

**BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY**

(Not to be reproduced without the permission of BIS or used as an Indian Standard)

ड्राफ्ट भारतीय मानक

मणिकादाई नूल विश्लेषण - रीती संहिता

Draft Indian Standard

Manikadai Nool (Wrist Circummetric Sign) Analysis - Code of Practice

ICS 11.120.10

Siddha Sectional Committee, AYD 05

Last Date of Comments: 16.02.2024

FOREWORD

There is a worldwide resurgence of interest in holistic systems of health care, particularly with respect to the prevention and management of lifestyle-related disorders, and chronic, non-communicable, and systemic diseases. It is increasingly understood that no single healthcare system can provide satisfactory answers to all the health needs of modern society. Evidently, there is a need for a new inclusive and integrated healthcare regime that should guide health policies and programs in the future.

Siddha medicine is an ancient medical system in India and involves a system of regional therapy with geographical significance for the convenience of treatment and comfort of patients. The Siddha system involves the use of herbs, minerals, metals, and any organic material available, and emphasizes patients' physiology, environment, age, gender, race, habits, psychology, habitat, diet, appetite, physical condition, and disease.

In Siddha Medicine, *Agathiyar Soodamani Kayaru Soothiram* provides diagnostic and prognostic predictions correlating with anthropometric values of wrist circumference measured by one's own finger breadths. The treatise gives 96 descriptions under 26 finger breadth measurements and subdivisions. The *Manikadai Nool* (Wrist Circummetric Sign) provides insight into Siddha Anthropometry giving analogues predicting one's current health status and prognosis as well. Standardization of this ancient techniques helps for wider use of this technique will influence ascertaining clinical outcome and physician decision.

This Standard will provide the requirements for the techniques and the practice guidelines. It will help in providing guidance to Siddha Physicians, Researchers, Academicians, Lifestyle modification trainers etc., to analyze *Manikadai Nool* appropriately and help establish it as a traditional diagnostic tool for Preventive, Personalized and Prophylactic treatment through Siddha Medicine.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-2022 'Rules for rounding off numerical values (Second Revision). The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

This standard specifies general requirements and code of practice details for *Manikadai Nool* (Wrist Circummetric Sign) Analysis.

2 NORMATIVE REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provision of this standard. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

IS No.	Title
IS 2819: 1983	Specification for braided cotton cord (Second Revision)
IS 4513:1968	Specification for scissors, surgical dressing and stitch
IS 1481:1970	Specification for metric steel scales for engineers (First Revision)

3 TERMINOLOGY

For the Purpose of this standard, the following terms and definitions shall apply.

3.1 Manikadai Nool - A Unique diagnostic strategy/tool that is used to predict certain clinical features (*Mukutram* level disorders which is reflected in constitutional make (*Saptha thathu*) and as expressed as symptoms, diseases, or incurable signs) occurring in an individual based on the Antebrachial circumference variations correlated with Fingerbreadth measurements.

3.2 Manikkadai - The term “*Maṇi*” denotes Wrist and “*Kaṭai*” means end measures. The measure of the wrist (circumference) obtained at the Antebrachial point by using a *Nool*.

3.3 Nool – Suitable non elastic thread/ rope with specifications as mentioned in 4.1.1

3.4 Virar kadai - The term “*Virar*” denotes finger and “*Kaṭai*” means end measures. The measure of the mediolateral breadth/width of individual finger unit using a *Nool*.

3.5 Finger Breadth Units (FBU) - One full breadth of the finger is taken into consideration for FB and the readings of each FB are divided into 4 units, quarter measurement ($\frac{1}{4}$), half ($\frac{1}{2}$), three quarters ($\frac{3}{4}$), and full breadth.

3.6 Calculation of Finger Breadth: Unit of measure calculating the Mediolateral width of one extended finger (palm-side).

3.7 Nanku virar kadai (4 Finger Breadth) - The Mediolateral Width of the 4-extended fingers (palm-side) of the patient.

3.8 Ideal point of Nanku Virar Kadai (4 Finger Breadth) measurement - The middle location of four fingers where the *Nool* is placed to measure the *Nanku Virar Kadai*.

3.9 Antebrachial point (ABP) - The point at the forearm/ante brachium where the circumference is measured using the *Nool* (thread). It is an important point in the forearm (Ante brachial region) which is used to measure the Ante brachial circumference. The length of the four finger breadths is measured back from the wrist line to reach this focus.

3.10 Antebrachial Circumference (ABC) - The circumference of ABP as measured using the *Nool*. Further, the length obtained in the *Nool* is converted into number of FBU to assess readings.

3.11 Anatomical Point for Manikadai (Wrist Circummetric) Measurement -

Antebrachial point as referred to in the Operational definitions 3.9

3.12 Anatomical Point for Nanku Virar kadai (4 Finger Breadth) Measurement -

Nanku Virar kadai (4 Finger Breadth) as referred to in the Operational definitions 3.8.

4. REQUIREMENTS

4.1 Cotton Yarn (Thread) Cord:

The Cord used for measurement shall be made of cotton yarn uniformly braided with 3 strands. The ideal range of length of the cord may be fixed as 150 mm to 200 mm, and width of nominal diameter around 3 mm. The cord shall be free from knots, kinks, broken or loose ends projecting from the cord.

5 METHODS FOR MANIKADAI NOOL (WRIST CIRCUMMETRIC SIGN)

5.1 Method – 1

- 1) The patient is asked to sit comfortably in the chair provided, by keeping the hand fingers intact and straight. (See Fig 1)
- 2) The patient should hold the wrist anterior surface up and place it on the examination table for easy measuring by the investigators. (See Fig.2)

- 3) The specified Nool (Nominal thread) is used to take the measurement.
- 4) The total Mediolateral width of 4 fingers is measured from the Ideal point of Nanku Virar Kadai measurement by using the Nool (See Fig.4 & 5)
- 5) The total length obtained is measured back towards the ante brachial part of the arm, by keeping the Nool in the middle of the wrist crease. (See Fig.6)
- 6) Reach the point where the total length is met in the ante brachium, point out, mark, and measure the Ante brachial circumference (ABC) by using the same Nool. (See Fig.7)
- 7) The length obtained, i.e., ABC is converted into total no FBU and recorded. (See Fig.8)
- 8) Repeat the process twice again for maximum accuracy of the reading. (See Fig. 9)
- 9) The reading obtained in number of FBU is interpreted with clinical description from the script.



FIG. 1



FIG. 2



FIG. 3

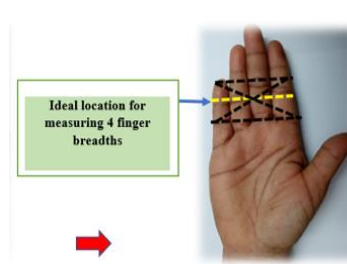


FIG. 4



FIG. 5



FIG. 6



FIG. 7



FIG. 8



FIG. 9

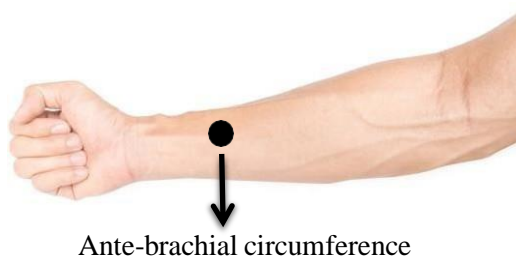


FIG.10 ANATOMICAL POINT FOR MANIKADAI MEASUREMENT

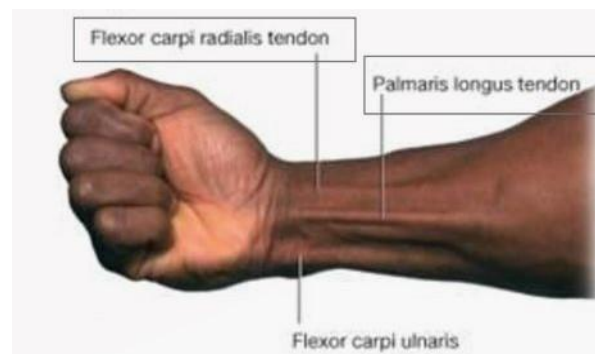


FIG.11 ANATOMICAL PLANES OF THE FOREARM

5.2 Method – 2

- 1) The patient is asked to sit comfortably in the chair provided, by keeping the hand fingers intact and straight. (See Fig. 1a)
- 2) The patient should hold the wrist anterior surface up and place it on the examination table for easy measuring by the investigators. Ask the patient to keep their fingers together (Adduction of fingers). (See Fig. 2a)
- 3) Keep the patients left or right hand over the anterior wrist region so that the little finger is placed in the same plane of wrist line (See Fig. 3a)
- 4) Mark the point on forearm where the outer border of index finger lies and that is the Ante-brachial circumference point. (See Fig. 4a)
- 5) Measure the Ante brachial circumference (ABC) by using the same Nool. (See Fig. 5a)
- 6) The length obtained, i.e., ABC is converted into Total Number of FBU and recorded. (See Fig. 6a)
- 7) Repeat the process twice again for maximum accuracy of the reading.
- 8) The reading obtained in Number of FBU is interpreted with clinical description from the script.



FIG.1A



FIG. 2A



FIG. 3A



FIG. 4A



FIG. 5A



FIG. 6A

5.3 Calculation of Manikadai Nool Value

- 1) The nearest measure of FBU (full breadth, three quarter, half and one fourth) is confirmed based on the consequent reading.
- 2) The findings are expressed as FBU is calculated using the formula (Width of the 4 extended fingers (Palmar) of the Patient/4).
- 3) The FBU values provided in the Annexure A is based on the Classical textual references and is given solely for Physician's interpretation.

5.4 Conditions of Measurement:

- 1) While the measurement can be made on either left or right sides of the forearm, the report shall clearly indicate on which side the measurement has been taken. It is to be considered, while in Nadi Parisothanai (Pulse Diagnosis), generally right side is used for men and left side is used for women
- 2) Examine and observe for any anatomical deformities, previous fractures of the arm as it may affect the accuracy of readings. If observed try to take readings in the opposite arm.
- 3) History of foreign bodies (metal rods, plates etc.) in-situ, arteriovenous (AV) fistula should be considered.

6 SPECIAL CONSIDERATION

Conditions such as Congenital abnormality of the wrist, any abnormal swelling, injury or fracture of the wrist, dropsy, malnutrition, foreign bodies in-situ are to be taken into consideration before establishing Manikadai values.

7 EXPRESSION OF RESULTS:

- 1) The findings are to be correlated with the presenting complaints and note of patients.
- 2) Leading questions are to be asked and logical derivations used to interpret the diagnosis.
- 3) The results are analyzed based on the affected *Mukkutram* and the impacted *Udal thathus*, expressed as the subjective signs, and findings as per suitable format (Annexure B).

8 REPEATABILITY:

The accuracy of the repeatability is obtained by at least three consecutive readings.

9 DATA COLLECTION PROFORMA REQUIREMENTS:

Basic demographic description of subjects

Fresh data of the should patients be collected through either Case Record Form (CRF), Questionnaires or Case Reports. CRF could be generated according to the expected specific outcome of the studies or in general. Information such as demographic details, clinical history relatable to

Manikadai Nool measurements and vital data on current clinical status are to be presented in the Data collection proforma. A model CRF for Diagnostic cum Validation studies of Manikadai Nool is given in Annexure B for reference.

10 OTHER CONSIDERATIONS

The Manikadai analysis can be used to analyze the state of the *thirithodam* and *saptha thathus*. The analysis can be more productive, when the body constitution as per Siddha Science is also taken into consideration along with other details. This analysis can be used as an effective diagnostic tool to improve the accuracy of the disease prediction and its correlation with appropriate treatment regime.

ANNEXURE A

MANIKADAI NOOL (WRIST CIRCUMMETRIC SIGN – INFERENCE)

Manikadai Nool Measurements (in FB*)	Inferences given in the Siddha Classical Books
11 FB	Considered a healthy sign; as otherwise, the patient may be obese;
10 FB	Diseases that are causing pallor (Anaemia); Body and extremities appear shrunken; Cluster of gastrointestinal diseases attended with pain and painful gastrointestinal disorders accompanied by indigestion.
9 3/4 FB	Sinus ulcer; Inguinal lymphadenopathy; Cough; Dryness; Diseases of the spleen may occur within a year
9 1/2 FB	Heat affecting the bones with the occurrence of pallor of the body; Dryness of eyes; Fever; Dryness of the body
9 1/4 FB	Oliguria or reduced urinary output; Insomnia due to intense sensation of heat; Sinusitis and its associated symptoms
9 FB	Pricking pain inside the ear with ear blockage or dullness; Pain in the hip region and thigh;
8 3/4 FB	Dryness of the body; Skin diseases resembling urticaria; Pricking pain in the abdomen; Pitta diseases, - causing pallor of conjunctiva, oral cavity, and Upper extremity.
8 1/2 FB	Cough; Sensation of heat in the body; Formation of ulcer; Glandular swelling
8 1/4 FB	Febrile illness of <i>Pitha vayu</i> nature characterized by yellowish discoloration of body, vomiting of in digested matter with colicky pain of the abdomen, and dropsy.; Venereal disease (Sexual transmitted disease); Diseases of the head may occur within one year
8 FB	Flatulence causing stomach growling; Swelling in the body; Chronic Sinusitis; Throat pain
7 3/4 FB	Ano-rectal diseases (hemorrhoids); Weakening of both lower extremities; Tremor of the head; Enlarged lymph nodes in the cervical region (Cervical lymphadenopathy) may occur within one year, along with bleeding per nose; Over a period of time there will be discharge of blood from the nose

7 1/2 FB	Group of diseases in which there is dryness, softening, soft necrosis, caries, tuberculosis, decay or destructive changes in bones, cartilages or other bony tissues accompanied by general emaciation, muscular dystrophy and fatigue.; Flatulence and abdominal distension; Burning sensation of face; Burning sensation of eyes; Febrile illness; Pain in the legs; Occurrence of Pyaemic abscess or Carbuncle or Carcinoma in the thigh region
7 1/4 FB	Low back ache; Bilious aggression in the head region and its associated symptoms; Diseases that are causing pallor (Anaemia); Heaviness of both extremities; Insomnia
7 FB	Bilious aggression in the head region which may present the features of per oral bleeding, Pulmonary tuberculosis and dryness of the stool associated with increased body heat
6 3/4 FB	Swelling or inflammation of the scrotum due to the vitiation of Vatham; Reddish discoloration of eyes; State of stupor or giddiness; Urinary obstruction may occur within a period of 3 years; Pain in both upper and lower extremities
6 1/2 FB	Febrile conditions or increased body heat; Pricking pain in the body; It may be a death sign
6 1/4 FB	Anorectal diseases like haemorrhoids; Bloody dysentery; Severe diarrhoea associated with sleeplessness; Change in the skin colour or its darkening
6 FB	Severe phlegmatic congestion in the chest; Stupor or giddiness; It may be a fatal sign
5 3/4 FB	Delirium and its associated features; Giddiness; Fatigue; It may be a fatal sign
5 1/2 FB	Toxin affecting head; Pallor of the nose; Tooth becomes blackish in nature; It's a fatal sign (Death may be predicted within 10 days)
5 1/4 FB	Severe emaciation (cachexia) of the body; Increased sleepiness; It may be a fatal sign (Death may be predicted within 6 days)
5 FB	Pallor of the body and chillness; Signs of phlegm congestion resembles that of toxicity; It may be a fatal sign.
4 3/4 FB	A state of unconsciousness; Tongue dryness; Chorea. It may be a fatal sign (Death is predicted within 7 days)
4 1/2 FB	Anasarca or general body swelling; Severe Sunken eyes; It may be a fatal sign (Death is predicted within 9 days)

4^{1/4} FB	Body tremors; Weakness of both hands and legs; Face becomes blackish in nature; Extreme difficulty in breathing; It may be a fatal sign (Death may be predicted within 2 days)
4 FB	Emaciation of face with diminished eye function; Swelling of both extremities; It may be a fatal sign (Death may be predicted within 5 days)

***FB - finger-breadth**

ANNEXURE: 2

Model Case Sheet Proforma – Case reports and Diagnostic accuracy studies

UHI D	Name of the patient		Occupation	Age	Sex	Diet		Nilam (Tick Appropriately)															
						V	N	K	M	Mar	Neit	Paalai											
Date	Naadi Kalam	Naadi Nadai (Pulse Reading) Please Tick						Yakkai Ilakkanam (Body Constitution) Please Tick															
	V	P	K	V	P	K	V	P	K	V	P	K	V	P	K	V	P	K	V	P	K	M	K
WC in FB	Result in Finger Breadth (4-11) WC/1 FB						Neerkuri					Neikuri											
4 FB							Pozhudu (Tick Appropriately)																
1 FB							_____						Karkalam	Koothirkalam	Munpanilkalam	Pinpanikalam	Ilavenirkalam	Muthuvenirkalam					
	FB																						
Clinical Findings and Presenting complaints						Observations from Manikadai Reading by Finger Breadth																	
1							1																
2							2																
3							3																
4							4																
5							5																
Comorbidities	DM/HTN/CKD/Thyroid/Heart disease/Others (Specify):																						
Examination of Saptha Thathukkal (7 primary constituents)	Saram			Senneer			Oon			Kozhuppu			Enbu			Moolai			Suckilam/Suronitham				
	S	I	D	S	I	D	S	I	D	S	I	D	S	I	D	S	I	D	S	I	D		
Subject	Description																				Tick		
Category of Reading	a. True Positive symptoms (TP) – Clinical presentations coinciding with Manikadai Reading																				[]		
	b. Sequence of True Positive symptoms (SqTP) – Clinical presentations coinciding with multiple Finger breadth readings showing a sequence of origin and progress																				[]		
	c. False-positive symptoms (FP) – Subjects not presenting, expressing, or having the symptoms even though the features are shown in the particular reading																				[]		
	d. False-negative symptoms (FN) – Subject is presenting the symptom or disease that has no description in the obtained reading																				[]		
Attachments (If available)	e. Investigations: Serological/others (Specify)																				[]		

	f. Imaging: X-ray/Scan/others (Specify)	[]
	g. Previous case/Medical record (Copy)	[]
	h. Photographs/Images of Neer/Neikuri pattern and its reports	[]

UHID: Unique Health Identification Number, V: Vatham, P: Pittham, K: Kabham, VP: Vathapittham, VK: Vathakabham, PV: Pithavatham, PK: Pitthakabham, KV: Kabhavatham, KP: Kabhapittham, MK: Mukkutram, WC: Wrist Circumference, FB: Finger Breadth, S: Sufficient, I: Increased, D: Decreased.

NOTE OF CAUTION:

[1] *Manikkadai nool* test results should not be interpreted in isolation; it must be correlated with clinical information and be interpreted by Registered Siddha Medical Practitioners only to determine final diagnosis.

[2] *Manikkadai nool* test results may vary based on time of testing, season, site appearance, physiological condition of the patient, current medication, or nutritional and dietary changes. Please consult your Siddha doctor for any clarification.

[3] *Manikkadai nool* test results cannot be used for Medico legal purposes.