

Kapalabhati between Purification and Pranayama: A Classificatory Divergence and Its Consequences for Breath Regulation Research

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ABSTRACT

Background: Kapalabhati is named in the six purification practices of both the Hatha Yoga Pradipika and the Gheranda Samhita, and it is named as a pranayama in a large body of peer-reviewed physiological and clinical research. Both usages are long established, both are held by informed authorities and the disagreement between them is rarely acknowledged in print.

Objective: This paper establishes where Kapalabhati sits in the classical corpus, in current institutional taxonomies and in the research literature, examines what the divergence between these sources costs evidence synthesis, and proposes a reporting convention that allows either classification to be used without ambiguity.

Approach: A conceptual review of verse-level material from the Hatha Yoga Pradipika and the Gheranda Samhita, of official Indian yoga syllabi and protocols, and of indexed empirical studies, systematic reviews and commentaries that classify Kapalabhati explicitly or by placement.

Findings: The classical texts are consistent and specific. Both name Kapalabhati among the six purificatory actions and both omit it from their lists of kumbhakas. Read together, the passages indicate that breath retention is the operative distinction: the pranayama passages require it and the Gheranda Samhita expressly forbids it for its breathing variant of Kapalabhati. Every Indian institutional syllabus located for this review follows the classical placement. The empirical literature follows the opposite convention, with numerous indexed studies naming Kapalabhati a pranayama in their titles. The cost of the divergence is visible in evidence synthesis: two systematic reviews of pranayama published seven years apart operate on technique sets that do not overlap on this practice, one including it as a matter of category and the other excluding it through a respiratory rate criterion, and neither states the difference as a limitation.

Conclusion: The disagreement is not resolvable by appeal to authority, because the two traditions apply different criteria to different ends. It is resolvable in reporting. An eight-item convention is proposed under which a study states the taxonomy it applies and reports the technique-level parameters that determine physiological effect, so that a reader and a reviewer can reconstruct the intervention regardless of the category name attached to it.

Keywords: Kapalabhati; shatkarma; pranayama; classification; evidence synthesis

INTRODUCTION

A practice can be widely taught, extensively researched and physiologically well characterized while its position in the taxonomy of its own tradition remains unsettled. Kapalabhati is such a practice.

The question can be posed plainly. A researcher designing a breath regulation trial for a school population selects four techniques and describes the intervention as a pranayama program. One of the four is Kapalabhati. A reviewer trained in the classical texts observes that Kapalabhati appears among the six shatkarmas, the

purificatory actions, and that the texts present those actions as preparation undertaken before pranayama rather than as pranayama itself. A second reviewer, drawing on the physiological literature, observes that Kapalabhati is a voluntary modification of respiratory rate and force, that it appears under the heading of pranayama in journals including *Chest* and *Frontiers in Psychiatry*, and that excluding it from the category would remove one of the most studied breath practices in the field from a review of breath practices.

Both reviewers are correct within their frames. The exchange is common in supervision and in peer review, and it usually ends with one party deferring rather than with the disagreement being recorded. Because it is seldom recorded, it is seldom examined, and because it is seldom examined the field has not noticed what it costs.

That cost is the subject of this paper. The argument runs in four steps. The classical placement is established at verse level, since much of the confusion in secondary sources traces to imprecise citation. The institutional and research positions are then set out and shown to diverge systematically rather than randomly. The consequence for evidence synthesis is demonstrated through two published systematic reviews whose operational definitions of pranayama do not agree on this practice. Finally a reporting convention is proposed. The convention does not adjudicate the classification, which this paper argues is not adjudicable on present grounds, but makes an author's choice explicit and supplies the parameters that determine physiological effect independently of what the practice is called.

APPROACH TO THE SOURCES

This is a conceptual review. It draws on three bodies of material and treats each according to what it can establish.

Classical material comprises the *Hatha Yoga Pradipika* of Svatanmarama [1] and the *Gheranda Samhita* [2], the two texts that between them define the shatkarma category for the later tradition. Verses are cited by number. Where translations differ materially, the difference is reported rather than resolved. Verse numbering in the *Gheranda Samhita* varies across editions and the numbering used here follows the edition cited.

Institutional material comprises published syllabi and protocols issued by Indian government and certification bodies, which are the documents that determine how the practice is taught and examined at scale.

Empirical material comprises indexed studies, systematic reviews and commentaries retrieved through database searching and through the reference lists of retrieved articles. Studies were treated as classifying Kapalabhati as a pranayama where they did so in a title, in a stated definition or by explicit inclusion in a set described as pranayama. No claim to exhaustive retrieval is made; the argument turns on the existence and the consistency of the two conventions rather than on a count.

Empirical sources were identified through searching of PubMed and Google Scholar, supplemented by hand-searching the reference lists of retrieved articles and by checking articles citing the two systematic reviews examined in Section 7. Searches covered material published up to January 2026 and used combinations of the terms Kapalabhati, Kapalbhathi, kapalabhathi pranayama, shatkarma, shodhana kriya, pranayama classification and fast breathing, in title, abstract and keyword fields. Records were excluded where Kapalabhati was named only in passing without a stated or implied classification, and where the full text could not be obtained. Institutional sources were retrieved from the published websites of the Ministry of Ayush, the Yoga Certification Board, the Quality Council of India and Kaivalyadhama, and comprise the syllabi and protocols that govern teaching and certification in India. Because this is a conceptual rather than a systematic review, records were assessed for relevance to the classification question rather than screened against a prospectively registered protocol, and a PRISMA flow count was not maintained.

One further distinction governs what follows. Where this review reports what a text states, the statement is given with its verse reference. Where it draws a criterion from what several passages have in common, that criterion is an interpretation advanced here and is identified as such. The classical texts assign Kapalabhati to the shatkarmas explicitly; that retention is the operative boundary between the two categories is a reading of the passages rather than a rule the texts state in those terms.

THE CLASSICAL PLACEMENT

Two lists, and which one contains Kapalabhati

The second chapter of the Hatha Yoga Pradipika contains two enumerations, and the whole classical question turns on which of them names Kapalabhati.

The first is the list of six purificatory actions at verse 2.22, which names dhauti, basti, neti, trataka, nauli and kapalabhati, and closes by declaring these to be the six actions [1]. Kapalabhati is the sixth and last member. The text then treats each in turn, and the Kapalabhati verse arrives at 2.35, describing exhalation and inhalation performed rapidly like the bellows of a blacksmith, and drying up the phlegm humour.

The second enumeration is the list of the eight kumbhakas at verse 2.44, which names suryabhedana, ujjayi, sitkari, shitali, bhastrika, bhramari, murchha and plavini [1]. This is the pranayama repertoire of the text. Kapalabhati does not appear in it.

Between these two lists sits verse 2.36, which is the load-bearing verse for the preparatory reading. One from whom obesity, phlegm disorder and impurities have been removed by the six actions should thereafter practice pranayama, and succeeds without strain. The sequence is stated as a sequence: the six actions, then pranayama.

The structure of the chapter reinforces this. The Sanskrit text carries sectional rubrics beginning atha, meaning now begins, and these mark the boundaries. The Kapalabhati rubric introduces verse 2.35, closing the block of six purifications that opened at 2.24. The rubric introducing the kumbhakas arrives nine verses later at 2.44. Kapalabhati stands inside the purification block and before the pranayama block, in a text that marks the boundary explicitly.

One frequently repeated claim about this chapter deserves correction, since it circulates widely and supports the opposite conclusion. Chapter 2 is often described as the chapter on pranayama, which would place Kapalabhati inside a pranayama section by simple location. The Sanskrit colophon names the chapter only as the second instruction. Chapter titles in circulating editions are supplied by translators and they differ: one widely used English edition heads the chapter on pranayama, another heads it shatkarma and pranayama, a third names pranayama, sat-kriya and kumbhaka. The chapter title is editorial and carries no evidential weight in either direction.

The Gheranda Samhita separates the two categories more sharply still. Its seven limbs each occupy a chapter, and the text assigns purification to the first limb and lightness to the fifth, achieved through the six actions and through pranayama respectively [2]. The list of six actions appears at 1.12 and again includes kapalabhati. Pranayama is the subject of chapter 5, whose own list of eight kumbhakas at 5.46 omits Kapalabhati as the Hatha Yoga Pradipika's list does. Four chapters separate the two treatments.

The shared simile and the operative difference

The strongest argument for the pranayama reading is that Kapalabhati and Bhastrika are described in almost identical terms, and Bhastrika is unambiguously a pranayama. The observation is correct and the Hatha Yoga Pradipika makes it unavoidable, because it uses the same image for both. Kapalabhati at 2.35 is performed like the bellows of a blacksmith. Bhastrika at 2.62 moves the air as the bellows is moved forcefully by a blacksmith [1]. One text, one simile, twenty-seven verses apart.

Svatmarama therefore saw the resemblance and classified the two practices differently anyway. What separates them in the text is specific and it is worth stating exactly, because it is the criterion that a functional taxonomy would need to displace.

The Bhastrika passage at 2.59 to 2.67 contains four elements the Kapalabhati verse lacks. It prescribes a posture, requiring padmasana. It prescribes finger control of the nostrils. It requires retention, directing that having duly performed kumbhaka one should exhale through ida. And it closes by naming what has been described: this is the kumbhaka named bhastra, at verse 2.67 [1].

That closing label is the sharpest formulation available. The same chapter declares Kapalabhati to be one of the six actions at 2.22 and declares Bhastrika to be a kumbhaka at 2.67. The classification is stated in both directions, in the same chapter, for two practices the text itself describes with one simile.

The differentiating element is breath retention, and the Gheranda Samhita confirms this from the other side. Its breathing variant of Kapalabhati directs inhalation and exhalation performed rapidly, and then adds that one should not retain [2]. Its Bhastrika, at 5.75 to 5.76, carries the same blacksmith simile followed by the instruction to perform kumbhaka. Both texts converge on one rule: bellows breathing with retention is pranayama, bellows breathing without retention is purification.

This matters for how the classical position should be characterized. The texts do not classify Kapalabhati as a purification through inattention or through a merely historical accident of list membership. They apply a criterion, they apply it consistently across two works, and the criterion is one that modern protocols have largely set aside, since retention is omitted from most contemporary teaching of the fast practices.

The three Kapalabhatis of the Gheranda Samhita

A further feature of the Gheranda Samhita complicates any assumption that the classical term denotes a breathing practice at all.

The text gives three types [2]. The first is performed by inhaling through the left nostril and exhaling through the right, then reversing, rapidly and without retention. The second draws water in through the nostrils and expels it through the mouth. The third takes water in through the mouth and expels it through the nasal passages.

Only the first involves breath. The second and third are nasal and oral irrigation practices with no respiratory component, functionally continuous with neti. In the text that gives the fullest classical treatment of Kapalabhati, two of its three forms are washes.

Two further details of the first type are worth noting, since it is the one that corresponds to the modern practice. It is described as alternate nostril breathing, which the contemporary technique is not, the modern form using both nostrils with abdominal contraction driving exhalation. And the received Sanskrit in several editions reads bhalabhati, forehead shining, rather than kapalabhati, skull shining. The classical term is therefore neither stable in its reference nor coextensive with what is taught under the name today.

A conditional prescription

A final classical point cuts against a strong version of the preparatory argument, and stating it keeps the account accurate.

Verse 2.21 of the Hatha Yoga Pradipika is usually quoted in its first half, which directs that where fat or phlegm is excessive the six actions should be performed first. The second half directs that another, meaning one whose humours are already in balance, should not perform them [1]. The prescription is conditional on the practitioner's constitution rather than universal.

Verse 2.37 goes further, reporting that by pranayama alone all impurities dry up, and that some teachers accept no other practice. The text records a position within its own tradition that dispensed with the six actions entirely.

The six actions are therefore preparatory for those who need them rather than a gate through which every practitioner must pass. This does not affect the classification of Kapalabhati, which both texts state plainly. It does affect what follows from the classification, and it is the reason this paper treats the question as one of category rather than of prerequisite.

THE INSTITUTIONAL POSITION

Where the classical texts speak through interpretation, the institutional documents that govern teaching and certification in India speak directly, and they are unanimous.

The Common Yoga Protocol issued by the Ministry of Ayush is the most widely distributed yoga document in the world, forming the basis of International Day of Yoga observance [3]. Its structure answers the question by construction. The protocol proceeds through prayer, loosening practices, yogasanas, then a numbered section titled Kapalabhati, then a numbered section titled Pranayama, then dhyana and the closing. The pranayama section contains three practices: nadishodhana, shitali and bhramari. Kapalabhati has its own structural slot, placed immediately before pranayama and deliberately outside it.

The placement is a judgment rather than a blanket exclusion of forceful breathing, since the protocol omits Bhastrika altogether and so cannot be read as separating fast practices from slow ones. It positions Kapalabhati specifically.

The Yoga Certification Board syllabi carry the same classification and make it more explicit as the levels rise. The Level 1 syllabus for Yoga Protocol Instructor places Kapalabhati under yoga cleansing techniques, alongside knowledge of dhauti and neti, with pranayama treated in a separate unit covering the concepts of puraka, rechaka and kumbhaka together with nadi shodhana, shitali and bhramari [4]. The Level 3 syllabus for Yoga Teacher and Evaluator lists the practice under the heading of yogic shatkarma and names it Kapalabhati (vatakrama), assigning it the shatkarma-internal designation for the air-based variant [5]. The higher-level document does not merely separate Kapalabhati from pranayama; it locates it positively within the purification taxonomy.

The Quality Council of India syllabus for Yoga Protocol Instructor carries an identical structure, placing Kapalabhati under yoga cleansing techniques and pranayama in a separate unit [6]. Since this scheme preceded the Yoga Certification Board's, the agreement between them shows the classification surviving an institutional handover rather than reflecting one drafting committee.

Kaivalyadhama, among the oldest yoga research institutions in India, follows the same convention in its advanced course syllabus, listing Kapalabhati under kriya as a cleansing process in the theory paper and under kriyas in the practical hours, with pranayama covered separately [7].

The position across these documents is consistent enough to state without qualification. No Indian institutional syllabus located for this review classifies Kapalabhati as a pranayama.

THE RESEARCH LITERATURE

A substantial part of the empirical literature follows the opposite convention, and it does so in journals of standing. The studies below were identified by the search described in Section 2 and are offered as demonstration that the convention is in current use, not as a count of its prevalence.

The clearest instances are those where the classification appears in a title, since a title commits an author and a journal simultaneously. A case report in *Chest* describing a spontaneous pneumothorax is titled for Kapalabhati pranayama and states that the report is the only known instance of spontaneous pneumothorax caused by pranayama [8]. A study of neurological and autonomic change during the practice, published in the *Journal of Family Medicine and Primary Care*, likewise names it a pranayama in its title while retaining the vocabulary of cleansing in its discussion, describing the practice as energizing, cleansing and heating [9]. Titles naming Kapalabhati pranayama also appear in pulmonary function research [10], in metabolic and fitness research [11] and in case reports on metabolic syndrome, the last describing Bhastrika and Kapalabhati jointly as fast pranayama [12].

The convention extends to studies that operationalize the category rather than merely naming it. Sharma and colleagues, in the *International Journal of Yoga*, divided their intervention into fast pranayama comprising Kapalabhati, Bhastrika and Kukkuriya, and slow pranayama comprising nadishodhana, savitri and pranav [13]. The classification here is functional and explicit, and it is made by authors working within Indian yoga research rather than by observers unfamiliar with the shatkarma category.

Systematic reviews adopt the same usage. A recent meta-analysis of pranayama for mental disorders included studies using Kapalabhati within its pranayama construct, defined the technique as passive inspiration with

forceful expiration, and attributed reported adverse events to pranayama and in particular to Kapalabhati [14]. Electroencephalographic work on gamma oscillation describes it as a high-frequency yoga breathing practice and situates it within pranayama [15], as does heart rate variability work reporting parasympathetic withdrawal immediately following practice [16].

One study is unusually instructive because it holds both classifications at once. Epe and colleagues examined four techniques including Kapalabhati, subsumed all four under the term pranayama, and in the same paper acknowledged that the abdominal practices are known as cleaning techniques [17]. The tension is visible on the page and passes without comment.

A residue of the classical position survives in titling practice, which shows that the divergence is live among researchers rather than confined to commentary. One study assigns pranayama to Bhastrika and kriya to Kapalabhati within a single title [18]. Another uses the shatkarma-internal designation vata karma in its title, matching the Yoga Certification Board's Level 3 formulation [19]. The naming is unstable even within individual titles: a study of cerebrovascular hemodynamics attaches the word pranayama to Bhramari but not to Kapalabhati, while pooling both with a retention practice as one class [20].

The pattern is therefore not a simple opposition between Indian and non-Indian scholarship, nor between traditional and clinical authors. It is a convention operating inside the research literature that has drifted from the convention operating inside the teaching and certification literature of the same country.

THE EXPLICIT COUNTER-POSITION

Two papers argue the classical position directly, and engaging them is necessary because they represent the case that any functional classification must answer.

Patidar and colleagues, in the *International Journal of Yogic, Human Movement and Sports Sciences*, address the question in their title and state their position in their abstract, holding that among the general public there is a myth of considering Kapalabhati a pranayama [21]. Their evidence is textual enumeration: the *Hatha Yoga Pradipika*'s list of six, the *Gheranda Samhita*'s list with its three variants, and the *Hatharatnavali*'s expansion to eight cleansing practices. They conclude that the two techniques differ mechanically, Kapalabhati working through forceful expiration driven by the anterior abdominal wall and Bhastrika through forceful inspiration and expiration driven by the chest.

The paper establishes the textual position accurately. Its limitation is that the argument rests entirely on enumeration. It offers no account of why textual list membership should govern a physiological classification, and it frames the disagreement as public ignorance rather than as a divergence between two taxonomies applying different criteria to different purposes. The mechanical contrast it draws between Kapalabhati and Bhastrika is a functional argument, and a functional argument distinguishing two practices does not establish that either belongs outside the pranayama category.

A second and more authoritative statement appeared in *Yoga Mimamsa*, the journal of Kaivalyadhama and the oldest yoga research journal in India. Prashanth, Priyanka and Maheshkumar reappraise the classification through the classical texts, hold that Kapalabhati is traditionally practiced as a preparatory technique before engaging in pranayama, and conclude that it constitutes a yogic cleansing procedure rather than a form of pranayama [22].

This paper carries a detail that illustrates the argument of the present review more economically than any other item in the literature. Its senior author is also senior author on the heart rate variability study cited above, published six years earlier, whose title names Kapalabhati pranayama [16]. The same researcher has published the practice as a pranayama and subsequently argued that it is not one.

That is not an inconsistency to be held against the author. It is evidence about the field. A category that a careful investigator can apply in one direction and then argue against in another, without either publication being irregular, is a category doing unreliable work. The disagreement is not between informed and uninformed parties.

It is between two frames that a single informed party can occupy at different times and for different purposes.

Table 1. Placement of Kapalabhati across three classes of authority.

Source class	Placement	Criterion applied
Hatha Yoga Pradipika [1]	Sixth of six purificatory actions (2.22); absent from the eight kumbhakas (2.44)	Presence of breath retention
Gheranda Samhita [2]	Sixth of six purificatory actions (1.12), first limb; absent from the eight kumbhakas (5.46), fifth limb	Retention expressly excluded for the breathing variant
Indian institutional syllabi [3,4,5,6,7]	Cleansing technique or shatkarma; separate section from pranayama	Continuity with classical placement
Empirical research literature [8–20]	Pranayama, frequently a fast pranayama	Voluntary regulation of respiratory rate and force
Explicit commentary [21,22]	Purification, not pranayama	Textual enumeration

WHAT THE DIVERGENCE COSTS

A taxonomic disagreement that changed nothing would be a matter for footnotes. This one changes what a meta-analysis contains, and two published reviews demonstrate it.

The first is the meta-analysis of pranayama for mental disorders cited above [14]. Its inclusion criterion requires pranayama applied as a standalone intervention. Kapalabhati falls inside the construct, contributes to the pooled effect estimates and is named as the probable source of the adverse event signal that the review attributes to pranayama.

The second is a systematic review of the psychophysiological correlates of slow breathing [23]. It also announces pranayama as its subject and supplies a definition, describing pranayama as a set of breathing techniques aiming at directly and consciously regulating one or more parameters of respiration. It then operationalizes that construct through a rate criterion, including any technique of breath control that slows the breath to ten breaths per minute or fewer, and excluding breathing paced at a higher frequency.

Kapalabhati is performed at approximately one to two cycles per second, which is sixty to one hundred and twenty cycles per minute. A cycle here comprises one forced exhalation and the passive inhalation that follows it, and is reported as a cycle rather than a breath because the two terms are not used interchangeably across this literature [15,24]. It is ineligible for the second review by a margin of six to twelve times the threshold.

The two reviews are therefore not disagreeing about Sanskrit. Neither mentions the shatkarma question. They are silently applying incompatible operational definitions under one word: the first nominal, admitting whatever the field calls pranayama, the second functional, admitting whatever meets a physiological criterion. Two syntheses that both present themselves as estimating the effects of pranayama are pooling technique sets that do not overlap on one of the most studied practices in the field, and neither records this as a limitation.

Table 2. Two systematic reviews of pranayama, with divergent operational definitions.

	Mütze and colleagues [14]	Zaccaro and colleagues [23]
Stated subject	Pranayama for mental disorders	Pranayama, examined as slow breathing
Operational definition	Pranayama delivered as a standalone intervention	Breath control slowing respiration to ten breaths per minute or fewer
Basis of the definition	Nominal — the category as the field applies it	Functional — a measured respiratory parameter

Status of Kapalabhati	Included; named as probable source of adverse events	Ineligible; the practice runs at sixty to one hundred and twenty breaths per minute
Divergence recorded as a limitation	No	No

The direction of the second review's reasoning deserves attention, because it points toward the resolution proposed in Section 9. Zaccaro and colleagues did not exclude Kapalabhati on the ground that it is a shatkarma. They excluded it by measuring something. Confronted with a category whose boundaries are contested, the more methodologically explicit of the two reviews set the traditional category aside and substituted a physiological criterion that a reader can check.

THE PHYSIOLOGICAL CASE FOR A FUNCTIONAL TAXONOMY

The evidence that Kapalabhati behaves differently from slow pranayama is consistent, and it bears on classification because it shows that the category name predicts little about the intervention.

The direct comparison is the clearest. Malhotra and colleagues examined Kapalabhati against slow deep breathing in one protocol, measuring heart rate variability, and reported sympathetic dominance for Kapalabhati against parasympathetic dominance for slow deep breathing [24]. The two practices moved the same measure in opposite directions.

The divergence persists over a program rather than resolving as an artifact of the practice moment. Sharma and colleagues, comparing fast and slow pranayama over twelve weeks, found both reducing perceived stress while only the slow arm significantly reduced heart rate, diastolic blood pressure and mean arterial pressure [13]. Studies of the fast practice alone report the same direction, with parasympathetic withdrawal during and immediately after practice [9,16] and a cortical arousal profile marked by increased gamma activity [15]. Against this, the meta-analytic evidence for slow breathing reports increased vagally mediated heart rate variability during practice, after a single session and following a multi-session intervention [25].

Two qualifications keep the picture accurate. The acute autonomic effect of Kapalabhati is biphasic, with one study reporting parasympathetic withdrawal immediately after practice reverting toward parasympathetic dominance after a recovery interval [16]. And a resemblance in autonomic profile does not by itself establish category membership, since Bhastrika shares the fast profile and is classified as a pranayama by every source considered here.

The applied consequence is the safety asymmetry. The meta-analysis of pranayama for mental disorders reports adverse events more frequently associated with fast than with slow breathing techniques, and names Kapalabhati specifically [14]. The pneumothorax case report attaches to the same practice [8]. Pooling Kapalabhati into an undifferentiated pranayama category therefore dilutes a distinct risk profile into a category otherwise characterized by slow, low-risk techniques, which is a reporting problem before it is a taxonomic one.

A REPORTING CONVENTION

The classification question is not adjudicable on present grounds, and the reason is worth stating precisely rather than treated as a failure of scholarship. The classical taxonomy sorts practices by their function within asoteriological progression, using retention as its criterion. The research taxonomy sorts practices by their physiological mechanism, using voluntary control of respiration as its criterion. Each is coherent by its own standard. Neither is answerable to the other's, and an argument that one is simply mistaken has to supply a reason why its criterion should govern, which no source located for this review does.

What is achievable is unambiguous reporting. Eight items make an author's classification explicit and supply the parameters that determine effect regardless of the category name.

1. **Name the taxonomy applied.** State whether the study uses the classical taxonomy, in which Kapalabhati

is a shatkarma, or the functional taxonomy, in which it is a fast pranayama. One sentence in the methods is sufficient.

2. **Report respiratory rate.** Give the target cycles per minute for each technique. This single parameter separates fast from slow practices, determines eligibility for a substantial part of the review literature and is currently reported inconsistently.
3. **State whether retention is included.** Kumbhaka is the criterion the classical texts apply, and its presence or absence is a matter of fact about the protocol. Most contemporary teaching of the fast practices omits it, which is itself worth recording.
4. **Specify the active phase.** State whether inhalation, exhalation or both are active, and what drives the active phase. Kapalabhati and Bhastrika differ on this point and are frequently described interchangeably.
5. **Report nostril configuration.** State whether the practice uses both nostrils or alternates. The classical breathing variant of Kapalabhati is alternate-nostril; the modern practice is not, and the two should not be cited as the same technique.
6. **Cite classical sources at verse level.** Where a classification argument rests on a classical text, cite the verse and name the edition. Chapter-level citation supports the widespread and incorrect claim that Kapalabhati sits inside a chapter titled Pranayama, when the chapter title is supplied by translators.
7. **Report technique-level outcomes where the design permits.** Where a protocol combines fast and slow practices, state that the design does not isolate technique effects. Where it examines one technique, report it as such rather than as pranayama.
8. **State the classification in reviews as an inclusion criterion.** Systematic reviews of pranayama should state whether fast practices are eligible and on what basis, so that a reader can determine what the pooled estimate covers.

The convention takes no position on which taxonomy an author should adopt. Its purpose is that a reader, a reviewer and a subsequent meta-analyst can each determine what was done. A trial that names Kapalabhati a pranayama, reports a target of one hundred cycles per minute, states that no retention was used and notes that both nostrils were open has been fully informative whatever term it chose. A trial that names four pranayama techniques and reports twelve weeks of practice has not, and no amount of taxonomic agreement would repair it.

IMPLICATIONS FOR PROTOCOL DESIGN

Three consequences follow for research design, and none of them require the classification to be settled first.

The first concerns sequencing. If the classical position is taken seriously as a design principle rather than as a matter of nomenclature, Kapalabhati is a practice that texts place after basic familiarity and before the retention practices. Protocols that introduce it in the opening week are making a choice against that ordering, which is defensible but which the current reporting convention leaves invisible.

The second concerns supervision and screening. The safety asymmetry documented in Section 8 attaches to the fast practices specifically, and the precautions appropriate to Kapalabhati are not those appropriate to alternate nostril breathing. A protocol that treats its techniques as one category for the purposes of screening is applying uniform precautions to a set with non-uniform risk.

The third concerns evidence synthesis, and it is the one with the longest reach. Every trial that reports a combined protocol as a unit adds to the aggregate evidence for pranayama while leaving the question of which practice produced the effect exactly where it was. Where a protocol combines practices with opposite autonomic signatures, technique-level reporting is what would eventually allow a synthesis to separate them.

LIMITATIONS

This review examined sources retrievable through database searching and through publicly available institutional documents, and makes no claim to exhaustive coverage. Several classical sources bearing on the question were not consulted at verse level, among them the Hatharatnavali, which expands the purifications to eight and which secondary sources report as describing a variant whose name fuses those of Kapalabhati and Bhastrika. Sanskrit commentarial literature on the relevant verses was not examined. Verse numbering in the Gheranda Samhita varies across editions and the numbering used here follows the edition cited.

The count of studies classifying Kapalabhati as a pranayama is illustrative rather than systematic, and no claim is made about the proportion of the literature adopting either convention. The argument requires only that both conventions are in current use by informed authors, which the sources cited establish.

CONCLUSION

Kapalabhati is named among the six purificatory actions in both texts that define the category, is omitted from both texts' lists of kumbhakas, and is separated from pranayama by the criterion the texts apply consistently on the reading advanced here, which is breath retention. Every Indian institutional syllabus located for this review preserves that placement. A substantial body of indexed research names the same practice a pranayama, on the functional ground that it is a voluntary modification of respiratory rate and force.

Neither convention is an error. They apply different criteria toward different ends, and the disagreement persists because no argument has been advanced for why either criterion should govern the other's domain. The evidence that it is a genuine divergence rather than a misunderstanding is that a single research group has published on both sides of it.

What the divergence costs is measurable in evidence synthesis. Two systematic reviews of pranayama, published seven years apart, operate on technique sets that do not overlap on this practice, one admitting it by category and the other excluding it by respiratory rate, and neither records the difference. Readers of both would reasonably believe they had read two estimates of the same thing.

The remedy proposed here is a reporting convention rather than a ruling. An author who states the taxonomy applied and reports respiratory rate, retention, active phase and nostril configuration has made the intervention reconstructable, and has done so in four lines of a methods section. The classification may remain contested for as long as the two traditions retain their separate purposes. What need not remain contested is what any given study actually did.

DECLARATIONS

Ethics approval. Not applicable. This conceptual review analyzes published literature and classical texts, and involved no human participants.

Consent for publication. Not applicable.

Availability of data and materials. Not applicable. All sources analyzed are published and cited.

Competing interests. The authors declare that they have no competing interests.

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REFERENCES

1. Svratmarama. (1915). The Hatha Yoga Pradipika (P. Sinh, Trans.). Panini Office. (Original work composed circa 15th century)
2. Mallinson, J. (Trans.). (2004). The Gheranda Samhita: The original Sanskrit and an English translation. YogaVidya.com.
3. Morarji Desai National Institute of Yoga, Ministry of Ayush, Government of India. (2019). Common Yoga Protocol (4th rev. ed.). Ministry of Ayush.
4. Yoga Certification Board, Ministry of Ayush, Government of India. (n.d.). Syllabus for Level 1: Yoga Protocol Instructor. Yoga Certification Board.
5. Yoga Certification Board, Ministry of Ayush, Government of India. (n.d.). Syllabus for Level 3: Yoga Teacher and Evaluator. Yoga Certification Board.
6. Quality Council of India. (n.d.). Syllabus: Yoga Protocol Instructor (Version 0.2). Quality Council of India.
7. Kaivalyadhama G. S. College of Yoga and Cultural Synthesis. (n.d.). Advanced course in yoga: Syllabus. Kaivalyadhama.
8. Johnson, D. B., Tierney, M. J., & Sadighi, P. J. (2004). Kapalabhati pranayama: Breath of fire or cause of pneumothorax? A case report. *Chest*, 125(5), 1951–1952. <https://doi.org/10.1378/chest.125.5.1951>
9. Malhotra, V., Javed, D., Wakode, S., Bharshankar, R., Soni, N., & Porter, P. K. (2022). Study of immediate neurological and autonomic changes during kapalbhati pranayama in yoga practitioners. *Journal of Family Medicine and Primary Care*, 11(2), 720–727. https://doi.org/10.4103/jfmpc.jfmpc_1662_21
10. Senthil Kumar, K., Jeneth Berlin Raj, T., Sembulingam, P., & Tripathi, P. C. (2013). Consolidate effect of Vibhagha pranayama, Nadishuddi pranayama, Savithiri pranayama and Kapalabhati pranayama on the pulmonary functional status of young healthy male subjects. *International Journal of Medical Research and Health Sciences*, 2(3), 502–508. <https://doi.org/10.5958/j.2319-5886.2.3.042>
11. Bal, B. S. (2015). Impact of short-term training of Kapalabhati pranayama on components of health-related fitness. *International Journal of Science Culture and Sport*, 3(13), 59–68. <https://doi.org/10.14486/intjcs437>
12. Chidambaram, Y., Balasubramaniam, S., John Xavier, A., Ajay Kumar, I., Subramaniam, S., & Venkateswaran, S. T. (2026). Impact of fast pranayama (Bhastrika and Kapalabhati) on metabolic parameters in a patient with metabolic syndrome: A case report. *International Journal of Research in Medical Sciences*, 14(5), 2098–2101. <https://doi.org/10.18203/2320-6012.ijrms20261355>
13. Sharma, V. K., Trakroo, M., Subramaniam, V., Rajajeyakumar, M., Bhavanani, A. B., & Sahai, A. (2013). Effect of fast and slow pranayama on perceived stress and cardiovascular parameters in young health-care students. *International Journal of Yoga*, 6(2), 104–110. <https://doi.org/10.4103/0973-6131.113400>
14. Mütze, C., Mitzinger, D., & Haller, H. (2025). Effectiveness of pranayama for mental disorders: A systematic review and meta-analysis of randomized controlled trials. *Frontiers in Psychiatry*, 16, 1616996. <https://doi.org/10.3389/fpsy.2025.1616996>
15. Budhi, R. B., Singh, D., Goswami, J., Manjunath, N. K., & Vinchurkar, S. (2024). Influence of high-frequency yoga breathing (Kapalabhati) on states changes in gamma oscillation. *International Journal of Yoga*, 17(2), 106–115. https://doi.org/10.4103/ijoy.ijoy_5_24
16. Lalitha, S., Maheshkumar, K., Shobana, R., & Deepika, C. (2021). Immediate effect of Kapalabhati pranayama on short term heart rate variability (HRV) in healthy volunteers. *Journal of Complementary and Integrative Medicine*, 18(1), 155–158. <https://doi.org/10.1515/jcim-2019-0331>
17. Epe, J., Stark, R., & Ott, U. (2021). Different effects of four yogic breathing techniques on mindfulness, stress and well-being. *OBM Integrative and Complementary Medicine*, 6(3), 031. <https://doi.org/10.21926/obm.icm.2103031>
18. Yadav, G., & Sony, S. (2024). Effect of Bhastrika pranayama and Kapalabhati kriya on vital capacity of junior cricket players. *International Journal of Physical Education, Sports and Health*, 11(2), 249–252. <https://doi.org/10.22271/kheljournal.2024.v11.i2d.3292>
19. Ravi, P., Venugopal, V., Boopalan, D., Anandhan, A., Chidambaram, Y., & Kuppusamy, M. (2023). Effect of Vata Karma Kapalabhati on sinus headache. *Journal of Primary Care Specialties*, 4(1), 32–34.

https://doi.org/10.4103/jopcs.jopcs_15_22

20. Nivethitha, L., Moovenanthan, A., Manjunath, N. K., Bathala, L., & Sharma, V. K. (2018). Cerebrovascular hemodynamics during the practice of Bhramari pranayama, Kapalbhathi and Bahir-Kumbhaka: An exploratory study. *Applied Psychophysiology and Biofeedback*, 43(1), 87–92. <https://doi.org/10.1007/s10484-017-9387-8>
21. Patidar, M., Vishwakarma, D. K., Shukla, M., & Nathani, N. (2023). Unveiling the concepts of Kapalbhathi – Shatkarma and Bhastrika – Pranayama. *International Journal of Yogic, Human Movement and Sports Sciences*, 8(2), 479–482. <https://doi.org/10.22271/yogic.2023.v8.i2g.1506>
22. Prashanth, S., Priyanka, S., & Maheshkumar, K. (2026). Kapalabhati in classical Hatha Yoga: A critical reappraisal of its classification. *Yoga Mimamsa*, 58(1), 4–8. https://doi.org/10.4103/ymjscy.ymjscy_15_26
23. Zaccaro, A., Piarulli, A., Laurino, M., Garbella, E., Menicucci, D., Neri, B., & Gemignani, A. (2018). How breath-control can change your life: A systematic review on psycho-physiological correlates of slow breathing. *Frontiers in Human Neuroscience*, 12, 353. <https://doi.org/10.3389/fnhum.2018.00353>
24. Malhotra, V., Gumashta, J., Bhagat, O. L., Dhakar, M. J., Sofia, M., & Patel, M. H. (2025). Comparative effects of Kapalbhathi and slow deep breathing on heart rate variability: Mechanistic insights into sympathetic and parasympathetic dominance. *Mymensingh Medical Journal*, 34(1), 256–264.
25. Laborde, S., Allen, M. S., Borges, U., Dosseville, F., Hosang, T. J., Iskra, M., Mosley, E., Salvotti, C., Spolverato, L., Zammit, N., & Javelle, F. (2022). Effects of voluntary slow breathing on heart rate and heart rate variability: A systematic review and a meta-analysis. *Neuroscience and Biobehavioral Reviews*, 138, 104711. <https://doi.org/10.1016/j.neubiorev.2022.104711>