



Review Article

Volume 15 Issue 07

July 2026

COMPARATIVE EVALUATION OF ANGULI PRAMANA IN THE BRIHATTRAYI: A REVIEW ARTICLE

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Abstract

Background:

The measurement of the human body has been an important area of study since ancient times. Among the earliest systems of body measurement, Ayurveda provides one of the most detailed and clinically relevant approaches. In Ayurvedic science, measuring the body was not limited to understanding anatomy; it also played a vital role in assessing health, diagnosing diseases, determining prognosis, and planning treatment. One of the most significant concepts in this tradition is *Anguli Pramana*, a personalized system of body measurement that uses an individual's own finger breadth (*Swa-Angula*) as the standard unit of measurement.

The term *Anguli Pramana* is derived from the Sanskrit words *Anguli*, meaning "finger," and *Pramana*, meaning "measurement" or "standard." In this system, the breadth of the middle finger, particularly at the middle phalanx, serves as the basic unit for measuring different parts of the body. Because the unit is based on the individual's own finger, the measurements are proportionate to that person's body rather than being fixed or universal.

The concept of *Anguli Pramana* is described in detail in the three major classical texts of Ayurveda, collectively known as the *Brihatrayi*: the Charaka Samhita, the Sushruta Samhita, and Ashtanga Hridayam (along with the Ashtanga Sangraha). Although all these texts recognize the importance of *Anguli Pramana*, each presents it from a different clinical perspective. The Charaka Samhita emphasizes its role in clinical examination and diagnosis, the Sushruta Samhita focuses on its surgical and anatomical significance, while Vagbhata integrates and systematizes the concepts from both traditions. As a result, slight differences can be observed among these texts in terms of numerical measurements, anatomical descriptions, and their practical applications in clinical practice.

Objective: To systematically compare and critically examine the descriptions and applications of *Anguli Pramana* in the Charaka Samhita, Sushruta Samhita, and Ashtanga Hridayam (along with the Ashtanga Sangraha).

Methods: Relevant classical references pertaining to *Anguli Pramana* were collected from the *Charaka Samhita* (Vimanasthana), *Sushruta Samhita* (Sutrasthana), and *Ashtanga Hridayam/Ashtanga Sangraha*, and were critically reviewed and compared.

Results: Charaka describes total body height as 84 Angula; Sushruta as 120 Angula (with hands raised); and Vagbhata as 3½ Hasta.

Conclusion: Although the classical texts present minor variations in numerical measurements, they share a common understanding of *Swa-Angula Pramana* as an individualized, proportion-based system for evaluating a person's Ayu, Bala, and Prakriti.

Keywords: *Anguli Pramana, Swa-Angula, Pramana Sharira, Anthropometry*

I. Introduction

Ayurveda, one of the oldest continuously practiced systems of medicine in the world, traces its origins to the Vedic tradition and emphasizes that a thorough knowledge of the human body (*Sharira Jnana*) is fundamental to accurate diagnosis and effective treatment. Among the ten components of *Dashavidha Rogi Pariksha* described by Charaka, *Pramana Pariksha* (assessment of body measurements) is considered an important aspect of clinical evaluation, as it provides valuable information regarding an individual's physique and constitutional status.^[1]

Classical Ayurvedic literature describes two principal methods of body measurement:

- **Anguli Pramana**, which measures body dimensions using the individual's own finger breadth (*Swa-Angula*).
- **Anjali Pramana**, which estimates the volume of body fluids and internal constituents using the capacity of the individual's cupped palms.

"देहः स्वैरंगुलैरेष यथावदनुकीर्तितः।" (Su. Su. 35/16)

Among these, *Swa-Angula Pramana* is distinctive because it employs the individual's own finger breadth as the unit of measurement, making the assessment personalized and proportional to that person's physique rather than based on a fixed standard.^[2] *Pramana Pariksha* closely resembles the modern concept of anthropometry, which involves the systematic measurement of human body dimensions and proportions to assess individual physical characteristics.^[3]

The concept of *Anguli Pramana* has been described in the major classical Ayurvedic texts by Charaka, Sushruta, and Vagbhata in the *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridayam/Ashtanga Sangraha*, respectively.

"केवलं पुनः शरीरं अंगुलिपर्वणि चतुरशीतिः।" (Cha. Vi. 8/117) ^[4]

"सर्विशमंगुलशतं पुरुषायाम इति।" (Su. Sū. 35/14) ^[5]

"स्वं स्वं हस्तत्रयं सार्धं वपुः पात्रं सुखायुषोः।" (A.H. Sha. 3/106) ^[6]

Although these texts share the same fundamental principles, they differ in certain anatomical descriptions, numerical measurements, and clinical applications. Therefore, a systematic comparative analysis of their perspectives is valuable for enhancing the understanding of classical Ayurvedic concepts and exploring their relevance in contemporary anthropometric and integrative health research.

Objectives:

- To conduct a comparative analysis of the descriptions of *Anguli Pramana* presented in the *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridayam/Ashtanga Sangraha*.
- To evaluate the clinical importance of *Anguli Pramana* in the assessment of Ayu (longevity), Bala (physical strength), and *Prakriti* (constitutional type).

II. Materials and Methods

This study was designed as a qualitative, descriptive review of classical Ayurvedic literature. The analysis was based primarily on authoritative Ayurvedic texts, with a focus on the concepts and descriptions of *Anguli Pramana*. The following classical sources were systematically examined and compared:

1. Charaka Samhita – Vimanasthana 8/117
2. Sushruta Samhita -Sutrasthana- 35/12–15
3. Ashtanga Sangraha – Sharira Sthana, along with the Ashtanga Hridayam (Sharira Sthana)

Selection Criteria:

Classical verses describing body measurements were identified and included in the review. These comprised references to *Ayam* (body height), *Vistara* (arm span), *Anga-Pratyanga Pramana* (measurements of individual body parts), and other related measurements associated with physical assessment and prognostic evaluation. To ensure a comprehensive understanding of the original texts, established Ayurvedic commentaries, including Chakrapani's *Ayurvedadipika* on the Charaka Samhita and Dalhana's *Nibandha Sangraha* on the Sushruta Samhita, were also consulted and incorporated into the analysis.

III. Results

Comparative tables were compiled to facilitate a systematic comparison of the similarities and differences in the concepts presented by the three Acharyas.

A. Overall Body Height (Ayam/Deha Pramana)

Table.1-The most fundamental measurement — total body height — differs numerically across the three texts:

Parameter	Charaka	Sushruta	Vagbhata
Total Body Height	84 Angula (<i>Swa-Angula</i>)	120 Angula (<i>Swa-Angula</i> , hands raised)	3½ Hasta (~84 Angula equivalent)
Reference	Ch. Vi. 8/117 ^[7]	Su. Su. 35/4–12 ^[8]	A.S. Sha. 3/106 ^[9]
Posture	Standing erect	Standing on toes, both hands raised	Standing (hasta unit)
Prognosis for Sama Pramana	Dirghayu, Bala, Oja, Sukha, Aishwarya	Dirghayu, Dhanasampanna	Sama Sharira = Sukha, ayu

Explanation of differences: The variation in the reported measurements is primarily due to differences in the method of measurement rather than in the underlying concept. Sushruta describes a body measurement of 120 *Angula*, which is obtained by measuring the distance from the feet to the fingertips with both arms raised above the head, thereby including the length of the upper limbs in addition to standing height. In contrast, Charaka records a body height of 84 *Angula*, representing only the standing height. Vagbhata expresses the measurement as 3½ Hasta, which is mathematically equivalent to 84 *Angula* (1 Hasta = 24 *Angula*; $3.5 \times 24 = 84 \text{ Angula}$). Therefore, the apparent numerical variation among the classical texts reflects differences in measurement techniques rather than any conceptual disagreement.

B. Concept of Ayam and Vistara (Height and Arm-Span)

All three Acharyas introduce a critical proportionality principle — *Sama Ayam-Vistara* — that equates healthy body proportions with longevity:

- **Avyam** = Vertical height of the person
- **Vistara** = Horizontal distance between fingertips of both outstretched arms (arm-span)

Table.2- Comparative Description of Sama, Heena, and Adhika Sharira According to Charaka, Sushruta, and Vagbhata

Concept	Charaka [10]	Sushruta [11]	Vagbhata [12]
Sama (Equal)	<i>Avyam</i> = <i>Vistara</i> → Uttam Ayu, Bala, Oja, Sukha	Proportionate body → Dirghayu	Sama Sharira → Sukha, Dirghayu,
Heena (Reduced)	< 84 <i>Angula</i> → Heen Ayu, Bala, Oja	Heen Dhanasampanna	Heen
Adhika (Excess)	> 84 <i>Angula</i> → Madhyam Ayu	Madhyam Ayu, Dhanasampanna	Excess → imbalance

The Ayurvedic concept of Swa-Angula-based proportional body measurements, described in classical texts such as the Caraka Samhita, Susruta Samhita, and Aṣṭanga Hṛdaya, predates Leonardo da Vinci's *Vitruvian Man* (c. 1490 CE). Although developed independently, both traditions emphasize proportional relationships among body parts as indicators of ideal human morphology.^[13]

C. Anga-Pratyanga Pramana (Measurements of Body Parts)

Individual body-part measurements (*Pratyanga*) are detailed extensively in all three Samhitas, using *Swa-Angula* as the base unit.

Table.3-showing measurement of body parts by all *acarya* of *bṛhatṭrayi* and english terminology

Body part (Anga/Pratyanga)	<i>Caraka</i> (angula) Ch.Vi.8/117 [14]	<i>Susruta</i> (angula) Su.Su.35/12 [15]	<i>Vagbhaṭa</i> (angula) A.S. Sa. 8/36[16]	English terminology
<i>Pada</i>	4,6,14	14	4(ut) ;14 a	The foot
<i>Prapada</i>		4,5	4	The forepart of foot
<i>Padatala</i>		4,5	4	The forepart of foot
<i>Parsni</i>		5,4	4	The heel
<i>Pada Madhya</i>		14		Middle part of foot
<i>Gulpha Madhya</i>		14		Middle part of gulfa
<i>Jangha Madhya</i>		14		Middle part of jangha
<i>Janu Madhya</i>	16	14	14	Mid part of knee
<i>Jangha</i>	18	18	18	The shank (from the ankle to the knee)
<i>Uru</i>	18,32	18,32	18	Thigh
<i>Janu</i>	4		4	Knee
<i>Pada angustha</i>		2	2	The great toe
<i>Pada pradesini</i>		2	2	2nd toe
<i>Madhyama</i>		1 ½	1 ½	3rd toe
<i>Anamika</i>		1	1	4th toe
<i>Kanisthika</i>		½	½	5th toe

<i>Indrabasti parinaha</i>		16		Circumference of the calf
<i>Manibandha parinaha</i>		12		Circumference of wrist
<i>Prakostha parinaha</i>		12		Circumference of the forearm
<i>Ansapitha to kurpara</i>	16	16	15	
<i>Hasta</i>	12	24		The hand
<i>Bhuja</i>		32		The arm
<i>Manibandha to kurpara</i>		16		Distance between wrist and elbow joint
<i>Hasta tala</i>		6,4		Palm
<i>Pradesini from angustha mula</i>		5		Distance between root of thumb and index finger
<i>Madhyama</i>		5	5	Middle finger
<i>Pradesini</i>		4 ½	4 ½	Index finger
<i>Anamika</i>		4 ½	4 ½	Ring finger
<i>Kanisthika</i>		3 ½	3 ½	The little finger
<i>Angustha</i>		3 ½	3 ½	The thumb
<i>Prabhu</i>	16		16	The forearm
<i>Prapani</i>	15		15	The forearm
<i>Pani</i>			12	Palm

The Sushruta Samhita presents the most comprehensive and anatomically detailed descriptions of *Anga-Pratyanga Pramana* (measurements of individual body parts), reflecting its strong emphasis on surgical anatomy. In contrast, the Charaka Samhita primarily highlights the diagnostic and prognostic significance of Pramana, particularly in the assessment of Ayu (longevity) and Bala (physical strength). The Ashtanga Hridayam and Ashtanga Sangraha integrate and consolidate the concepts presented in the earlier texts, offering a more systematic and balanced account of *Anguli Pramana*.

D. Unit of Measurement: Definition of "Angula/Anguli"

All three Acharyas define Angula (unit of finger-breadth), though with slight technical variations.

Table.4- Comparative Description of Swa-Angula Measurement in Charaka, Sushruta, and Vagbhata

Criterion	Charaka ^[17]	Sushruta ^[18]	Vagbhata ^[19]
Unit name	Swa-Angula	Swa-Angula	Swa-Angula + Hasta
Anatomical site	Width of Madhyama Parva of Madhyama Angula	Same as Charaka (per Dalhana)	Same + 1 Hasta = 24 Angula
Exact location	Middle phalanx of middle finger	Medio-lateral width at proximal interphalangeal joint	Same
Commentator	Chakrapanidatta (<i>Ayurveda Dipika</i>)	Dalhanacharya (<i>Nibandha Sangraha</i>)	Arunadatta (<i>Sarvangasundara</i>) + Indu (<i>Sasilekha</i>)
Primary reference	Ch.Vi.8/94	Su.Su. 35/3	A.H. Sha. 3/57; A.S. Sha. 8/29

IV. Discussion

The comparative evaluation of the classical texts indicates that, although Charaka, Sushruta, and Vagbhata describe different numerical values for total body measurements, they share the same fundamental principle of *Swa-Angula Pramana*. All three scholars advocate the use of an individual's own finger breadth as a personalized and proportional unit for assessing body dimensions. The variation between Charaka's measurement of 84 *Angula* and Sushruta's 120 *Angula* arises from differences in measurement methodology rather than conceptual disagreement. While Charaka records only the standing height, Sushruta measures the distance from the feet to the fingertips with the arms extended overhead, thereby including the length of the upper limbs in the total measurement.

Vagbhata, in the *Ashtanga Sangraha* and *Ashtanga Hridayam*, presents a synthesized interpretation of the earlier traditions by expressing body height as 3½ Hasta, which is equivalent to 84 *Angula*. This mathematical equivalence demonstrates his effort to

harmonize the concepts presented by Charaka and Sushruta, reflecting the integrative nature of his works.

From a contemporary scientific perspective, the Ayurvedic concept of *Pramana Sharira* closely corresponds to the field of anthropometry, which involves the systematic measurement of human body dimensions. The classical principle of Sama Ayam-Vistara, which states that body height and arm span are proportionate, is consistent with findings from modern biomechanics and forensic anthropology. Current research has shown that, in healthy adults, arm span is generally comparable to standing height, and significant deviations from this relationship may indicate skeletal abnormalities or disorders affecting growth and development.

Another notable aspect of *Swa-Angula Pramana* is its individualized approach to body measurement. By using each person's own finger breadth as the standard unit, Ayurveda recognizes natural variations in body size and proportions. This concept closely resembles the modern principle of allometric scaling, which evaluates body dimensions relative to individual body size rather than relying on fixed universal standards. Such an approach highlights the advanced understanding of human body proportions in classical Ayurveda and supports its relevance in contemporary fields such as personalized medicine, prosthetic design, ergonomics, and surgical planning.

The differences in emphasis among the classical texts also reflect the distinct clinical orientations of their authors. The Sushruta Samhita provides detailed measurements of individual body parts (*Anga-Pratyanga Pramana*), reflecting its strong focus on surgical anatomy and operative practice. In contrast, the Charaka Samhita emphasizes the role of Pramana in clinical assessment, particularly in evaluating Ayu (longevity), Bala (physical strength), and Prakriti (constitutional type) before treatment. The Ashtanga Hridayam and Ashtanga Sangraha integrate these perspectives, presenting a balanced and systematic account that combines both anatomical precision and clinical applicability.

Limitations:

The present review is based exclusively on the analysis of classical textual sources and does not involve primary anthropometric data collection. Further studies are needed to evaluate the validity of *Swa-Angula Pramana* through comparisons with modern anthropometric databases employing multivariate statistical analyses.

V. Conclusion

The comparative analysis demonstrates that *Anguli Pramana*, as described by Charaka, Sushruta, and Vagbhata, represents a well-developed and individualized system of anthropometric assessment within the Ayurvedic tradition. Although the classical texts report different numerical values for body measurements—84 *Angula* in Charaka, 120 *Angula* in Sushruta, and 3½ *Hasta* (equivalent to 84 *Angula*) in Vagbhata—they are conceptually consistent in recognizing *Swa-Angula Pramana* as a personalized, proportion-based method of evaluating the human body.

The scope of *Pramana Sharira* extends beyond the measurement of physical dimensions. It serves as an important component of Ayurvedic clinical examination by assisting in the assessment of Ayu (longevity), Bala (physical strength), and Prakriti (constitutional type), thereby contributing significantly to *Rogi Pariksha* (patient evaluation). Moreover, the principles of *Pramana Sharira* have considerable relevance in modern disciplines such as anthropometry, forensic anthropology, prosthetic design, sports biomechanics, and personalized healthcare.

Future interdisciplinary studies integrating the classical principles of *Anguli Pramana* with advanced digital anthropometric technologies and contemporary analytical methods may further validate its scientific significance and facilitate the integration of traditional Ayurvedic knowledge with modern biomedical science.

CONFLICT OF INTEREST –NIL

SOURCE OF SUPPORT –NONE

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