

PART I

CONCEPT OF HEALTH

PART II

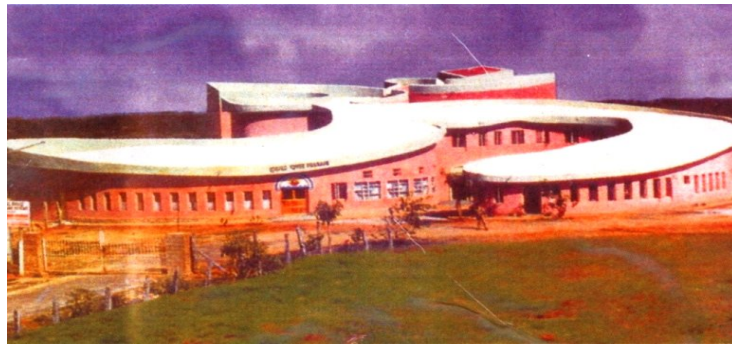
**EFFECT OF *KAPĀLBHATI* AND *PRANĀYĀMA* (*Yoga*
BREATHING) ON MUSCULAR ENDURANCE**

Dissertation Submitted by

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Towards the

In partial fulfillment of Master of Science in *Yoga* [Msc (*Yoga*)]

To

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Sharad Saini

Declaration

I undersigned Sharad saini declare that I have done the work this presents. The literary research is under the guidance of Dr. Saraswati Mohan and the experimental research is under the guidance of Dr. Nagarathna and Dr. Balaram Pradhan. I further declare that this work entitled:

PART- I: Literary Research

Concept of health and

PART- II: Experimental Research titled

Effect of *Kapālbhati* and *Praṇāyāma* (Yoga Breathing) On Muscular Endurance

Place: *Praśānti Kuṭīram*

Date:

SHARAD SAINI

CERTIFICATE

This is to certify that Sharad Saini is submitting this literature research “Concept of Health” and experimental Research on “Effect of *Kapālbhāti* and *Praṇāyāma* (*Yoga* breathing) on muscular Endurance in experienced *Yoga* practitioners”, towards partial fulfillment of the requirements for Masters of Science (*Yoga*) registered for the course on August 2008 in Swami Vivekananda *Yoga* Anusandhana Samsthana (SVYASA) and this dissertation is a record of the work carried out by him in this institute.

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PART I

CONCEPT OF HEALTH

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CHAPTER 1

INTRODUCTION

This is common saying, emphasizing the importance of the body, even, throw the self and the knowledge of the self are the ultimate goals

शरीरमाद्यं खलु धर्मसाधनम् (5,33 Kumārsambhava)

This body is the instrument of *dharma*.

We have three types of body: physical body, subtle body and causal body. The physical body is only one instrument of *dharma*. Through this body we can do good or bad *karma*. It is our duty that we should keep this body healthy, so that we can perform our *dharma*, which will lead to the knowledge of *Ātma*

Among the concepts of health, most common and accepted concept all over the world is absence of disease.

World Health Organization (WHO) defined Health. In 1986 WHO also said that health is "a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities."

A doctor's point of view of health, may differ from a philosopher's or a psychiatrist's or a biomedical scientist's view.

Considering the inadequacy of biomedical concept, an idea of relation environment to health was put forward by 'Dubos'. He defined health as relative absence of pain and discomfort and a continuous adaptation and adjustment to the environment to ensure optimal function. (Dr. Ulka a natu), *Yoga for health & harmony*, ghantali mitra mandal.

Let us examine the concept of health according different school of medicine.

Health according to Āyurveda.

समदोषसमाग्निश्च समधातुमलक्रियाः ।

प्रसन्नात्मेन्द्रियमनाः स्वस्थ इत्यभिधीयते ॥

samadoṣasamāgniśca samadhātumalakriyāḥ ।

prasannātmendriyamanāḥ svastha ityabhidhiyate ॥Yoga for health & harmony

A person is said to be healthy when the three *doṣās* or humors, digestive fire or *Agni*, seven *dhātus* (tissue): Skin glow, Blood, Flesh, Fat, Bones, Marrow and Semen, Three *malas* (wastes) Excretion, Perspiration, Urine are in a balance state in the body along with time (soul), *indriyās* (senses) and *Manas* (mind) are in a state of bliss.

Caraka defines health as:

विकारो धातुवैषम्यं साम्यं प्रकृतिरुच्यते ।

सुखसंज्ञं कमारोग्यं विकारो दुःखमेव च ॥च . सं ।४.९.४॥

vikāro dhātuvaiṣamyam sām्यam prakṛtirucyate

sukhasañjña kamārogyam vikāro duḥameva ca ..C.S 4.9. 4..

Any disturbance in the equilibrium of *Dhātus* is known as disease and on the other hand the state of their equilibrium is health. Health and disease are also defined as pleasure and pain respectively.

In philosophical systems like *Sāṅkhya* a disturbance of the equilibrium in nature gives rise to sixteen-fold *vikāras* (eleven *indriyas* and five *tanmātrās* , i.e subtle elements). The primordial cause of creation, that is *Prakṛti* is nothing but a state of equilibrium of the three *guṇās* - *sattva*, *rajas*, and *tamas*. In the medical science, however, *vikāra* and *prakṛti* are to be taken in a

different perspective . Hence, *Dhātus* take the place of *guṇās*. *Dhātus* (*guṇās*) consist of *vāta*, *pitta* and *kapha*, *rasa*, *rakta*, *māṁsa*, *medas*, *asthi* and *majja* are like *rajas* etc. Any deficiency or excess in the normal quantity of the *Dhātus* cause *vikara* or diseases. Equilibrium of these *dhātus*, on the other hand, is *prakṛti*, that is health . C. S.4.9.4.

Let us examine the concept of health according different school of medicine

Health according to Homeopathy

Homeopathy is based on the philosophy that the body, mind and emotions are not really separate and distinct, but are actually fully integrated. Balance between these three is health. If they get disturbed then a person suffers from disease. Which type of physical disease differs from person to person, Homeopath seeks a remedy from all of the patient's physical and psychological symptoms. Although some people's symptoms may be complex, a well-trained Homeopath will know which symptoms should be specially noted, and can choose an effective, individualized remedy.

Health according to Naturopathy

In the health condition of man the spiritual vital force (autocracy), the dynamism that animates the material body (organism) rules with unbounded sway and retains all the parts of the organism in admirable, harmonious vital operation as regards both sensations and functions, so that our indwelling, reason-gifted mind can freely employ this living, health Instruments for the higher purpose of our existence.

Health according to Yoga.

In the *Yoga Patañjali* direct did not define about Health but *Patañjali* describe about body, how we can keep this body Healthy.

First we will know about *Yoga* then we will see how *Yoga* can help to keep the body Healthy.

The term *Yoga* it is verbal root as युज् (*Yuj*) in sanskrit. *Yuj* means joining, $\text{युज्यते अना इति योगः}$ (*yujyate anena iti Yogaḥ*). *Yoga* is that which joint Jivātmā with *Paramātmā* . Through *Yoga* a person can mastery over the mind ‘*Yogaḥ Chitta Vr̥tti Nirodhah*’. (*Yoga Sutra*:1.2) *Yoga* is a process of gaining control over the mind if mind will be healthy then a person can keep the body Healthy. *Patañjali* gives a wide range of techniques that slowly harmonize the mind and gradually induce subtle perception. However, the main path of *Patañjali* is contained within eight fundamental stages. The first five are

1. *Yama* (social code)
2. *Niyama* (personal code)
3. *Āsana* (sitting posture)
4. *Prāṇāyāma* (control the *prāṇa*)
5. *Pratyāhar* (sense withdrawl)

These first five stages are the esoteric or *bahiranga* (external) practices of *Yoga*. They progressively prepare the body-mind for the last stages:

6. *Dhāraṇā* (concentration)
7. *Dhyāna* (meditation),
8. *Samādhi* (superconsciousness)

Patañjali told about eight stages, we will know about *Āsana* and *Prāṇāyama*, anyone can do this practice a *Āsana* is defining by *patañjali* as a steady and comfortable sitting position. In theory, it can include many of the *Āsana* of Hatha *Yoga*, but practically it includes only a few, such as *padmāsana*, *siddhāsana*, etc. The purpose of and *Āsana*

In *Patañjali Yoga* is balance the different nerve impulses, feeling of pain and pleasure, heat and cold and all other opposite sensation.

Prāṇāyama is the combination of the Sanskrit words *prāṇa* = life force and *āyama* = control or mastering.

According to *Patañjali Yoga Sutras*,

तस्मिन्सति श्वासप्रश्वासयोगतिविच्छेदः प्राणायामः ॥ २.४९ ॥

tasminsati śvāsapraśvāsayorgativicchedaḥ prāṇāyāmaḥ .P.Y.S.2.49

Prāṇa means breath, *āyama* is lengthening or widening through control. when breathing is control so as to retain the breath, it is *Prāṇāyama*. It is interesting to note that serpents, elephants, tortoise and so on live long lives because they perform the act of respiration fewer times per minute than human beings. The life of human being can also be prolonged if the breath is retained, but this requires training as well as practice.

In the *Taittiriya Upaniṣads* Varuna told his son (Bṛghu) about *pañcakōśa*. He describes that we have five koshas like- *Annamaya Kōśa*, *Prāṇamaya Kōśa*, *Manomaya Kōśa*, *Vijñānamaya Kōśa*, *Ānandamaya Kōśa*

***Annamaya Kōśa*:** This consists of five elements, namely the earth, water, fire, wind, air. This is normally nourished by gross food that we consume.

***Prāṇamaya Kōśa*:** The *Prāṇa* is the basic fabric of this universe both inside and outside our body. A uniform harmonious flow of *Prāṇa* to each and every cell of the *Annamaya Kōśa* keeps them alive and healthy.

***Manomaya Kōśa*:** *Manas* (mind) is the source of every thing. This is the aspect of one's personality where in the mind carries on its different functions such as perception (*Manah*), Memory (*Citta*) and ego (*Ahaṅkara*). This is called *Manomaya Kōśa*.

***Vijñānamaya Kōśa*:** conscience within that continuously guides us to do a thing or not to do a thing, this is called *Vijñānamaya Kōśa*.

Ānandamaya Kośa: is the blissful state. This is the most subtle aspect of our existence which is devoid of any form of emotions; a state of total silence – a state of complete harmony, and perfect Health

CHAPTER 2

HEALTH ACCORDING TO DICTIONARIES

These are the sanskrit words for 'Health' found in Student Sanskrit–English Dictionar of *vāman* Sivaram Apte.

Meaning of health

Health □□□□□ (*kuśalaṁ*), □□□□□ (*arogaḥ*), □□□□□□□ (*susthatā*), □□□□□ (*vārta*),
□□□□□□□□ (*rogābhāvaḥ*), □□□□□□□□□□ (*nirāmayatvaṁ*), □□□□□□□ (*ārogyaṁ*),
□□□□□□□□□□ (*svāsthyaṁ*), □□□□□□□ (*anāmayāṁ*), □□□□□□□□□□ (*kalyatparṁtā*),
□□□□□□□□□ (*śarīrasukhaṁ*), □□□□□□□□ (*arogitā*), □□□□□□□□□□□ (*śarīrāvasthā*),
□□□□□□□□□□ (*kuśalamasya*), □□□□□□□□□□□ (*ārogyavat*), □□□□□□ (*nīroga*), □□□□□□
(*niruja*), □□□□□□□□ (*svastha*), □□□□□□□□ (*nirāmaya*), □□□□□□□ (*sustha*), □□□□□-
□□□□□□□□□□ (*śarīra-sthitiḥ*), □□□□□□□□□ (*kuśalin*)

Student Sanskrit-English Dictionary of Vaman Sivram Apte gives the meaning above words of all the

□□□□□□□□ (*ārogyaṁ*) Good health

□□□□□□ (*kuśalaṁ*) Right proper, good, auspicious, happy, prosperous, well versed

□□□□□□□□□□□□□□ (*svāsthyaṁ*) Self-reliance, self dependence, health, well-being, comfortableness, fortitude resoluteness, firmness, Properitey

□□□□□□ (*anāmaya*) healthy, sound, health, well-being

□□□□□□□□□□ (*arogin*), □□□□□□□□□□ (*arogya*) Healthy

□□□□□□□□ (*arogaḥ*) Free from disease, healthy sound, well, sound health

□□□□□□□□□□ (*kuśalin*) Happy, doing well, prosperous

□□□□□: (*anāmayaḥ*) Healthy, sound health, well-being

□□□□□□□□ (*susthiti*) Good condition, Health convalescence

The English-Sanskrit Dictionary of Sir Monier- Monier Williams gives the meaning each of the below words

Health □□□□□□□□□□ (*svāsthyaṁ*), □□□□□□□□□□ (*svasthatā*), □□□□□□ (*arogaḥ*),
□□□□□□□□□□ (*ārogyaṁ*), □□□□□□□□□□ (*susthatā*), □□□□□□□□□□ (*arogitā*), □□□□□□□□□□
(*susthiti*), □□□□□□□□□□ (*anāmayaṁ*), □□□□□□□□□□ (*nirāmayatā*), □□□□□□□□□□
(*rogābhāvaḥ*), □□□□□□□□□□ –□□□□ (*kalpatvaṁ -tā*), □□□□□□□□□□ (*kuśalaṁ*), □□□□□□□□□□
(*śarīrasukhaṁ*), □□□□□□□□□□ (*vārta*)

Sanskrit-English Distionary of Sir Monier- Monier Williams gives the meaning of each of the words

□□□□□ (*arogaḥ*) Free from disease, healthy, well, health

□□□□□□□□□□ (*ārogyaṁ*) Free from disease, healthy, health, a ceremony for gaining health

□□□□□□□□□□ (*anāmayaṁ*) Free from disease, healthy, salubrious, health

□□□□□□□□□□ (*kuśalaṁ*) Well, health, in good condition, prosperous, well-being, prosperous
condition, happiness

CHAPTER 3

3. A CONCEPT OF HEALTH ACCORDING TO ĀYURVEDA

The first secret you should know about perfect health is that you have to choose it. You can only be as healthy as you think it is possible to be. It involves a total shift in perspective which makes disease and infirm old age inception.

A system of preventive medicine and health care is called unacceptable.

Your *prakāti* tells you how nature intends you to live. According to *Āyurveda*, your body knows what is good and what is bad for it; Nature has built the correct instincts into you from birth. Once you notice and obey these innate tendencies, you will find that your physiology is capable of achieving balance on its own, with minimal effort on your part.

Dating back in India more than 5,000 years, *Āyurveda* comes from two Sanskrit root words *Ayus*, or *Veda*, meaning “knowledge” or “science”. Therefore *Āyurveda* is usually translated as “the science of life”. An alternate and more precise reading would be “the knowledge of life span”.

Introduction

Āyurveda, this therapy is usefull for the human being, how *Āyurveda* works and how we can use this system (*Āyurveda*). In the *Āyurveda* we have different type of *prakṛti*. Throu *Āyurveda* a person can know which type of *prakṛti* that person have(*Vāta doṣa, Pitta doṣa and Kapha doṣa*) and how a person can balance his/her *doṣa*.

Living in tune with nature

The ideal of perfect health depends upon perfect balance. Everything you eat, you say, you think, you do, you see, and you feel affects your overall state of balance. It would seem impossible to control all these different influences at once. Yet by following specific body's type diets, exercises, and daily and seasonal routines, you can correct the vast majority of imbalance. Now present in your physiology and prevent those that might lie in future.

Imbalance in the *doṣās* is the first sign that mind and body are not perfectly coordinated. The three *doṣās* are called *Vāta*, *Pitta* and *Kapha*. Although they regulate thousands of separate functions in the mind-body system, they have three basic functions:

Vāta doṣa-controls movement, *Pitta doṣa*-controls metabolism and

Kapha doṣa- controls structure.

Every cell in the body has to contain all three of these principles. To remain alive, your body has to have *Vāta*, which allows it to breathe, circulate blood, pass food through the digestive tract, and send nerve impulses to and from the brain. It has to have *Pitta*, or metabolism, which process is food, air and water throughout the entire system. It has to have *Kapha*, or structure, to hold the cells together from muscle, fat, bone. Nature needs all these three to build a human body.

First, we must determine your body type. There are three *doṣās* and there are three basic types of human constitution in the *Āyurvedic* system, depending upon which of the *doṣās* is dominant. If a doctor examines then you can know that which type of *prakṛti* you have.

The doctor examines your body type through *Āyurveda* body-type test; in this he has to ask some questions, these questions are divided into three sections. See sample of questionnaire in the Appendix. For the first 20 questions, which apply to *Vāta doṣās* and they have to read each statement and mark, from 0 to 6 whether it applies to you.

0 = Does not apply to me, 3 = Applies to me somewhat (or some of the time)

6 = Applies to me very much (or nearly all of the time)

See appendix for the questionnaire

At the end of the section, write down your total *Vāta* score. For example, if you mark a 6 for first question, a 3 for the second, and a 2 for the third, your total up. That point would be $6+3+2 = 11$. Total the entire section in this way, and you arrive at your *Vāta* score. Proceed to the 20 questions for *Pitta* and those for *Kapha*.

When you finished, you will have three separate scores. Comparing these will determine your body type.

The telltale signs of the three pure body types are:

1. *Vāta*: Thin body, quick, changeable mind vivacious manner. These people strike others as unpredictable. Under pressure they grow excited and anxious.
2. *Pitta*: Medium body, orderly and decisive mind, forceful manner. These people strike others as intense. Under pressure they become angry and abrupt.
3. *Kapha*: Heavysset body, calm, steady mind, easygoing manner. These people other as relaxed. Under pressure they balk and grow silent.

Single - *doṣās* type:

Vāta, Pita, Kapha

If one *doṣa* is much higher than the others, you are a single *doṣa* type.

A true single- *doṣa* type displays the trains of *Pitta*, or *Kapha* very prominently.

Your next highest *doṣa* will still show some influence in your natural tendencies but to a much lesser degree.

Two –doṣa type

Vāta - Pitta or Pitta - Vāta

Pitta - Kapha or Kapha - Pitta

Kapha - Vāta or Vāta - Kapha

If no *doṣa* is extremely dominant, you are a two *doṣa* or type. This means that you display quality of two leading *doṣās* either side by side or in alternation. The higher one comes first in your body type, but both count.

Most people are two–*doṣa* types. In some, the first *doṣa* is very strong. If one has score like *Vāta-70, Pitta-90, Kapha-46*, which would qualify as pure *Pitta* except for the prominence of other *doṣās*, *Vāta*, in other cases, where the difference is smaller, and the first *doṣa* still predominates, but the second will be almost equal. Your score is *Vāta-85, pitta-80, Kapha-40*, which is a *Vāta-Pitta* type, even though these two *doṣās* are very close.

Finally, some people have score in which are *doṣās* stand out but the others are exactly tied (for example, *Vāta-69, pitta-86, kapha-69*). They are still likely to be a two-*doṣa* type, but a written test did not pick up the second *doṣās* – *Kapha*. If your score is like this, pay attention to the first *doṣa* as your dominant one, and with time the second will become clearer.

Three–doṣa type: *Vāta- Pitta- Kapha*

If your three scores are nearly equal (for example, *Vāta-88, pitta-75, kapha-82*) you are a three–*doṣa* type. This type is considered rare, however, check you're to score over carefully, or have a friend help you take the test again to verify.

Then read over the descriptions of *Vāta*, *Pitta*, and *Kapha* to see if one or two *doṣās* are prominent in your makeup. If not, we discuss the three- *doṣa* type.

Characteristics of *Vāta* type

1. Light, thin build.
2. Quick to grasp the new.
3. Perform activity quickly/information, also quick to forget.
4. Tendency to worry.
5. Irregular hunger and digestion
6. Light, interrupted sleep insomnia,
7. Enthusiasm, vivaciousness imagination.
8. Excitability, changing moods
9. Tendency towards constipation.
10. Tires easily, tendency to overexert
11. Mental and physical energy comes in bursts

The basic themes of *Vāta* type are “changeable”. *Vāta* people are unpredictable and much less stereotyped than either *Pitta* or *Kapha*, but their variability—in size, shape, mood and action is also their trademark, for a *Vāta* person, mental and physical energy comes in bursts, without steadiness.

Vāta leads the other two *doṣās* also. It is the “king” among the *doṣās*, because when it is in balance, *Pitta* and *Kapha* are generally in balance, too. Balancing *Vāta doṣa*, therefore, is vitally important for everyone.

Characteristics of *Pitta* type

1. Medium build.
2. Enterprising character likes challenges.
3. Medium strength and endurance.
4. Sharp intellect.
5. Sharp hunger and thirst strong digestion.
6. Precise, articulation speech.
7. Tendency towards anger irritability under stress
8. Cannot skip meals.

9. Blond light brown, or red hair
10. Aversion to sun, hot weather.

The theme of the *Pitta* type is intense. Anyone with bright red hair and a florid face contains a good deal of *Pitta*. A *Pitta* person is ambitious, sharp-witted, out-spoken, bold, argumentative or jealous. The combative side of *Pitta* is a natural tendency, but it does not have to be expressed, when in balance, *Pitta* people are warm and ardent in their emotions, loving and content. A face glowing with happiness is very *Pitta*.

Physically, *Pitta* people are medium in size and well proportioned. They maintain their weight without drastic fluctuations. It is not difficult for them to gain or lose a few pounds at will. Facial features are well proportioned. Eyes are medium in size, often with a penetrating glance. Hands and feet are medium, too, Joints are normal.

Characteristics of *Kapha* type

1. Solid powerful build, great physical strength and endurance.
2. Steady energy, slow and graceful in action.
3. Tranquil relaxed personality, slow to anger.
4. Cool, smooth, thick, pale often oily skin.
5. Slow to grasp new information, but good retentive memory.
6. Heavy , prolonged sleep
7. Tendency to obesity.
8. Slow digestion, mild hunger.
9. Affectionate, tolerance forgiving.
10. Tendency to be possessive complacent

The basic theme of the *Kapha* type is relaxed, *Kapha doṣās* persons are structurally sturdy in the body, bring stability and steadiness; He provides a reserve of physical strength and stamina that have been built into the sturdy, heavy frames of typical *Kapha* people. *Kapha* people are considered as fortunate in *Āyurveda*, because as a rule they enjoy sound health. Moreover, their personalities express a serene happy, tranquil view of the world.

The following symptoms will help to know identify very easily that they are too much *Kapha prakṛti*.

1. Mull things over for a long time before making a decision.
2. Walk up slowly, lie in bed a long time, and need coffee once they are up.
3. Be happy with the status quo and preserve it by conciliation of others.
4. Respect other people's feeling, with which they feel genuine empathy.
5. Seek emotional comfort from eating.
6. Have graceful movement, liquid eyes, and a gliding walk even if overweight.

The three *doṣās* (*Vāta doṣa*, *Pitta doṣa* and *Kapha doṣa*) actions are interconnected. *Kapha doṣa* and *Vāta doṣa* are cold in potency, but *Pitta doṣa* is hot in potency. It means that any thing, which is cold in potency, for example, cold water or milk increases *Kapha doṣa* and *Vāta doṣa* but leads to the decrease in *Pitta doṣa*.

At the same time if you take food which is hot in potency for example hot chilli, it leads to the increase in *Pitta doṣa* because chilli being hot in potency. Here *Kapha doṣa* and *Vāta doṣa* decrease because hot potency decreases both of these *doṣās*, *Vāta* and *Kapha doṣās* respectively

A drink of cold water brings *Pitta* down again, but it raises *Vāta* and *Kapha*. They can be brought down by eating a little fennel seed, but that raises *pitta* once more , and so on. The *doṣās* are connected endlessly.

Vāta comes first because it changes first and drags the other two *doṣās* with it. This means that balancing the *doṣās* is not like balancing the scale of justice until things are equal. It is more like adjusting the flow of images on a TV set. In other words, the *doṣās* are balanced when they are in dynamic equilibrium. Change and permanence must be allowed to interplay. To help achieve this state, *Āyurveda* describes certain enduring qualities evident throughout nature.

How to balance your *doṣās*

There are four broad areas of everyday life that can be used to promote balance in *Vāta*, *Pitta* and *Kapha*: Diet, exercise, daily routine, seasonal routine.

Many people waste a lifetime running after the goal of balancing and never attain it, because the *doṣās* shift by the day, by the hour and by the minute. And yet balance is the easiest thing of all. Nature has already endowed your body with the proper instincts for it; our principles only help to uncover and sharpen those instincts.

For most people, the worst temptation is diet. Each of us is probably worried a little fanatical about foods. *Āyurveda* has so much to say about food, it can be easily used to support an obsession with diet. But if you see it in the proper light, all this new information is just a way to wake up our body. *Āyurveda* does not dictate that one food is “right” and another as “wrong.” Instead, you discover right and wrong by listening to your *doṣās*.

So one should not get caught up in the details of whether your food is too hot or too cold, too heavy or too light, too oily or too dry. Every time a *doṣa* moves, some specific food could be called upon to keep the body losing balance. But if we attempt to balance this way, the process rapidly degenerates into fanaticism. This is not the way of self-knowledge. Every day there must be a conversation between you and your body; the following suggestions indicate the kind of talk your body type generally likes to hear from you.

The balanced life: general points

Balancing *Vāta*

Regular habits, warmth, quiet, steady supply of nourishment, attention to fluids, decreased sensitivity to stress, sesame oil massage (*abhyanga*), ample rest. These are the techniques through which we can balance the *Vāta*.

Vāta is the “king” of the *doṣās*, balancing it is a prime requirement for everyone; when *Vāta* is brought into line, it will bring *Pitta* and *Kapha* into line with it.

The key of balancing *Vāta doṣa* is regularity. *Vāta* is so sensitive and quick to change that it easily falls prey to overstimulation. *Vāta* people thrive on variety, but when things change too much, their excitement turns to exhaustion. That is why so many *Vāta* feel frazzled and nervous. The source of their restlessness is that *Vāta doṣa* is no longer setting the proper rhythms in their bodies. Instead of eating, sleeping, and exercise regularly, *Vāta* people can grab food when they can, skip meals, exercise by fits and starts, and go to bed at odd hours.

If you show signs of *Vāta imbalance*, these following pointers will help you reshape your daily routine to make it more congenial to *Vāta doṣa*:

- Get plenty of rest – this is all-important for any *Vāta* problem. When you feel that you are

Pushing yourself or overdoing any activity (including mental activity), stop and rest for five minutes. Getting adequate sleep every night is also of most importance; you should not rest yourself to insomnia, even though you may have had it for years. The best rest, aside from sleep, is the relaxation provided by meditation.

- Stay warm- being a cold *doṣa*, *Vāta* benefits from heat; *Vāta* is also dry, so be sure that the air in your room has enough humidity. It is advisable to avoid drafts too, since *Vāta* is extremely sensitive to moving air.

- Drink lots of warm fluids during the day to prevent dehydration. *Vāta* herbal tea is also available in the market. You can drink up to four cups a day. Avoid very very cold foods and drinks.
- Avoid mental strain and overstimulating yourself. Loud music, violent movies, long hours of TV, particularly in the evening, are all potent aggravators of *Vāta*.

This treatment of *Vāta* is particularly soothing in dry, cold weather- many *Vāta* types nothing that their resistance to cold and flu is helped considerably- but it also tones the sinuses in general and can be used by everyone, not just *Vāta*. The treatment can be repeated up to twelve times a

day. (if your sinuses are blocked, however, you should not overdo this treatment; oil aggravates *kapha doṣa*, which is often behind chronic sinusitis).

BALANCING *PITTA*

The key of balancing *Pitta* is moderation, making sure that you do not push yourself too hard. Of all the body types, *Pitta* is gifted with the most inner drive, aggression and energy. *Pittas* are people who attack life head-on and relish challenges, the more difficult the better. But the inner drive is often the source of their undoing. *Pitta* gives you a fiery energy; if you abuse it, it will burn you up. The workaholics of this world are generally out-of-balance *Pittas*, especially if their emotional undertone is energy and compulsive.

If you show signs of *pitta* imbalance, the following pointers will help balance your daily routine and make it more congenial to *Pitta doṣa*:

- Take time to wind down from activity- alternating rest and activity is the basic rhythm of life. Because they have so much capacity for activity, *Pittas* tend to ignore the other side of the cycle. You need to find an island of calm at the end of your workday. Eat a quiet dinner, turn off your telephone in the evening, and resolutely avoid the temptation to bring your work home. For all of us, the island of calm is really inside ourselves. Out-of-balance *Pittas* frequently lose of this.
- Meditation is very useful for regaining inner calm and equilibrium. It also allows you to remember that rest is the source of dynamic activity.
- Eat a *Pitta*-pacifying diet. It's important not to overeat, which *Pittas* do if they push their excellent digestion too hard. At the same time, you do not want to feel uncomfortably hungry-*Pittas* suffer if they have to skip meals. Rather than going to extremes, eat moderate meals at regular hours three times a day. If your digestion is rocky, warm milk flavored with sugar and cardamom will help bring *Pitta* back into balance. If you always find yourself with a roaring appetite and excessive thirst, you need to moderate your digestion, which a *Pitta*-pacifying diet will help. Following list will help to know which type of food should be taken by *Pitta* type person.

Favour

Reduce or avoid

Almost all, in moderation,

No spice should be used in large quantities;

With emphasis on sweet and/or

minimize all bitter and astringent herbs and

heating herbs and spices,

spices, such as:

such as:

allspice

cumin

coriander seed

saffron

anise

fennel

fenugreek

turmeric

asafoetida

ginger

parsley

basil

juniper berries

bay leaf

licorice root

caraway

nutmeg

BALANCING *KAPHA*

Stimulation, variety of experiences, regular exercise, warmth, dryness,

weight control, reduced sweetness.

The key to balance *Kapha* is stimulation. By nature, *Kapha doṣa* is steady and slow; this leads to dependability and strength. Without activity, *Kaphas* can become lethargic and dull. This is directly linked to their slow digestion. As we have seen, when food is not digested completely (or if it is too heavy, oily, or indigestible to begin with), toxic residues called, āma can clog up the system and eventually lead to disease.

Kapha people move in and out of balance slowly, so it is good to be steady about keeping this *doṣa*s in balance. Aggravate *Vāta* today and you will likely feel the effect tomorrow. But you can eat *Kapha*-aggravating foods all winter and not realize your mistake until spring comes and the

accumulated *doṣās* “melts down,” giving you a typical spring cold or sinus congestion. You will notice that *Vāta* and *Kapha* do not share any qualities except coldness.

If you show signs of *kapha imbalance*, the following points will help make your daily routine more congenial to your dominate *doṣās*

- Seek variety in life. *Kapha* need to make a conscious effort to seek new experiences. They cherish hearth and home, which averts the danger of running themselves ragged. But there is a definite tendency to stagnate, leading to depression, the bane of many unbalanced *Kaphas*. As with the other *doṣās*, medication is very useful here; it allioes *Kaphas* to discover the underlying alertness in their nature.
- Eat a *Kapha*- pacifying diet it is important not to overeat if you are *Kapha* type, because the tendency to become overweight is definitely present. Hot ginger tea taken at meals helps sharpen dulled taste buds; it also makes show digestion more efficient, as does a teaspoon of whole fennel seeds chewed after the meal. If there is a lot of congestion, *Āyurveda* recommends favoring dry foods and astringent(puckering) tastes. Dry toast, apples, crackers, trumeric, and many raw vegetables are good for avoiding excess *Kapha* buildup and toning the digestive tract.
- Stay warm. Being a cold *doṣās*, *Kapha* benefits from heart. Dry heat Is best if you are congested, a frequent *Kapha* complaint. Directing a sunlamp at your chest or using a heating pad under your back often helps with excess *Kapha*.
- Avoid dampness. *Kapha* is particularly sensitive to cold damp conditions. Be careful not to expose your nose, throat, and lungs to cold winter.
- Perfform a dry message on your body to stimulate circulation. This procedure is called *gharṣaṇa* and is done with special raw-silk gloves(available by mail order). You should not use oil when aggravated. *Kapha*, is a oily *doṣa*. A brisk full-body rubdown, taken five to ten minutes, is good enough; do not work so hard that you tire yourself out. If you do not have gloves, a dry loofash sponge can substitute.

Drink warm fluids during the day, but take them in moderation, since *Kapha* is already moist. To loosen congestion and sore throat, a tea made by boiling one-quarter teaspoon of dry ginger and

turmeric in one cup of water is effective. A special *Āyurveda Kapha*-pacifying tea can also be helpful. You can drink up to four cups a day.

3. B CONCEPT OF HEALTH ACCORDING TO HOMEOPATHY

Health is more than simply the absence of disease. Being healthy gives us a sense of well-being, of being balanced, of personal freedom.

When we are physically healthy we have strength and flexibility, and a reservoir of energy to draw on should we need it. Being emotionally healthy means we can acknowledge and express our feeling and by so doing maintain rewarding relationships. Being mentally healthy enables us to think clearly, to formulate ideas, solve problems and make decisions easily.

Homeopathy strengthens the body's vitality and its ability to respond to stress without recourse to other medicine. The principles of Homeopathy as a whole represent a complete view of the processes of health and disease. Homeopathy, as a system of medicine, is practiced within the framework of these principles.

1. The similitum or law of similars

The basic law of homeopathy is *similia similibus curentur*. Based on this premise, the first homeopathic principle states that any substance that can make you ill can also cure you anything. That which is capable of producing symptoms of disease in a healthy person can cure those symptoms in a sick person.

By symptoms the Homeopath means those changes that are left by the patient (subjective) or observed (objective), which may be associated with a particular disease, or state of disease and which are the out-ward expressions of that state.

2. The laws of cure

The laws of cure were formulated by Constantine Hering. He based them on a lifetime's observation of the processes involved when sick patients became cured. Throughout his years of practice he was able to draw the following conclusions:

As someone is cured, symptoms move from the innermost organs of the body (those most vital to life) to the outer organs. In other words cure moves from within to without. For example some

with heart disease (serious, life threatening) may experience stomach or bowel problems during the process of cure.

Cure also takes place from head to toes, so that symptoms usually ‘drip off’ the body, starting from the head and clearing downwards, with the hands and the feet (sometimes simultaneously) being the last to be affected (with, e.g., skin eruption).

Symptoms that never been suppressed in the past often resurface during the process of cure and usually do so in the reverse order from their original sequence. For example, if a patient with heart disease had been successfully treated with orthodox medicine for a stomach ulcer before the heart condition, then the appearance of stomach symptoms (less severe than in the original complaint) would be welcomed as a sign that the old suppressed symptoms were being cleared out. These laws apply to the treatment of chronic complaints but occasionally also to acute prescribing so if an old symptoms surfaces after a good prescription, wait to see if it will clear of its own accord.

The suppression of disease usually leads to a more deep-seated illness surfacing. For example, many children whose eczema has been ‘successfully’ treated with steroids may suffer from asthma at a later date. These two events are seen by the orthodox medical profession as having only a casual connection, whereas the Homeopath believes that the suppression of the eczema has caused the asthma. Successful homeopathic treatment involves the eczema reappearing at some point.

It is also possible to suppress with homeopathic medicines by treating a single and not therefore taking the whole person into account.

Homeopaths use these laws of cure to monitor treatment, to check whether the cure is going in the ‘right’ direction. As far as cure treatment or home prescribing is concerned, occasionally a very well selected constitutional remedy will push to the surface old symptoms that may have been forgotten. These will clear of their own accord. It is important not to prescribe another remedy and by so doing encourage the chronic condition to go back in again.

3. Building health-preventative medicine

The desire to rid the body of disease is a healthy attitude. Although any approach that involves building health and therefore preventing disease or ill health will, of course, be of greater benefit in the long term than any temporary suppression of the symptoms alone. How we approach illness, as well as the treatment we choose, deserves some thought.

The presence of disease or pain often creates anxiety, which in turn can lead to fear and panic. In this situation most of us at one time or another have consulted an authoritative figure(a doctor) to allay our anxiety by putting a name to what is happening to our bodies, and to determine how it must be treated. The danger here is that, in looking outside ourselves for the answers and in asking too few questions, we experience a loss of personal control with consequent feeling of helplessness. We give up our responsibility for our own health to the people 'in charge' and we become real patients.

By taking responsibility for what happens to our bodies we can then start creating for ourselves the balance we want in our own lives, and we can start tuning into our feelings, or inner sense, of what is wrong with us. By developing this positive approach towards creating a healthy life for ourselves we can move away from automatically taking a defensive position towards illness.

Ultimately, being involved in our healing processes giving us self- confidence increases our personal strength and gives us more choices. Creates an electrochemical pattern which is stored in the dilutant and which then spreads like liquid crystal through the body's own water. Another hypothesis suggests that the dilution process triggers an electromagnetic field of the body.

4. The whole person

The concept of treating the 'whole person' is an essential element of classical homeopathy. The basis of this belief is that symptoms, disease or pain do not exist in isolation, but are a reflection of how the person as a whole is coping with stress. It is the whole person that counts- not just the physical but also the mental and emotional 'bodies'. The homeopath looks beyond the disease (for example ' tonsillitis or; migraines' or 'food poisoning') to the totality of symptoms a person experiences.

Vital force

Homeopaths believe there is a balancing mechanism that keeps us in health, provided that the stresses on our constitutions are neither too prolonged nor too great. This balancing mechanism, Hahnemann called, the 'vital force' and he believed it to be energetic substance, independent of physical and chemical forces, that literally gives us life and is absent at our death.

The human organism, indeed any living thing, has a unique relationship with its environment. Biologists call it "homeostasis", by which they mean that a healthy living being is self-regulating, with an innate (protective) tendency to maintain equilibrium and compensate for disruptive changes. Homeopaths believe that the vital force produces symptoms to counteract the various stresses we experience, and that makes adjustments moment by moment throughout our lives to keep us healthy and balanced. These symptoms, then, are simply the body's way of telling us how it is coping with stress. Obvious examples are shivering when cold, perspiring when overheated and eating or drinking when hungry or thirsty. All these reactions help to ensure the regulation of a constant, life-preserving environment within the body.

Familiar expressions such as defense mechanism and immune system are another way of referring to the vital force. Homeopaths believe that disease 'attacks' only when the vital force is weakened.

Homeopathic medicines act as a catalyst, the energy of the remedy stimulating the body's own vital force (it is immune system or defense mechanism) to heal itself. They do not weaken the defense mechanism by suppressing it as do many orthodox medicines. The correct homeopathic treatment not only alleviates the symptoms but enables the patient to feel that is once again flowing harmoniously. Patients often remark that they have not felt so well in a long time.

3. C CONCEPT OF HEALTH ACCORDING TO NATUROPATHY

Health is a boon to man. Health is a blessing of a person. If a person loses health, that person cannot enjoy his life. The state of health implies much more than freedom from disease. Good health is the attainment and maintenance of the highest state of mental and bodily vigor.

The conduct of life is immersed in maintaining health; the care of the health should begin with the earliest life, the care of child with reference of feeding of greatest importance. The question of food that is proper in quality and amount is very important.

Careful attention of the functions of the bowels and proper care of the teeth are subjects of the most importance. Disease is lack of ease. If all the organs function well and naturally, then there is a feeling of ease or comfort, it is said that one is healthy; when the sense of comfort vanishes, it is said that one has disease. The cause of the disease may be in the mind (*ADI*) or the body (*VYADHI*).

If the blood is perfectly pure, there can be no accumulation of toxins in the body and there can be no disease. Disease or the toxin condition of the body is due to impurities or abnormalities in the blood. Proper exercise, proper use of air, water and proper mental condition ensure purity of blood and maintenance of the system in good health.

The main aim of nature cure is to prevent disease; it teaches you the principle by which you can maintain good health and efficiency to a ripe old age. The nature cure methods have great combative value. However, its greatest value lies in preventive methods.

It teaches you to protect your body from disease and in case you get disease how to recover.

Health and disease

Health is a state of harmony in which all the organs of a man function properly. He digests his food well, sleeps soundly and works efficiently. He jumps with joy, dances with ecstasy and whistles with felicity. The blood stream is clean and pure.

Health is a normal and harmonious vibration of the elements and forces. Composing the human entity on the physical, mental, moral and spiritual planes of being, it is an inwards feeling of happiness.

Signs of health are both external and internal. The latter are more important. Mental health is always followed by physical health. The mind is healthy when the body is healthy. If you want to enjoy perfect health, both body and mind should be healthy. If the mind is healthy, you will be peaceful and serene.

If one eats well with good appetite, if he is not feeling drowsy, if urine, motions, perspiration, wind and phlegm are excreted properly, if he is serene during provocation, if he is able to do his daily work properly without fatigue, if he has no pain in any part of the body, if he is free from the evil habits of smoking, drinking and, if he does not take meat and, opium then he is considered healthy.

Vital force about health

Though we boast ourselves to be civilized, yet when the question of food comes, we make many imperceptible blunders.

The English system of taking food and breakfast often is not compatible with the tropical climate of our country. By taking cooking and concentrated food with spices and condiments, we should see how much nutrition in our food that nutrition helps to keep our body healthy. Most of the people have no time to cook food and most of the time they take pack food from the market, that food can not give sufficient nutrition because that food is not fresh we fill our belly with denatured food and hence this degeneration in the physique of the youths of the 20th century.

We cannot change our age-long habits all of a sudden, and so we must have some compromise. First, we should take some sort of exercise such as a morning walk or some abdominal

gymnastics or Surya Namaskara or Asana, Paschimothanasana and Sarvangasana, Second, we should take a morning bath either in hot or cold water.

Radiant health

Health is joy. Health is wealth. Health is elixir of life. Without health, there is no enjoyment. Without health, one cannot earn well. Without health one cannot attain his desired object. Without health, life becomes a burden. Foremost attention should, therefore, be given towards keeping perfect health.

Without cause, there is no effect; so there is no sickness without violation of the laws of nature. Nature always tries to keep up health, but we bring on sickness by continuous violation of the laws of Nature.

There is seldom any sickness amongst the animal kingdom. They do not violate laws of nature and therefore, they seldom require any medical help. Only rarely a few domesticated animals require some medical help as they cannot lead a natural life.

How to keep fit and healthy

The ultimate goal of life is god-relation, for this purpose constant study and practice (*sādhana*) is necessary. Without a sound mind and a healthy body, *sādhana* is not possible.

Health and psychology

You must be a psychologist, if you want to lead a happy and healthy life and if you want to progress in the spiritual path. Most of the physical ailments spring from a diseased state of mind. One should bear this in mind that emotional imbalance leads to all nervous and physical illness. This is the reason why a *sannyasin*, even though he is starved, homeless and friendless, is happy and full of vigour. He has inner strength. One should lead a well-regulated life; proper hours of work and rest are necessary. Then alone you will be healthy and peaceful and have ample (sufficient) time for *Sadhanā*. Then alone one can achieve success in all his undertakings. Go to bed at 10 PM and get up at 4AM. You will have strong nerves.

Secret of conserving energy

If you want to enjoy sound health and peace of mind, then give up indulging useless wasteful activities, such as one should discriminate and analyse each action like if a person get ill then naturopath advise that he/she should skip the meal because when they eat food, after eating food digestion process take lot of energy, if a person skip the meal then that digestive energy a person can save and body will use that energy for healing.

Real danger to health

Very few people realize that evil qualities like hatred, jealousy, anger, touchiness and impatience, are harmful to themselves. A fit of anger that lasts ten minutes take away more angry than would work at the plough for days without food. The slow gnawing jealousy eats away your nerve-power more rapidly than white ants eat through dry wood.

Over sensitiveness, impatience and worry bring on gray hairs scores of years earlier than they are due. Be serene. Look without in. Strive. Exert. Give all your thoughts to the eradication of your own evil qualities within; then you will never get angry. Look into the good qualities of other; you will hate none. If one learns to admire other's achievements jealousy will disappear.

Another important rule, if one wants to lead a healthy life, is live in the eternal present. Concentrate all your attention on the work in hand.

Solve your problem yourself

Learn to master your mind and solve your own problems. Jump over the hurdles in your path. Do not pass your miseries to others. Give up the complaining habit.

Nature Cure methods

1. **Water Therapy/ Hydrotherapy:** It is the most ancient of all the remedial agents. It produces several types of physiological effects based on temperature and duration. Hhydropaths involves the use of water for pain-relief and treating illness. The term hydrotherapy itself is synonymous with the term water cure as it was originally marketed by practitioners and promoters in the 1800s. A hydrotherapist therefore, is someone who practices hydrotherapy.

2. **Air therapy:** Good health requires fresh air. Air therapy is used in different pressures and temperatures, in variety of disease conditions. The air pressure inside a hyperbaric oxygen chamber is about two and a half times greater than the normal pressure in the atmosphere. This helps your blood carry more oxygen to organs and tissues in your body.

3. **Heat therapy:** Here different temperatures are used through different heating techniques. These produce different specific effects. Heat is what propels physical movement within the body. In a heated area, blood flow increases. Irritation is also a form of heat. Whenever there is increased blood flow, there is an increased supply of nutrients and more removal of waste and toxins. All movements in the body accelerate blood flow. So this is a continuous process

4. **Fasting therapy:** Clogging causes disease. Fasting is the best therapy to get rid of clogging in body and mind. Naturopath advise that he/she should skip the meal because when they eat food, after eating food digestion process take lot of energy, if a person skip the meal then that digestive energy a person can save and body will use that energy for healing.

5. **Mud therapy:** Mud absorbs, dissolves and eliminates the toxins and rejuvenates the body. It is employed in treatment of various diseases like constipation, skin diseases etc. The mud is a combination of local volcanic ash, imported Canadian peat and naturally heated mineral waters.

6. **Food therapy:** food is a medicine. This is the main slogan of Nature Cure.

7. **Massage therapy:** Massage acts as tonic & stimulant. It creates calming effect. Massage is the manipulation of superficial layers of muscle and connective tissue to enhance the function and promote relaxation and well-being. Massage involves acting on and manipulating the body with pressure – structured, unstructured, stationary, or moving – tension, motion, or vibration, done manually

8. **Acupressure:** Different points on hands, feet & body are associated with different organs. If pressure is applied on these selected points, related organs can be cured of their ailments.

9. **Magneto therapy:** South and North poles of magnets have different powers and shapes are employed in treatment. Magnets are applied directly on different parts of the body. Charged water or oil is also used in magneto therapy.

10. **Chromo therapy:** Seven colours of Sun (violet, indigo, blue, green, yellow, orange and red) are employed through irradiation on body or by administering charged water, oil and pills for treatment.

3. D CONCEPT OF HEALTH ACCORDING TO ALLOPATHY

Health is a common theme in most of the cultures. In fact, all communities have their concepts of health, as part of their culture. Among definitions still used, probably the oldest is that health is the 'absence of disease' (□□□□□□). In some cultures, health and harmony are considered equivalent, harmony being defined as 'being at peace with the self; The ancient Indians and Greeks shared this concept and attributed disease to disturbance in bodily equilibrium of what they called "humors".

Introduction

The term 'allopathy' was invented by German physician Samuel Hahnemann. He conjoined allos 'opposite' and pathos 'suffering' as a referent to harsh medical practices of his era which included bleeding, purging, vomiting and the administration of highly toxic drugs." One example, of an allopathic therapy would be "using a laxative to relieve constipation." Misuse of the Term "Allopathy", 2000 Allopathy is a method of treating disease with remedies that produce effects different from those caused by the disease itself, "Webster Dictionary 1913."

Changing concept

Health is a fundamental human right and a world-wide social goal, essential to the basic human needs and to an improved quality of life. Health is not perceived in the same way by all members of a community.

1. **Biomedical concept:** - Traditionally, health has been viewed as an "absence of disease", and when one is free from disease, and then the person is considered, 'healthy'. This concept is known as the 'biomedical concept'.
2. **Ecological concept:** - The ecologists put an attractive hypothesis. They viewed health as a dynamic equilibrium between man and his environment, and disease maladjustment of the human organism to environment. "Health implies the relative absence of pain and

discomfort and a continuous adaptation and adjustment to the environment to ensure optimal function". Human ecological and cultural adaptations do determine not only the occurrence of disease but also determines the availability of food and the population explosion.

3. **Psychosocial concepts:** - Contemporary concept reveals that health is not only a biomedical phenomenon, it also revealed one which is influenced by social, psychological, cultural economical and political factors of the people concerned. These factors to be taken into consideration in defining and measure health.
4. **Holistic concept:** - The holistic model is a synthesis of all the above concepts. It has been variously described as combined or multidimensional process involving the well-being of the whole person in the context of his environment. That of view corresponds to the ancients that health implies a sound mind, in a sound body, in a sound family, in a sound environment. This holistic approach implies all sectors of society having the effect of health, in particular, agriculture, and food etc, the emphasis is on the promotion and protection of health.

Definition of health:

“Health is one of those terms which most people find it difficult to define. Many definitions of health have been offered time to time, as is evident from the following meaning gives in different, dictionaries and other.

- a. “The condition of being sound in body, mind or spirit, especially freedom from physical disease or pain”(Webster)
- b. “Soundness of body or mind; that condition in which its functions are duly and efficiently discharged”(Oxford English Dictionary)
- c. “a condition or quality of the human organism expressing the adequate functioning of the organism in given condition, genetic and environmental”
- d. “A modus Vivendi enabling imperfect men to achieve a rewarding and not too painful existence while they cope with as imperfect world”
- e. Health is "a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities".

Here we see how health is defined in Allopath and also examine some important concept basic to Allopathic, like screening.

Concept of screening

The active search for disease among apparently the healthy people is a fundamental aspect of prevention. This is embodied in screening, which has been defined as “the search for unrecognized disease by means of rapidly applied tests, examinations or other procedures in apparently healthy individuals”.

The annual health examinations were means for the early detections of “hidden” disease. To bring such examination within the reach of large masses of people with minimal expenditure of time and money, numbers of alternative approaches have come into use. They are based primarily on conserving the physician-time for diagnosis and treatment. This is the genesis of screening program. The screening programs were for individual diseases such as tuberculosis, syphilis; or selected group such as antenatal mothers, school children and occupational groups. Over the years, the screening tests have steadily grown in number. Today screening is considered a preventive care function, and some consider it a logical extension of health care.

Screening differs from periodic health examinations in the following

1. Capable of wide application
2. Relatively inexpensive
3. Requires little physician time. In fact the physician is not required to administer the test, but only to interpret it.

Screening and diagnostic tests

A screening test is not intended to be a diagnostic test. It is only an initial examination. Those who are found to have positive test results are referred to a physician for further diagnostic work-up and treatment

Screening and diagnostic tests contrasting Table

| S.NO | Screening test | Diagnostic test |
|------|----------------------------|--|
| 1 | Done on apparently healthy | Done on those with indications or sick |
| 2 | Applied to groups | Applied to single patients. |

| | | |
|---|---|--|
| | | All disease are considered |
| 3 | Test results are arbitrary and final | final Diagnosis is not final but modified in light of new evidence, diagnosis is the sum of all evidence |
| 4 | Based on one criterion or cut-off point | Based on evaluation of a number of symptoms, signs(e.g., diabetes) and laboratory findings |
| 5 | Less accurate | More accurate. |
| 6 | Less expensive | More expensive |
| 7 | Not a basis for treatment | Used a basis for treatment. |
| 8 | The initiative comes from the Investigator or agency providing care | The initiative comes from a patient with a complaint. |

Aim and objectives of screening:

- To sort out from a large group of apparently healthy person those likely to have the disease or at increased risk of the disease.
- To bring those who are “apparently abnormal” under medical supervision and treatment.

Screening is carried out in the hope that earlier diagnosis and subsequent treatment favorably alters the natural history of the disease in a significant proportion of those who are indentified as positive.

Explanation of terms

- a. **Screening** screening is testing for infection or disease in populations or in individuals who are not seeking health care, example, serological testing for AIDS virus in blood donor, neonatal screening, premarital screening for syphilis.

Types of screening Three types of screening have been described:

1. Mass screening
2. High risk or selective screening
3. Multiphase screening

1. **Mass screening:**-Mass screening simply means the screening of a whole population. For example, all adults. It is offered to all adults. A particular sick individual may run into contracting the disease in question (e.g., tuberculosis).
 2. **High risk or selective screening:**-Screening will be most productive if applied selectively to high risk groups. For example, since cancer cervix tends to occur relatively less often in the upper social groups, screening for cancer cervix in the lower social groups could increase the yield of new cases.
 3. **Multiphase screening:**- It has been defined as the application of two or more screening tests in combination to a large number of people at one time. The procedure may also include a health questionnaire, clinical examination and a range of measurement and investigations (e.g, chemical and hematological tests on blood and urine specimen, all of which can be performed rapidly with the appropriate staffing organization and equipment.
- b. Case-finding:** This is use of clinical and/or laboratory tests to detect disease in individuals seeking health care for others reasons; for example the use of VDRL test to detect syphilis in pregnant women.
- c. Diagnostic tests:** Use of clinic and/or laboratory procedures to confirm or refute the existence of disease or true abnormality in patients with sign and symptoms presumed to be caused by the disease for example, VDRL testing of patients with lesions suggestive of secondary syphilis. The distinction between screening, case finding or diagnosis should be clear-cut. However it is blurred by the multiplicity of tests used and haphazard nature of diagnosis decision- making.

Disease:-The disease to be screened should fulfill the following criteria before it is considered suitable for screening.

1. The condition required should be an important health problem (in general, prevalence should be high);
2. There should be a recognizable latent or early asymptomatic stage;

3. The natural history of the condition, including development from latent to disease, should be adequately understood (so that we can know at what stage the process ceases to be reversible).
4. Facilities should be available for confirmation of the diagnosis.

Screening test:-The test must satisfy the criteria of acceptability, repeatability and validity.

1. **Acceptability** since a high rate of cooperation is necessary, it is important that the test should be acceptable to the people at whom it is aimed (e.g, rectal or vaginal examination) are not likely to be acceptable to the population in mass campaigns.
2. **Repeatability** an attribute of an ideal screening test or any measurement (e.g., height, weight) is its repeatability(sometimes called reliability, precision or reproducibility)
3. **Validity (accuracy)** the term validity refers to what extent the test accurately measures which it purport to measure. In other words, validity expresses the ability of a test to separate or distinguish those who have the disease from those who do not. Validity has two components sensitivity and specificity. Sensitivity and specificity are usually determined by applying the test to one group of persons having the disease, and to a reference group not having the disease. Sensitivity and specificity together with “predictive accuracy” are inherent properties of a screening test.

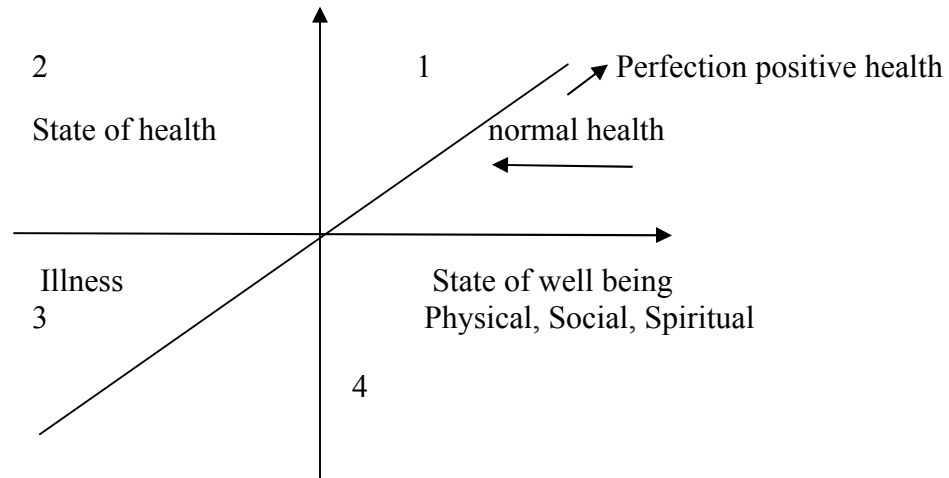
Sensitivity it has been defined as the ability of a test to identify correctly all those who have the disease that is true positive”.

Specificity the ability of the test to identify correctly those who do not have the disease, that is, “true negatives”.

Conclusion: - Allopath change health definition many time earlier Allopath believe in physical body then Allopathy told that Physical body, mental and social spiritual well- being is health. In Allopath if we cannot find disease symptoms throw many instruments we can find disease.

3.E CONCEPT OF HEALTH ACCORDING TO YOGA

According to the World Health Organisation(WHO) the state of health is defined as a state of complete physical, mental, social and spritual well-being and not merely an absence of disease.



In the diagram, the 3rd quadrant ‘the region of ill- health’ represents what normally we designate as ‘sickness. Below this, man acts instinctively and is akin to animal man. In the first quadrant, the region of ‘normal health’ the state of normal man is indicated. As he moves along the lines further up, he becomes healthier featured by the dormant faculties expressing more vividly in man. This is shown as the region of positive health, the next region in the human spectrum. In this state the limitation of normal man namely the strong urges of thirst, hunger, fear and sex are reduced greatly and are fully under control. In the concept of Sri Aurobindo, the new faculties of deeper perceptions of the world beyond the five senses emerge in this phase of super-human existence. Further growth leads man to unfold even deeper layers of consciousness and widen the spectrum of his knowledge to move towards divinity or perfection. In this march toward perfection, *Yoga* is a systematic conscious process for accelerating the growth of the human being from his animal level ultimately to divinity. It is a systematic methodology for an all-round personality development-physical, mental, intellectual, emotional and spiritual components of man. Thus, *Yoga* in its methodology for the growth of the man to divine heights includes techniques useful for therapeutic application in making man healthier.

The science of illness

In *Ānandamaya Kośa* a man is healthiest with perfect harmony and balance of all his faculties. At *Vijñānamaya Kośa* there are movements, but are channelised in the right direction. As such, it is in the *Manomaya* level the imbalance starts. Likes and dislikes have come to play at this level. They start governing our actions; often they are in the wrong direction. The liking of any sweet in a diabetic may lure him to eat the same against doctors advise. Thus going against what is right, causes imbalances. These imbalances amplify themselves resulting in mental illnesses called *Ādhis*.

The *Ādhis* (primary disease) are two fold- *Sāmānya* (ordinary) and *Sāra* (essential). The *Sāmānya* are normally produced during the interactions with the world. These may be termed as psychosomatic ailments. It can be dealt with by suitable techniques and congenial atmosphere. The subtler *Ādhis* of the essential type (*Sāra*), which cause the birth of the physical body can be destroyed only by the realization of the causal state of mind and corresponding ability to live in *Vijñānamaya* and *Ānandamaya Kośa*. In that state, man transcends the cycles of birth and death.

The second category of ailments are *Anādhijāh Vyādhayaḥ*- those not originated by mind. These are the infectious and contagious disease. *Anādhija Vyāghis* can be handled through conventional medicines, Mantras and good actions. These bring about the purity of mind.

Yoga deals with *Panca Kośa* in an integrated approach to handle *Ādhija Vyaādhs* on the five layered existence of human being i.e.

(1) *Annamaya Kośa*

(2) *Prāṇamaya Kośa*

(3) *Manomaya Kośa*

(4) *Vijñānamaya Kośa*

(5) *Ānandamaya Kośa*

The disturbance in the *Manomaya Kośa* Percolates into the physical layer(*Annamaya Kośa*) through the *Prāṇamaya Kośa*. Hence, in the treatment of these psychosomatic ailments it becomes mandatory to work at all these levels of our existence to bring about the quickly results.

Annamaya Kośa In the *Annamaya Kośa* every thing is made of ‘Anna’(matter), every thing comes out of *Anna* and every thing is sustained by *Anna* and everything dissolves into *Anna*. This physical body is made up of ‘Anna’(matter).This matter(*Anna*) based aspect of our physical personality is called *Annamaya Kośa*. *Annamaya Kośa* consists of five elements(*Pancabhūtas*) namely the earth (*Prthvi*), Water (*Jala*), fire (*Agni* or *Tejas*), wind (*Vayu*), and space (*Ākāśa*). This is normally nourished by the gross food that we consume. All entire world of matter starting from elements, molecules, atoms, protons, neutrons and electrons, and that all are pockets of energy. The atoms conglomerate together to form various chemicals; our body is therefore a permutation and combination of various chemicals (example packets of energy in various configurations). When they join together they form molecules, cells, tissues, organs, etc. These follows certain well-defined laws of nature and are controlled by nervous(electrical) and chemical(hormone) mechanisms to bring about movement and action in each and every cell. Thus *Annamaya Kośa* is the Physical frame if they are in balance state then a person can live healthy.

Prāṇamaya Kośa: *Prāṇa* is the life energy, from which even the gross *Annamaya Kośa* comes out. *Prāṇa* the life energy described here is not the material electromagnetic energy spectrum known to modern science. All these energies like electricity, sound, light, radio etc belong to *Annamaya Kośa* as they are bound by energy laws. The *Prāṇa* described here is subtler than that. It does not allow the laws of the unusual energies. Without *prāna* this body is useless. This *Prāṇa* is the basic fabric of this universe both inside and outside our body. *Prāṇa* has the capacity to move inside different areas of the body (*Annamaya Kośa*) depending on demand. For e.g, when you perform more brain work you need more *prāna* in the brain. *Prāṇa* flows through subtle channels called *Nādi*. The five dimensions of this *Mukhya prāṇa* flow resulting in activities in these areas are called *Panca prāṇas*. The downward force called *Apāna* is

responsible for functions like breathing movement is called 'Prāṇa'. *Udāna* is responsible for upward activities like vomiting, *Samāna* is responsible for proper digestion and balancing *prāṇa* and *apāna*. *Vyāna* is that which is responsible for all activities in the periphery like nerve impulses, blood circulation, activity in all cells. A balance between all these five *prāṇas* is health, and imbalance is ill health.

Purification for Prāṇamaya Kośa (The layer of *Prāṇa*) 'Prāṇa' is the basic life principle. *Prāṇāyāma* is a process for gaining control over *Prāṇa*. The five manifestations of *Prāṇa* and the corresponding most comprehensive definition of *Prāṇāyāma* in the human system are described in *Praśnopaniṣat*. Also the conventional *Prāṇāyāma* through regulation of breath is described there in.

Manomaya Kośa The *Manas*(mind) is the source of every thing. Mind which is defined as a conglomeration of thoughts responds to the input through sense organs. For example, your eyes see a beautiful bird; eyes send an image to the brain and the mind(*manah*) perceives it as a beautiful bird. Within the next fraction of a second, your memory(*Citta*) deciphers that it as a very very type of birds, which is wanted to see badly. The thought circulates in the mind and *citta* which soon goes on to make you feel, it is so beautiful, I like it, I love it, I want it. This component of *Manomaya Kośa*, in which this rapid recycling takes place and gather momentum is called the 'Emotions'(*Bhāvanā*).

Purification for Manomaya Kośa (The mental layer)

1. **Dhāraṇa and Dhyāna:-** A direct operation on this level is made possible by the last three limbs of *Aṣṭāṅga Yoga* of Patanjali- *Dhāraṇā*, *Dhyāna* and *Sāmadhi*. The culturing of mind is accomplished by focussing of the mind (*Dhāraṇa*) initially, followed by relaxed dwelling of the mind in a single thought (*Dhyāna*) for longer duration leading ultimately to superconsciousness (*Sāmadhi*). A progressive habituation allows the mind to remain relaxed during the period of meditation (*dhyāna*). The benefits of

transcendental meditation, a simple standardised technique, are numerous interesting and noteworthy.

2. **Emotion culture:** to handle and gain control over the basic cause of mental agitation, we use the *Yoga* techniques like a devotional session, containing prayers, chants, *bhajans*, *stotras*, etc. thus control over emotions is obtained through the devotional session.

Vijñānamaya Kośa *Vijñānamaya Kośa* is the fourth layer of our existence. We all have two minds. For example, when the *Manomaya Kośa* said that “It is a beautiful bird, I want to have it” and you started instructing your hand to take that bird, the inner mind said “sorry, you cannot take or catch that bird you have no right to take or catch that bird, this is a free bird. This conscience within that continuously guides us to do a thing or not to do a thing is the *Vijñānamaya Kośa*.

Purification for *Vijñānamaya Kośa*

A basic understanding is the key to operate from *Vijñānamaya Kośa*. *Upaniṣads* are the treasury of such knowledge which is the redeemer of all miseries and obsessions. It is the lack of that inner *jnāna* which is responsible for many wrong habits, agitations, etc. the happiness Analysis-*mīmāṃsā* of the *taittiriya upaniṣat* handles the most fundamental problems relevant to all living creatures. The analysis systematically leads the reader to that substratum from which *Prāṇa* and mind emerge the *Ānandamaya Kośa*. It helps the person to change his attitude of greed and deep attachment to material possessions and enjoyment towards the relation that happiness is within and each one of us in our causal state is ‘*ānanda*’ embodied. As a result man’s outlook of life changes. Knowledge burns the strong attachments, obsessions; likes and dislikes which are the basic reasons of the agitations’ of mind.

Ānandamaya Kośa the bliss layer of our existence. This is the most subtle aspect of our existence which is devoid of any form of emotions; a state of total silence – a state of complete harmony, and perfect health.

While in Manomaya *Kośa* the creative power predominates, in *Vijñānamaya Kośa* it is the power to discern and discriminate. Bliss is embodied in *Ānandamaya Kośa*, the highest state of evolution in the manifested existence.

Purification for *Ānandamaya Kośa*

To bring the bliss of our causal body called *Ānandamaya Kośa* in all our actions is the key for a very happy and healthy life, this also brings our inner healing power to effect, a complete cure of our ailments.

CHAPTER 4

CONCLUSION

Body is an instrument to achieve the goal of life. One should have good health. Without the health the body cannot work properly. So to keep the instrument of the body in healthy condition, I have discussed the concept of health according to various dictionaries and various medical sciences like *Āyurveda*, Homeopath, Naturopath, Allopathy and *Yoga*.

Āyurveda emphasizes prevention of disease, rejuvenation of our body systems, and extension of life span. The profound premise and promise of *Āyurveda* is that through certain practices, not only can we prevent heart disease and make our headaches go away, but we can also better understand ourselves and the world around us, live a long healthy life in balance and harmony, achieve our fullest potential, and express our true inner nature on a daily basis.

Āyurveda provides an integrated approach to preventing and treating illness through lifestyle interventions and natural therapies. It is based on the view that the elements, forces, and principles that comprise all of nature - and that holds it together and make it function - are also seen in human beings.

Allopathic medicine began to be widely used in the late 1800s and early 1900s. It is the primary medicine used in the western world. It separates healing the mind and body from the spiritual aspect of health. It does not emphasize that the health of the mind has an impact on the health of the body. Medical doctors search for symptom of physical causes of ailments and treat them in acute situations. There is less emphasis on preventative care; rather, they deal with problems as they arise.

Homeopathy is a medical system that has been practiced in America since the nineteenth century. It deals with the wellness of patients by discussing preventative measures. Practitioners determine treatments by the principle of similarities, also referred to as "like cures like." It means that a person's condition can improve using a substance that creates similar symptoms in people with no illnesses. Another main principle is that the lower the dose of a medicine, the greater is its effect. Homeopathic doctors claim their procedures are effective,

Naturopathic medicine emerged as a safe alternative to invasive medical procedures around 1980. Naturopathic physicians believe that the body has an innate ability to heal itself. They encourage preventative measures including diet, exercise, stress reduction and natural therapies to discourage illness from appearing. Treatment of illnesses combines modern medicine and alternative medicine to give the best healing plan to the patient. The benefit of using naturopathic medicine is that treatment plans attempt to avoid side effects and treat the cause of the illness instead of the symptoms.

Health is considered as the main channel to do our *dharma* through the instrument of the body. The physical body is the only instrument of *dharma*. Through this body we can do good or bad *Karma*. Hence it is our duty that we should keep this body healthy, so that we can perform our *dharma*, which will lead us to the knowledge of Ātmā.

In the *Tarttireya Upaniṣads* Bhrgu told about *Panca Kośa*. These are: *Annamaya Kośa*, *Prāṇamaya Kośa*, *Manomaya Kośa*, *Vijñānamaya Kośa*, *Ānandamaya Kośa*. When a person realises each *Kośa* then his/her blissful state increases and that time a person can perfect health.

This thesis gives a good concept of health according to. Different view of medical fields. The study will be helpful to everybody.

ABBREVIATIONS

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PART II

EFFECT OF *KAPĀLBHATI* AND *PRAṆĀYĀMA* (*Yoga* **BREATHING) ON MUSCULAR ENDURANCE**

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ABSTRACT

The present study was conducted to assess the possible of influence immediate effect of *Kapālbhāti* and *Prāṇāyāma* on handgrip muscle endurance (HGE). A sample of 31 male subjects were selected (average age 22.81 ± 3.03 years), half of participants were assessed on HGE, Visual analog scale (VAS) and perceived exertion rate (PER) immediately before and after the practice two sessions (i.e., *Prāṇāyāma* and Breath awareness) on first day. Next day, order of session was reversed. The results showed a significant improvement in HGE ($p < 0.001$) after *Prāṇāyāma* by 10.11% compared to its baseline. Also, there was significant interaction between sessions (*Prāṇāyāma* and Breath awareness) and time (pre and post) in HGE.

Key words: *prāṇāyāma* Yoga handgrip endurance

Conclusion There was no significant difference in PER and VAS. The result suggested that *Prāṇāyāma* enhances the endurance without generation muscle fatigue.

CHAPTER 1

INTRODUCTION

Yoga is an ancient practice with Eastern roots that involves both physical postures (*āsana*) and breathing techniques (*Praṇāyāma*). There is also a cognitive component focusing on meditation and concentration, which aids in achieving the goal of union between the self and the spiritual (Brotto, Mehak & Kit, 2009).

Praṇāyāma is the fourth limbs of *Astanga Yoga* of *Patañjali*. *Praṇāyāma* is the combination of the Sanskrit words ‘*Prāṇa*’ and ‘*āyāma*’. *Prana* means breath, *āyāma* is lengthening through controlling breath. *Praṇāyāma* is consciously control over breath, which is consisting of conscious inhalation, retention and exhalation. It is often practiced in conjunction with meditation and *āsanas* (Yardi, 2001).

Earlier many *Yoga* intervention studies showed improvement in muscle strength using handgrip dynamometer. For example, three months of *Yoga* practices showed to increase handgrip strength in male teachers, who had 8-10 years of experience in physical education and sports (Telles, Nagarathna, Nagendra & Desiraju, 1993). In another, the patients with rheumatoid arthritis having pain and swelling of finger joints following practice *Yoga* for 5 days a week, for 8 weeks had also improved in handgrip strength (Hassock, Das & Telles, 1994). School children are undergoing 10 days residential *Yoga* camp had enhanced in their handgrip strength performance (Raghuraj, Nagarathna, Nagendra & Telles, 1996). *Yoga* training for a short period of six weeks had produce significant improvements in handgrip muscle strength and HGE (Madanmohan, Mahadevan, Balakrishnan, Gopalakrishnan & Prakash, 2008). In constraint A recent study documented that there was no significant effect on following four different kinds of *Yoga* breathing on handgrip strength (Joshi & Telles, 2009).

All, the prior studies had evaluated the effect of *Praṇāyāma* on different population with different duration of *Yoga* techniques, which consisted of either different limbs of *astanga Yoga* or a specific technique. The current study has aimed to investigate the possible improvement in HGE capacity following 20 minutes of *Praṇāyāma*.

CHAPTER 2

REVIEW OF LITERATURE

The study was conducted to determine a particular nostril has an effect on hand grip strength. 130 right hand dominant, school children age 11 -18 years were randomly assigned to 5 groups with a specific *Yoga* practice for a 10 day *Yoga* camp. The right-left and alternate-nostril breathing groups had a significant increase in grip strength of both hands at the end without any lateralization effect. The breath awareness and mudra groups showed no change. (Raghuraj, Nagarathna, Nagendra & Telles, 1997).

Study was consisted of three groups a set of *Yoga* practices on normal adults (n=37), children (n=86), and patients with rheumatoid arthritis. They were divided into *Yoga* and control group, adult female volunteers and patients showed a greater percentage improvement than corresponding adult male no gender difference in children. At last *Yoga* practice improves hand grip strength in normal persons and in patients with rheumatoid arthritis and there was difference in gender and age wise result. (Dash & Tells 2001).

Another study was designed to evaluate the grip and pinch strength differences between right and left handed population. The study included 128 right and 21 left hand dominant volunteers. Grip strength grip pinch was measured by using a Jamar dynamometer and manual pinch meter. Pulp pinch strength measurements were performed by manual pinch meter. There was significant difference between the grip and pinch strengths of dominant and non dominant hands in favour of the dominant. The next study concluded that the dominant hand is significantly stronger in right handed subjects but no such significant in left handed people. (Incel, Cecel, Durukan, Eardem & Yorgancioglu 2002).

Another study was designed to test whether *Yoga* training of six weeks duration modulates sweating response to dynamic exercise and improves respiratory pressures, handgrip strength and handgrip endurance. 46 healthy subjects given *Yoga* training, 23 motivated subjects as control group. In the *Yoga* group weight loss was significant. In contrast, weight loss was not significantly different in the control group. *Yoga* training for a short period of six weeks can produce significant improvements in respiratory muscle strength and endurance. (Madanmohan, Mahadevan, Balakrishnan, Gopalakrishnan & Prakash. 2008)

CHAPTER 3

AIM AND OBJECTIVES

3.1 AIM

To measure the handgrip muscle endurance before and after *Kapālbhāti* and *Prāṇāyama*.

3.2 OBJECTIVES

To measure the perceive exertion before and after handgrip muscle endurance test.

3.3 HYPOTHESIS

Does handgrip muscle endurance increase after immediately *Kapālbhāti* and *Prāṇāyama*.

3.4 NULL HYPOTHESIS

Hand grip muscle endurance does not increase after immediately *Kapālbhāti* and *Prāṇāyama*.

CHAPTER - 4

METHODS

4.1 SUBJECTS

4.1.1 Sample Size

The sample size of the present study was 31 male *Yoga* practitioners.

4.1.2 Sources of The Subjects

Since the study was conducted in SVYASA, the participants were selected from long terms *Yoga* residential *Yoga* courses.

4.1.3 Inclusion Criteria

- Age group were between 20-30 years male well experienced in *Yoga*
- The student of different courses i.e., Post Graduate and Bachelor Degree in Yogic Sciences.
- Free from of acute or chronic injury
- Right handed based on the 'Edinburgh Handedness Inventory' (Oldfield, 1971)
- Those were familiar with *Prāṇāyāma* techniques.

4.1.4 Exclusion Criteria

- Female
- Gymnasium, sports practiner
- Old persons.

4.1.5 Ethical Consitoratim:

They were explained about study in details and then consent forms were obtained.

4.2 DESIGN OF THE STUDY:

Present study was a cross over design. The participants were assigned randomly divided into groups (i.e., *Prāṇāyāma* sessions and Breath Awareness session). The half of participants performed *Kapālbhāti i, Prāṇāyāma* and Breath Awareness on Day 1. The order of groups was reversed on Day 2. They were assessed on HGE, VAS, and PER before and immediately after the each session (*Kapālbhāti Prāṇāyāma* and Breath awareness).

4.3 ASSESSMENTS

Handgrip test used to see the immediate effect of *Kapālbhāti Praṇāyāma* on muscle endurance, in this test we took the *Yoga* students. They were told to do *Kapālbhāti* for one minute and *Praṇāyāma* for 15 minutes and Breath awareness for same duration of time (20 minutes), before and after the practice they assigned for the test. For test we used to Visual fatigue analogue Scale (VAS) or Bores scale to see the effect of *Praṇāyāma* and Breath awareness. This test had done in the morning to avoid the any effect of other activity.

INSTRUMENTS:

4.3.1 Handgrip

Using handgrip dynamometer (Lafayette Instruments, Co., Model No.76618, USA) maximum voluntary contraction (MVC) was assessed thrice for each participant, the average of three measurement was consider as final MVC value; 50% of final MVC was calculated and marked on the dynamometer display. Each participant sat in a chair with his right arm placed on a table with the elbow extended at the level of heart and forearm positioned upward at 30 degree with the hand resting on a handgrip dynamometer. They instructed to sustained isometric handgrip contractions to the prior defined value of their 50% MVC as long as possible before and after (*Praṇāyāma* and Breath awareness).

4.3.2 Borg's Scale

Perceived Exertion Rate (PER)

Borg's rating scale was used to evaluate the perceive excretion before and immediately after both sessions (*Praṇāyāma* and Breath awareness). Borg scale was used to rate the perceived exertion scale (Borg et al. 1982) and this tool has been already used in a study of a maximal contraction of handgrip (subjective feeling maximal) (Noble & Robertson 1996; Pincivero et al. 1999). The participants were explained about the scale, and they were told, "Think about their feeling of exertion and rate those feeling on the scale before and immediately after the HGE. PER scale consisted of 15 statements ranges from 6-20 (very very light and very very hard).

4.3.3 Visual Fatigue Analogue Scale (VAS)

This is considered to be a simple and reliable tool to measure subjective pain (Wewers & Lowe, 1990). It consists of a horizontal straight line of 10 centimeters marked on a clean white sheet. One end of the line represents ‘No Fatigue, and the other end, ‘Maximum Fatigue’. The subject is asked to indicate his pain by marking a dot on this line.

4.3.4 Edinburg Handedness Inventory

| Edinburgh Handedness Inventory (revised) | | | | | |
|--|--------------------|---------------------|----------------------|----------------------|---------------------|
| <i>Please mark the box that best describes which hand you use for the activity in question</i> | | | | | |
| | <i>Always Left</i> | <i>Usually Left</i> | <i>No Preference</i> | <i>Usually Right</i> | <i>Always Right</i> |
| Writing | | | | | |
| Throwing | | | | | |
| Scissors | | | | | |
| Toothbrush | | | | | |
| Knife (without fork) | | | | | |
| Spoon | | | | | |
| Match (when striking) | | | | | |
| Computer mouse | | | | | |

EDINBURGH HANDEDNESS INVENTORY

This Inventory is developed by Dr Stephen M. Williams, Colchester, Essex, United Kingdom, is useful to identify mixed-handers as anyone having an Laterality Quotient (*LQ*) between fifty and minus-fifty³. It is now about forty years since Oldfield's article, and it has inspired a mass of work (already the Web of Knowledge records over seven thousand citations of it). This might, but should not, have the effect of stultifying development of the test instrument. This corpus of work should be taken as supplying evidence of ways to improve the inventory. The biggest change in the revision here proposed is the discarding of three of the original Edinburgh activities (opening box; broom; drawing) and the adding of a new one (computer mouse). Drawing could still be used as a *substitute* for writing (in the context, say, of possible dysgraphia) – these two activities are very highly (about 0.90) correlated.

4.4 INTERVENTION

4.4.1 *Praṇāyāma*

1. Each participant asked to sit in crossed leg posture back, spine, and neck in one align, the sessions start by chanting of Om three times.
2. *Kapalabhati*. Active exhalation followed by passive inhalation with contraction of abdominal muscle, this procedure was repeated for one-minute followed by one- minute of rest.
3. The full yogic breathing was practiced by adopting *Brahma mudra* (Hand gesture), slow and deep breathing was done using abdominal, thoracic, and clavicular muscle continue for the five minutes followed by one-minute rest.
4. The *Nadisuddhi Praṇāyāma*, which is an alternate nostril breathing practices by manipulating the breathing by *Nasika-mudra* (hand gasture) for the for five minutes followed by one-minute of rest.
5. The *Bhramari Praṇāyāma*, which is practiced by producing humming bee sound during exhalation. This practiced was carried out for five minutes followed by one minute of rest.

4.4.2 **Breath Awareness:**

The participants were asked to sit in crossed leg posture; keeping their back, spine, and neck in one align, and witnessing their breath for 20 minutes.

4.5 DATA EXTRACTION

Data were analyzed using Statistical Package for Social Sciences, version 10.0. Descriptive statistics were used to summarize the data. A GLM repeated-measures ANOVA was done at two level within-subjects factor [i.e., Time (pre-post)] and between-subjects factor [i.e. sessions (*Praṇāyāma*, Breath awareness)]. Both session-by-time interaction effects between-subjects and within-subjects effects were assessed. Post-hoc tests were done using Bonferroni's correction for changes at different time points between sessions.

CHAPTER 5 RESULTS

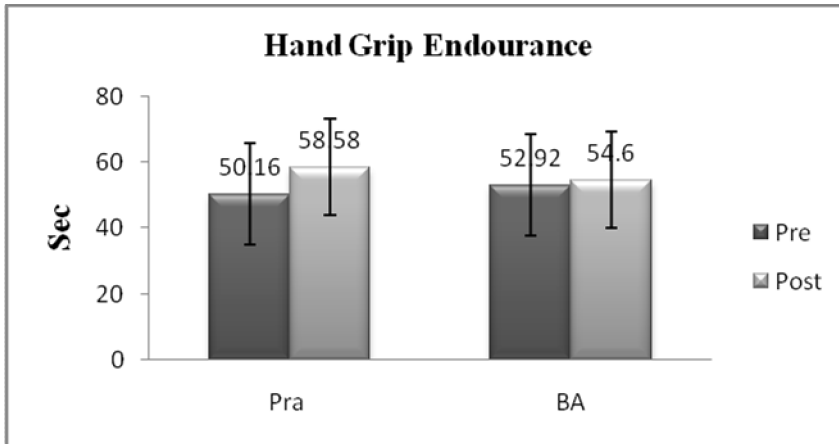
A repeated-measures analysis of variance was done on HGE. Results showed significant session-by-time interaction effects [$F(1, 30) = 11.163, P = 0.002$] and within-subject effects [$F(1, 30) = 7.017, P = 0.013$]. Post-hoc tests using Bonferroni's correction showed significant differences at between *Kapālbhāti*, *Praṇāyāma* and Breathe awareness groups in post measures alone. There was a significant within-subjects difference (pre and post measure) in the *Kapālbhāti*, *Praṇāyāma* session alone but not in the Breath Awareness session.

TABLE 1: The mean±SD for Hand grip endurance, perceive exertion rate pre and post of *Praṇāyāma* and Breath awareness.

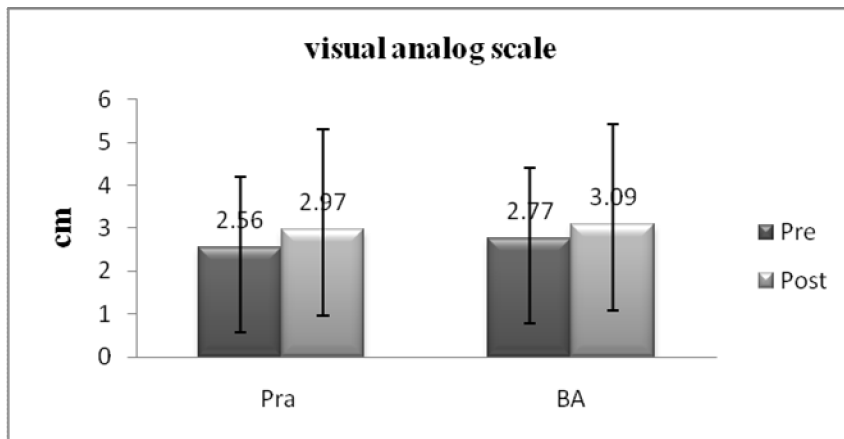
| Variable | <i>Kapālbhāti, Praṇāyāma</i> | | | Breath awareness | | |
|----------|------------------------------|---------------------|----------|------------------|-----------------|----------|
| | Pre | Post | % change | Pre | Post | % change |
| HE | 50.16 ±15.78 | 58.58 ±14.78 *** | 10.11 | 52.92 ±15.26 | 54.60 ±14.64 | 3.68 |
| VAS | 2.56 ±1.64 | 2.97 ±2.33 | 20.75 | 2.77 ±1.99 | 3.09 ±2.01 | 6.77 |
| PER | 12.10 ±2.20 | 11.97 ±1.54 | -5.85 | 12.42 ±1.36 | 12.48 ±1.48 | 1.29 |

Foot note:-HGE = Handgrip endurance; VAS = Visual analog scale; PER = Perceived exertion rate

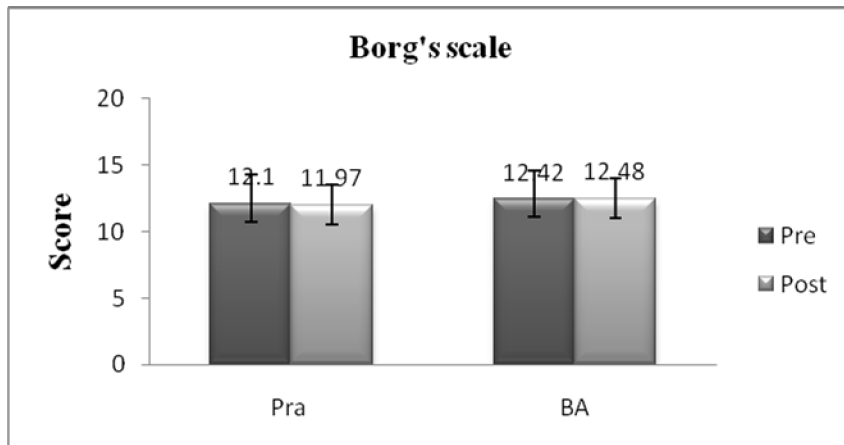
*** $p < 0.001$, RMANOVA with Bonferroni adjustment Post values compared with respective pre value.



Graph-1 Representing the group mean±SD values of (pre and post) *Praṇāyāma* and breath awareness of Hand grip Endurance.



Graph-2 Representing the group mean±SD values of (pre and post) *Praṇāyāma* and breath awareness of Visualize analog scale.



Graph-3 Representing the group mean \pm SD values of (pre and post) *Praṇāyāma* and breath awareness of Borg's scale

Chapter 6

DISCUSSIONS

Handgrip endurance showed significant increase in *Kapālbhāti*, *Praṇāyāma* session whereas non-significant change was observed compared to breath awareness session. The change in *Kapālbhāti*, *Praṇāyāma* session is statistically significant than breath awareness. Therefore, the hypothesis made in the introductory section was accepted.

Muscle fatigue is defined as a decrease in maximum force generating capacity of the muscle (Bigland-Ritchie et al. 1984). This ability to resist fatigue is sometimes expressed as muscle endurance, which can be defined as time to failure to maintain target tension (Hicks, 2001). Earlier studies showed that a significant improvement in hand-grip muscle strength in diverse population with various yogic intervention as well as different duration of *Yoga* regime (Telles, Nagarathna, Nagendra and Desiraju, 1993; Hassock, Das & Telles, 1994; Raghuraj, Nagarathna, Nagendra and Telles, 1996). In contrast, there was non-significant change in handgrip strength on earlier studies (Madanmohan, Mahadevan, Balakrishnan, Gopalakrishnan & Prakash, 2008; Joshi & Telles, 2009). Hence, yogic breathing has an effect of enhancing the handgrip strength. Madanmohan et. al. (2008) found a non-significant improvement male by 16 % but a significant in female group by 53 % in endurance whereas 10% improvement observed in the current study. This difference was may be due to (i) base line endurance is low (ii) one-third percent MVC target was applied (iii) six-week of *Yoga* training regime (Madanmohan et. al., 2008).

MECHANISM

Muscle strength and metabolic capacity of skeletal muscles are the two factors that influence HGE. *Praṇāyāma* may be improving peripheral blood flow, which might be reducing the accumulations of acid metabolites that brings reduction in hypoxemia and hence lower the muscle fatigue as a result handgrip endurance increases. Normal volunteer undergoing *Praṇāyāma* and *Yoga* training showed a decrease in blood lactate levels in post exercise phase (Raju et at., 1986). This indicates better oxygen delivery or utilization because of *Praṇāyāma*. In

another study *Praṇāyāma* practitioner were able to reach, higher work rates by reducing oxygen consumption without elevating in blood lactate levels. (Raju et al., 1994).

CHAPTER 7

SUMMARY AND CONCLUSION

7.1 SUMMARY

This study shows that short term *Praṇāyāma* is helpful to increase handgrip endurance. The study was cross over design, in this design the result was significant and *Prāṇāyāma* is more helpful to increase grip strength compare then breathe awareness. The *Praṇāyāma* result.

7.2 LIMITATION

The sample size was very small, it should be more
Yoga and control group should be different

7.3 SUGGESTION FOR THE FURTHER STUDY:-

Sample size was very small it should be large. *Yoga* and control group should be different.

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RAW DATA

TABLE 1 JOURNAL PARAMETER

| sl.no | Name | Age | Cm | Weight | BP | | Date |
|-------|-------------------|-----|-----|--------|--------|-------|-----------|
| | | | | | Sys | Dys | |
| 1 | Rp singh | 24 | 174 | 71 | 112 | 88 | 4/5/2010 |
| 2 | Jitendra Kumar | 30 | 167 | 63 | 122 | 84 | 4/5/2010 |
| 3 | gajanan Saraf | 23 | 174 | 56 | 118 | 78 | 4/5/2010 |
| 4 | Krishna kumar | 25 | 164 | 53 | 124 | 86 | 5/5/2010 |
| 5 | Dilbag Singh | 24 | 182 | 68 | 128 | 82 | 6/5/2010 |
| 6 | Bhaskar | 26 | 164 | 59 | 116 | 82 | 6/5/2010 |
| 7 | Anand R Poudel | 26 | 164 | 53 | 108 | 68 | 6/5/2010 |
| 9 | Sudipto | 22 | 169 | 71 | 116 | 84 | 8/5/2010 |
| 10 | Nidhish.j. nidhri | 23 | 172 | 48 | 112 | 80 | 8/5/2010 |
| 11 | Rahul singh | 21 | 167 | 48 | 116 | 78 | 6/5/2010 |
| 12 | Rajendra | 18 | 164 | 56 | 118 | 84 | 8/5/2010 |
| 13 | Gautam | 22 | 164 | 69 | 108 | 78 | 10/5/2010 |
| 14 | Ayus Shukla | 18 | 159 | 55 | 114 | 88 | 10/5/2010 |
| 15 | Subir ghosh | 26 | 167 | 71 | 118 | 86 | 10/5/2010 |
| 16 | Supreet S | 19 | 162 | 56 | 126 | 84 | 11/5/2010 |
| 17 | Abhay Singh | 19 | 172 | 53 | 116 | 82 | 12/5/2010 |
| 18 | Ashish Kumar | 19 | 167 | 58 | 118 | 84 | 10/5/2010 |
| 19 | Jai Kumar | 22 | 164 | 67 | 118 | 86 | 12/5/2010 |
| 20 | Amit Ghosh | 22 | 164 | 56 | 124 | 88 | 13/5/2010 |
| 21 | Punit Sharma | 19 | 172 | 68 | 112 | 82 | 12/5/2010 |
| 22 | Rohit Kumar | 25 | 167 | 58 | 112 | 84 | 13/5/2010 |
| 23 | Revanth I | 24 | 172 | 62 | 120 | 86 | 14/5/2010 |
| 24 | Omprakash | 22 | 172 | 64 | 112 | 86 | 14/5/2010 |
| 25 | Ankush Kumar | 20 | 172 | 51 | 114 | 82 | 14/5/2010 |
| 26 | P mallikarajun | 23 | 167 | 55 | 120 | 60 | 14/5/2010 |
| 27 | Shiaupal Kumar | 24 | 162 | 53 | 116 | 80 | 16/5/2010 |
| 28 | Mandeep singh | 21 | 169 | 62 | 108 | 80 | 18/5/2010 |
| 29 | Sumit D. | 20 | 169 | 64 | 116 | 82 | 12/5/2010 |
| 30 | Rishi | 28 | 154 | 71 | 128 | 86 | 19/5/2010 |
| 31 | Snsants | 26 | 169 | 56 | 112 | 86 | 23/5/2010 |
| 32 | Gurmet | 26 | 167 | 59 | 128 | 88 | 12/5/2010 |
| | Mean | 22 | 162 | 57.93 | 113.43 | 79.75 | |

TABLE 2 MVC & PRĀṆĀYĀMA

| sl.no | Name | MVC | | | 50% MVC | PRĀṆĀYĀMA | | | | | |
|-------|----------------|-----------|----|----|------------|-----------|------|------|------|-----|------|
| | | MVC Trail | | | | ME | | VFAS | | BS | |
| | | 1 | 2 | 3 | | PRE | Post | PRE | Post | Pre | Post |
| 1 | Rp singh | 50 | 52 | 52 | 25.3 | 43 | 58 | 1.1 | 1.1 | 11 | 11 |
| 2 | Jitendra Kumar | 44 | 42 | 42 | 21.3 | 36 | 37 | 1.3 | 0.6 | 11 | 11 |
| 3 | Gajanan Saraf | 41 | 35 | 44 | 20 | 61 | 50 | 2 | 2.2 | 13 | 15 |
| 4 | Krishna kumar | 48 | 49 | 48 | 24.2 | 36 | 53 | 4.4 | 2.8 | 13 | 13 |
| 5 | Dilbag Singh | 46 | 50 | 51 | 24.5 | 80 | 63 | 5.8 | 4.6 | 13 | 13 |
| 6 | Bhaskar | 42 | 41 | 42 | 20.83 | 59 | 78 | 3.5 | 2.8 | 13 | 11 |
| 7 | Anand R | 41 | 45 | 41 | 21.66 | 53 | 84 | 4.5 | 4.3 | 13 | 13 |
| 9 | Sudipto | 45 | 44 | 40 | 21.5 | 75 | 70 | 3.5 | 3.8 | 8 | 12 |
| 10 | Nidhish.j. | 40 | 35 | 37 | 18 | 25 | 64 | 1 | 0.5 | 13 | 11 |
| 11 | Rahul singh | 30 | 30 | 31 | 15 | 31 | 52 | 3.4 | 0.5 | 19 | 11 |
| 12 | Rajendra | 46 | 36 | 30 | 18 | 60 | 55 | 2.9 | 4.6 | 11 | 11 |
| 13 | Gautam | 28 | 34 | 36 | 16 | 28 | 34 | 3.3 | 5.3 | 13 | 12 |
| 14 | Ayus Shukla | 50 | 40 | 44 | 22 | 31 | 64 | 3 | 3.3 | 9 | 10 |
| 15 | Subir ghosh | 39 | 38 | 35 | 18 | 81 | 88 | 3.2 | 4.5 | 13 | 13 |
| 16 | Supreet S | 39 | 37 | 29 | 17 | 48 | 74 | 2.3 | 1.4 | 13 | 13 |
| 17 | Abhay Singh | 43 | 43 | 42 | 21 | 62 | 44 | 3.7 | 6.7 | 11 | 13 |
| 18 | Ashish Kumar | 45 | 42 | 36 | 21 | 37 | 36 | 6.4 | 6.6 | 11 | 13 |
| 19 | Jai Kumar | 52 | 50 | 50 | 25 | 45 | 52 | 1 | 0.5 | 13 | 11 |
| 20 | Amit Ghosh | 40 | 39 | 38 | 19 | 32 | 44 | 0.8 | 1 | 15 | 13 |
| 21 | Punit Sharma | 44 | 42 | 47 | 22 | 48 | 55 | 1.2 | 11 | 11 | 11 |
| 22 | Rohit Kumar | 34 | 36 | 34 | 16 | 54 | 65 | 2.8 | 4.9 | 13 | 13 |
| 23 | Revanth I | 45 | 46 | 49 | 22 | 41 | 48 | 0.5 | 1.1 | 11 | 12 |
| 24 | Omprakash | 35 | 37 | 36 | 18 | 31 | 37 | 6.1 | 3.6 | 14 | 13 |
| 25 | Ankush Kumar | 37 | 38 | 39 | 19 | 56 | 64 | 1.1 | 0.4 | 9 | 9 |
| 26 | P mallikarajun | 48 | 44 | 41 | 22 | 35 | 37 | 0.7 | 1.5 | 9 | 7 |
| 27 | Shiaupal | 40 | 44 | 39 | 20 | 61 | 64 | 1 | 2.2 | 15 | 13 |
| 28 | Mandeep singh | 45 | 42 | 45 | 22 | 72 | 84 | 1.6 | 1.9 | 9 | 11 |
| 29 | Sumit D. | 35 | 35 | 39 | 18 | 58 | 64 | 2.4 | 2.1 | 11 | 13 |
| 30 | Rishi | 55 | 54 | 57 | 27 | 52 | 65 | 2.2 | 2.1 | 13 | 13 |
| 31 | Snsants | 35 | 29 | 37 | 17 | 57 | 64 | 1 | 2.3 | 13 | 13 |
| 32 | Gurmet | 34 | 36 | 35 | 17 | 67 | 69 | 1.5 | 1.8 | 11 | 13 |

TABLE 3 BREATHAWARENESS

| sl.no | Name | BREATHAWARENESS | | | | | |
|-------|--------------------|-----------------|------|------|------|-----|------|
| | | ME | | VFAS | | BS | |
| | | PRE | Post | PRE | Post | Pre | Post |
| 1 | Rp singh | 62 | 56 | 2.8 | 1.3 | 13 | 13 |
| 2 | Jitendra Kumar | 39.62 | 32.7 | 0.9 | 0.8 | 11 | 11 |
| 3 | Gajanan Saraf | 75 | 61 | 1.9 | 1.2 | 13 | 13 |
| 4 | Krishna kumar | 51 | 47 | 2.2 | 3 | 11 | 13 |
| 5 | Dilbag Singh | 82 | 50 | 6.6 | 4.5 | 11 | 13 |
| 6 | Bhaskar | 49 | 69 | 5 | 3.8 | 13 | 13 |
| 7 | Anand R Poudel | 61 | 80 | 4.5 | 3.6 | 13 | 13 |
| 9 | Sudipto mukharjee | 63 | 50 | 1.5 | 2.8 | 12 | 14 |
| 10 | Nidhish.j. nidhri | 25 | 41 | 0.3 | 0.5 | 13 | 13 |
| 11 | Rahul singh | 51 | 46 | 2.2 | 4.7 | 15 | 15 |
| 12 | Rajendra gochhikar | 60 | 54 | 2.4 | 3.6 | 11 | 11 |
| 13 | Gautam | 32 | 38 | 6.6 | 6.8 | 11 | 11 |
| 14 | Ayus Shukla | 46 | 44 | 5.6 | 2 | 12 | 11 |
| 15 | Subir ghosh | 49 | 69 | 4 | 5.5 | 13 | 13 |
| 16 | Supreet S | 66 | 80 | 3 | 3 | 13 | 11 |
| 17 | Abhay Singh | 55 | 53 | 6.5 | 6.7 | 14 | 13 |
| 18 | Ashish Kumar | 25 | 35 | 5.4 | 4.1 | 15 | 11 |
| 19 | Jai Kumar | 42 | 44 | 1.2 | 1.2 | 12 | 13 |
| 20 | Amit Ghosh | 34 | 38 | 0.5 | 1 | 15 | 15 |
| 21 | Punit Sharma | 53 | 53 | 1.8 | 7.4 | 11 | 12 |
| 22 | Rohit Kumar | 72 | 68 | 1.6 | 4.5 | 13 | 15 |
| 23 | Revanth I | 54 | 52 | 0.5 | 1.1 | 11 | 11 |
| 24 | Omprakash | 28 | 32 | 5.4 | 6 | 13 | 13 |
| 25 | Ankush Kumar | 55 | 55 | 0.5 | 1.4 | 11 | 11 |
| 26 | p mallikarajun | 32 | 36 | 0.8 | 1.4 | 10 | 9 |
| 27 | Shiaupal Kumar | 56 | 64 | 3.7 | 5.4 | 14 | 15 |
| 28 | Mandeep singh | 80 | 88 | 2 | 1.5 | 11 | 11 |
| 29 | Sumit D. | 59 | 60 | 1.6 | 1.7 | 13 | 13 |
| 30 | Rishi | 58 | 61 | 1.4 | 1.6 | 11 | 11 |
| 31 | Snsants | 61 | 68 | 1.6 | 1.6 | 13 | 13 |
| 32 | Gurmet | 65 | 68 | 1.7 | 2.1 | 13 | 13 |

SIGNED INFORMED CONSENT FORM

Title of the project : Immediate effect of Pranayama on handgrip endurance.

Investigator : Dr. Balram Pradhan.

Name of the guide : Dr. Nagarathna.

Name of the participant: _____

Date and time : _____ **and** _____

About the project

In order to understand the immediate effect of voluntary regulation breathing (Pranayama) practice on of muscle endurance. We will be recording the Muscle endurance with Hand Grip dynamometer. All these techniques are noninvasive and commonly used in routine clinical practice.

Please note;

1. All information obtained during the study will be kept confidential and individual report of the test will be given.
2. You can withdraw from the study at any point of the time unconditionally.
3. In case the study does cause any adverse effects, the institution is not liable.

I hereby have understood the above and consent voluntarily to participate in the study.

Place _____

Date _____

Signature of the participant

QUESTIONNAIRES

DEMOGRAPHIC DATA SHEET

Name :

Sri/Smt.....Date.....

.....

Age.....Sex:

Education.....Marital Status.....

Occupation.....

Duration of yoga practice.....

Hand performance

DATA SHEET

NameAge.....

Date.....

| MVC | Trial1 | Trial2 | Trial3 |
|-----------------|---------------|---------------|---------------|
| | | | |
| Mean MVC | | | |
| 50% MVC | | | |

Date..... Time.....

| | Visual Fatigue analog scale | Muscular endurance |
|-----------------------|------------------------------------|---------------------------|
| Pre Pranayama | | |
| Post Pranayama | | |

Date..... Time.....

| | Visual Fatigue analog scale | Muscular endurance |
|------------------------------|------------------------------------|---------------------------|
| Pre Breath Awareness | | |
| Post Breath Awareness | | |

VISUAL FATIGUE ANALOG SCALE

Name..... Age..... Date.....

How do you rate your fatigue at the present time?

No Fatigue

Maximum Fatigue



THE BORG SCALE

6 No exertion at all

7 Extremely light

8

9 Very light

10

11 Light

12

13 Somewhat hard

14

15 Hard (heavy)

16

19 Extremely hard

20 Maximal Exertion