

**ANTHROPOMETRY STUDY IN AYURVEDA WITH ASSOCIATION OF
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ABSTRACT

Acharya has devised suitable methods for measurements of human body and contents of body. In Ayurveda classics Praman Sharir is the term given to this subdivision which depicts the importance of measurements or anthropometry. Anthropometry is the branch of anthropology which refers to taking quantitative measurements of human body. Body measures show a person's health status, structure, size, posture, and body composition. Ayurvedic literature provides a detailed description of body measurements and elements. To measure the body and its contents, Anjali pramana and Angul pramana were utilised. Acharya sushruta has described Praman sharir in context of Aatur pareeksha, The patient was inspected and measurements of various body structures were taken in terms of Angula Praman. The title Angula Praman refersto the book's part on the importance of anthropometry in modern science.

KEYWORDS: Anthropometry, Praman Sharir, Angul Pramana, Acharya Sushrut.**INTRODUCTION**

Anthropometry^[1]- The measurments of Human, is a system of scientific procedures and techniques for obtaining various measures and observations on both the living and the dead. It is the technique that determines the physical dimensions of a person's size, shape, and functional abilities. Ayurveda Acharya uses many of procedures to assess a person and identify what is normal and what is pathological. Praman pariksha is included in the dasvidha aturapariksha, which is given by Acharya Charaka. In Sutrasthna, the Acharya Sushruta described praman sharira. The measurements of body parts and bodily fluids have also been provided by Acharya Vagbhata. The morphological characteristics such as height, breadth, and so on are expressed in swa aguli prama (fingerbreadth). Aguli refers to a finger, while prama refers to a measurement. An individual's body proportion is calculated using these metrics. Persons with perfect physical proportions, known as Sama pramana, are believed to live longer.

Anthropometry

The words 'Anthropos' and 'metron' denote human and measurement, respectively. It is the science of human body measurements. J.S. Elsholtz, a German physician, coined the term anthropometry in the seventeenth century. It is the science that determines the physical dimensions of a person's size, shape, and functional abilities. Anthropometry has a long and illustrious

history. Leonardo da Vinci (1452-1519), a famous 15th century Italian artist, engineer, and architect, created the concept and drawing for such a well-proportioned physique. His Vitruvian Man has endured to this day and is frequently used as a logo.^[2] Scientific anthropometry, on the other hand, began roughly 250 years ago with Johann Friedrich Blumenbach (1752-1840), who established Craniology's foundations^[3] Anthropologists have now developed a set of metrics for defining human form. These measurements have been in use for hundreds of years and are based on anatomical landmarks. There are several methods for taking body measurements. Anthropometer Rod, Goniometer, Spreading calliper, Sliding calliper, Measuring Tape, Rod compass, Osteometric Board, Skinfold Caliper, Parallelograph, Bone holder, and other instruments are used to take measurements in Anthropometry.

Anthropometry may be subdivided into the following sections^[4]

- Somatometry is the measuring of the living body, including the head and face,
- Osteometry is the measurement of the long and short bones of the skeleton.
- Craniometry is a technique for determining the size of the skeletal brain cavity (neurocranium) and the face (splanchnocranium).

Anthropometric measurements are used as a proxy

measure for assessing health state, physique, obesity, malnutrition, disease, and job capacity for a variety of reasons. Anthropometry is a scientific method and methodology for taking a variety of measures in various geographical regions and races. Anthropometry is a science that is applied in the fields of surgery, cosmetology, and forensic science. It's used to diagnose a variety of ailments, determine nutritional status, conduct growth and developmental research, and design a variety of medical and other tools for human use.

Pramana sharir

Pramana is the tool for acquiring knowledge. Pramana is measurement of body or its constituents. In order to measure the volume of body components (e.g. Jal, Rakta, Vasa, Majja, Purish, Mutra, Sveda etc.), Anjali praman is used. Angul pramana is used to measure the lengths of different body parts. Digit of hand is Angul and pramana means measurement. The morphological characters such as height, breadth etc was given and measured in swa angul pramana (breadth of one's own finger).

Concept of Angul Pramana is available in Vedas,

Puranas and other Ayurvedic classical texts. In Yajurveda, Angul pramana is cited in the homakunda preparation. Bhela has mentioned Angul Pramana while explaining the life-span of individual.^[5] Acharya Sushruta, Acharya Charaka and Acharya Vagbhata also described Pramana sharir^[6,7,8,9] in detail.

Anthropometry and Sushrutokta angul pramana sharir

Anthropometry deals with a wide range of human body measurements, including pelvimetry, craniometry, osteometry, skin fold thickness, height and weight measurements, and so on.

Depending on the nature of the issues, the quantity and type of measures varied. In terms of Anguli Pramana, Acharya Sushrut has given the measures of numerous body parts, sub-parts, and structures. These dimensions were taken for a sama pramana with ideal body proportions. Samapramanas have good health, ojas, bala, sukha, and longevity^[10] because they have equal total height/Stature and Width/Span of body. The following are some of the metrics given by Acharyasushrut.^[11]

Table no. 1: Measurements of body (in angula) according to acharya sushrut.

Body part	Angul Praman
Length of angustha (thumb) and kanishthika (little finger)	3.5
Length of pradeshani (index finger) and anamika (ring finger)	4.5
Length of madhyamanguli (middle finger)	5
Hasta (distance between kurpara (elbow joint) tip of middle finger)	24
Circumference of manibandha (wrist)	12
Breadth of mukha (mouth)	4
Circumference of greeva	20
Female chest (uras) and male waist (shroni)	18
The breadth of bhaga(pubis), the distance between mehana(penis) and nabhi(umbilicus), the distance between nabhi(umbilicus) and hridaya(heart), distance between hridaya(heart) and greeva(root of neck), distance between two stana (breasts), mukhayam(distance between chin and top of Forehead),	12
The lengths of mehana (penis), vedanantara(distance between angles of mouth), nasa(nose/nasal height), karna (external ear), lalat(forehead), greeva and distance between the two dristi mandalas (pupils).	4
The length of vrashna (scrotum), chibuka(chin), teeth, Nasaputa(nostrils/nasal breadth), karnamula (base of external ear), nayantara (distance between two inner canthus of eyes)	2
The padangustha (great toe) and pada pradeshani (second toe)	2
Length of pada (foot)	14
Length of jangha(leg) and uru (thigh)	18
Length of portion between janu sandhi and kati sandhi	32
Total length of lower extremity	50

If an individual is endowed with measurement of sama pramana, he attains long life and prosperity^[12]. For examination of patient, knowledge of normal Pramana of body is important. Knowledge of Normal pramana of body is also important in various surgical interventions e.g. Nasa Sandhana.

DISCUSSION

Anthropometry is branch of Anthropology which specifically deals with the measurements relating to human body. Branch of sharir dealing with pramana or measurements is pramana sharir. Anguli praman sharir can be correlated with Anthropometry. The words 'praman' and 'metry' are related to measurements. In context of pramana sharir, pramana is considered in context of various body measurements. There is very

detailed description of angul pramana given in Sushrut samhita in which measurements of various human body parts were given. Human body measurements given were very scientific and accurate as it was based on person's own finger width or swa angul pramana. Nowadays various unit systems have been given for measurements e.g. SI, FPS System. But in samhita period, angul pramana was used for measuring lengths. Angul pramana is a good tool to describe measurements as it was personalised as it differs from individual to individual and it was standardise because the result measured was not an absolute value but a ratio between the lengths of the part measured to the Angul mana. This indicates that Anthropometry was well developed thousands of years back.

CONCLUSION

As a result, it can be assumed that Anguli praman sharir, or human body measurements, were detailed in Ayurveda classical books thousands of years ago. In terms of Angul Praman, Acharya Sushrut described numerous body measurements. This suggests that Anthropometry was well- developed thousands of years ago and was quite scientific and precise.

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