



**ANGULĪ PRAMĀNA, AN ANCIENT TOOL OF MEASUREMENT: A CRITICAL REVIEW**

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**ABSTRACT**

Ayurveda is one of the ancient sciences in India. *Pramāna shārīr* is one of the concepts stated in Ayurveda. It especially deals with the measurements of the human body. As there were no standard units of measurement, our sages discovered the unique method of measurement i.e. *Angulī pramāna*. It has individualistic approach as individual's own finger width is used to measure the body parts. Hence it is also known as *swa-angulī pramāna*. Measurements of different body parts is already given by our āchāryas thousands of years ago. All these measurements are in terms of *angulī*. Though these measurements are stated in Ayurveda in ancient period, they are valid in the recent era too. Anthropometry is the modern counterpart of the *Pramāna Shārīr*. Anthropometry is a branch of Anthropology that involves the quantitative measurements of human body. It is a single most portable, universally applicable, inexpensive and non-invasive technique for assessing the size, proportions and compositions of the human body. *Pramāna shārīr* remained untouched aspect in clinical practice due to its unexposed practical application. So as to get the excellence in clinical practice in Ayurveda, one must know the *pramāna* of the body as well.

**Keywords:** *Pramāna shārīr*, *Angulī pramāna*, Anthropometry

**INTRODUCTION:** *Pramāna shārīra* is one of the unique concepts of Ayurveda mentioned in ancient Ayurvedic classics. In *Pramāna shārīra*, the normal measurements of the whole human body in total and of various parts of the body separately are described. The normal measurements of liquid components are also mentioned in Ayurveda. The measuring units for body part is *angulī pramāna* whereas for liquid component is *anjali pramāna*. Out of these, *angulī pramāna* which deals with measuring different body parts helps in assessing the lifespan, strength of normal as well as diseased persons. If the person is having appropriate *pramāna* of different body parts as mentioned in Ayurvedic classics is said to have long life and prosperity. In the same

way person with moderate and poor measurements will have medium and short lives respectively. *Angulī pramāna* is based on individual's own finger width. In Ayurveda, the term 'angulī' (breadth of one's own finger) has been accepted as smallest unit for measuring body parts. [1]

In modern science also Anthropometry is a branch of Anthropology that involves the quantitative measurements of human body. It is a single most portable, universally applicable, inexpensive and non-invasive technique for assessing the size, proportions and compositions of the human body. Appropriate use and interpretation from infancy to old age is a valuable tool for guiding health status and nutritional status of individuals and populations. Pediatrics has

long used child growth as an important parameter to evaluate the health and wellbeing of children. In adults, body measurement data are used to evaluate health and dietary status, disease risk and body composition changes that occur over the adult life span.[2]

**PRINCIPLE:** *Angulī pramāna* is a unique concept of our sages and its utility has to be made practical. *Angulī pramāna* is equal to the breadth of the finger of the individual whose body is being measured; hence individuality is the basic principle behind *angulī pramāna*. It is also known as ‘*swa-angula pramāna*’. In ancient period, there were no universally accepted scales or units of measurements, so they developed a single tool, *swa-angulī* (individuals own finger) as a measuring tool and also unit of measurement. They have mentioned the measurements of various parts of the human body and their importance in various diagnostic and therapeutic measures.

**PURPOSE:** The intelligent physician, who examines the measurements of *anga* (major parts) and *pratyanga* (minor parts) of the body and excellences especially, becomes successful in his activities. [3]

**IMPORTANCE:** According to āchārya Charaka, the entire body measures 84 *angulī* in height (*āyāma*) also in breadth (*vistāra*) i.e. with both the hands extended at shoulder level. If *āyāma* and *vistāra* are same, the body is said to be ‘*sama sharīra*’. The persons having normal measurement of the body are endowed with longevity, strength, immunity, happiness, supremacy, wealth and other desired qualities. Those having body with less or more measurement have qualities contrary to those. [4]

According to āchārya Sushruta, the measurement of the body has been indicated in one's own *angulī* (finger's breadth) only. The man or woman having these measurements will attain long life and plenty of wealth; with moderate and poor measurements, they attain medium and short lives respectively. [5]

**Opinions about angulī pramāna:** *Angulī* are the distal movable parts of the upper limb. These are twenty in number which are of five types 1) *Angushta* (thumb) 2) *Tarjanī* or *pradeshinī* (index finger) 3) *Madhyama*(middle finger) 4) *Anamikā* (ring finger) 5) *Kanishthikā* (little finger).

There are some opinions regarding which *angulī* to take for *swa-angulī pramāna*,

1. According to *Deshakālamāna* chapter of Kautiliya Arthashāstra, width of middle part of 8 *yava* is equal to one *angula* and *madhya prakarna* (proximal interphalangeal joint) of *madhyamā anguli* (middle finger) of *Madhya kaya purusha* is equal to one *angula*. [6]

2. According to Shārangadhara Samhitā, width of *madhyama parva* (proximal interphalangeal joint) of *madhyamā angulī* (middle finger) is equal to one *angula* and *nakhatala bhāga* of *angushta* (proximal end of nail of thumb) is one *angula*. [7]

3. Dalhana stated that eyeball measures 2 *angula* with the unit of one *angula* measured by the middle portion of person's thumb. [8] *Angulī pramāna* can be taken as,

1. Width of middle finger at proximal interphalangeal joint,
2. Width of proximal end of nail of thumb,
3. Measurement obtained by taking the length of middle finger and then dividing by five.

4. Measurement obtained by taking width of the palm and then diving by four.

**Historical review:** A general inquiry regarding *pramāna* was prevalence since time immemorial, which can be traced even up to pre-historical era. This is evident from its notion in the earliest literature like Vedas and oldest medical and other texts.

**1. Vedic Kāla:** References regarding the *angulī pramāna* can be cited in Yajurveda. *Anguli pramāna* is utilized in *homa kunda* preparation. Another reference regarding the length of *darbha* used for *homa* is available in Yajurveda. It is mentioned like *darbha* should be cut in 6 *angula pramāna*. In Rigveda a reference explains like *Paramātmā* takes *āshraya* in *dasha angula pradesha*. [9]

**2. Upanishada-Purāna Kāla:** In Varāhamihikya, the ancient *Brihat Samhitā*, a reference regarding 5 types of *Purushas* with their *Angulī pramana* is available.

In Agni Purāna, *angula* details regarding *pramāna* of different parts like *hridaya*, *prishtha*, *kati* etc available and also reference regarding ‘*sama āyāma vistāra*’ available.[10]

In Shrimat Tantrasāra Sangraha by Shrimadananda Tirtha in the context of *Pratima yoga lakshana*, various *pramānas* of different body parts has been mentioned for making statues which is based upon *Swa-angula* concept. [11]

**3. Samhitā Kāla :** Samhita period is considered as the golden period for Ayurveda. The classical textbooks of samhitā kāla have given much importance to the *pramāna parikshā*.

**a) Charaka Samhitā:** Āchārya Charaka has explained *Pramāna shārīra* as one of

the *Dashavidha parikshā* (Tenfold examination) of the patient. He has categorically mentioned the *angulī pramāna* of various *anga-pratyanga* of the human body. He has put forth the concept of *sama sharīra*. There by throwing light on the fact that *pramāna* concept can be a useful tool to assess the *āyu* (lifespan) of the *ātura* (patient). [12]

**b) Sushruta Samhita:** Āchārya Sushruta has explained the *angulī pramāna* of different parts of the body. According to him a person with appropriate *pramāna* of *anga-pratyanga* is bestowed with good health and long life.

Āchārya has mentioned *pramāna parikshā* as one of the criteria for assessing the *āyu* of the person. Āchārya Sushruta has further explained that proceeding with the treatment, it is beneficial to examine the *āyu* of the patient. [13]

**c) Kāshyapa Samhitā:** Āchārya Kāshyapa has explained about *Anjali pramāna* but he has not dealt with *Angulī pramāna*.

**d) Bhel Samhitā:** Detailed description of *pramāna* of different body parts is not available in Bhela Samhitā but in ‘Āyurlakshanendriya’ chapter, he has mentioned that if *lalāta*, *nāsikā* and *karna* of a person are of 6 *angula* each then he will attain the lifespan of 100 years. [14]

#### 4. Sangraha Kāla

**a) Ashtāṅga Sangraha:** Vriddha Vāgbhata has also explained the *pramāna* of different parts of the body and also explained regarding *sama sharīra* concept. Details regarding *pramāna* of different parts of body are available. [15]

**b) Ashtāṅga Hridaya:** Detailed description regarding the *Pramāna shārīr* is not found

in Ashtāga Hridaya. But āchārya has explained that the appropriate height of a person is equivalent to 3½ times the length of his hasta (hand). [16]

### 5. Madhya Kāla

a) **Shārangdhara Samhitā:** In the context of *Mānaparibhāshā* reference of *angulī pramāna* can be cited. *Angulī pramāna* has been mentioned while explaining about the *Kudava pramāna*. *Anguli pramāna* of *anga-pratyanga* is not explained in detail, different types of *pramāna* are explained in detail though. In the commentary, description regarding the *angula* is available. [17]

b) **Vangasena Samhitā:** In the chapter named *Nidānapanchaka*, āchārya has considered knowledge of *pramāna* as one of the key to achieve success in the field of medicine. In the same chapter, while explaining about the *Kudava māna*, he has mentioned about the *angulī pramāna*. [18]

c) **Rasatarangini:** Many references regarding *angulī pramāna* are available in relation to the preparation of different *Putas*. In relation to *Mahāputa*, author explained that it should have ½ *vyāma* depth and 2 *hasta* width. The word *vyāma* is synonym for *āyāma* which is of 84 *angulas*. [19]

d) **Kautilya Arthashastra:** *Angulī pramāna* has been used as the ‘unit measurement’ for measuring lengths of different objects, depth, measuring land distances.

In ‘*Deshakālamānam*’ chapter, definitions of *angula* have been explained. We found two opinions, one opinion states that one *angula* is the measurement which is obtained by taking 8 *yavas* in the middle;

and according to the other opinion, one *angula* is the measurement of *madhyama prakarsha* of the *madhyamā angulī* of the *madhyakaya purusha*.

In ‘*Tulāmānapautavam*’ chapter, the concept of *angulī pramāna* has been applied for preparing different types of weighing tools to measure the weight of gold, silver etc. [20]

**DISCUSSION:** *Pramāna shārīr* and *angulī pramāna* is a unique contribution of Ayurveda to the knowledge of measurement, healthy living and diagnosing the ailments. *Pramāna shārīr* is the term given to that section which depicts the importance of Anthropometry in contemporary sciences. The essentiality of *pramāna* is depicted in fundamentals of Ayurveda as *māna* or *pramāna* of *hitāyu*, *ahitāyu*, *sukhayu*, *dīrghayu* is one which constitutes Ayurveda. The intelligent physician examine the measurement of major and minor parts of the body and excellences, especially becomes successful in his activities.

There are basically two types of *pramāna*, one is *Angulī pramāna* and the other is *Anjali pramāna*. *Angulī pramāna* is based upon *swa-angulī pramāna* is used for measuring the dimensions i.e. *āyām*, *vistāra* and *parināha* etc. of different *anga-pratyanga* of the body. *Anjali pramāna* on the other hand is used for measuring the other body constituents including fluids.

All āchāryas have used *swa-anguli* as the unit of measurement for taking different parts of the body. *Pramāna shārīr* helps to identify the eight *nindita purusha* explained in ayurvedic classics i.e. to determine *atidīrgha* and *atihrasva purusha*.

*Anguli pramāna* has been mentioned in relation to *yantras* and *shastras* utilized in Shalyatantra and in Panchakarma; also different instruments like *bastinatra*, *dhoonnetra* etc are prepared utilizing the concept of *anguli pramāna* and probably the *swa-anguli pramāna* of the patient or the person under treatment. There are explanations regarding the depth up to which the *uttarbasti netra* should be inserted into the patient's *yoni* or *mootramarga* this is probably based upon the concept of *swa-anguli pramāna*.

There are different opinions about *angulī pramāna* and *Angulī pramāna* can be taken as,

1. Width of *madhyama parva* of *madhyamā angulī* (width of middle finger at proximal inter-phalangeal joint).
2. Width of *nakhatalabhāga* of *angushtha* (width of proximal end of nail of thumb).
3. Measurement obtained by taking the length of *madhyamā angulī* and then dividing by five.
4. Measurement obtained by taking width of the palm and then diving by four.

*Āyāma* (Height) and *vistāra* (width or armspan) of the human body is given as follows,

Charaka- 84 *angulī*

Sushruata- 120 *angulī*

Vaghbata- 3 ½ *hasta*

**CONCLUSION:** *Angulī pramāna* is indeed unique concept in Ayurveda. It has its specialty of individualistic approach; hence often called as *swa-angulī pramāna*. Individual's own finger width is used to measure body parts. *Angulī pramāna* can be correlated with the Anthropometry of the modern science. Utility of an ancient measurement

tool i.e. *anguli pramāna* can be evaluated by doing survey study on healthy individuals and it can be used in epidemiological studies just like modern Anthropometry. It will serve as alternative technique for assessment of public health as well as to detect probable risk of getting disease. Further study as measurement tool on large healthy population is necessary.

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