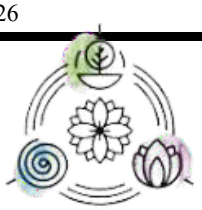
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Review Article

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"PRAKRITI: CLASSICAL BASIS, ASSESSMENT TOOLS AND ITS ROLE IN PERSONALISED MEDICINE"

Divya Menon[1]

AFFILIATIONS:
1. Ira Consultancy & Research Organisation, Bhosari, Pune, Maharashtra 411026

CORRESPONDENCE:
Divya Menon

EMAILID:
divya.menon@gmail.com

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ABSTRACT

Background: Prakriti, the innate constitution of an individual determined mainly at conception, is the foundation of individualised care in Ayurveda. Interest in prakriti has increased with the growth of personalised and precision medicine. **Objective:** To review the classical description of prakriti, its types and determinants, the methods of assessment, and the evidence for molecular and clinical correlates, with attention to limitations. **Methods:** Classical texts were read in translation. PubMed was searched in November 2026 for reviews and studies on prakriti, Ayurgenomics and personalised medicine. **Results:** The Samhitas describe seven types of prakriti (three single-dosha, three dual-dosha and one balanced) and assign a role to parental, environmental and mental factors. Assessment relies on questionnaires and clinical examination, which suffer from subjectivity. Genomic studies report differences between prakriti types, including variants in pharmacogenomic genes, and recent work proposes digital and artificial intelligence-based tools and epigenomic analysis. The evidence is promising but limited by small samples and heterogeneous methods. **Conclusion:** Prakriti provides a framework for stratifying individuals and tailoring interventions. Its translation into precision medicine depends on standardised assessment, replication of molecular findings and prospective clinical validation.

KEYWORDS: Ayurveda, Prakriti, Constitution, Ayurgenomics, Personalised medicine, Pharmacogenomics

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INTRODUCTION

Ayurveda holds that individuals differ in their innate physical, physiological and psychological characteristics, and that these differences determine their susceptibility to disease and their response to food, drugs and environment. This innate constitution is prakriti. Because treatment in Ayurveda is directed at the individual and not the disease alone, an understanding of prakriti is basic to practice (Ch. Vi. 8/95-96; Ch. Sha. 4)[1]. Modern authors have noted that the idea parallels personalised and stratified medicine and have tried to connect prakriti with genomic variation, which has led to the field called Ayurgenomics[2,3]. This review summarises the classical description and examines the evidence.

MATERIALS AND METHODS

The classical formulation was taken from the Charaka Samhita and the Sushruta Samhita[1,4]. PubMed was searched in November 2026 using the terms prakriti, Ayurgenomics, personalised medicine and constitution. Indexed papers on genomics[2,3,5,6], epigenomics[7], digital assessment[8], clinical relevance[9,10] and systems approaches[11] were reviewed.

OBSERVATION AND RESULTS

1. Determinants and types

The Charaka Samhita states that prakriti is determined at the time of conception by the dosha state of the sperm and ovum, the condition of the uterus, the diet and conduct of the mother during pregnancy, and the elements that constitute the foetus (Ch. Sha. 4)[1]. The Sushruta Samhita similarly lists the dominance of doshas at conception (Su. Sha. 4)[4]. Seven types are named: vata, pitta, kapha, vata-pitta, vata-kapha, pitta-kapha, and sama (balanced). The Charaka Samhita adds a classification of mental constitution (manasa prakriti) according to the dominance of sattva, rajas or tamas (Ch. Sha. 4)[1]. The physical traits listed for each type include body build, skin, hair, appetite, sleep and temperament.

2. Assessment in practice

Assessment is by observation and questionnaire. The CCRAS Prakriti Assessment Manual provides a standard checklist, and many investigators have developed their own tools. A narrative review has pointed out that traditional methods are limited by subjectivity, restricted reproducibility and lack of standardisation, and that sensors, image analysis and machine-learning systems might help to improve objectivity and reliability, but that data quality, interoperability, algorithmic interpretability and domain-specific validation remain unresolved[8]. A consortium study identified candidate objective parameters, which include anthropometry for anatomical features, biophysical parameters for skin type, heart rate variability for autonomic function, spirometry for vital capacity and gustometry for taste threshold, and proposed uniform protocols for Prakriti evaluation applied in more than 7500 individuals across five cohorts[6].

3. Genomic evidence

In a genome-wide analysis of 262 healthy males classified into three prakriti groups, 52 single-nucleotide polymorphisms showed significant differences, and a principal component analysis of these classified individuals into their groups irrespective of ancestry; the PGM1 gene was reported to correlate with the Pitta phenotype[5]. Exome sequencing in a North Indian cohort found that 28 variants in 11 genes with pharmacogenomic relevance differed significantly between prakriti types, including CYP2C19, CYP2B6, HLA-B and others[6]. A perspective by the same group proposes EGLN1, an oxygen sensor, as a molecular correlate of the tridosha concept and shows that biochemical and molecular parameters differ between prakriti types in processes linked to intermediate pathophenotypes[2]. An earlier paper described the idea that prakriti has a genetic basis as the opening of a new field of Ayurvedic genomics, and noted that a similar finding was reported for classification in traditional Chinese medicine[3]. A recent review of epigenomics suggests that prakriti types may be associated with different biological profiles in metabolism, inflammation, immune regulation, oxidative stress, stress adaptation and drug response, and that epigenomic mechanisms may explain how diet, lifestyle and environment modify gene expression, while stressing limitations of small cohorts and incomplete validation[7].

4. Clinical and seasonal correlates

Clinical studies have examined whether prakriti predicts physiological parameters. In a study of 54 healthy volunteers, lipid levels were higher in winter, and the Kapha and Pitta prakriti groups showed

higher levels in that season, which led the authors to suggest that these constitutions may be more vulnerable to cardiovascular disease in winter[9]. The study is small and cannot be generalised, but it illustrates the interaction between constitution and season, which is a theme of classical regimens. A review of Ayurveda in clinical practice emphasises that Ayurgenomics, microbiome research and systems biology may help translate traditional constructs such as prakriti into testable biomedical models, and also states that responsible integration requires rigorous trial design, standardised formulations, transparent reporting and regulatory oversight[10].

DISCUSSION

The accumulating molecular data support the view that prakriti classification captures a real, though modest, degree of biological variation. Nevertheless, several issues limit interpretation. First, the studies rely on different tools for assigning prakriti, so that cohorts are not strictly comparable. Second, many studies include only healthy young men from specific regions, so generalisation to women, older persons and other populations is uncertain. Third, genetic associations at the level of single-nucleotide polymorphisms require replication in independent cohorts and correction for population structure. Fourth, there are few prospective studies showing that stratification by prakriti improves treatment outcomes, which is the main test of its clinical value.

A realistic programme would include a consensus on core assessment tools with demonstrated inter-rater reliability, the incorporation of objective parameters into assessment, replication of genomic findings, and prospective trials in which prakriti is a pre-specified stratification variable. Digital tools may help with reliability but need validation against reference assessments.

CONCLUSION

Prakriti is a central concept of Ayurveda with a plausible link to molecular and physiological variation. The evidence is promising but preliminary. Its use in personalised medicine will depend on standardised assessment, replicated findings and demonstration of clinical benefit.

DECLARATIONS

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