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ABSTRACT

Kriyās are processes of physical cleaning from its unwanted toxic elements. It is not done simply without any reason. In this part 1 of the dissertation Dhouti kriyās from various ancient yogic and spiritual texts have been described. Comparison of Dhouti kriyās in different ancient texts has also been presented. Later the modern concept of Dhouti kriyās has also been described in a detailed manner with its limitations and benefits.

In Satkarma Saṅgrahaḥ , Vastra Dhouti is described along with its physical benefits. It is mentioned that diseases like asthma , leprosy, 20 kinds of phelgmic diseases , enlargement of spleen, cough , deafness of ear , dyspepsia ,etc are destroyed by the practice of Vastra Dhouti.

In Haṭharatnāvalī ,Vastra Dhouti is described as also its physical benefits. The main difference is that the skin related problems are said to be getting cured with the practice.

In Gherenḍa Śamhitā most of the Dhouti kriyas are vividly described starting from Karna Dhouti to Mūla śodhanā . The benefits of each practice are given as well as the technique.

In Haṭha Yogā Pradīpikā, Vāhnisārā, Bahiṣkṛta, Vārisarā, Vatsarā etc are also described. The practice and benefits of Sankhaprakṣālanā has been described in a detailed manner in this text compared to other such ancient texts.

In modern days the dhouti kriyas are also having its various therapeutic importance. In Ayurveda dhouti kriyas are mentioned as a remedy for various stomach related diseases. It is more useful in modern times because of the stress-related life style, where GID diseases became a regular routine of human life. Another big problem is urban pollution, which is increasing diseases like Asthma. In all these diseases dhouti kriyas are considered as a great remedy if practiced with care and awerness.

PART-1

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CHAPTER-1

INTRODUCTION

Kriyās are ancient Yogic practices to clean physical system from its various toxic elements. The principle objective of yoga is to unify the soul with universal truth that is higher consciousness. In order to reach that higher state of existence primarily one has to be stable physically. To become physically stable the body should remain free from any kind of disease. Our body consists of various kinds of toxic elements, which is the main cause for our bodily diseases. The kriyas are techniques of clearing the body from its various toxic elements. There are various kriyas to clean various body parts of ours ranging from hair to nails. These kriyās are the primary steps to prepare the body for higher practices which requires tremendous concentration.

In modern days the kriyās are also getting importance because of its various therapeutic aspects. It is found that various modern ailments can be treated effectively with the regular practice of different kriyās. Diseases like Asthma, cough related problems; acidity, gastric, irritable bowel syndrome etc can be cured to a large extent with the regular practice of specific kriyas.

In this report only Dhouti kriyās are discussed. This is mainly concerned with stomach purification.

Dhouti kriyās falls under the perspective of Sat karmās. Saṭ karmās are six different kriyā techniques for six different body parts to get rid of six different impurities.

ANTAR Dhouti - Vatsarā (plāvini)
Vārisarā (sankhaprakṣālanā)
Vāhnisārā (agnisārā)
Bahiṣkṛta (Anal cleaning)

DANTA Dhouti - Jihvā
Kaṛṇa
Kapālarandhrā (frontal sinus)
Cakṣuḥ

Hṛd Dhouti - Vastra
Vamana
Daṇḍa

MŪLA ŚODHANĀ - Base purification

Dhouti is one of the most important as well as effective practices among all the kriyās. Dhouti is very useful for stomach cleansing. The gastro intestinal part gets thoroughly cleaned with the practice of particular Dhoutis. Regular practice of Dhouti makes the energy flow rhythmic and the blocks of the nadis released. The interaction between the mind and the body established. The purpose of Sat karma Dhouti is to prepare the base for higher practices of yogic wisdom. Dhouti purifies the whole system and removes all the toxic elements, which are preserved in our physical system. Most of the modern diseases that human society is facing today are caused these toxic elements which create an imbalance between the mind and the body. By practicing Dhoutis these toxic elements are removed. So, the mind body interaction regained in the proper channel.

As the mind becomes positive it effects on the body also becomes positive. As a result, all the physical components work in co-operation with one another. This certainly helps the immune system to become stronger and diseases can be avoided to a large extend.

CHAPTER-2

THE CONCEPT OF DHOUTI KRIYĀS IN ŚAṬKARMA SAṄGRAHAḤ

(Harshe Dr RG (1970) *ŚAṬKARMA Saṅgrahaḥ* Yoga mimansa prakasana)

Sat karma saṅgrahaḥ is a small text consisting of about 149 verses. It is one of the few books among yoga texts where all the kriyās are vividly described. It seems that the original work was done by a man called Cidghananandanatha which is mentioned in verse number 4. The writer was originally from Natha Sampradāyā. Although the original work was bigger than the present one, Raghunāthā brought a confined version later. The Sat karma sangrahaḥ deals with many special topics except yogic practices.

THE KRIYĀ ASPECT

In verse 40 to 41 the treatment about eye diseases are described.

In verse 42 to 43 kaphā, dośa, nāśā are described.

In verse 51 to 54 three kinds of kaphā (medā, malā, nāśā) are described.

In verse 56 to 58 Dhouti karmas are described.

मृदुलं धवलं शुद्धं चतुरविस्त्रितम् ।

तिथिहस्त मितायामं धौतिवस्त्रस्य लक्षणम् ॥ ५६ ॥

Mrdulam dhavam śuddham caturaṅgulavistrtam /

tithihasta miatāyāmam dhautiVastra sya lakṣṇam //56//

In verse 56 the technique of Vastra Dhouti is given.

The definition of the piece of cloth used in Dhouti is that should be soft, white, clean and, angulās(inches) broad and 15 hands long.

Verse 57

One should slowly swallows the whole of the cloth wet with water, breathing out through the nostrils and should draw out again gradually. This is called Dhouti karma (vastrā) in which the presiding deity is Gaṅgā.

Verse 58

Coughs, asthma, enlargement of spleen, leprosy are destroyed. Dyspepsia, 20 phlegmatic diseases and the deafness of the ear are removed by the action of Dhouti.

From verse 59 to 66 various therapeutic aspects of Dhouti are given as well as practicing the Dhouti's with the experienced eye of Guru is prescribed.

CHAPTER-3

THE CONCEPT OF DHOUTI KRIYĀ IN HATHARATNĀVALI

(M Venkata Reddy, Athramuru(1982) Hatharatnāvali)

There are many yoga texts like HathaRatnāvali but speciality about this book is that it describes about a large number of Tāntric practices. The date of origin of HathaRatnāvali is not clearly known but it is considered to be latter to HathaYogā Pradipikā.

This book is believed to be written by Srinivāsā. Many books are believed to be influenced by this book. Many practices of HathaRatnāvali have similarities with Ayurvedic practices. It also mentioned in HathaRatnāvali that practicing the kriyās without proper guidance may be fatal.

As Srinivasa Bhatta mentioned, Atmāramā as one of the authorities on HathaYoga in his HathaRatnāvali the earlier terminous of his work may be fixed as 1600 A.D. This is regarded as the earlier date of HathaRatnāvali's original manuscript.

Dhouti

विशद्धस्तप्रमाणेन धोति वस्त्रसुधीर्धितम्

चतुरंगुलविस्तरं सिक्तं चैव शनैग्रसेत् ॥३५॥

Viśaddhastapramāṇena dhouti Vastrasudhīrdhirtam

caturagula vistaram siktam caiva śanaigraset//35//

Sutra 35: Describes:

One should swallow slowly a long wet cloth four fingers (approximately 3 inches) in breadth and 20 cubits long. Then the swallowed cloth should be withdrawn out slowly. This process is known as Vastra Dhouti. Everyday it should be practiced then it increases the gastric fire.

Sutra 36: Mentions:

As a result of performing Dhouti, asthma, diseases of the spleen and the skin, the 20 varieties of the diseases caused by phlegm undoubtedly get cured. There is no mention of any other Dhouti's in Hatharatnavali.

CHAPTER-4

THE CONCEPT OF DHOUTI KRIYĀ IN GHERANDA SAMHITĀ

(Chandra Vasu, Rai Bahadur Srisa (1996). *The Gheranda Samhita*. New Delhi:
Munshiram Manoharlal Publishers Pvt. Ltd. P 37-50)

The Gheranda Samhitā is one of the most important Sanskrit texts in the traditional Tāntric culture. The book is actually presents a dialogue between sage Gheranda and an inquirer Candakapāli.

The book contains a total of 350 verses and divided into seven chapters. In each of this seven chapters the purification of body in various types and conditions are described. It deals with all the yogic practices like asana, mudras, pranayama, pratyahārā, dhyānā and samādhi etc.

This Gheranda Samhitā also deals with various types of kriyās which is practiced according to HathaYoga principles. The main object is to purify the body from toxic elements, kaphā, medhā and to rythmimize the pranic flow in the physical system. The book originally discusses various forms of HathaYoga primarily because physical body is the first step towards purification of mind. If the physical body is dirty and full of toxic elements then how can the mind become clean? So that is why physical cleanliness is the first step towards the attainment of ultimate Mokṣā. In this perspective the Gheranda Samhitā is indeed a very important practical guide.

THE FOUR INTERNAL DHOUTIS

Verse 13

It is described in the Gheranda Samhitā that Dhoutis are of four kinds and they clear away the impurities of the body in their own capacities. They are

- a) Antar Dhouti(internal cleansing)
- b) Dantā Dhouti(cleaning the teeth)
- c)Hṛd Dhouti(cleaning the heart)
- d)Mūla sodhanā (cleaning the rectum).

Verse 14

Again antar Dhouti is divided into 4 parts. They are

- a) Vatsāra (wind purification),
- b) Vārisārā (water purification),
- c) Vahnīsārā (fire purification) and
- d) Bahiskrit (anal cleansing)

VERSE 15

Vātsarā Dhouti- contract the mouth like the peak of a crow and drink air slowly, and filling the stomach slowly with it, move it therein , and then slowly force it out through the lower passage.

In Verse 16 it is told that Vātsarsā is very secret process, by practicing it body gets purified, all diseases are destroyed and the gastric fire increases.

VERSE 17

It mentions about Vārisārā Dhouti. The process given is –Fill the mouth with water down to the throat, and then drink it slowly, next move it through the stomach, forcing it downwards expelling it through the rectum.

VERSE 18

It is told that the process should be kept secret. It purifies the body and by practicing it with care, one gets a luminous or shining body.

VERSE 19

It is told that Vārisarā is the highest Dhouti. He, who practices it with easy, purifies his body and turns it in to a shining one.

AGNISARA OR FIRE PURIFICATION

VERSE 20 & 21

Describes about Agnisārā or Vahnīsārā kriyā.

The process – press the naval knot or intestines towards the spine hundred times. This is Agnisārā or fire process. This gives success in the practice of yogā, it cures all the diseases of stomach and increases the internal fire. In Verse 21 its importance is mentioned.

Bahiṣkṛta Dhouti

Verse 22, 23,24 & 25 talks about bahiṣkṛta Dhouti.

Process- by crow bill mudra fills the stomach with air, hold it there for one and a half an hour and then force it down towards the intestines. This is a very process which should not be revealed to anybody. verse 23 mentions that one has to stand in navel deep water then draw out the long intestine, wash it with hand and then again draw it inwards. The most complicated factor in this practice is that one has to with held his breath for one and half an hour.

DANTA DHOUTI-TEETH PURIFICATION (DANTA MULA DHOUTI)

In verse 26,27and 28, Danta Dhouti and Danta Mula Dhouti is described. One has to rub the teeth with pure mud so long as dental impurities are removed.

JIHVA ŚODHANAM -- TONGUE CLEANSING

-

In verse 29 the secrecy and its importance is described.

In verse 30 & 31 it is told to clean the tongue with index, middle and ring fingers and rub the tongue well until the phlegm is removed. Then rub it again with butter and milk.

In verse 32, it is instructed to practice this before the rising and setting sun.

KARṆA DHOUTI – EAR CLEANING

In verse 33 the important of Karna Dhouti is mentioned. With the cleaning of ears, one can hear the mystical sounds.

In verse 34 the process of forehead rubbing with the thumb is mentioned which similarly known as Kapālarandhra Dhouti.

HṚD DHOUTI-HEART CLEANSING

It is called because the practices enlisted under these effects the lungs region of the body. It is the lungs region which gets cleared from elements like cough by the practice of these kriyas.

HṚD Dhouti are of three kinds. These are Daṇḍa Dhouti, Vastra Dhouti, Vamana Dhouti

रम्भादण्ड हरिद् दण्ड वेत्राण्डम् तथैव च ।

हृन्मध्ये चलयित्वा तु पुनः प्रत्याहरेच्छनैः ॥३७॥

Rambhādaṇḍa harid daṇḍa vetraṇḍam tathaiva ca ।

Hṛnmadhye calayitvā tu punaḥ pratyāharecchanaiḥ ॥37॥

In verse 37 & 38 it is instructed to perform Daṇḍa Dhouti with stalk of turmeric or with stalk of cane. By this process all the phlegm, bile and other impurities of the body is cleaned. One become free of heart diseases if practice this regularly.

अथ वामन धोतिः ।

भोजनान्ते पिबेद्वारि चाकन्थपूरितम् सुधीः ।

उर्ध्वां द्रिष्टिं क्षणं कृत्वा तज्जलं वमयेत् पुनः ।

नित्यमभ्यसयोगेन कफपित्तम् निवारयेत् ॥३९॥

Atha vāmana Dhoutiḥ।

Bhojanānte pibedvāri cākanthapūritam sudhīḥ।

Urdhvām dṛiṣṭim kṣaṇam kritvā tajjalaṁ vamayet punaḥ।

Nityamabhyasayogena kaphapittam nivārayet।।39।।

In verse 39 it is suggested to perform Vamana` Dhouti after meal by drinking water full up to the stomach and then vomit it. Normally it is prescribed to perform three hours of meal. Then it clears out all the undigested elements of the stomach.

*One should not confuse it with kunjā which is performed in empty stomach.

अथ वस्त्र धोतिः

चतुरङ्गुलविस्तारं सुक्ष्मवस्त्र शनैर्गेषेत

पुनः प्रत्याहरेदेतत्प्रोचते धोति धौतिकम्मकम् ॥ ४० ॥

atha Vastra Dhoutiḥ

caturaṅgulavistāraṁ sukṣmavastraṁśanaigr

śanaigrasesepunaḥpratyāharedetatprocateśanaigraset Dhoutikmbharkam ।। 40

IN VERSE 40 & 41 VASTRA DHOUTI IS MENTIONED.

One has to swallow slowly a thin cloth which is four fingers wide, and then slowly draw it out again. Regularly practicing this cures abdominal diseases, enlarged spleen, fever, leprosy and other skin diseases. One become cheerful and gain strength by regularly practicing this.

अथ मूलशोधनम् ।

अपानकरता तावधावन्मूलं न शोधयेत् ।

तस्मात्सर्वप्रयत्नेन मूलशोधनमाचरेते ॥ ४२ ॥

Atha mūlaśodhanam ।

apānakraratā tāvadhāvanmūlaṁ na śodhayeet ।

tasmātsarvaprayatnaena mūlaśodhanamācarete ॥ 42 ॥

MOOLĀ ŚODHANĀ --

In verse 42, 43 & 44, Mula Śodhana is described. It is suggested to clean the rectum with the middle finger or by the root of haridrā (Turmeric), carefully and then clean it with water.

This destroys constipation, indigestion, and dyspepsia and increases the beauty of the body.

CHAPTER-5

THE CONCEPT OF DHOUTI KRIYĀ IN

HATHAYOGĀ PRADIPIKĀ

(Muktibodhananda, Swami (2001). *HathaYoga Pradipika*. Munger: Yoga

Publication Trust. Second Edition.)

In the field of HathaYogā probably there is no other document which is parallel to HathaYogā Pradipikā. The text is originally compiled by Yogi Swātmārāmā. It is believed to be written around sixth to fifteenth century A.D. The very purpose of HathaYoga described under HYP is to transform the mind to higher state of consciousness by awakening the Kundalini. Sat kriyās, especially the Dhouti kriyās are probably the most effective in this regards.

In order to purify the mind purification of the body is the primary step. That is why kriyās are given importance in Hathayogā practices. The main objective of kriyās is to increase the capacity of concentration. As the energy gets activated in the physical system the power of concentration also increases. Sat karmā kriyās particularly Dhouti kriyās helps to decrease the fluctuation of prana as a result, thus mind become stable. So concentration becomes easier.

In *HYP* the Dhouti is described as

Antar Dhouti – Vātsarā, Vārisārā (Sankha Prakṣālanā), Vāhni sārā (Agnisārā), Bahiṣkṛta (rectal cleaning), Danta Dhouti- Jihvā, karna, kapāl randhrā, Caksu, Hṛd Dhouti- Vastra , Daṇḍa, Vaman (kunjal and vyāgra). Mula Śodhana (anal cleansing)

अथ धौतिः ।

चतुरन्गुलविस्तारं हस्तपन्चदशायतम्

गुरुपदिस्टमार्गेण सिक्तं वस्त्रं शनैर्ग्रसेत् ।

पुनः प्रत्याहरेच्चैतदुदितं धौति कर्म तत् ॥२४ ॥

Atha Dhoutiḥ ।

caturangulavistāraṁ hastapancadaśāyatam ।

gurupadiṣṭamārgeṇa siktam Vastra ṁ śanaigraset ।

punaḥ pratyāhareccaitaduditam Dhouti karma tat ॥24॥

In verse 24 Vastra Dhouti is described.

It is told to use a neatly cleaned cloth which is finely woven cotton. Synthetic material should not be used and the cloth should not wider than the tongue, it prescribed to have a cloth which is at least one meter length and it should not be more than one and a half meter.

Vātsarā Dhouti is performed by breathing in slowly through the mouth in Kaki mudra and then swallowing the air in to the stomach. After one and a half hour the air should be passed through the large intestine which is helpful to perform in an inverted posture.

Vārisārā Dhouti

Commonly known as Sankhapraksalana. In this process one has to drink 16 glass of warm salty water and evacuate through the bowels. With every 2 glasses of water a series of 5 specific asanas should be performed. Then it will become easy to evacuate the water through bowels. 45 minutes after completing the practice it is suggested to take a salt less liquid mixture of cooked rice, mung dāl and ghee, until the stomach is completely full.

There is also another practice called Laghu sankha Praksālanā, where only six glasses of water can be taken.

VĀHNISĀRA DHOUTI

It is known as Agnisārā kriyā, it involves moving the fire in the body which is located in the navel region. Bahiskrtā Dhouti is very difficult to perform unless one becomes an advanced Hathayogi. In this process one has to bring out the rectum and then wash it with hand. Danta Dhouti is the cleaning of the teeth with a stick usually neem or babool. It also includes jihvā Dhouti, karma Dhouti, kapalarandhrā Dhouti and caksu Dhouti.

HR̥D DHOUTI

It includes vamana Dhouti, where one needs to drink adequate amount of salt water until vomiting sensation generates. Then by tickling the back of the throat one has to vomit out the

whole salt water. This is performed after meal. There is another kriyā called kunjā kriyā which is performed in empty stomach.

MULA- ŚODHANA

It is done by inserting the middle finger into the rectum and rotating clockwise and anticlockwise. In order to avoid any injury the finger nails should be cut properly.

In HathaYoga Pradipikā, various benefits are also described in verse 25 (chapter 2) about these Dhouti kriyās. It is told that one gets rid of cough, asthma, diseases of the spleen, leprosy and 20 kinds of diseases caused by excess mucus through the effects of Dhouti karma.

The various practices help to remove infectious bacteria from the mouth, nose, ear, eyes, throat, stomach, intestine and anus.

* The only important point is that one should not practice these Dhouti kriyās without the proper guidance of a guru\ instructor. Because if wrongfully done than it might cause serious injury to the body.

CHAPTER-6

Comparison of the Kriyās in different scriptures

Sl. No.	Name of the Kriyā	Implements used	GhS	HR	SKS	HP
1. Dhouti						
(i) Antar Dhouti						
	(a) vātsāra	Air	Filling the stomach with air through Kakimudra and force it out through the lower passage.	-----	-----	-----
	(b) vārisāra	Water	Drinking warm saline water and evacuate the bowel.	-----	perform nauli; release it and then perform <i>Citrakāriṇī</i> and evacuate.	
	(c) vahnisāra		Pressing the naval knot towards the spine for 100 times.	-----	-----	-----
	(d) bahiṣkṛta		Filling the stomach with Kaki mudra; holding for one and half hour, and then force it down towards the intestines.			

Comparison of the Kriyās

Sl. No.	Name of the Kriyā	Implements used	GhS	HR	SKS	HP
(ii) Danta Dhouti						
(a) Dantamūla						
	Dhouti	catechu - powder	Rubbing the teeth with catechu - powder or with pure earth.	-----	-----	-----
	(b) Jihvā Śodhanam	Fingers	Rubbing and cleaning the root of the tongue with the index, the middle and ring finger; throws out phlegm.	-----	Same as in Gh S but which finger should be used is not mentioned.	-----
	(c) Karṇa Dhouti	Fingers	Cleaning the the two holes of the ear by the index and the ring fingers.	-----	-----	-----
	(d) Kapāla Randhra Dhouti	Thumb	Rubbing the depression of forehead with the thumb of the right hand.	-----	-----	-----
(iii) Hrid Dhouti						
	(a) Daṇḍa	Plantain stalk or the stalk of turmeric or cane	Inserting the stalk into the esophagus and then drawing it out again.	-----	-----	-----
	(b) Vamana	Water	Also known as <i>vyagrah kriyā</i> . Drinking water and vomiting the food three hours after meal	-----	-----	-----

Comparison of the Kriyās

Sl. No.	Name of the Kriyā	Implements used	GhS	HR	SKS	HP
(c)	Vastra	Cotton tape	Swallowing a thin cloth four fingers wide and taking it out again.	Same as in GhS But here the length of cloth is given as 30 feet.	Same as in GhS. Here the length is 15 hands (a Hand = 15")	Same as in SKS.
(iv)	Mūlaśodhana	Finger	Inserting the middle finger or turmeric root into the rectum rotating clockwise and anti – clockwise.	-----	It is known as Adhascakri. Only the middle finger is used	-----

CHAPTER-7

TECHNIQUE AND THERAPEUTIC (MODERN) ASPECTS OF

DHOUTI KRIYĀS

Basic Dhouti kriyās.

Tongue Cleansing: Jihvānirlektan

This works on the Talu cakrā, the base of the skull, and throat cakrā. In ancient times the tongue was rubbed by inserting the ring finger, middle, and index finger deep into the back of the tongue rubbing out the impurities at the root of the tongue slowly. One can also grab it with rounded tongs or with a clean handkerchief or bandana drawing it out slowly, elongating it, and milking it.

Today tongue scraping in India is part of daily oral hygiene often utilizing a tongue scraper made out of silver, copper, or stainless steel which is inserted on the back most part of the tongue with a light but firm pressure and then brought forward skimming off any surface scum, mucous, dead cells, toxins, food debris, and other impurities until the entire upward facing surface of the accessible tongue is cleaned. One technique is to start at the back of the tongue, working progressively with gentle but firm strokes from back to front starting until the

whole surface of tongue is cleansed. Like the ear, foot, and hand, the tongue is considered to reflect the overall body's condition.

Benefits: Stimulate the back brain, throat, cleans the breath, increases digestion, , prevents tooth decay, prepares for Khechari mudrā.

Danta Dhouti (Teeth Washing)

One uses the stiff hairlike fibres of the neem tree or babool tree to clean the teeth and the spaces between the teeth. Neem tree twigs (called dentoon in certain parts of India) contain a special herbs and resins created by the neem tree. One chews on the end of the twig until it becomes soft and hairlike (many fine bristles), then first insert the stiffer bristles between the teeth and then rub the teeth and gums like a tooth brush. Today most people use tooth brushes, picks, or special appliances but the point here is to stimulate the gums as well as the nerve roots of the teeth while taking advantage of the special herbs available by the plant, rather than to only mechanically clean. In regards to the health of the teeth, sitkāri pranayama is very beneficial to the gums as the air is drawn in through the mouth through the clenched teeth while the lips are drawn open wide.

Karna (ear)Cleansing : Glands in the outer canal of the ear produce wax to protect the deeper structures of the ear; this can accumulate and block the vibrations of sound.

Nothing smaller than the little finger should be placed in the ear.

Clean and trim the nails, place the little finger in the ear and rotate it gently and apply some pressure to the ear walls to dislodge wax; remove the finger; tilt the head to that side and shake

out any bits of dry wax; repeat with the index finger. Wash the layer of wax off the fingers and repeat for the other ear.

Benefits; - Hearing can be sharpened by cleaning the wax. Shuttle sounds can be heard.

Kapāl randhrā (frontal sinuses)

Vigorously wash the top of the head with cold water. (This term is also used for cleaning the upper back palate.)

Benefit; - This gives immediate transformation from sluggishness to wakeful vitality, soothing the whole brain.

Kapāl Dhouti

Simply press the thumbs on the temples and rotate first in one direction then in the other.

Benefit; - Eases headache and brings relaxation to the brain, removing sluggishness.

Cakshu (eyes)

Wash the eyes with clean lukewarm water whenever time permits.

Benefit; - The eyes are refreshed and tiredness is relieved.

The three Hṛd Dhouti Vamana Dhouti (sometimes called, Kunjal Kriyā, or Gaja Karṇi):

Cautions: Not for hiatal hernia, high blood pressure, or ulcers. Do not use cold water.

Technique: This is the cleansing of the oesophagus and stomach by quickly drinking approximately two litres of lightly salted lukewarm water, performing nauli kriyā (optional), then forcefully evacuating the stomach utilizing uddiyāna

bandhā after having taken a big inhalation followed by a complete exhalation and external kumbhakā. If the vomiting motion is not triggered naturally through this process, use a finger to tickle the upper part of the throat as far back as is necessary to induce vomiting. To be effective the vomiting wave action should be very forceful moving from the bottom of the stomach upward so that all the contents including any old solid matter at the bottom of the stomach are pushed up and out. Don't worry if not all the liquid is evacuated.

It is best done at dawn or first thing in the morning but after evacuating the bladder and bowels. With a little practice the entire quart will come out in a forceful stream in one or two waves taking with it any old mucous or debris, but most of us will require a series of three or more wavelike contractions to eliminate reflex toward bad food, water, or foreign objects.. Many of us were punished as children when we did not control our instinctual natural reflexes such as vomiting, evacuating, fully sneezing, etc. Thus in order to enhance the vital life supporting intelligence of the body we must learn how to let go of our conditioning. The vomiting reflex is a wavelike reverse peristalsis and is thus not meant to be performed willfully, mechanically, or consciously. Simply try to trigger it and surrender to the body's inner wisdom allowing for this cleanse to happen naturally.

Hints: Use pure warm water and non-iodized pure salt if available. The salt is not essential as this wash can be done with plain warm water. Try to finish the entire process from the beginning of drinking the salt water to the final series of evacuation in less than three minutes. If there is undigested food left over from last night's dinner, we gain information as to our digestion and food

compatibilities. This may be acidic and taste and smell "badly" but remember we are getting it out. Try to get the bottom of the stomach emptied, but do not worry if not all the salt water comes out of the mouth. It will come out the other end and serve as a wash there if need be.

It is best done outside in nature standing on grass in a yoga setting. At home, it is helpful that the toilet bowl is clean and pleasant or we can use a big wide pan, the point being that we should not worry and hold back. Take some deep breaths before you start in order to keep the mind from worrying that you do not need to stop because of gasped breath. The uddiyāna bandhā should be done. Keep the attitude cheerful and light hearted. Its often done in groups so that we can laugh at what in most social settings is considered unacceptable, gross, sick, or "bad".

Beginners are often advised to do it daily, but after it is mastered and there are no diseases of the lungs, then once a week or less often according to your own constitution. Do not eat anything for at least half an hour after vamāna and then make it light, easily digestible, and devoid of spices.

Benefits: Traditionally Vamāna has been highly recommended to those suffering from kaphā disorders. It cleanses and stimulates the stomach, oesophagus, lungs, chest, heart, throat, nose, eyes, ears, and sinus. It balances the vayu (winds) in the body especially the upward moving prana-vayu that moves upward. It is one of the specific remedies in Ayurvedic medicine for stomach, throat, asthma, and lung affliction (along with hṛd Dhouti). It is counter-

indicated in cases of hiatal hernia and ulcers.*It also opens up the mind blockages.

Another similar kriyā is Vyāghra Kriyā (tiger kriyā) which varies mainly in that it is done immediately or within two hours after a specially prepared meal. It is sometimes called Kunjal Kriyā also. It is especially helpful in removing excess mucous of the lungs and throat as well as normalizing pitta (bile secretions).

Hṛd (heart) Dhouti,[Daṇḍa Dhouti (stick)]

Cautions: Same as in Vamāna Dhouti. Do not use a stick or stiff instrument. Do not let go of the end (by always allowing plenty of slack. Do not allow the tube to be inserted for longer than one minute and withdraw before you enter the lower part of the stomach as this kriyā is designed to stimulate the pharynx and oesophagus, and indirectly the lungs, bronchioles, heart, stomach, and chest.

Technique: Daṇḍa (Stick) Dhouti or Hṛd (heart) Dhouti are very similar: The word, hṛd, refers to the heart. In the old days yogis stuck a specially prepared flexible and smooth stick made of turmeric, sugar cane, or stalk of banana down the throat, pharynx, and into the oesophagus. Then it was pulled out before it entered into the stomach proper. It should be less than three feet long and about one centimeter in diameter. Always use after cleaning and boiling it.

First drink lukewarm saline water, then swallow the tube slowly. If the tube feels stuck (usually there may be some resistance at the glottis, drink some water and the esophagus will open. This is Hṛd Dhouti.

Practice it with lukewarm saline water and swallow it in gulps relaxing the throat, neck, and oesophagus. Convince yourself that you can breathe deeply even though something is in your throat. Once you relax with the nervous reflex to throw it out in order to breathe, it becomes easy. Draw it back up slowly. Be certain that you do not lose the grip at the top end. With Hṛd or Daṇḍa Dhouti it is not necessary to keep inside the oesophagus for more than a few seconds, but one can move it up and down slowly for added stimulation. Always remove the tube slowly and gently.

Benefits: Hṛd Dhouti is actually more stimulating to the lungs, bronchioles, esophagus, heart, shoulder, and thoracic region of the back, than the stomach which it also stimulates. It is specific for all problems of the thoracic and throat region except those listed in the cautions. In Ayurveda and yoga therapy it is especially recommended for asthma, cardiac restrictions, and other pulmonary problems.

Vastra (cloth) Dhouti (also sometimes called Hṛd Dhouti)

Similar to stick Dhouti except that one swallows a four finger width (about 3 cm wide) tightly stitched and linen cloth that has been dipped in lukewarm salted water which is about three to five meters long (approximately 20 feet).

there are never any loose strands or edges of thread. The cloth should be made out of thin but tightly woven cotton such as linen, yet it should be soft. Always leave at least one foot of the upper end of the cloth free from the mouth and keep your hands on it to prevent any peristalsis from accidentally grabbing the top end out of the hand and into the gut..

Technique: Wash the cloth in warm lightly salted water in order to lubricate it and keep it rolled unknotted in a small pot. Relax the belly and abdomen while breathing fully. Smooth out the cloth wide and place it on the tongue. Bite gently on the cloth and swallow some saliva and gently move the cloth to the back of the throat. Keep on swallowing generating saliva by biting and swallowing it as you gently push the cloth further back to the throat until the cloth is grabbed by the peristaltic wavelike contractions of the throat as you swallow the saliva. Stop to convince yourself that you can breathe fine and give the throat and esophagus time to adjust. Swallow some lukewarm salted water to help move the cloth down. Once the leading end is in the stomach, things will go much easier.

.Hints and Kinks: Similar to stick Dhouti, be careful to remove cloth within five minutes of entering into the stomach to prevent it going through the pyloric valve. Allow yourself a firm grip and plenty of extra length to prevent swallowing the hand held end. Make sure there are no loose threads on the cloth, the cloth is clean, and not ripped. When the cloth emerges it will be filled with mucous so wash it thoroughly afterwards and then hang to dry in the sun.

Benefits: Although obviously a stomach and esophagus cleanser and tonifier Vastra Dhouti has a powerful cleansing effect upon the sternum, chest, heart, throat, shoulders, upper back, and especially the lungs. It also removes excess mucous from the stomach. It is specifically used in yoga therapy for asthma and lung problems

The four antar Dhouti

Vatsarā Dhouti -- Washing the intestines with air

There exist different forms of Vatsarā Dhouti. Here only one form is given which is drinking the air from the mouth and swallowing it, Then churning it around through the intestines and expelling it out the anus, thus providing an air bath for the entire gastro-intestinal tract. It is also mentioned in Gherenda samhita.

Technique: First one needs to learn Kaki (crow beak) mudra shaping the mouth like a beak by pursing the lips, relaxing the tongue, then breathe in deeply and very slowly Perform kaki mudra; With the eyes open, focus on the nose tip (nasikāgra dristi); avoid blinking. Make the mouth into a beak by pursing the lips, relax the tongue, and breathe in slowly and deeply through the “crow’s beak” (kaki mudra).

Through practice one will learn how to carry the air into the stomach and not the lungs, by closing the epiglottis with a sudden push, a little air is allowed into the stomach. When one swallows the air into the stomach, expand the abdomen Repeat this sequence ten times until the belly is fully distended. Then perform an inverted pose that can create pressure on the abdomen such as plough pose (halāsana) and let the knees fall to the ears (karṇapiḍāsana). Then fold the hands between the knees in pashinee mudra (the folded psychic gesture) squeeze the air out through the anus.

Benefits: It brings equanimity between body/mind, stimulates the gastric fire, and purifies the blood. It brings peacefulness and contentment in the body/mind. It stretches the spinal cord, the spinal muscles, deeply massages the abdomen.

Agni Sārā Kriyā or Vahnīsārā:

Agni means fire and sārā means wash. This is the fire wash kriyā practice which looks like many repetitions of uddiyāna bandhā performed continuously one after the other without holding or breathing in-between. Agni Sara also can look some what like a slower kapālabhāti except there is no breathing at all (it is done by holding out all the breath in external retention (bahir kumbhakā).

It is learned at first from standing with the knees strongly bent and the feet shoulder width apart. Do not bend the back, but rather keep the and torso spine long. Once learned standing it can be performed sitting in lotus or other postures.

Remember that the navel point can go in only if the muscles release and soften. We are not trying to build muscle here, but rather relax, soften any hardness and tension, tonify the region with fire or energy, thus burning up stagnant toxins (or moving stagnant chi).

Agni sārā is best learned at first like uddiyāna, standing with feet shoulder distance apart (especially if we want to do a deep and slower practice of fewer repetitions). However agni sara is also effectively done in virāsanā, vājṛāsanā, siddhāsanā, padmāsanā with gradual practice. At first the abdomen muscles will

get tired and you will have to stop. This impediment goes away automatically with practice. Bhastrikā, kapālabhāti, and uddiyāna bandhā practice help in this regard.

Shankha prakṣālanā Kriyā (cleansing the conch of the intestines or complete bowel wash):

Another name for this kriyā is Varisara. Prakṣālanā means cleaning outwards, and sankha means a conch. This washes the entire gastrointestinal tract very quickly by drinking salt water and performing special cleansing asanās together in sequence.

If the stomach is completely empty. Eat a light dinner or better forgo the previous evening meal. Also it is best that the food eaten the previous day was not spicy.

Technique: There are a few minor differences in techniques from one school to another, but they all consist of drinking lukewarm saline water and then performing a sequential set of asanas to move the water through while cleansing the entire GI tract. One drinks more water, repeating the sequence of specially designed asanās, and so forth in this repetitive manner until the intestines have been completely washed (clear liquid comes out from the anal opening).

Mostly the various versions of Shankha Prakṣālanā kriyā vary as to the choice of asanās, their amount, and sometimes the order of the asanās. Drink 1/2 quart (1/2 liter) of lukewarm saline water.

1) Stand up over toes and arms stretched up over head. Walk around like this forward and backward, left and right for one minute.

2) Standing in sideways tree swaying pose (triyakā tāḍāsana) or sometimes called standing sideways half wheel (ardha cakrāsana): Keep the weight of the body equal on both feet throughout. Left the right hand over head and allow the left arm to move toward the knee. Return and raise the left arm over head, letting the right arm dangle toward the right knee, and sway to the right. Return and repeat to total anywhere from three and up to eight times.

3) Kati cakrāsana: From tāḍāsana spread legs apart wider than hip distance (about 2 1/2 feet), then twist over to the left placing the right hand on top of the left shoulder wrapping the right arm across the body in back. Twist the lower abdomen all the way over as possible and return to center, and repeat to the right side reversing the arms (so that the left arm is on the right shoulder and the right arm is wrapped around the waist in back). Then come back to center. Repeat three to eight times total for this cycle.

4) Tiriyākā bhujangāsana (twisting cobra) or twisting snake (sarpāsana). Twist to the left, go back to center twist to right, go back to center, go down. Repeat three to eight times total.

5) Ardha matsyendrāsana both sides (see asana section). Repeat three times to eight total.

6) Pavanā muktāsana -- wind releasing pose. Lying on the back, bend the right knee and bring it to the head and raise the head to the knee. Then release the

right leg to the ground and raise the left knee to the head and head to the knee. Then simultaneously raise both bent knees to the head and the head to the knees. Repeat three to eight times total.

It is also sometimes called chālanā. Squat with legs spread one foot apart sitting on the heels and the heels on the ground as the typical squat. If this is not possible or there is a strain use a rolled up towel to raise the heels so undue stress is not created at the toes, foot, ankles or especially the knees during this exercise.

First bring the right knee to the ground toward the outside edge of the left foot as far as possible. The right heel will necessarily raise but try to keep the left heel grounded. Then twist the whole body especially the lower belly to the left as far as possible placing the arms over the lateral edge of the left thigh with the palms on the ground. Especially stretch the stomach muscles. Return to center. Repeat the same process with the opposite leg and foot to the right side. Return. Then repeat both processes for a total of three to eight times.

8) Then evacuate the bowels only if there is an urge to do so. Do not strain. This is one complete cycle. In either case drink another 1/2 quart (1/2 liter) of warm saline water and repeat steps 2-7 above. Evacuate the bowels if the urge arises. Drink again 1/2 quart (1/2 liter) of warm saline water and repeat until you have done this whole process (drink then exercise) four more times (cycles) or until only clear liquid comes out.

At first you will pass normal faeces, then water and feces combined, then the water will get thinner and clearer, eventually passing only clear water. Keep the

mind positive and in good humor. Then do śavāsanā for at least forty five minutes with a blanket to keep warm, during which time do not repress the urge to get up and evacuate some more if coaxed. Lubricating the anus and lower rectal area with ghee or oil may be helpful.

Do not eat anything for at least one hour after the śavāsanā avoiding any spicy, hard, or rough foods. For this reason khicheri (overly cooked rice and daal) with generous amounts of ghee are recommended.

Benefits: Cleanses and tones the entire gastrointestinal tract. Excellent for excess tamas and rajas, very cooling in summer, lightens the mind and attitude, good for depression, removes toxic conditions of the blood and tissues that are caused by intestinal waste product. It thus relieves flatulence, constipation, acidity, indigestion, menstrual cramps, asthma, acne and boils etc..

* It should avoid in case of high blood pressure, and serious diseases of the intestines.

Laghu Shankha prakṣālanā (shortened version): Laghu means short. As above and always on an empty stomach. Do this and then go to evacuate. This brings on a gushing bowel movement and also much urination. This shortened procedure can be done in a short period of time without much disruption in the regular agenda. Being less drastic than the full version it can be done more frequently, say even as much as once a week.

Drinking 2 liters of salted water (2 tsp/liter). Drink two glasses quickly. Do the asanas above or one round of the special short asana sequence below. Then drink

another two glasses quickly. Then repeat the asana sequence. Repeat until all the water is finished. Then sit for toilet, do not strain. If no action repeat another round of asana.

The five laghu shankha prakṣālanā asana sequence consists of:

1. Tādāsanā arms stretching up overhead and lifting onto the toes.
2. Tiryākā tāḍāsana
3. Kati cakrāsana
4. Tiryākā bhujangāsana
5. Ūdarakarśaṇasana

The most drastic of the kriyās, it should be done with a light heart, no worry, and with a sense of humor.

BAHISKIRTA (ANAL CLEANING)

“It is not easily available, even to the Gods” GS 1:23

This requires controlled prolapse of the rectum so that it can be washed outside the body.

Very few people in this world is known to be practicing this.

MULA SHODANA (BASE PURIFICATION)

“If the person does not practice Mula Shodhanā then the apana (function of elimination) does not pass freely. Clean the anus with the finger then repeatedly

wash it with water. This practice removes the hard fermented stool from the lower colon. Abdominal ailments are removed, the body becomes graceful and healthy and one's digestive fire improves." GS 1: 43 - 45

This will seem most offensive to many but, it has the most liberating effect in awareness and acceptance of the body, grounding and connecting with the pelvic floor in a very practical way.

In India turmeric roots are easily available and are used; turmeric is astringent, anti-biotic, a blood purifier and stimulates peristalsis. In many ways a finger is better because it can be manipulated into the pockets of the rectum and ease out hard faecal matter. The hands should be very thoroughly cleansed afterwards.

Ensure that the fingernail is short, clean and not snagged.

In a squatting position use ghee, oil, soap or water as a lubricant and, insert the index or middle finger into the anus about 2cms and then gently rotate it in both directions simultaneously pushing the finger further into the rectum. Continue rotating and inserting as deeply as possible, stimulating the nerves and functions of the rectum. Remove and wash and repeat several times using firm but gentle pressure on the walls of the rectum. Contracting and releasing the anal sphincter (aśvini mudrā) will intensify the practice. Wash the anus with cold water to stimulate blood flow.

Benefits; -

There is a rich supply of blood vessels and nerves from the sympathetic and parasympathetic systems at the anus; it is these blood vessels that so easily distend to form haemorrhoids. Mula Shodanā Stimulates these and supports the

function of the whole elimination system, encouraging strain-free elimination. The rectum is cleaned of encrusted waste matter, which hardens onto the thinly walled plexus of blood vessels creating haemorrhoids, bleeding, scabbing and rectal pain. It has a direct action on easing constipation. Haemorrhoid sufferers need to begin the practice very cautiously and gently pushing back the distended varicose veins into the rectum and massaging very carefully. Combining daily Mula Shodanā with laghu Shankhaprakṣālanā, elimination will become much easier and as the haemorrhoids heal more pressure, rotation and repetition can be used in Mula Shodanā.

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CHAPTER-8

SUMMARY & CONCLUSIONS

According to the HathaYoga texts, all these practices are not only supposed to be for the purification of the physical being but also for the purification of the most vital aspects of the personal, psycho- logical, and spiritual being. There is toxicity present in the body. The toxicity, or pollution is present not only in the physical sense but also present psychologically and physically. In fact, it is thought that it is the ignorance or confusion which has brought about identification with this body, and which in turn has contributed to the physical impurities found in your body.

In modern medical field the therapeutic aspects of these Kriyās are also considered to be vital. In fact many diseases, particularly stomach related problems can be cured with regular practice of Dhouti kriyās. But this practices should not be done without a proper instructor. By inventing new and easier to use instruments Dhoutis can be made popular among the general population. Particularly in a nation like India where stomach related problems are more common, because of more spicy food.

The very essence of Dhouti kriyās is to purify the body from all sorts of toxic elements which is the main cause for various common ailments, without using much of modern medicine. These practices are described in various methods in different HathaYoga texts, even different schools have their own methods of practicing various kriyas. Therefore it is always necessary to practice this kriyas under proper guidance.

CONCLUSIONS

- 1) Dhouti kiyas are a scientific process of body cleansing
- 2) Dhouti kriyas are a preparatory physical practice to attain the supreme consciousness through mind.
- 3) Various stomachs related diseases could be cured by the proper practice of dhouti kriyas.

CHAPTER-9

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ABSTRACT

The present study was conducted to compare the effect of three different integrated yoga modules on associative memory in 241 school children of both genders aged between 13-17 years. Subjects were randomly allocated to three groups, after separating for sex, the groups were Creativity group(CVG, N=81), Intelligence quotient group (IQG,n=81) and group (n=81) & Physical stamina group(PSG,n=79). All the groups prescribed specific yoga modules for 10 days. Associative memory was assessed by using Wechsler'sMemory Scale. The assessments were taken on day 1 and day 9. All the 3 groups showed significant improvement by student paired t-test (CVG – 12.2%, IQG- 11.4%, PSG- 11.3%). The result showed significant improvement in all groups. Multiple comparisons using one way ANOVA test showed that no-group are significantly different from each other. There was no gender effect on the final outcome.

CHAPTER-1

INTRODUCTION

Memory means “to be mindful or to remember”. Memory is the store house of past experiences. Thus it is the seat of our ability to recreate or reproduce past experiences, perceptions, emotions, thoughts and actions. To be truthful we have only the vaguest notions of how our memory actually works.

The remembering of a past experience or an idea by recalling something associated with it is also part of the function of the same memory. Eg: revisiting a

town after many years of absence may recall a series of long forgetting incidents each associated with one or more than others.

Memory is the function involved in reliving past experiences and is the totality of the past experiences that can be remembered. In fact it is a specific past experience. If a man has to live successfully and attain success in all walks of life efficient memory is very essential.. The memory of a person does not decrease by itself unless it is disturbed by shocks of some kind or disease or damage on the nerve cells of the cortex. If the individual is physically and mentally healthy the chance of deterioration in the memory is rare possibility.

Memory can be improved by efficient learning. Only memorizing the material does not mean improvement of memory. In one of the studies one group tried to improve their memory by repeating a material over and over again. Another group tried to improve it by following the principles of efficient learning. Following better technique and principles to learn and remember a material was found to show improvement in memory (1).

One earlier study showed that yoga breathing through a particular nostril increases spatial memory scores without lateralized effects (2).In another study on Yoga based personality development camp (PDC) children using Wechsler memory scale test proved that memory scores increased significantly after completion of the PDC camp on the 10th day, however three different groups based on the same intervention showed different degrees of improvement (3)

In this present study using Wechsler's Memory Scale associative memory was tested in school children. The intervention given is yogic practices selected from ancient texts of Yoga. The School children were divided into three different groups and named based on the type of Yoga interventions intended to facilitate the prescribed faculty, viz- Intelligence quotient, Creativity and Physical stamina. The intervention period was 10 days.

CHAPTER-2

AIMS & SCOPE

- I) The integrated yoga module(IAYM) helps in improving associative memory capacity by Wechsler's memory scale test.
- II) To compare associative memory in three different modules of yoga given to three different groups viz CVG, IQG and PSG intended to facilitate the CV, IQ and PS in respective groups.

SCOPE

Wechsler memory scale was assessed in children of age group 13-17 years in three different modules namely Creativity(CRG), Intelligence quotient(IQG) and Physical stamina(PSG) to assess the change in creativity, intelligence quotient and physical stamina facets in children.

CHAPTER-3

LITERATURE SURVEY

Yoga and memory –

Uma et al (4) evaluated the integrated approach of yoga as a potential therapeutic tool for mentally retarded children . This was a one-year controlled study where ninety children with mental retardation of mild, moderate and severe degree were selected from four special schools in Bangalore, India. Forty-five children underwent yogic training for one academic year (5 h in every week) with an integrated set of yogic practices, including breathing exercises and *pranayama*, *sithilikarana vyayama* (loosening exercises), *suryanamaskar*, *yogasanas* and meditation. They were compared before and after yogic training with a control group of 45 mentally retarded children matched for chronological age, sex, IQ, socio-economic status and socio environmental background who were not exposed to yoga training but continued their usual school routine during that period. There was highly significant improvement in the IQ and social adaptation parameters in the yoga group as compared to the control group. This study shows the efficacy of yoga as an effective therapeutic tool in the management of mentally retarded children.

Another study by Cohen et al (5) assessed auditory/verbal and visual/spatial memory in children with complex partial epilepsy of temporal lobe origin, there

were two groups of epileptic children and a normal control group were administered a Comprehensive Children's Memory Scale (Experimental Edition) which is presently being developed by this author. The first experimental group consisted of 12 children having complex partial seizures of left temporal origin and the second group consisted of 12 children having partial complex seizures of right temporal lobe origin based upon clinical description and EEG / neuroimaging verification. Results indicated: (a) Children with left temporal lobe epilepsy demonstrated significantly lower performance than controls on auditory/verbal memory testing. (b) Children with right temporal lobe epilepsy demonstrated significantly lower performance than controls on visual/spatial memory testing. (c) For the most part, the right and left temporal lobe groups did not significantly differ from each other. However, their performance was in the expected direction; i.e., children with left temporal lobe epilepsy scored lower than right temporal lobe epileptics on auditory/verbal memory testing, and children with right temporal lobe epilepsy scored lower than left temporal lobe epileptics on visual/spatial memory testing.

UNINOSTRIL BREATHING, IQ AND CR

The effects of unilateral forced nostril breathing on cognitive performance was studied by Jella SA, Shannahoff-Khalsa DS (6). Their study describes the effects of 30 minutes of unilateral forced nostril breathing on cognitive performance in 51 right-handed undergraduate psychology students (25 males and 26 females). A verbal analogies task modeled after the Miller Analogies and SAT Tests was used as a test of left-hemispheric performance and mental rotation tasks based

on the Vandenberg and Kuse adaptation of Shepard and Metzler's tests were used as spatial tasks for testing right-hemispheric performance. Spatial task performance was significantly enhanced during left nostril breathing in males and females, $p = .028$. Verbal task performance was greater during right nostril breathing, but not significantly $p = .14$. These results are discussed in comparison to other cognitive and physiological studies using unilateral forced nostril breathing. This yogic breathing technique may have useful application in treating psycho physiological disorders with hemispheric imbalances and disorders with autonomic abnormalities.

4. DeMoss K and others (7), observed the effect of gender, creativity, depression, and attribution style in adolescents with high academic ability. This study examined the relationship among gender, creativity, depression, and attributional style among high-achieving adolescents. One hundred twenty-eight eighth- and ninth-grade high-achieving students completed the Torrance Test of Creative Thinking (TTCT), the Children's Depression Inventory (CDI), and the Children's Attribution Style Questionnaire--Revised (KASTAN-R CASQ). The results indicate that there were gender differences only on the verbal component of the TTCT, with females scoring significantly higher. For both sexes, there was a significant relationship between figural creativity and a depressogenic attributional style. However, for females, high verbal creativity was associated with low levels of depression and a positive attributional style.

A study by Naveen et al (2) showed that Yoga breathing through a particular nostril increases spatial memory scores without lateralized effects. Practice of

Uninostril breathing facilitates the performance on spatial and verbal cognitive tasks, said to be right and left brain functions, respectively. Since hemispheric memory functions are also known to be lateralized, the present study assessed the effects of uninostril breathing on the performance in verbal and spatial memory tests. School children (N = 108 whose ages ranged from 10 to 17 years) were randomly assigned to four groups. Each group practiced a specific yoga breathing technique: (i) right nostril breathing, (ii) left nostril breathing, (iii) alternate nostril breathing, or (iv) breathe awareness without manipulation of nostrils. These techniques were practiced for 10 days. Verbal and spatial memory was assessed initially and after 10 days. An age-matched control group of 27 were similarly assessed. All 4 trained groups showed a significant increase in spatial test scores at retest, but the control group showed no change. Average increase in spatial memory scores for the trained groups was 84%. It appears yoga breathing increases spatial rather than verbal scores, without a lateralized effect.

In earlier studies it was shown that both verbal (left brain function) and spatial (right brain function) memory improved with specific nostril and alternate nostril breathing. In this study also specific nostril breathing is given along with IAYM to assess the change in human faculties like intelligence, creativity and physical stamina,. In another study by the same authors (2) it was shown that the spatial memory improved more than the verbal memory..

CHAPTER-4

METHODS

4.1 subjects

The children in program were participants in ten days residential yoga course at Swami Vivekananda Yoga Anusamdhana Samsthana, Bangalore, India, during summer holidays. There were total of 297 children out of 900 who were screened, were included in the study. 241 children completed the camp. Rest of the students dropped out of the camp as explained in trail profile (figure-x). Among the 241 students there were 156 boys and 85 girls. The details of the subjects are given in table-1.

Table-1 Details of subjects

Groups	No of subjects	Age (Mean±SD)	No of male	Age (Mean±SD)	No of female	Age (Mean±SD)
CVG	81	14.16±1.22	55	14.07±1.32	24	14.35±0.98
IQG	81	14.10±1.07	53	14.13±1.09	30	14.04±1.04
PSG	79	14.11±1.37	31	14.10±1.51	48	14.13±1.15
TOTAL	241	14.12±1.22	139	14.10±1.30	102	14.16±1.06

CVG=creativity. IQG= Intelligence Quotient. PSG= Physical Stamina

Inclusion criteria:-

1. All children who participated in a residential personality development program.
2. those who knew English language, which were checked by oral questionings.

Exclusion Criteria:-

1. Children who were not normal in their mental health, based on the subjective report.

Informed consent:

The signed informed consent was not obtained from the parents / guardians of the children, who participated in the study. However, the parents had consented for them to take part in the 10 day Personality Development camp.

4.2 Study design

900 children with age range 13 to 17 years were screened for the above mentioned (under –subjects) inclusion criteria, 297 were selected with age range 13 to 17. There were 189 males and 109 females in the group. They were randomly allocated to three groups. The pre-assessment was done on day 1 of the 10 day personality development camp in a residential setting. They were then followed for 9 days with their respective interventions i.e., IQ (intelligent

quotient), CV (creativity), PS (physical stamina). On day 9, the post assessment was done on all the three groups.

4.3 Randomization

Out of 900 children screened 297 children were satisfied the inclusion criteria. The subjects were then randomly allocated to three groups. This was done using lottery method, where the chits were picked by the person who had no other role in the study; to group the 297 children's into 3 groups of 99 each. The three groups were then designated as Intelligent Quotient group (IQG), Creativity group (CRG) & Physical stamina group (PSG), by the co-coordinator of the camp, who had no role in the intervention.

4.4 Masking

It is difficult to assess yoga practices in double blind trial because the intervention requires actual participation of the subjects and hence identities becomes known after allocation. However, there was an attempt to blind the subjects by giving another set of names for the three groups, which was used all through the 10 days camp viz. Brahma for CVG, Vishnu for IQG and Mahaswara for PSG.

4.5 ASSESSMENT

Three sets of ten matched pair of words were selected, which is to be read out to the students.

Procedure- Students were given three sets of white papers numbering 1, 2 and 3. Then the students were instructed to listen carefully to three sets of ten matched

pair of words each without writing anything, while it was read out serially as 1, 2 and 3.

After reading out all the three sets the students were told to get ready with their paper. This time one by one the words were read out from three different sheets as 1, 2 and 3 without their matched pairs. The words were read out one by one and the students were told to write the matched pair which was read out earlier.

Five seconds time was given in between words for writing. The first set was told to write on sheet 1 the second on sheet 2 and third on sheet 3. Each sheet was read out separately.

Subjects were spread all over the hall to ensure that no body can copy from one another while writing the answer. It was ensured that nobody can write anything while instruction was given.

4.6 INTERVENTION

Training in Yoga: -

All three groups i.e., IQG, CRG & PSG underwent 10 days of “personality Development camp” during which they are engaged in IYM (Integrated Yoga Module) for 8 hours per day This included activities under the following categories:

- | | |
|------------------------------------|------------------|
| 1. Breathing Exercises | : 15 minutes/day |
| 2. <i>Sithalikaarana Vyama</i> | : 15 Minutes/day |
| 3. <i>Asana</i> (Physical Posture) | : 45 Minutes/day |
| 4. <i>Pranayama</i> | : 1 Hour/day |
| 5. Meditation (OM) | : 15 minutes/day |
| 6. Lecture on yoga philosophy | : 45 minutes/day |

7. Krida Yoga (yogic game) : 1 hour
8. *Trataka* (yoga based eye exercise) : 30 minutes

However, the practices within each of the categories mentioned above, were differed for each group and were specific to facilitate the faculty that was focused for each group. i.e., IQG, CRG and PSG. In addition to the above, each group had specific special yoga practices included to facilitated the quality of the group. They are:

(i) IQ Group

1. *Surya Anulaoma Viloma* (Right nostril breathing) : 1 Hour/
2. Chanting (Gita-Jnana yoga) : 1 Hour/day

(ii) CR Group

1. *Chandra Anuloma Viloma* (Left nostril breathing): 1 Hour/day
2. Chanting (Gita-Bhakti Yoga) : 1 Hour/day

iii) PS Group

1. *Nadi Sudhi* (Alternate breathing) : 1 Hour/
2. Chanting (Hanuman Chalisha) : 1 Hour/day

The detail of the daily routine practices for each group are given in APPENDIX-3

4.7 DATA EXTRACTION AND ANALYSIS

The scoring process-

The matched pairs are divided into two sections.

Easy score and hard score.

Total number of easy score / 2 + Total number of hard score.

There are total of six easy scores and four hard scores in each set. Total there are 18 easy scores and 12 hard scores. Maximum scoring capacity is 21.

4.8 ANALYSIS

- 1) a) Normal distribution of data was checked using- Kolmogorov Smirnov test.
 - b) One way ANOVA was used to check for the baseline difference between the groups.
 - c) Paired 't' test for assessing the difference within (Pre –post) each group was done.
 - d) One way ANOVA test was used to find out any significance difference between the three groups.
- 2) a) To find out gender effect independent 't' test was done on the baseline data.

CHAPTER-5

RESULTS

The one-way ANOVA for baseline values showed that data of three groups were not significantly different from each other. Comparison of pre and post values showed that there was a significant improvement ($p < 0.001$) in associative memory in all three groups according to student paired 't' test. The non-parametric Wilcoxon signed ranks test also showing the same result as per paired t-test (table-4). The percentage change of post-pre data showed a change of 12.2% in CVG, 11.4% in IQG and 11.3% in PSG. There is no significance difference between the three groups as shown in one way ANOVA analysis. The group mean \pm SD for the three groups are given in Table-1. The group mean \pm SD and degree of change of boys and girls separately are detailed in Table-2.

Table 1. Mean and standard deviation with percentage changes in three groups.

Group	Pre-scoring M \pm SD	Post scoring M \pm SD	% change
CV	17.2 \pm 3.03	19.3 \pm 2.37*	12.2
IQ	17.3 \pm 2.55	19.3 \pm 1.93*	11.4
PS	17.6 \pm 2.45	19.5 \pm 1.66*	11.3

* Significant in paired t-test, $p < 0.001$

IQ (Intelligence Quotient), CV (Creativity), and PS (Physical Stamina).

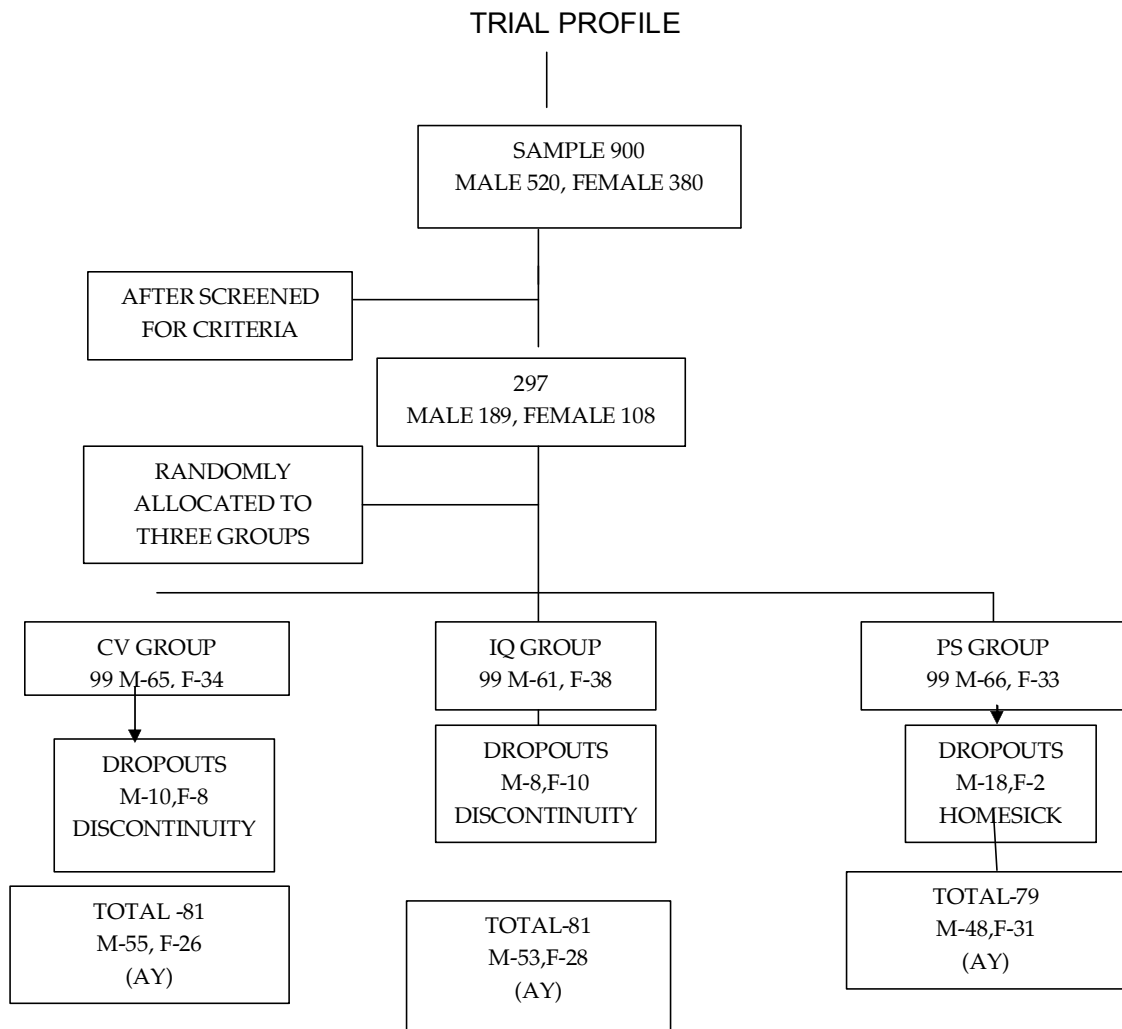
Table-2

	CV	IQ	PS

B	Pre M±SD	16.29±3.20	17.27±2.67	17.64±2.38
	Post M±SD	17.85±2.67	17.29±2.09	17.87±1.78
	% change	16	11.46	11.11
G	Pre M±SD	18.88±2.18	19.25±2.36	19.60±2.59
	Post M±SD	20.04±1.48	19.60±1.66	19.68±1.51
	% change	12.26	13.36	10.12

IQ (Intelligence Quotient), CV (Creativity), and PS (Physical Stamina), B=Boys, G=Girls.

FIGURE-X



CHAPTER-6

DISCUSSION

The present study shows that there is significant improvement in associative memory as assessed by Wechsler memory scale after 10 days IAYM. All the three groups were matched in the baseline data. For pre-post comparison paired t-test and for between group comparison ANOVA test was selected. The male and female does not show any difference in the baseline data. The comparison of pre-post data in each group shows significant improvement. Although there is no statistically significant difference between the groups

Earlier studies in the Vivekananda yoga research foundation(4) in two groups of 38 children each(age mean 13.8 ± 1.3 yrs) in a residential setting with IAYM s intervention for 10days had shown significant improvement in yoga group in visual verbal memory (16% , $p < 0.01$), auditory scores(19%, $p < 0.001$), audio visual memory scores (5%, $p < 0.01$) as compared to non yoga control group who showed significant deterioration as (17%, 26%, 21% and 7% correspondingly).

Later in the efficacy of uninostril breathing on hemisphere function (5) using standard tests for spatial and verbal memory specific to right and left hemisphere functions were undertaken in the same setting of PDC camps. 108 normal children (mean age 13 years) were allotted to 4 groups of 27 each practicing left nostril breathing (CAV) , Right nostril breathing (SAV), Alternate nostril breathing (NS) and Breath awareness(BAW). Assessments of both spatial and verbal memory tests had ten test items. Result showed significant improvement in spatial and verbal memory for all 4 groups. All had greater increase in spatial compared to verbal memory, with no clear laterized effects. The percentage changes were SAV-21%, CAV-25%, NDS-31% and BAW-29% for verbal memory

scores and SAV-90%, CAV-86%, NDS-79% and BAW-81% for spatial memory scores .

Based on these observations the same researchers went on to repeat the same kind of study with a random allocation of 108 children to 4 groups with an addition of a non-yoga control group. This was published in an indexed journal (2). Thus Naveen et al in 1997 which clearly established that yoga practices have much greater impact on spatial memory (84%) than verbal memory (25%) without laterized effect of specific uninostril breathing practices. It was opined that these effects could be explained by the anxiety reducing effect of yoga.

Further attempts were made to study the effect of yoga on all aspects of memory (8). This was undertaken by using the assessments on Wechsler Memory Scale test (WMS) in a similar residential setting of PDC during summer holidays. There were a total of 118 children (from 3 batches) in age group 11-14 years. After the 10 days residential camp WMS were assessed on 6 facets which showed significant improvement. Maximum improvement of 136% was observed on recollecting details of a story. This process of remembering visual imagery which occurs as a subconscious aid to committing novel unrelated items to memory. This improves both verbal comprehension and processing (a left brain task) as well as visual imagery (right brain task). Hence the author concluded that yoga enhances function of both right and left brain to a comparable degree. Least improvement in tasks which involved digit span, orientation, and verbal paired associate learning are all tasks processed by the left hemisphere. Hence it may be said that yoga training increased the performance in all 6 facets, maximum increase occurred in tests of right brain faculties, and least in tests of left brain faculties.

Yoga texts and experts describe various benefits of yoga practices on different facet of personality. All the previous studies have used a common program of IAYM with changes only in the uninstal breathing pranayamas. Hence more specific modules based on scriptural knowledge for improving left brain functions- intelligence quotient, right brain functions -creativity and physical stamina were evolved and effect on the WMS was assessed in the present randomized design . Result confirms the generalized effect of the integrated yoga modules taught in the residential summer holiday PDC set up. 11 to 12 % increase in associative learning (the 7th facet of WMS) is demonstrated in this study. Earlier study had shown 0 to 58% change in associative learning in 3 different batches of IAYM in the same age group where as the present study has a uniform result of 11 to 12% change.

In addition this results are in tune with earlier observations(2,3) where in the improvement in left brain memory(be it verbal memory or facet 5 and7 of WMS) was in the range of 8 to 25% as compared to right brain memory which was in the range of 80-100% . Thus we could expect that the module designed for facilitative left brain memory would have shown significantly greater degree of improvement on this management.The absence of every significant difference between the groups seems to be due to the overwhelming holistic effect of the whole program on to overall stability, harmony and anxiety reducing effect of yoga.

The differences that are described in the yoga texts could be more subtle and marked by the overall effect. Hence future study has to be designed with the practice of only the selected practices in a non residential set up.

CHAPTER-7

SUMMARY AND CONCLUSIONS

1. Yoga has been shown to be effective by earlier studies in improving different aspects of personality both physical and mental. Studies on yoga on associative memory are sparse. Therefore this study has been taken up to assess the effect of yoga on associative memory.
2. In this study a total of 241 subjects were taken. They were distributed among three groups (IQ, CV and PS) with random allocation after stratifying for gender. The assessment has been done through associative memory facet of Wechsler memory scale.
3. The data analysis was done using SPSS package through paired t-test and multiple comparison ANOVA test.
4. The baseline data were well matched for all three groups.
5. The pre –post analysis (students paired t-test) showed significant improvement in all three groups.
6. Between group comparison was done by ANOVA test, which shows that no group is significantly different from each other.
7. There was no gender effect on the study as independent sample 't' test shows no significant difference between males and females.

Conclusion

- All the three groups show significant improvement in their performance on Wechsler Memory Scale
- There was no significant difference between the groups.
- Analyses for gender effect shows no significant difference between males and females.

CHAPTER-8

LIMITATIONS OF THE STUDY

1. The signed informed consent was not obtained from the parents / guardians of the children, who participated in the study. However, the parents had consented for them to take part in the 10 day Personality Development camp.
2. All the three groups had specific interventions, viz. Intelligence Quotient, Creativity , Physical stamina. There was no control intervention group or control group.
3. It was observed that , the children were not relaxed and enthusiastic during the Assessment (pre-post) as children performed this task after 6 tests which too required 3 hours.
4. The random allocation was done through lottery method instead of using random number table.

CHAPTER-9

SUGGESTIONS FOR FUTURE WORK

1. As this study was done in a controlled atmosphere (ashram life from urban setting), a study in urban setting where the house and schools are situated, may be more useful.
2. To compare the effect of yoga modules studies, the study can be repeated with control intervention group and control group.
3. Effect of individual practices along with IAYM on memory with control groups to be studied with longer duration.

CHAPTER-10

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