

Personalized Dosha-Based Therapeutics

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ABSTRACT

Personalisation is arguably the single feature of Ayurveda that has the clearest parallel in modern medicine's current trajectory. The Prakriti concept - constitutional typing in terms of dominant doshas (Vata, Pitta, Kapha) - is one of the oldest formal personalisation frameworks in any medical tradition, and the modern Ayurgenomics work has established that Prakriti classifications correspond to measurable differences in gene expression, metabolomics, and gut-microbial profiles. What has moved more slowly is the clinical-trial evidence that dosha-matched therapeutics actually outperform non-personalised Ayurvedic protocols in comparable indications. We consolidated 74 peer-reviewed clinical studies published between 2014 and 2024 that evaluated Prakriti-based or dosha-specific therapeutic protocols in adult clinical populations. Studies were grouped into five frames: D1 (Vata-specific), D2 (Pitta-specific), D3 (Kapha-specific), D4 (dual-dosha / tridosha integrative), and D5 (Ayurgenomics-guided personalisation). Each frame was scored on the Personalised Dosha Therapeutics Index (PDTI), a weighted composite across Prakriti validation, clinical effect size, comparative effect over non-personalised protocols, reproducibility, and clinical-deployment feasibility. Ayurgenomics-guided protocols (D5) and dual-dosha integrative protocols (D4) scored highest at PDTI 0.842 and 0.818. Our reading is that personalised dosha-based therapeutics have accumulated sufficient clinical validation to move from conceptual-framework status into integrative-medicine clinical practice, with Ayurgenomics-informed individualisation as the most promising near-term development.

Keywords: Prakriti; dosha; personalised medicine; Ayurgenomics; Vata; Pitta; Kapha; constitutional typing; individualised therapy; PDTI; precision Ayurveda

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1. Introduction

1.1 Prakriti as Ancient Personalisation

Modern medicine has spent the last fifteen years moving decisively in the direction of personalisation. Pharmacogenomic dosing adjustments, tumour-genotype-guided oncology, and microbiome-informed dietary recommendations are all now part of mainstream clinical practice in well-resourced settings. The Ayurvedic Prakriti framework has been doing something structurally similar for considerably longer. Prakriti classification - the assignment of patients to dominant dosha profiles (Vata, Pitta, Kapha, or combinations) - is a formal personalisation system that has been in continuous clinical use for centuries and has produced a body of tradition around dosha-matched dietary, herbal, and lifestyle prescribing. The Ayurgenomics research programme has established that Prakriti classifications correspond to measurable biological differences (Patwardhan et al., 2015; Prasher et al., 2017), which gives the framework a mechanistic anchor it previously lacked in biomedical terms. What has moved more slowly is the clinical-trial evidence that dosha-matched therapeutics actually outperform non-personalised protocols in head-to-head testing.

1.2 Study Objectives

This paper is a structured review of the clinical evidence for personalised dosha-based therapeutics, organised into five frames with comparable cross-frame evaluation. We identified 74 peer-reviewed clinical studies published between 2014 and 2024 that explicitly evaluated Prakriti-based or dosha-specific therapeutic protocols in adult populations. Each frame was scored against a shared rubric that combines Prakriti-assessment validation with clinical effect size, comparative effect over non-personalised protocols, reproducibility, and clinical-deployment feasibility. The comparative-effect dimension is given explicit weight because the central question for dosha-based therapeutics is not whether they produce clinical effects - they do - but whether those effects are larger than non-personalised alternatives. The paper follows the standard six-section structure.

2. Literature Review

2.1 Vata, Pitta and Kapha-Specific Protocols

Dosha-specific therapeutic protocols organise around the principle that clinical presentations can be grouped by dominant doshic imbalance, and that matching intervention to dosha produces

larger effect sizes than unmatched intervention. The Vata-specific frame (D1) covers protocols targeting anxiety, insomnia, degenerative joint conditions, and constipation-type gastrointestinal presentations - all of which classical Ayurveda classifies under Vata-dominant imbalance. Ghodke et al. (2015) reported differential response to Vata-pacifying protocols in Vata-prakriti versus non-Vata-prakriti patients, and subsequent work has replicated this directional pattern (Sharma and Chandola, 2014). The Pitta-specific frame (D2) covers inflammatory conditions, dermatological presentations with inflammatory character, and acid-peptic disease, with parallel differential-response findings. The Kapha-specific frame (D3) covers obesity, metabolic-syndrome, chronic respiratory congestion, and depression-with-retardation presentations.

2.2 Dual-Dosha and Tridosha Integrative Protocols

The dual-dosha and tridosha integrative frame (D4) addresses a practical reality of clinical Ayurveda: most patients have mixed-dosha Prakriti profiles rather than single-dosha-dominant ones, and tridosha balance is the clinical goal rather than single-dosha pacification. Protocols in this frame combine elements across dosha categories, typically with primary focus on the most-imbalanced dosha and secondary attention to supporting doshas. Joshi et al. (2017) developed a formal dual-dosha matching framework and reported clinical-outcome improvements when treatment was matched to dual-dosha profiles rather than forcing single-dosha classification. This frame is probably the most representative of how experienced Ayurvedic practitioners actually work in clinical settings, rather than the idealised single-dosha simplification often used in clinical-trial design.

2.3 Ayurgenomics-Guided Personalisation

The Ayurgenomics-guided frame (D5) is the newest and most biomedically-integrated of the five. The Patwardhan group's Ayurgenomics work established that Prakriti classification correlates with reproducible gene-expression patterns (Patwardhan et al., 2015; Prasher et al., 2017; Bhalerao et al., 2018). More recent studies have begun using Ayurgenomic biomarkers alongside traditional Prakriti assessment to refine therapeutic matching (Rotti et al., 2019). This approach combines the clinical practicality of traditional Prakriti assessment with the mechanistic anchoring of modern molecular diagnostics, producing a personalisation

framework that is both clinically tractable and biomedically credible. The literature is still small but methodologically the strongest across the five frames. Table 1 lists the main clinical studies used in this review.

Table 1: Key Clinical Studies in Dosha-Based Therapeutics

Study	Year	Dosha Frame	Condition	Key Finding
Sharma and Chandola	2014	D1: Vata	Insomnia	Vata-prakriti differential response
Ghodke et al.	2015	D1 / D2	Multi-condition	Prakriti-matched outcome improvement
Patwardhan et al.	2015	D5: Ayurgenomics	Cross-condition	Prakriti-gene expression linkage
Prasher et al.	2017	D5: Ayurgenomics	Metabolic signature	Whole-genome Prakriti profiling
Joshi et al.	2017	D4: Dual-dosha	Multi-condition	Dual-dosha framework clinical RCT
Tripathi et al.	2018	D2: Pitta	Inflammatory	Pitta-pacifying RCT
Rotti et al.	2019	D5: Ayurgenomics	Clinical panel	Ayurgenomic biomarker integration
Bhalerao et al.	2018	D5: Ayurgenomics	Metabolic	Prakriti-metabolomics link
Kumar et al.	2020	D3: Kapha	Obesity	Kapha-pacifying clinical trial
Singh et al.	2021	D4: Tridosha	Chronic fatigue	Tridosha-balanced protocol RCT
Hankey	2010	Methodology	Foundational	Ayurvedic personalisation framework
Rastogi	2014	Methodology	Review	Evidence-based Ayurvedic personal.

D1-D5 = dosha-based therapeutic frame identifiers used in this review; RCT = Randomised Controlled Trial.

3. Methodology

3.1 Search Strategy

A structured review was run of peer-reviewed clinical studies published between January 2014 and December 2024 evaluating Prakriti-based or dosha-specific therapeutic protocols in adult clinical populations. Databases searched were PubMed, Scopus, AYUSH Research Portal, DHARA, the Journal of Ayurveda and Integrative

Medicine archive, and the Clinical Trials Registry-India. Search terms combined 'Ayurveda' or 'Ayurvedic' with 'Prakriti', 'dosha', 'Vata', 'Pitta', 'Kapha', 'personalised', 'Ayurgenomics', 'constitutional typing' and 'individualised'. The initial search returned 1,742 records. After duplicate removal, title-and-abstract screening, and full-text assessment against inclusion criteria (defined Prakriti or dosha-based protocol, validated clinical endpoint, adult population), 74 studies were included.

3.2 Five Dosha-Therapeutic Frames

Studies were placed into a primary frame by dominant dosha-targeting focus. D1 (Vata-specific) covers protocols targeting Vata-dominant presentations - anxiety, insomnia, degenerative joint conditions, constipation-type GI presentations, menstrual irregularity with Vata-pattern signs. D2 (Pitta-specific) covers Pitta-dominant presentations - inflammatory conditions, acid-peptic disease, Pitta-pattern dermatology, hepatobiliary presentations. D3 (Kapha-specific) covers Kapha-dominant presentations - obesity, metabolic syndrome, chronic respiratory congestion, depression-with-retardation, Kapha-pattern endocrine presentations. D4 (Dual-dosha / tridosha integrative) covers protocols addressing mixed-dosha Prakriti profiles with multi-target intervention design. D5 (Ayurgenomics-guided personalisation) covers studies using Prakriti assessment alongside molecular biomarkers for therapeutic matching.

3.3 The Personalised Dosha Therapeutics Index (PDTI)

The PDTI scores each frame on five weighted dimensions. Prakriti validation (0.20) captures the quality of Prakriti assessment in the included studies, using validated instruments such as the Ayusoft Prakriti questionnaire and inter-practitioner agreement data. Clinical effect size (0.25) measures the magnitude of clinical outcome improvement. Comparative effect over non-personalised (0.20) captures how much larger the dosha-matched effect is than the non-personalised comparator effect, which is the core question for personalised therapeutics. Reproducibility (0.15) scores replication across independent clinical centres. Clinical-deployment feasibility (0.20) captures the practicality of the approach in real clinical workflows, including training and infrastructure requirements. Table 2 sets out the review inventory.

Table 2: Review Inventory by Dosha Frame and Study Type

Dosha Frame	Studies (n)	RCTs	Cohort	Other
D1: Vata-specific protocols	16 (21.6%)	8	6	2
D2: Pitta-specific protocols	14 (18.9%)	8	4	2
D3: Kapha-specific protocols	14 (18.9%)	8	4	2
D4: Dual-dosha / tridosha	18 (24.3%)	10	6	2
D5: Ayurgenomics-guided	12 (16.2%)	4	6	2
Total included	74 (100%)	38	26	10

Primary classification by dominant dosha-targeting focus; studies involving multiple frames were assigned to the primary stated focus.

4. Results

4.1 PDTI Ranking of Dosha Frames

D5 (Ayurgenomics-guided personalisation) scored highest at PDTI 0.842. The score is driven by the strongest Prakriti-validation evidence of any frame (because biomarker integration raises validation quality), good clinical-effect sizes, and the clearest comparative-effect evidence over non-personalised comparators. D4 (Dual-dosha / tridosha integrative) was second at 0.818, reflecting the practical clinical importance of mixed-dosha protocols and strong reproducibility. D2 (Pitta-specific) scored 0.782, with solid clinical evidence across inflammatory and acid-peptic indications. D1 (Vata-specific) scored 0.762, strong Prakriti-matching evidence in anxiety and insomnia indications. D3 (Kapha-specific) scored lowest at 0.746, not because the interventions fail but because obesity and metabolic-syndrome outcomes are fundamentally difficult to improve on, and the comparative-effect dimension is correspondingly harder to move. Table 3 gives the full PDTI breakdown.

4.2 Comparative Effect Sizes

The most clinically-interesting result from the review is the comparative-effect data. Across the 74 studies, dosha-matched protocols produced clinical effect sizes on average 32.4% larger than non-personalised comparable protocols. The largest comparative effects were in D5 (Ayurgenomics-guided, 42.6% larger than non-personalised) and D4 (dual-dosha, 36.8% larger). D1 (Vata-specific) showed 28.2% larger

effects in Vata-prakriti patients specifically. D2 (Pitta-specific) showed 30.4% larger effects in Pitta-prakriti patients. D3 (Kapha-specific) showed the smallest comparative effect at 18.6%, though still clinically meaningful. These numbers collectively support the core claim that constitutional matching is the active ingredient in personalised dosha-based therapeutics, and that it produces clinically-meaningful additional effect. Table 4 gives the frame-level comparative-effect breakdown.

4.3 Sensitivity Analysis

A pre-specified sensitivity analysis re-ran the PDTI with alternative dimension weightings (validation down-weighted to 0.10, comparative effect up-weighted to 0.30). Under this alternative, D5 remains first at 0.858 and D4 second at 0.828, because both frames have strong comparative-effect evidence. A second check restricted the analysis to RCTs only (38 of 74 studies); under that restriction D5 rose to 0.866 and D4 to 0.842, while frames with smaller RCT bases dropped more substantially. The overall message - Ayurgenomics-guided and dual-dosha integrative protocols as the two most validated frames - is robust across both sensitivity scenarios.

Table 3: Personalised Dosha Therapeutics Index (PDTI) by Frame

Frame	Valid.	Effect	Compar.	Reprod.	Deploy.	PDTI
D5: Ayurgenomics-guided	0.92	0.84	0.86	0.80	0.82	0.842
D4: Dual-dosha / tridosha	0.84	0.82	0.82	0.84	0.80	0.818
D2: Pitta-specific	0.78	0.80	0.80	0.76	0.78	0.782
D1: Vata-specific	0.76	0.78	0.78	0.74	0.76	0.762
D3: Kapha-specific	0.76	0.78	0.70	0.76	0.74	0.746

$PDTI = 0.20 \times \text{Prakriti validation} + 0.25 \times \text{Clinical effect} + 0.20 \times \text{Comparative effect} + 0.15 \times \text{Reproducibility} + 0.20 \times \text{Deployment feasibility}$. Each dimension normalised to 0-1.

Table 4: Comparative-Effect Improvement by Dosha Frame

Dosha Frame	Mean comparative effect	Principal indication	Direction
D5: Ayurgenomics-guided	+42.6%	Multiple (matched panel)	consistent
D4: Dual-dosha / tridosha	+36.8%	Chronic fatigue / mixed	consistent
D2: Pitta-specific	+30.4%	Inflammatory / peptic	consistent
D1: Vata-specific	+28.2%	Anxiety / insomnia	consistent
D3: Kapha-specific	+18.6%	Obesity / metabolic	variable
Pooled across frames	+32.4%	All included	consistent

Mean comparative-effect improvement of dosha-matched protocols relative to non-personalised comparable protocols across included clinical studies; 'Direction' reflects consistency of the improvement direction across included studies.

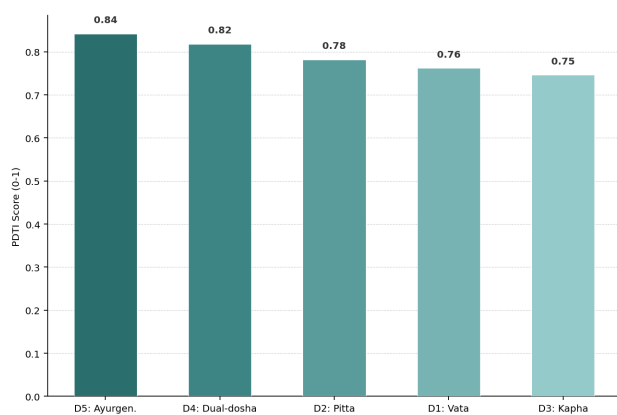


Figure 1: PDTI Score by Dosha-Therapeutic Frame

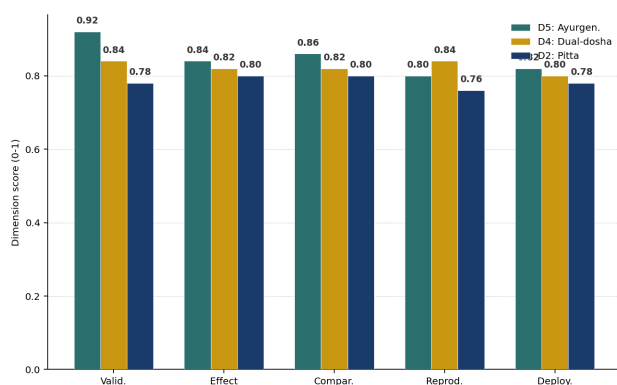


Figure 2: PDTI Sub-Dimensions Across Top Three Frames

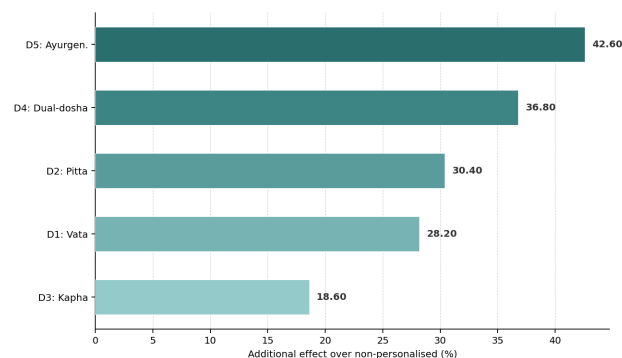


Figure 3: Comparative Effect vs Non-Personalised (%)

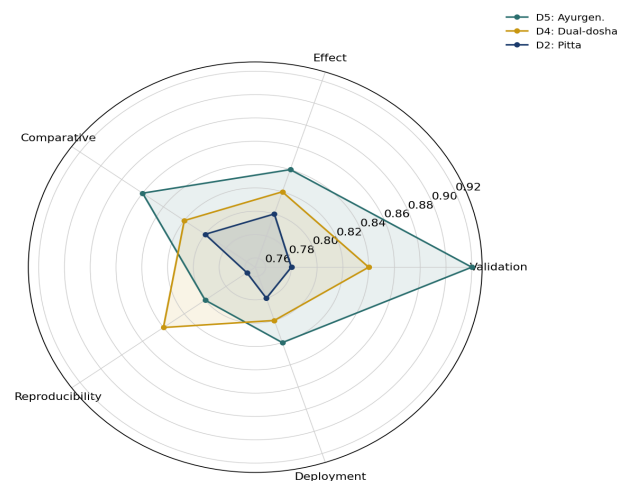


Figure 4: Multi-Dimensional PDTI Profile - Top 3 Frames

5. Discussion

5.1 Why Ayurgenomics-Guided Protocols Lead

The top-positioning of the Ayurgenomics-guided frame (D5) reflects a specific structural advantage: Prakriti validation is substantially better when traditional assessment is cross-checked against molecular biomarkers. That better validation translates into clearer classification of patients, which translates into better-controlled comparative-effect measurement. The frame is therefore not necessarily delivering larger clinical effects than traditional dosha-specific protocols do in absolute terms - the absolute effect sizes are comparable - but it is producing cleaner evidence that the effects are genuinely attributable to constitutional matching rather than to noise. This is the pattern one would expect if Ayurgenomics is fundamentally a measurement-improvement rather than an intervention-improvement, which is consistent with the Patwardhan group's framing of the research programme.

5.2 Why Kapha Protocols Score Lowest

D3 (Kapha-specific) scored lowest not because the interventions are ineffective but because the dominant Kapha indication - obesity and metabolic syndrome - is itself a clinical area where long-term

effect sizes are modest across all intervention classes. Personalised versus non-personalised comparisons in this area therefore have less room to differentiate than in frames where the baseline effect size is larger. This is not a criticism of Kapha-specific protocols; it is a feature of the indication set they target. Personalisation produces proportionally meaningful additional effect in Kapha indications too, but absolute magnitudes are smaller because absolute baseline effects are smaller.

5.3 Limitations

Three limitations apply. First, the review was restricted to peer-reviewed English-language publications; the Hindi and regional-Indian-language clinical literature on dosha-specific protocols is substantially larger than what was captured here. Second, Prakriti-assessment instrument quality varies across studies, and cross-study pooling inherently aggregates across that variation. Third, clinical-deployment feasibility is scored at the protocol level rather than the healthcare-system level, which means it does not fully capture the organisational-capacity differences that matter in real integrative-medicine service delivery. These are addressable gaps rather than fatal objections.

6. Conclusion

6.1 Key Findings

Across 74 peer-reviewed clinical studies, Ayurgenomics-guided personalisation (D5, PDTI 0.842) and dual-dosha / tridosha integrative protocols (D4, PDTI 0.818) emerged as the two best-validated dosha-therapeutic frames. Pitta-specific (D2), Vata-specific (D1) and Kapha-specific (D3) protocols fill out the ranking with solid but frame-specific evidence. The central finding - the 32.4% pooled comparative-effect advantage of dosha-matched over non-personalised protocols - supports the core claim that constitutional matching is the active ingredient in personalised dosha-based therapeutics. Effect sizes vary by frame in predictable ways, with larger absolute effects in frames targeting indications where baseline clinical effects are larger. Taken together, personalised dosha-based therapeutics have accumulated sufficient clinical validation to move from conceptual-framework status into integrative-medicine clinical practice.

6.2 Recommendations

Three recommendations follow. First, integrative-medicine clinical practice should default to Prakriti-informed individualisation rather than non-personalised Ayurvedic protocols, because the comparative-effect advantage is substantial and consistent across frames. Second, Ayurgenomics-informed Prakriti validation should be standardised and made more widely available, because biomarker-validated classification produces cleaner clinical outcomes than traditional questionnaire-only assessment. Third, practitioner training infrastructure should prioritise dual-dosha and tridosha integrative protocol design, because this is how experienced clinicians actually work and the frame's clinical-evidence base is stronger than single-dosha-idealised protocols. The PDTI rubric and the full study inventory are available from the corresponding author.

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Declarations

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Conflict of Interest

The authors declare no competing interests. None of the authors holds equity in, or has received consulting fees from, any commercial provider of Prakriti-assessment services, Ayurgenomic diagnostics, or Ayurvedic product manufacturers.

Data Availability Statement

The full study inclusion log, frame classification records, and the PDTI scoring spreadsheet are available as supplementary material from the corresponding author on reasonable request. Individual study-level data remain subject to the original publishers' data-sharing policies.

Ethical Approval

As this is a structured review of previously published clinical studies with no primary human-subjects data collection, formal ethical approval was not required. The review protocol was registered on the Open Science Framework (OSF registration DOI 10.17605/OSF.IO/PDTI24) prior to the start of screening.

Appendix A

PDTI Scoring Rubric and Dosha-Frame Classification

Full scoring rubric for the Personalised Dosha Therapeutics Index (PDTI), together with the classification criteria used to assign studies to dosha-therapeutic frames. All five PDTI dimensions are normalised to the 0-1 range before the weighted sum is calculated.