

## An observational study on *Anguli Pramana* with special reference to body mass index (BMI)

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### Abstract

Finger-based measurement, known as *Anguli Praman*, has historically been an important tool in clinical practice across various fields of medical science. The word "Praman" translates to "measurement," and in ancient times, when modern measuring devices were not available, scholars used the width of a finger (*Anguli*) as a practical unit. They recognized its significance in clinical assessments. Even with advanced tools available today, finger measurements continue to offer a straightforward and affordable method in anthropometry.

In Ayurveda, the concept of anthropometry is explained through *Anguli Praman*, which is essential for determining a person's health status. An individual who has balanced

proportions—where *Aayama* (height) and *Vistara* (width) are equal—is referred to as a *Sama Purusha*. Such individuals are believed to enjoy good health, longevity, strength, and overall well-being. This research connects Charaka's standard of 84 *Angulas* and Sushruta's standard of 120 *Angulas* with Body Mass Index (BMI) to assess physical health.

**Keywords:** *Anguli Praman*, Anthropometry, BMI, Obesity, Healthy Weight, Underweight.

### Introduction

In the field of Ayurveda, the concept of *Maana* (measurement) is categorized into two main types: *Kalingamaana* and *Magadhamaana*, as noted in the *Sharngadhara Samhita*. Measurement is essential for evaluating the dimensions

of length, volume, and weight, which are identified as *Payamaana*, *Druvayamaana*, and *Pautavamaana*, respectively. The Ayurvedic literature also presents specific measurement systems like Anjali Pramana and Swa-Anguli Pramana, particularly relevant for anatomical assessments. The principle of Praman Sharir emphasizes the role of anthropometry in Ayurveda. Precise measurement is key to comprehending the human body's structure and is a critical step before initiating any treatment. According to Acharya Charaka, Praman Pareeksha (assessment through measurement) is included in the Dashavidha Pareeksha, aimed at evaluating a patient's strength (Bala). Meanwhile, Acharya Sushruta stressed the importance of assessing Ayu (lifespan) and Bala before beginning treatment, highlighting that accurate measurements are fundamental for diagnosis and therapeutic planning within Ayurvedic medicine.<sup>(1,2,3)</sup>

## Pramana

*Pramana* refers to the means or sources through which true knowledge (*Prama*) is attained. *Prama* is the accurate understanding of an object's characteristics, while *Pramana* is the essential tool or method used to acquire this knowledge. According to *Acharya Charaka*, all entities in the world can be classified as either true (existent) or false (non-existent), and this distinction can be determined through the proper application of *Pramana*.

## Anguli

The term *Anguli* is derived from the root word *Anga* (limb) combined with the suffix *uli*, referring to the digits or subdivisions of the *Hasta* (hand) and

*Pada* (foot). According to *Acharya Sushruta*, there are a total of 20 *Angulis* in the human body. These are named as follows: *Angustha* (thumb or big toe), *Pradesini* (index finger or second toe), *Madhyama* (middle finger or third toe), *Anamika* (ring finger or fourth toe), and *Kanisthika* (little finger or fifth toe). The terms *Anguri* and *Angula* are also used as synonyms for *Anguli*.

## Angula

*Angulapramana* is the method of measuring body dimensions—such as height, arm span, and organ circumference—using one's own finger-width (*Anguli*) as a unit. This self-referential system is well-documented in ancient texts like the *Yajurveda*, *Atharvaveda*, *Samhitas*, *Puranas*, and *Upanishads*. It was applied to measure body parts, distances, and even dimensions of instruments (*Yantra*) and surgical tools (*Shastra*)<sup>[4]</sup>.

The measurements of the body are traditionally indicated in terms of one's own angula (finger breadth). A man or woman possessing these ideal measurements is believed to achieve longevity and abundant wealth, while those with moderate or below-average measurements are said to have medium or shorter lifespans, respectively.<sup>[5]</sup> The ideal body proportion is 84 finger-breadths in length, equal to the outstretched arm span. Proper proportions are believed to ensure longevity, strength, vitality, happiness, power, and wealth.

## Aim and Objective

To highlight the importance of *Anguli Praman* by correlating it with BMI as a contemporary anthropometric parameter.

## Material

Relevant literature on *Anguli Praman* will be gathered from the Samhitas and other Ayurvedic texts.

## Methodology

- Pramaan assessment of individuals was conducted to evaluate their healthy or pathological state, demonstrating the significance of Pramaan by correlating it with BMI (Body Mass Index, calculated as weight in kg/height in m<sup>2</sup>).
- In this study 16 postgraduate students from the Rachna Sharir Department of Government Ayurvedic

College, Raipur. Their height, weight, and Anguli Pramaan were recorded, and BMI was measured of each student. The data on height and weight was analyzed, and a correlation was established with BMI. The observations were noted for further analysis.

### WHO RECOMMENDED BMI RANGE

- ☐ BMI < 18.5 - Underweight
- ☐ 18.5-24.9 - Normal range
- ☐ BMI = /> 25-30 – Overweight
- ☐ BMI = /> 30 – Obese

**Observation Table 1.**

S.no.	Name	Swa Anguli Pramaan (head to toe)	Height in mtrs.	Weight in kgs	BMI	Health status
1	a)Rajnarayan	92	1.65	92	34.8	Obese
2	b)Ayushi	97	1.55	61	26.2	Overweight
3	c)Priyanka	102	1.63	56	21.8	Normal
4	d)Durgeshwari	103	1.55	43	18.5	Going to be underweight if ignored
5	e)Sarita	96	1.53	53	22.8	Normal
6	f)Vijendra	102	1.73	54	17.6	Underweight
7	g)Snigdha	120	1.56	57	23.7	Normal
8	h)Salma	113	1.58	57	21.9	Normal
9	i)Shivali	101	1.51	50	23.8	Normal
10	j)Shivani	116	1.66	54	20.4	Normal
11	k)Durga	99	1.49	55	27.2	Going to be obese if ignored
12	l)Lata	122	1.58	48	20	Normal
13	m)Rashmi	99	1.58	54	21.8	Normal
14	n)Rutuja	114	1.60	53	20.7	Normal
15	o)Gamini	118	1.54	58	24.1	Normal
16	p)Resham	97	1.55	63	25	Overweight

## Observation and result

From the collected data, it was observed that the *Anguli Pramaan* of the 16 students ranged between 92 and 122. Within this range, the Body Mass Index (BMI) values varied, showing both normal and abnormal categories. According to the observations, students c, d, e, g, h, i, j, l, m, n, and o had BMI values within the normal range. In contrast, students b, k, and p were categorized as overweight, while student f was identified as underweight. Student a, was classified as obese. This variation highlights that even within a similar *Anguli Pramaan* range, BMI can differ significantly among individuals.

## Discussion

The analysis of the collected data reveals that *Anguli Pramaan* values among the 16 students varied between 92 and 122. Despite this relatively narrow range, BMI classifications among the students showed considerable variation—ranging from underweight to obese.

This suggests that *Anguli Pramaan* alone may not be a definitive indicator of nutritional status or body composition. While many students with average *Anguli* measurements (students c to o, excluding f, b, k, and p) fell within the normal BMI range, several others (students a, b, k, p, and f) displayed deviations—highlighting overweight, obesity, or underweight conditions.

These findings emphasize that while anthropometric tools like *Anguli Pramaan* are valuable in Ayurveda for assessing body proportions, they should be supplemented with modern metrics like BMI for a more comprehensive understanding of an individual's health

status. Factors such as diet, physical activity, metabolism, and genetic predispositions likely influence BMI beyond structural measurements.

In this study, I measured the height, weight, and BMI of 16 individuals. Among them, eleven students were found to have a normal BMI, one student was classified as obese, two were overweight, one was underweight, one was identified as being at risk of becoming underweight if not addressed, and one student showed signs of potentially becoming obese if preventive measures are not taken.

While previous studies have applied *Anguli Pramaan* extensively in fields such as *Dravyaguna*, *Rasashastra*, *Panchakarma*, and for the measurement of instruments, its application in *Rachana Sharir* remains largely unexplored. This gap highlights the need for further research and exploration of *Anguli Pramaan* from the anatomical perspective of *Rachana Sharir*.

## Conclusion

Based on the comparative study, several key conclusions can be drawn. The analysis revealed that individuals ranged between **96 to 122 Angul parva** generally maintained a normal health status, as indicated by their BMI. While *Acharya Charaka* described the ideal body proportion (*Sam Pramaan*) as **84 Angula**, *Maharshi Sushruta* proposed **120 Angula** as the ideal. The majority of individuals in this study exceeded Charaka's standard, aligning more closely with Sushruta's perspective—suggesting that his concept of *Sam Pramaan* may be more applicable in contemporary contexts.

According to Ayurvedic literature, individuals possessing ideal body measurements are believed to attain longevity, strength, vitality, happiness,

power, and abundant wealth. These ideal proportions—such as a height equal to one's outstretched arm are considered vital indicators of physical harmony. In contrast, those with moderate or below-average proportions are thought to experience medium or shorter lifespans, respectively.

Furthermore, the study observed that variations in BMI—whether above or below normal—often coincided with deviations from *Sam Pramaan* when assessed using the Ayurvedic *Swa-Anguli Pramana* method. This correlation supports the idea that *Anguli Pramana* was a valid diagnostic tool in ancient Ayurvedic practice.

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