]

Ayurvedic dietary reasoning likewise considers digestive capacity, quantity, previous food intake and appropriateness of food rather than advocating unrestricted intake.

The clinically relevant interpretation is therefore not:

“Every desire for food must immediately be satisfied.”

A more cautious formulation is:

Persistent and meaningful physiological hunger should not be chronically overridden in a manner that results in nutritional inadequacy, symptomatic distress or persistently disorganized eating patterns.

12. Comparative Interpretive Framework

Ayurvedic concept or observation	Classical context	Contemporary field that may be investigated	Current evidential status
<i>Kshudha</i>	Physiological urge for food	Subjective hunger, homeostatic appetite, meal-initiation signalling	Conceptual parallel; no direct equivalence
<i>Kshudha Vega Dharana</i>	Suppression of arisen hunger	Recurrent postponement of eating despite measurable hunger	Direct evidence largely absent
<i>Karshya</i>	Loss of body mass/emaciation	Chronic inadequate energy intake, body-mass change	Biologically plausible but nonspecific
<i>Daurbalya/Glani</i>	Weakness/fatigue	Effects of inadequate intake or prolonged fasting	Nonspecific

<i>Aruchi</i>	Reduced desire or aversion toward food	Appetite adaptation and altered eating cues	Hypothesis-generating
<i>Bhrama</i>	Giddiness	Symptoms during prolonged food deprivation in susceptible individuals	Nonspecific; not synonymous with hypoglycemia
Appropriate food timing	Food in accordance with physiological readiness	Chrononutrition and circadian meal timing	Supported as a modern research field
<i>Langhana</i>	Context-dependent therapeutic reduction/lightening	Structured energy restriction or fasting as broad comparator	Conceptually distinct; not a direct equivalence
TRE	No direct classical equivalent established	Defined daily eating/fasting windows	Human evidence heterogeneous
Early versus late eating	No one-to-one classical translation	Circadian timing of energy intake	Increasing experimental evidence

This framework deliberately avoids translating one knowledge system into the terminology of the other.

13. Contemporary Clinical Relevance

The practical value of *Kshudha Vega Dharana* may lie less in diagnosing a specific disease and more in improving **behavioral and dietary history-taking**.

Clinicians and researchers may consider asking:

- Does the individual regularly experience substantial hunger but postpone food for prolonged periods?
- How often does this occur?
- Is postponement voluntary or caused by work, travel or lack of access to food?
- Does daytime meal postponement lead to disproportionately large evening intake?

- Does the individual suppress hunger specifically for weight control?
- Is the eating restriction structured and nutritionally planned or irregular?
- Do recurrent episodes coincide with weakness, giddiness or impaired functioning?
- Has there been unintended weight loss or progressive loss of appetite?
- How regular are sleep and wake schedules?
- At what times are the largest meals consumed?

These questions may identify clinically relevant patterns even without using *Vega Dharana* as a biomedical diagnosis.

At the same time, attribution must remain cautious.

Persistent excessive hunger, prolonged loss of appetite, recurrent dizziness, weakness or unintended weight loss may result from numerous medical, nutritional or psychological conditions and warrant appropriate clinical evaluation.

Vega Dharana should therefore not be used as an explanation that prevents investigation of other causes.

14. What Modern Science Supports—and What It Does Not

A critical review must distinguish several levels of inference.

14.1 Reasonably supported

Modern evidence supports the propositions that:

1. hunger is associated with measurable and coordinated physiological signalling;
2. appetite cannot be reduced to a single hormone;
3. meal timing can influence metabolic responses;
4. late eating can alter appetite and glucose-related physiology under controlled experimental conditions;
5. meal omission can produce different metabolic consequences depending on timing and context; and
6. structured fasting can be metabolically beneficial, neutral or less effective depending on the intervention and population.[5-18]

14.2 Plausible but not directly demonstrated

It is biologically plausible that recurrent postponement of food despite meaningful hunger could influence:

- subjective energy and well-being;
- later food intake;
- appetite patterns; and
- metabolic responses.

However, these outcomes have not been adequately tested using a validated definition of *Kshudha Vega Dharana*.

14.3 Not established

Present evidence does **not** establish that:

- *Kshudha* is identical to ghrelin;
- *Bhrama* represents hypoglycaemia;
- *Daurbalya* represents any particular biochemical deficiency;
- *Agni* is equivalent to metabolic rate or circadian metabolism;
- every skipped meal is harmful;
- every episode of hunger must immediately be followed by food;
- TRE represents pathological *Vega Dharana*; or
- modern studies have “scientifically proven” the classical Ayurvedic doctrine.

These distinctions are essential if integrative Ayurveda research is to remain scientifically credible.

15. Limitations of the Current Evidence

15.1 No standardized definition of *Kshudha Vega Dharana*

There is currently no validated instrument that measures the frequency, intensity or duration of deliberately suppressed hunger according to the Ayurvedic construct.

15.2 Meal skipping is an imperfect surrogate

Biomedical studies usually record whether a meal was eaten. They rarely establish whether meaningful hunger had already arisen before the meal was omitted.

A participant skipping breakfast without hunger may therefore be classified identically to someone experiencing intense hunger and deliberately ignoring it.

From an Ayurvedic perspective, these exposures may not be equivalent.

15.3 Individual hunger patterns differ

Subjective hunger depends on habitual meal timing, activity, sleep, diet composition, energy requirements, metabolic health and learned cues.

A fixed number of hours without food cannot therefore be assumed to represent an identical physiological state in every person.

15.4 Modern studies examine heterogeneous exposures

“Meal skipping,” “intermittent fasting” and “TRE” encompass markedly different interventions.

Some involve caloric restriction, whereas others maintain energy intake. Eating windows occur at different times of day, and participant populations differ in age, adiposity and metabolic health.

15.5 Much mechanistic evidence is short-term

Controlled feeding experiments are valuable for establishing acute physiological effects but may have limited ability to predict long-term clinical outcomes.

15.6 Classical outcomes are broad and nonspecific

Weakness, giddiness, loss of appetite and body ache are common symptoms with numerous potential causes.

Their presence cannot establish *Kshudha Vega Dharana* as the cause.

15.7 Conceptual translation has inherent limitations

Ayurvedic concepts emerged within a theoretical framework different from contemporary biomedicine.

Attempts to translate terms such as *Kshudha*, *Agni* or *Vata* into individual hormones, organs or biochemical pathways can oversimplify both systems.

16. Proposed Research Agenda

A scientifically stronger evaluation of *Kshudha Adharaniya Vega* first requires **operationalizing the exposure**.

16.1 Development of a *Kshudha Vega Dharana* assessment instrument

A preliminary research instrument could record:

1. subjective hunger intensity using a validated visual analogue or numerical scale;
2. number of significant hunger episodes per day;
3. time at which hunger begins;
4. time between significant hunger and subsequent food intake;
5. reason for postponing food;
6. frequency of recurrent postponement;
7. perceived control over meal timing;
8. subsequent meal size;
9. total daily dietary intake;
10. timing of the final meal;
11. sleep and wake timing;
12. physical activity;
13. occupational schedule;
14. associated symptoms; and
15. longitudinal body-weight and body-composition changes.

No arbitrary threshold should be labelled “*Vega Dharana*” until construct validity has been established.

16.2 Prospective observational studies

Participants could record hunger intensity and eating time prospectively using ecological momentary assessment.

This approach would distinguish:

meal omission without substantial hunger

from

meal omission after substantial hunger has developed.

Continuous glucose monitoring could be included as a physiological measure, while avoiding the assumption that glucose values constitute a direct biomarker of *Kshudha*.

16.3 Comparative study design

A particularly informative study could compare:

Group A — Habitual hunger suppression

Individuals who repeatedly postpone eating after moderate-to-strong subjective hunger develops because of occupational, behavioral or other non-therapeutic reasons.

Group B — Planned early time-restricted eating

Individuals following a defined early-TRE protocol with adequate nutritional planning.

Group C — Conventional regular eating

Individuals following stable conventional meal timing without prolonged deliberate hunger suppression.

Potential outcomes could include:

- subjective hunger trajectories;
- subsequent energy intake;
- dietary quality;
- continuous glucose profiles;
- body weight and composition;
- sleep timing;
- fatigue and functional symptoms; and
- selected appetite-regulating hormones.

Such a design could determine whether **experienced hunger suppression** predicts outcomes independently of fasting duration itself.

16.4 Biomarkers as secondary rather than defining measures

Ghrelin, leptin and other appetite-related signals may be measured in mechanistic studies.

However, biomarkers should be treated as physiological correlates rather than definitions of Ayurvedic constructs.

This avoids circular reasoning in which a modern variable is arbitrarily assigned to an Ayurvedic term and subsequently presented as evidence validating that term.

17. Discussion

The Ayurvedic description of *Kshudha Adharaniya Vega* remains relevant to contemporary behavioral nutrition, but its significance is more nuanced than a simple recommendation never to skip meals.

The classical texts identify hunger as a meaningful physiological urge and associate its suppression with a collection of adverse manifestations.[1-3] The recurrence of related descriptions across *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya* demonstrates that inappropriate suppression of hunger was recognized as an important behavioral consideration within classical Ayurvedic medicine.

Modern physiology independently supports the general proposition that hunger has a biological basis. Neural, gastrointestinal and endocrine signals contribute to appetite, and ghrelin demonstrates a reproducible premeal relationship with hunger and meal initiation.[5-7]

The overlap, however, stops at conceptual plausibility.

Modern science has not identified an entity called *Kshudha Vega Dharana*, and no high-quality clinical trial has enrolled participants on the basis of a validated Ayurvedic definition of hunger suppression.

This limitation is especially important when interpreting meal-skipping research.

Experimental breakfast omission can alter glucose and metabolic responses,[8,9] but randomized evidence does not show universal metabolic harm from skipping breakfast.[10] Meal omission is therefore unsuitable as a direct proxy for *Vega Dharana* unless the presence and intensity of hunger are simultaneously measured.

Chrononutrition offers a stronger contemporary area of relevance. Controlled trials demonstrate that late eating can alter glucose handling, appetite and energy expenditure,[11,12] while synthesized randomized evidence suggests modest advantages for earlier distribution of energy intake.[16,18]

These results indicate that the temporal organization of food intake matters physiologically. They do not demonstrate equivalence between circadian biology and classical *Agni* or between meal timing research and *Vega Dharana*.

The fasting literature introduces an additional and necessary counterargument.

Early TRE has produced favorable metabolic effects in some controlled studies,[13,15] whereas other trials have not demonstrated substantial superiority over conventional meal patterns.[14] Meta-analytic evidence similarly suggests overall potential benefit accompanied by important heterogeneity.[16-18]

Consequently, the relevant distinction is not simply: **eating versus fasting.**

Instead, interpretation requires consideration of:

- whether genuine hunger has arisen;
- whether it is repeatedly disregarded;
- why intake is being postponed;

- whether overall nutrition remains adequate;
- when food is subsequently consumed;
- whether restriction is structured or irregular; and
- the metabolic and clinical context of the individual.

This framework may also better reconcile *Kshudha Adharaniya Vega* with Ayurveda's own recognition of *Langhana*.

The classical warning can therefore be interpreted cautiously as a preventive principle against **habitual, inappropriate disruption of physiological hunger-response behavior**, rather than as an absolute prohibition against fasting.

Importantly, this interpretation remains a hypothesis.

Its value lies precisely in making the ancient observation experimentally testable rather than retrospectively declaring it scientifically proven.

18. Conclusion

Ayurvedic classical literature describes *Kshudha* as an *Adharaniya Vega* and associates suppression of an arisen hunger urge with manifestations including *Karshya*, *Daurbalya*, *Vaivarnya*, *Angamarda*, *Aruchi* and *Bhrama*. Related descriptions are found in *Sushruta Samhita* and *Ashtanga Hridaya*, together with recommendations for appropriately light, warm and unctuous food.[1-3]

Contemporary physiology establishes that hunger is a complex biological and behavioral state involving coordinated neural, gastrointestinal, endocrine and environmental influences. Ghrelin represents one measurable component of this system but should not be equated with *Kshudha*. [5-7]

Controlled studies further demonstrate that meal omission and the timing of food intake can affect glucose responses, appetite and energy metabolism.[8-12] However, evidence is heterogeneous, and randomized studies do not support the proposition that every skipped meal is intrinsically harmful.[10]

Structured fasting provides an especially important counterpoint. Some TRE interventions—particularly those using earlier eating windows—have improved selected metabolic outcomes, while other randomized trials have shown limited or no superiority.[13-18] Accordingly, planned fasting cannot automatically be classified as *Kshudha Vega Dharana*.

The most scientifically defensible contemporary interpretation is therefore that *Kshudha Adharaniya Vega* represents a **potential behavioral-health principle concerning recurrent inappropriate suppression of meaningful physiological hunger**, rather than a rule prescribing immediate eating or fixed meal frequency.

At present, biomedical evidence provides **conceptual plausibility but not direct validation** of this Ayurvedic proposition.

Future research should measure the intensity of hunger, duration and frequency of suppression, reasons for postponement, subsequent food intake, circadian timing and metabolic outcomes prospectively. Direct comparison of habitual hunger suppression, structured early TRE and conventional regular eating could determine whether suppression of subjective hunger represents an exposure distinct from fasting duration itself.

Such an approach would move research on *Kshudha Vega Dharana* beyond retrospective conceptual correlation and toward a falsifiable, clinically relevant scientific hypothesis.

Declarations

Conflict of Interest

The author declares no conflict of interest.

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Ethical Approval

Ethical approval was not required because this article reviews previously published literature and does not report new research involving human participants or animals.

Informed Consent

Not applicable.

Data Availability

No new dataset was generated or analyzed for this narrative review.

Author Contribution

Dr. Anjana Shinde conceptualized the review, interpreted the classical Ayurvedic literature and contemporary scientific evidence, and prepared and critically revised the manuscript.

Relationship to Prior Work

A related review by Shinde and Randive was published in 2019 and is cited as Reference 4. The present manuscript is a substantially reformulated and updated critical narrative review incorporating subsequent evidence on chrononutrition, controlled meal timing, intermittent fasting and time-restricted eating and introducing an explicit distinction between suppression of manifested hunger and structured fasting. No table from the previous publication is reproduced.

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