

HOLISTIC MEDICINE

FOR TOTAL STRESS MANAGEMENT



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UNDERSTANDING THE CONCEPT OF HOLISTIC MEDICINE FOR

TOTAL STRESS MANAGEMENT

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PREFACE

Right at the outset, I pray Lord Ganesha to empower me to conceptualize and express the concept of Holistic Medicine correctly and completely. Further I pray that this book be useful for the wellbeing of one and all.

It was way back in 1969 when I was admitted to B. J. Medical College in Pune city in the state of Maharashtra. During my student days as Ill as later, I always felt that the allopathy medical course [which is more or less the same today], was cut off from human miseries. It did not incorporate the understanding of human life in its totality. It did not incorporate several available solutions to a large number of human ailments. It did not incorporate several research efforts in the pursuit of human Ill being. Later I found that all the medical courses other than allopathy, also had this deficiency. Today, I am glad that I could evolve the concept of well being of one and all i.e. TOTAL STRESS MANAGEMENT. In the course of that work I realized that Medicine is one and the divisions are arbitrary. Further I realized that having understood that medicine is one, the education, research and practice of all arbitrary divisions should be coordinated and “reunited”. In short, the medical course, research and practice should incorporate the study and research of human life in its totality and everything that can facilitate TOTAL STRESS MANAGEMENT.

Besides the arbitrary divisions of medicine, fields other than medicine such as education, agriculture, horticulture, industries and environment have bearing on the well being of an individual and the mankind. Hence the education, research and practice in these fields have also to be reoriented, coordinated and integrated so as to facilitate TOTAL STRESS MANAGEMENT.

This book is an attempt to provide intellectual framework for pursuing this goal. I have called this framework “Holistic Medicine” so as to distinguish it from every possible arbitrary division, branch or system of medicine with sectarian approach.

All of us whether involved in medical practice or not, have the responsibility, right and privilege to be involved in the study of Holistic Medicine. Such study would enable us to participate in development and practice the concept of Holistic Medicine. Such study, development and practice of Holistic Medicine would empower us to transform the sectarian medical courses into holistic ones. All this is essential for TOTAL STRESS MANAGEMENT.

I thank all my ancestors, my late parents, my in laws, wife Dr. Vibha, daughters Urjita and Mukta, my family members, my associates, my colleagues, my friends, my patients, my students and above all, the almighty NARAYANA for enabling me to write this book. I wish you all the best in your efforts towards TOTAL STRESS MANAGEMENT.

SHRINIWAS JANARDAN KASHALIKAR

THE PREVALENT CONCEPT OF HOLISTIC MEDICINE

A lot has been written about holistic medicine. But in general, I found that this literature consists of a collection of different systems of medicine. Many a time such literature includes descriptions of the feats and claims of different systems of so called alternative systems of medicine. Sometimes they are too tall and exaggerated! The claims and feats include cure of cancer, cure of AIDS and such other things.

Several international, national and regional conferences also have been organized on holistic medicine. This is really a healthy development. The credit for this goes to many open-minded individuals from different fields. However these conferences of “holistic medicine” are generally the conglomerations of the practitioners of alternative systems of medicine. In these conferences people share their beliefs and convictions. But in general they seem to adhere to and promote their own discipline rather than attempting to explore the unity amongst the apparent division [disciplines] of medicine! They do not seem to realize even instinctively that medicine is one!

These conferences have therefore not succeeded in developing course of holistic medicine and establish it in the mainstream medical education and practice.

The students and practitioners of allopathy are rarely if at all, are seen in these conferences. They seem to harbor the feeling that allopathy is the only final truth and last word in medicine. They seem to carry a notion that everything other than allopathy is quackery. They neglect or ridicule the activities going on in the under the title of “holistic medicine”. The mainstream education of allopathy remains deficient conceptually as well as in terms of modalities of treatment.

The science, art and technique of understanding and healing the life in general and mankind in particular

remain largely divided and in discord. The innumerable divisions/systems/ disciplines not only lack sufficient dialogue and understanding but there is lack of adequate harmony amongst basic, paraclinical, paramedical, nursing, clinical and super specialty fields in allopathy as well.

Thus, at present the field of medicine is divided into allopathy, homeopathy, ayurveda, unani, siddha, magneto-therapy, naturopathy etc. Some times medicine is also categorized as Tibetan medicine, Indian medicine, Chinese medicine, western medicine etc. (This is not quite the same as preclinical, paraclinical, paramedical, nursing, specialties, superficialities etc., which are divisions but without conceptual differences. There may be methodological and technical differences but not conceptual. This is in contrast to the divisions stated above, in which there are conceptual differences).

MY CONCEPT OF HOLISTIC MEDICINE

At first let us see why medicine [The science and art of healing and health promotion] is divided at present.

It is noteworthy in this connection that physics, chemistry, electronics and such other disciplines are not divided in different systems or regional identities. Thus, one doesn't come across Chinese chemistry, American Physics and Indian Electronics! This is because these are sciences with definite scopes for verification of the concepts in a fairly constant settings and/ or environment.

In contrast, medicine is a conceptual conglomeration of concepts of physical science, philosophy, ethics, arts, techniques and even culture, evolution and other biological sciences. So the education and practice of medicine during different periods of history, in different parts of the world have different cultural and regional identities. In addition to the development of these differences, the observations of different workers can also vary. This is because the real laboratories in which the studies are

conducted are organisms belonging to different species and organisms with different constitutions [even if they belong to the same specie]. One finds variations even in the same individual from time to time as a result of factors such age, pregnancy, environment and other stressors.

Medicine has been vulnerable to get divided because of one more factor. This factor is object of study; experimentation and observation. The object of study in medicine is not inanimate. It is not merely physical or chemical in nature. The objects are life in general and human being in particular. The instincts, emotions, intelligence and level of consciousness are not accessible to laboratory equipments and to the people who study them. This is because the observer is also a human being with limitations. Further, the observer's instincts, emotions, intelligence and level of consciousness also vary and are largely undeterminable. How these factors can interfere with observations can not be predicted. Medicine has therefore a lot of gray areas and uncertainties in contrast to physical sciences. Hence it is vulnerable to subjective factors such as prejudices, beliefs, fears, leading to divisions and discord among the members of the various divisions.

Besides all these, means of treatments (which are object of study) such as herbal medicines, yogic practices and homeopathic therapy, magneto-therapy, hypnotism etc. also vary from place to place and time to time.

The proposed concept of holistic medicine is as follows.

1. Holistic medicine with respect to its perspective is a realization that all existence, all concepts including those of all medical systems are components of a continuum. This is in consonance with the word holistic which is derived from the Greek word Holos meaning whole. The dictionary meanings of "holistic" are, a) Taking in the whole of something on a broader canvas and b) Based on the theory that a whole concept of organism is a more fruitful field of study than its parts or symptoms.

2. Holistic medicine is trans-religious (NOT NON RELIGIOUS) thus neither holy nor unholy, but beyond religion. It is trans-national (NOT UNNATIONAL OR ANTINATIONAL), but beyond the boundaries of a nation. It is trans-cultural (NOT UNCULTURED or ANTICULTURE), i.e. beyond the cultural dogmas or beliefs. It is trans-intellectual (NOT UNTELLECTUAL or ANTIINTELLIGENCE], but beyond the intellectual framework. It is trans-ideological (NOT DEVOID OF IDEOLOGY or ANTIIDEOLOGY), but beyond ideological boundaries. It is trans-scientific (NOT UNSCIENTIFIC OR AGAINST SCIENCE), but beyond the restrictive paradigms of science.

3. Holistic medicine transcends every kind of pettiness including petty identity and concepts born therein. (This in Indian Philosophy is referred to as SELF REALIZATION. I will consider and discuss this at a greater length in subsequent articles).

4. Holistic medicine is a vision, study and practice of a continuum that unifies arbitrary division/systems in medicine.

5. As regards its approach to various systems of medical field, holistic medicine does not blindly accept any theories, yardsticks (Criteria of evaluation), methodology, techniques or therapeutics of any system of medical field. It prefers to accept them provisionally and with due to consideration to the limitation and scope of application.

Thus with respect to theories, holistic approach is not averse to study possibilities and / or phenomena which do not fit in scientific and / or conceptual framework of any discipline of medical field or science. But it never declares or claims possibilities as facts or universal generalizations either. Many dogmatists in so called scientific different disguises and the others in religious do this.

6. Holistic medicine does not shackle itself with a restricted concept of life viz. from birth to death of the

body. However, holistic approach neither simply accepts the so called randomness of mutation nor so called natural selection in evolution. At the same time it does not insist on the doctrine of rebirth. It attempts to comprehend the subtler causalities underlying the organization of genotypes, evolution and such events. Holistic medicine deepens our understanding of multi-charactered, multifaceted, multidimensional and multi-planar complex nature of life and the universe. The holistic approach clearly conceives that homeopathy, yoga, ayurveda, Chinese medicine and many others are approaches springing from different levels of consciousness and different situations. Thus they add to the understanding and healing of life. It therefore does not dismiss or accept any concept in medical field with a fanatic spirit [condemning the others], which restricts the scope of every individual system in isolation. It does not get trapped in the belief that only one or more of the disciplines of medical field are true, the remaining being false.

By virtue of this approach to various approaches in medical field, holistic medicine concedes the importance of detailed history taking in homeopathy, tridosha theory of ayurveda, sankhya philosophy in terms of its conceptualization of universe and life and meridians and ying-yang of Chinese medicine/philosophy. But it does not deny the importance of allopathy either. Holistic medicine utilizes synthetic, analytical and reductionist approaches simultaneously with a scrupulous sense of proportion. This makes holistic medicine more profound and open with respect to appreciation of physiological, biochemical and other intricate processes, pathophysiological, pathological and other intricate disease processes and various pharmacokinetic and other complex curing processes more complete. This way it opens new vistas of knowledge and research to understand and heal life.

The significant and characteristic feature of holistic approach is to generate a guiding light for all the discipline in medical field as ill as all other branches of

science. Holistic approach in medical field has ushered in an era of expanding the conceptual and therapeutic scope of individual disciplines as well as discovering the continuity amongst them. Thus increasing number of members of different disciplines is studying the principles and practice of other disciplines. But holistic approach has made and will continue to make even greater and far reaching impact on physical sciences as well. Thus it is holistic approach which would point out the ignorance of a physicist or a doctor, with respect to the physical and chemical structure of space and time and physical dimensions of emotions and thoughts respectively. It is with holistic approach that one can hypothesize the instrumental role of electrical fields in respect of meridians in Chinese medicine and 'chakras' in hathayoga.

7. As regards the method of evaluation, it recognizes the effectiveness of treatment. It points out, for instance, the chemical analysis of honey or an ayurvedic or homeopathic drug trial in animals would at best have a limited inference value. It brings to our notice that drug trials with ayurvedic or homeopathic drugs and allopathic diagnosis do not make a completely reliable trial. Holistic approach teaches us that pneumococcal pneumonia per se without any further characterization with respect to prakriti (constitution), doshavaishamya, dhaturvridhi, dhatukshaya etc. One cannot reliably conduct drug trials with ayurvedic drugs. Similarly, allopathic diagnosis such as meningococcal meningitis per se does not have homeopathic remedies and hence conducting such disease oriented trials with homeopathic medicines is incorrect. Holistic medicine recognizes the scope and limitations of the knowledge which is derived from animal experimentation and the dissection of cadavers. It identifies the flaw or limitation intrinsic to the limitations of the so called standardization of doses without taking into consideration the nature of the patients' constitutions. It realizes that the observations of tissues under microscope tell us only part of the "truth" underlying. It

recognizes the limitations of such observations because of the influence of the procedure such as fixation and the chemicals and dyes used. It recognizes the ambiguity and exaggeration in ayurvedic texts which render it very difficult to practice with efficacy. Holistic medicine makes us aware of natural variation expected in the diagnosis amongst different homeopathic practitioners in homeopathic system. Holistic medicine tells us that this is because of the overlap of drug properties as well as individual variations in the clinicians' approach and the skill of eliciting history from patients. Holistic medicine teaches us the possibility of interaction amongst planets, geomagnet, gems at various hours of the day and our life, but it does not overlook the fallibility inherent in the so called sciences dealing with these interactions. It also tells us about the non-specific nature of therapeutic modalities such as ayurveda, magnetotherapy in the same vein as it tells us the limitations of radiotherapy, chemotherapy etc, which are lesion or etiopathology oriented.

Holistic medicine by its accommodative scrutiny of various effects of unani, naturopathy, magnetotherapy, faith healing, hypnotherapy, color therapy, music therapy, gems, stars and planets on the life of individuals, enriches the repertoire of means of healing life.

8. Holistic medicine transcends disciplinary as well as every other kind of bias or prejudice and takes us towards truth and more complete health. Thus it should be clear to everyone that it is not one more addition to already existing divisions of medical field. Since holistic approach aims to understand life and existence more fully, it shares the spirit of enquiry characteristic to ayurveda with respect to biological properties of the herbs and other medicaments. It shares the concepts of "proving" and potentization of homeopathy. It can relate and appreciate the influence of yoga and panchkarma. Since it is well versed with the Sankhya philosophy, it can easily develop an insight into the environmental influence and the role of Aahaara [diet] and Vihaara [conduct] in life. Herein lays its ability to

enrich the field of dietetics and conduct enormously as will be seen later.

9. Sometimes one comes across a term “integrated medicine”. According to this view medical field is already integrated. The question or the challenge is to unravel this “integrity” amongst various concepts of human existence and the universe. The challenge is to rediscover the “integrity” in therapies. In author’s view, all those who practice integrated medicine do show greater ability to overcome prejudices. This is an important advancement. One can learn from the experience of practitioners of integrated medicine, and develop holistic approach increasingly fruitfully. But often mere gunshot therapy [indiscriminate combinations of drugs] so much and justifiably criticized in allopathy, is accepted and practiced as integrated or holistic medicine. This is a path of least resistance, utter irresponsibility and poses maximum risk for the health of the patients and is detrimental to the healthy development of the concept and practice of holistic medicine.

10. Having said thus far, one has to consider one very powerful argument against holistic medicine. This argument is, “With so much holistic considerations the very tenets of all disciplines of medicine as well as science are shaken from the root and hence there is hardly anything left, which the doctors can bank on. This is likely to make the medical scientist as well as a clinician less definitive and more indecisive”. The counterargument is, “The students of holistic medicine do not and should not have the spirit of blind definitiveness and decisiveness. This in fact is better because they would not indulge in more definite but less complete decision about the treatment. On the contrary by frank dialogue the doctors and patients together would arrive at an enlightened, fearless and accurate decision. This would be true for researchers as well”.

It is to be appreciated that the aim of this series of articles is not merely to supply information about various disciplines

of medical field. Instead, the aim is to develop and share with the readers, holistic approach or perspective which eventually will lead to deeper understanding of life and more effective intervention whenever necessary. For this reason the author have taken liberty to conceptualize by conjecture, speculate, and hypothesize wherever deemed necessary. It is obvious that readers are expected not to accept but provisionally share and not to follow but work on and develop the conceptual framework and then practice of holistic medicine as presented in this series of articles.

HUMAN EXISTENCE: A HOLISTIC CONCEPT

Meaning of the word “existence” varies both with respect to ‘what’ exists and perception of the knower of ‘what’ exists.

Thus,

i) existence of a stone, electricity, radioactivity, space, time, car, computer, robot, fungi, plants, amoeba, fish, cat, monkey, man, dream, thought, emotions, mind and consciousness of Gnostic being do not imply the same phenomenon through the word “existence”. This is because the attributes of every one of these, though have some commonality, do vary. Moreover their effects on the surroundings also vary.

ii) The ‘perception’ of the ‘existence’ of the above by a stone, amoeba, man etc. also varies.

iii) Interactions amongst various constituents vary depending on their perceptions of one another.

iv) The scope and limitations of the human concepts of existence vary depending on perceptions. Thus, existence of a particle whose presence is deduced because of the effects it leaves but cannot be ‘observed’ by even the best of the resolutions, expands the meaning of the word ‘existence’. The universal and individual consciousness,

life, time, space, energy, matter are identified as contingents of multiplanar, multidimensional continuum, by a student of holistic medicine. .

AYURVEDIC paradigm helps us appreciate the apparent human existence as a contingent in universal continuum.

AYURVEDA states; anything that exists is DRAVYA, characteristics of DRAVYA are GUNA, and effects of DRAVYA are KARMA. (If I extend this to human life then implications of KARMA can be called PHALA. This brings forth the KARMA-PHALA-SIDDHANTA in new light). AYURVEDIC terms SAMANYA and VISHESHA connote commonality and specificity respectively. SAMANVAYA means interrelationship/interactions. ABHAAVA means nonexistence, 'absence' before it's coming into existence or after its destruction, not being present elsewhere or non-relationship with other DRAVYA (Marathi Encyclopedia Vol. I).

AYURVEDA (SANKHYA and other similar philosophies) conceive universe and everything therein, as constituted of nine DRAVYAS viz. AATMAA, MANA, KAALA, DISHAA, AKASHA, VAYU, TEJA, AAPA and PRUTHVI. In my view, PANCHAMAHABHUTAS i.e. the five causal entities Viz. PRUTHVI, AAPA, TEJA, VAYU and AAKASHA are forms of energies / space. The number may vary depending on new discoveries, basic tenets always remaining intact.

Just as reflection of Sun leaves the Sun intact, similarly all the nine DRAVYAS are essentially reflections of AATMAA, AATMAA remaining changeless. MAANDUKYOPANISHADA explains this concept. Thus, from consciousness AATMA, the multiplanar, multidimensional universe i.e. KARYA DRAVYAS become manifest. (I don't believe but consider such manifestation of universe more probable than in any other way.)

Consciousness through TANMATRAS i.e. pleuripotent space-energy-forms of cosmic life, variably get

‘reflected’ or ‘converted’ into KAARANA DRAVYAS viz. PANCHAMAHAABHUTA, and from them into KAARYA DRAVYAS i.e. manifest universe. ‘Conversion’ of consciousness into time, space, energy, life etc. may be referred to as transversion, as conversion in general, connotes change of matter to matter or merely matter to energy & energy to matter. (For AYURVEDIC descriptions such as DADHIKSHEERA NYAAYA, KHALEKAPOTANYAAYA etc. interested readers may refer texts on AYURVEDA and related philosophy.) Ontogenetic and phylogenetic processes are reversed analogues of the development of universe viz. from matter to consciousness and are viewed as contingents in the continuum of consciousness. The continuum itself is also referred as life and called ANUBANDHA.

Human existence thus is

- 1) That which is manifest from birth to death, STHOOLADEHA,
- 2) That which spreads beyond birth and death viz. KAARANA DEHA, SUKSHMA DEHA, LINGA DEHA referred to as astral bodies,
- 3) All that coexists alongwith body as Ill as possibly extends beyond but is not manifest viz. FIVE KOSHAS viz. ANNAMAYA, PRANAMAYA, MANOMAYA, VIDNYANAMAYA & ANANDAMAYA KOSHA.

I feel that reduction of life to only what is manifest and reduction of human life to only the span from birth to death is too restrictive and short sighted. Individual life and consciousness are contingents in cosmic life and consciousness and hence the individual lives and forms are referred to as “‘clothes’ which are changed”, in SHREEMAD BHAGVADGEETAA.

However, study of extended realms of human existence demand increasing exploration to arrive at more definitive conclusions regarding TIRYAGA YONIS as referred to latter. (A detailed account of this is available in Autobiography of

a Yogi - by, Swami Paramahansa Yogananda).

Let us study AYURVEDIC, YOGIC, CHINESE, HOMEOPATHIC, MAGNETOTHERAPEUTIC and ALLOPATHIC contribution to understanding of human existence.

AYURVEDA derives its concepts from thought-cum-realization viz. DARSHANAS. One of them is SANKHYA DARSHANA and one of the concept is CHATURVIMSHATI TATWATMAK PURUSHA i.e. universal being and individual being are constituted of 24 elements. The universal being himself is referred to as PURUSHA which means cosmic consciousness and behaves as a SAKSHI, i.e. has the same role as sun in forming a reflection, where sun remains unchanged, or time-space in which phenomena take place and without which the phenomena CANNOT take place.

With respect to manifest universe AYURVEDA has an elaborate system to characterize every element encountered in nature and in human being. This is, elaborately discussed in DRAVYAGUNA SHAASTRA. I feel that it is absolutely essential to corroborate this description with modern physics, chemistry and biology. Thus TEEKSHNA, GURU, LAGHU, MRUDU, MANDA, DRAVYA etc. can very ill be interpreted in modern terms on more reliable taxonomical grounds. Thus objective characteristics can be distinguished from "subjective sensation-based" description of characteristics.

AYURVEDA has subsequently developed concepts which are closer to allopathy thus e.g. SHADDHAATWAATMAK PURUSHA [AATMAA 5 MAHABHUTAS] or CHIKITSA PURUSHA - the living human being to be treated - is a concept closer to physiology, anatomy & psychology in allopathy. From SHADDHAAT.WAATMAKA PURUSHA further development is the concept of DOSHA-DHAT-UMALA VIDNYANA. Thus three DOSHAS viz. VAATA, PITTA and KAPHA, seven DHATUS - RASA, RAKTA, MANSA, MEDA, ASTHI, MAJJA, SHUKRA and MALAS

viz. MUTRA, PURUSHA, SIDA etc can be corroborated reasonably well with concepts in physiology, anatomy and psychology. One can appreciate increasing emphasis on understanding of physiology, psychology and anatomy of STHULADEHA, i.e. human body in the course of development in ayurveda.

Thus with respect to details of embryogenesis, digestion, circulation, one comes across advancement in AYURVEDA. But it is not at all comparable to allopathy. Concepts such as RASA, VEERYA, VIPAKA and PRABHAAVA show increasing understanding of digestive, absorptive and assimilative processes.

The concepts of AAHAARA (diet) and VIHAARA (psycho-physical-socio-cultural and other behavioral patterns, are in fact richer in AYURVEDA. JATISAAMAANYA & GUNASAAMAANYA are AYURVEDIC concepts similar to substitution of deficiency, in two ways. Thus JAATISAAMAANYA is banana for banana and GUNASAAMAANYA is anything similar to properties in place of banana. AYURVEDA teaches that AAHAARA and VIHAARA profoundly influence the whole being. This is a very valid concept.

DOSHA, DHATU, and MALA: VAATA, PITTA, KAPHA and KARANA, LINGA & STHULA DEHA represent in a brilliant exposition of the hierarchy in Spiritual, psychological and Neuro-endocrine-cellular integration. This needs careful attention.

VAATA evidently relates to bioelectrical (neural activity) activity, PITTA to metabolism (endocrine and biochemical activities) and KAPHA to stable structural and functional organization of the body systems, including various chemical bonds and enzymes activities favoring synthesis of large molecules. Whereas DOSHAS are the controllers and DHATUS, the controlled ones. The MALAS are the effects in such a cascade. All of them operate in a mutually beneficial manner. Role of and the concept of MALA is notably richer and more profound than the concept

of 'excreta'. MALA has important role in AYURVEDIC understanding of 'HOMEOSTASIS'. Role of MALA must be explored as it almost certainly has a lot of surprises in store.

Concept of AGNI is almost certainly equivalent to ATP and enzymes such as ATPases represent PITTA. KAPHA represents enzymes e.g. glycogen synthetase promoting processes such as glycogenesis, lipogenesis and also those which prevent or slow down break down of ATP.

The concept of SROTASAS teaches us the importance of identifying importance of space, pathways, gated channels, tracts like gastrointestinal tracts, Viscera such as heart, lungs etc. which facilitate the orchestrated interplay of billions of molecules.

The concept of PRAANA and the five PRAANAS is common to AYURVEDA and YOGA... PRAANA represents a bridge between the cosmic life and individual life and cosmic consciousness and individual consciousness. Its effects in body are also called PRAANAS and these are evident as manifestations or responses of CNS and ANS (Central nervous and autonomic nervous systems) activity. The regions of these PRAANAS or VAAYUS are CHEST = RESPIRATION = PRAANA = ANAAHATA CHAKRA, urogenital and anal region = discharge of urine, feces etc. = APANA = MULAADHAARA CHAKRA, navel = digestion = SAMANA = MANIPURA CHAKRA, Throat = neck = deglutition = UDAANA = VISHUDDHA CHAKRA and entire body = circulation = VYAANA = SWADHISTHANA CHAKRA.

Holistic understanding, harmonization, homogenization and amalgamation of all these concepts related to STHULADEHA are extremely desirable or rather essential and possible today.

Once I appreciate that AGNI is nothing else but A.T.P., GTP etc., PITTA represents catabolism, KAPHA represents anabolism and VAATA represents central nervous

bioelectricity it becomes easy to understand subtypes of VAATA, KAPHA & PITTA such as AAMAVATA, JALAVAATA, SHLESHAKA KAPHA, TARPAKAKAPHA, BHRJAK PITTA, RANJAK PITTA, PACHAK PITTA etc., which are different manifestations of different DOSHAS.

As far as DHATUS are concerned, anatomy, histology, physiology, biochemistry all must imbibe the principles of interconversions as taught by AYURVEDA and totally dissolve AYURVEDIC anatomy into realistic modern anatomy.

As far as MALAS are concerned they represent much more than mere excreta as referred to earlier. It is necessary therefore that allopathy enriches itself with this concept. Sialorrhea, polyurea, menorrhagia, diarrhea etc. show disorders of MALA DHAARANAA.

AYURVEDA teaches us continuity, interactivity and similarity of every aspect of human existence (JAATISAMANYA & GUNASAMANYA) with rest of the universe and provides some of the brilliant premises for choice of treatment.

The YOGA teaches us about five PRAANAS. But KUNDALINI is a special concept unique to YOGA, in fact HATHA YOGA.

HA and THA are equivalent to CHANDRA and SURYA or YIN and YANG principles.

KUNDALINI, in our view, represents possibly a link between KARANA DEHA, LINGA DEHA and STHULA DEHA & may represent DNA or genotype, or even a causal 'precursor' of the genotype.

It is supposed to be located at SWADHISHTHANA CHAKRA, which is a location of germinal epithelium from which gonads are developed at around 8 Weeks of intrauterine life. According to some, the KUNDALINI in quiescent state comes to reside at MULADHARA CHAKRA from which 72000 NADIS spring / arise.

AYURVEDIC concept tells us that KUNDALINI roughly corresponds to VAATASTHAANA and these two according to us represent “trapped” potentials for the development of entire personality, which in YOGIC parlance is referred to as the MEETING OF JEEVA & SHIVA.

The nadis such as IDA, PINGALA, SUSHUMNA, GANDHARI, HAST-AJIVIKA etc have to be interpreted on the background of interplay between all 5 KOSHAS.

The concept of seven LOKAS or SAPTALOKAS indicates insight of YOGA, UPANISHADAS and AYURVEDA into a “being”, its characteristics and its relationship to its levels of consciousness.

Thus BHUHU, BHUVAH, SWAH, MAHAH, JANAH, TAPAH, SATYAM on the one hand and ATALA, VITALA, SUTALA, TALATALA, MAHATALA, RASATALA and PATALA indicate crude or subtle nature of beings and then consciousness.

YOGA also teaches us about VAANIS i.e. expressions. The expression can be a lie, partially lie, superficial without commitment, superficial with partial commitment or from the bottom of the heart with total commitment. Thus YOGA depicts four levels of expressions VAIKHARI from pharynx, MADHYAMAA from the throat meaning involving autonomic (emotional) content, PASHYANTI from the heart i.e. deeper aspects of emotions with even greater personal instinctual involvement and PARA from NABHI i.e. navel i.e. VAATASTHAANA or KUNDALINI i.e. the very source or root of life where there is COMPLETE dissolution of the being in his / her statement.

The Chinese concept of CHI is analogous to or equivalent to PRAANA of AYURVEDA and YOGA. It also represents a bridge between individual and cosmic ‘life’, Chinese medicine refers to ancestral energy which is (hereditary) contribution from parents and energy from food (metabolic fuel) and air (oxygen and other gases).

I can view these concepts as corresponding to linkage between the PANCHAKOSHAS and rest of the universe.

The CHI flows through the STHULADEHA i.e. body through different pathways which possibly correspond with paths of bioelectrical fields or NADIS or even may overlap with neural impulses.

Chinese medicine also teaches us the dynamically interactive phenomena in nature and their role in human existence. These phenomena are opposite and complimentary in nature. Their complimentary and opposition is relative and not absolute. Thus certain temperature is YIN for high and is YANG for lower range.

Similarly day-night, dry-moist, heaven-earth etc. are similar to the GUNAS of AYURVEDA. With respect to human body upper part is YANG and lower part is YIN. Outside is YANG and inside is YIN! Wakefulness, contraction of mind and muscles respectively, correspond to YANG and sleep and relaxation to YIN.

The CHI is further subdivided into YONG i.e. deep seated nutritive energy ensuring stability and II the superficial protective energy which does not circulate ensuring defense. These concepts are close to KOSHAS.

MERIDIANS or pathways are mainly 24 and are associated with ten organs and two functions, thus precluding any semblance with allopathic anatomy of STHULA-DEHA-body.

TU-MAI and JEN-MAI are governing and conception vessels respectively. They originate from the same locus as KUNDALINI or KANDA and terminate in between nose & mouth, thus showing equivalents to IDA & PINGALA. These meridians contain effective points corresponding to CHAKRAS, LOTUSES and PLEXUSES. The concept that energy flows throughout twenty four hours, suggests similarity to neuroendocrine biological clocks, especially circadian rhythms.

CHINESE concepts teach us presence of 361 acupuncture points which may either correspond to receptor density, receptor sensitivity, static bio electrical fields, or accumulated bioelectrical effects. Interestingly, electrical resistance in these points is demonstrated to be low.

CHINESE MEDICINE thus teaches us the necessity to identify dynamic interactions between human life and rest of Universe and importance of moxibution, acupuncture, acupressure analogous to panchakarma, massage, pranyama, asanas, tattooing, piercing, branding etc).

HOMEOPATHY does not teach us concretely about either STHULA DEHA or KARANA or LINGA or SUKSHMA DEHA. But HOMEOPATHY brilliantly explores the nature of interactions of universal/comic and individual life through history taking. Since this history telling is closest to the MANOMAYA, PRAANAMAYA, VIDNYAANAMAYA and AANANDAMAYA KOSHA, homeopathy probably truly discovers subtler aspects of biological phenomena which include interactions producing either health or disease.

Homeopathic paradigm is similar to AYURVEDA but its emphasis is different and is evident in its THERAPEUTICS which is considered in greater details in one of the latter articles.

MAGNETOTHERAPY tells us some facts about STHULADEHA which are of particular interest, though it does not propose any elaborate / separate model of human existence.

Thus magnetic field produced by brain is 3×10^8 gauss, by heart 106 gauss, by muscles during flexion 107 gauss.

Magneto encephalography, magnetocardiography, magnetic surface stimulators etc. are employed to probe into further details of biomagnetic phenomena in modern allopathic research. Allopathic advances in the science of Physiology i.e. functioning of STHULA-DEHA teach us about various magnetism related phenomena such as

- 1) RESTING MEMBRANE POTENTIAL
- 2) ACTION POTENTIAL
- 3) IONIC FLUXES ACROSS MEMBRANES
- 4) GATED ION CHANNELS and their implications.

Biomagnetic and Bioelectrical fields and their implications with respect to health and disease are not yet well understood. Their relationship to KOSHAS also needs thorough exploration.

It is said that the human body is a battery and emanates electromagnetic waves at a rate of 80 million cycles per second. Implication of this is also not known. Implications of magnetism related to fertilization, embryogenesis etc. have to be explored.

Further, effects of the orientation of the planets i.e. specific points in space and time on the five KOSHAS have to be explored. These may reveal new and so far unthought-of implications of even gravity and similar forces.

Paracelsus, Mesmer and Samuel Hahnemann had identified 'magnetic' aspect of human existence and evolved the treatment of disease. But what they called MAGNETIC has to be studied and verified.

With respect to allopathy, allopathy teaches us in great details about the functioning of STHULA DEHA. Considering that the precise 'subject' or 'target' of treatment is human body and mind, its feats are impressive and of tremendous day-to-day utility. But this dramatic success is not complete. There is A LOT TO BE DESIRED because of its restriction to STHULA DEHA and MANA alone. Let us see in brief the brilliant advances of allopathy in knowledge of STHULA DEHA and MANA in brief.

Allopathy conceives human existence as that from conception to death of an individual. It denies involvement of any vital principle in human life. Thus it teaches about STHULA DEHA and MANA (also probably in part). This avoids tautology on the one hand but invites restrictive

thinking and tubular vision, on the other.

Genetics and heredity teach us about DNA, Genetic code, transfer of characteristics from parents to offspring via the male and female gametes i.e. heredity. But the forces, which determine (either independently separate or as attributes of DNA) 'assembly' of genotype and time dependent expression of the same are not known...

The nuclear package of heritage, genotype (genetic factors) and other environmental maternal as well as other factors (epigenetic as well as other unknown factors) decide events in organogenesis / embryogenesis.

Epigenetic factors may be:

- 1) Drugs or other toxic substances consumed by mother during pregnancy especially during 4th to 8th weeks of intra uterine life.
- 2) Effects of external radiation,
- 3) Maternal hormones,
- 4) Emotions of mother (through hormones or ANS imbalance or both),
- 5) Mother's nutrition,
- 6) Infections to mother,
- 7) Maternal diseases such as uterine abnormality, malignancy etc.
- 8) External mechanical trauma.

Organogenesis during 266 days of intrauterine life leads to full term fetus, ready for delivery, after receiving food and oxygen from mother via placenta and umbilical cord.

Fetus lacks adult respiratory and circulatory systems as well as many other functions. YOGA does not seem to explain anything related to fetus. Even AYURVEDA does not give parallels of KOSHAS or VAAYUS (PRAANAS) in the case of fetus. Possible relationship of SUKSHMA DEHA to fertilization etc. remains an enigma just as the role

of the same in determination of the genotype remains a mystery. Life of a fetus with respect to sleep-wakefulness, conscious-ness etc. also remains a mystery.

Fetus is delivered usually at an appropriate date and time for survival in external world, unless there are accidents, earthquakes, assaults, surgical interventions etc.

The functioning of a newborn baby is explored by physiological, anatomical, anthropometric, psychological approaches.

The good old concept common to many parallel approaches is that of the study of the constellation i.e. orientations of the stars, planets etc. and their possible effects. This is called JATAKA VARTAMANA, or KUNDALI. Besides this good old concept, HASTASAMUDRIK [PALMISTRY], PHYSIOGNOMY [THE PREDICTION OF THE NATURE FROM THE PHYSICAL CHARACTERISTICS], NUMEROLOGY [THE PREDICTION BASED ON THE NUMBERS such as birth date] are also employed.

The newborn has a body (the study of which is advanced tremendously) and mind (the study of which is deductive from its manifestations in body or in behavior), gives insight into the individual newborn's body and mind.

Thus allopathy tells us about conscious, subconscious and unconscious planes of mind and explains many phenomena on the basis of such understanding.

Allopathy teaches us the organization of body into different organ systems, organs, tissues, cells, cell organelles and details of the molecular phenomena. Thus with the advent of CAT scan, PET scan, MRI, electron microscopy, endoscopy, radio-immuno-assays, immunocytochemical assays, it teaches us homeostasis. It teaches us the functioning of central nervous, cardiovascular, respiratory, immune, autonomic nervous, endocrine, reproductive, hematological, musculoskeletal, excretory and alimentary systems. It teaches us precise characteristics of internal environment and factors modifying it. It throws light on

various characteristics of nerve impulse, the language of central nervous system, details of receptors bringing in these impulses by transduction, determinants and regulating mechanisms responsible for cardiovascular & respiratory functions. It explains the precise and moment to moment effects of autocrine, paracrine and endocrine secretions. It also explains the functioning of hypothalamo-pituitary- gonadal-uterine axis and phenomena such as menarche and menopause.

Allopathy teaches us the details of formation and activities of blood, the elaborate details of myosin / actin / actinin / troponin / tropomyosin and energetics of muscle contraction. It teaches us the molecular mechanisms determining acid-base balance in body and timely-appropriate formation of urine, digestion, absorption, assimilation etc. It enlightens us with precision details such as Nerve Cell Adhesion Molecules & simultaneously enables us with splicing techniques and other techniques in genetic engineering. It enables us to perform cardiac catheterization and treat 'heart patients' as ill as it enables us to design and develop prosthesis and achieve a lot in rehabilitation.

Allopathy thus in short, provides us with knowledge, simple ways of acquiring knowledge and relatively simple but tremendously useful techniques of investigations and interventions with respect to understanding conception, birth, growth, development, aging in health and disease, of the STHULA DEHA even with its restrictive approach and hence is indispensable. But its efficacy would multiply with HOLISTIC approach to human existence.

Holistic understanding of human existence, a cursory glance at which is made in the foregoing, will enable every one of us to be better clinicians, teachers, scientists, health policy planners, health executives etc. but more importantly to be better and wiser individuals.

DISEASE PROCESS - A HOLISTIC PERSPECTIVE

Fundamental concept of disease: - It is interesting to note that the existence of universe is explained on the basis of the forgetfulness of the PURUSHA of his own self. It is said that the existence of the universe as well as the human being in the present case, is like rays of the sun or likelight of a lamp. Thus these rays or light result from 'Forgetting'-that is nonbeing, descending of SUN or LAMP from his true self i.e. Sun or lamp character, without of course altering this true character. I don't have 'scientific' frame work to explain this 'vision' of reality found in many of .the texts of oriental philosophy. From this viewpoint, in ultimate analysis therefore, the universe "as I see", is a forgetfulness or so to say 'non-being' type of existence of the PURUSHA which in turn is the true self of the universe and, also true self of an individual. This process or phenomenon of manifestation of universe or human being is referred to as VIKRUTI. The unmanifested universe on the other hand is called as MAYA, AVYAKTA, PRAKRUTI, SHAKTI, YOGMAYA, and ADNYANA. Extrapolating this to the human beings, one can easily appreciate that forgetfulness of one's true self is real or fundamental disease. Forgetfulness of one's true self is invariably associated with fragmented, partial and illusory perspective of manifest universe; so one feels his perceptions as the sole, supreme and eternal reality and one proudly cherishes this perspective. This perspective where world is not seen exactly as it is, is manifestation of 'diseased' state. Though this disease is the root cause of and has led to suffering of many kinds in the universe, there are less subtle and more immediate causes of morbidity and mortality too. I do not deny this fact. These causes as ill as mechanisms and characteristics of physical and mental human suffering however have been looked at, described and explained in different ways by many scholars in the world in the course of history. When I study them keenly, I do understand with greater clarity what these people say and thereby, how these thinking

trends have come to be known as different 'systems' of medicine. Further I am able, to appreciate how these 'systems' actually compliment one another and help us to see their unified common basis. This becomes especially clear once I understand their language, terminology and concepts which are characterized by different stages of mind and different backgrounds.

Holistic perspective of human suffering: - Let us try to understand clearly the unified perspective of the causes, pathophysiology, pathology and progression of diseases in human life hitherto concealed.

First of all it must be stressed here that the causes of disease process must be comprehended in terms of ultimate, penultimate, immediate etc. In addition, I must understand the role of predisposing factors. Lastly I must clearly categorize effects / consequences / sequelae etc.

NIJA AND AAGANTUKA: - One of the ways in which the causes of diseases can be seen is a NIJA and AAGANTUKA. AAGANTUKA disease or 'VYADHI' e.g. accidents, burns, bullet wounds are a result of acute disturbance without significant involvement of the activity of the milieu interieur, in terms of disturbance in the homeostatic machinery. The effects here are more sudden. Thus perverted behavior, consumption of poison, perverted feelings, extreme pain, fear of unknown, hatred etc can pose extreme danger to health. This is aptly called in Sanskrit ASAATMENDRIY ARTHSANYOGA. This actually means, "Being in UNNATURAL OR NONPHYSIOLOGICAL SITUATION". Extreme or excessive activity leading to disease is called ATIYOGA because ATI is excess and YOGA is to be one with or in simple words, to be involved in. Perverted physical behavior involving sleeping at odd hours, eating irregularly eating without discretion-with respect to quality and quantity of food are termed MITHYAYOGA. Eating too less, talking too less and working too less are called MEENA YOGA. This ATI, MITHYAA and MEENA are all ASAATMENDRIYAARTH

SANYOGA.

One can appreciate that broadly speaking these are not exactly devoid of homeostatic disturbances. But primarily causative factors have been considered to be those other than the insignificant homeostatic dysfunction.

NIJA diseases are considered to be those where homeostatic machinery is conspicuously or perceptibly involved. Homeostatic disturbances are significant in this case. The SANKRIT terminology for or corresponding to homeostatic regulatory processes is DOSHAS. However one can see that factors such as infection, seasonal changes, genetic defects etc. are not absent in this case.

ADHYAATMIKA, AADHIBHAUTIKA AND AADHIDAIVIKA: - Another way of looking at causative factors of the diseases is to consider whether the cause is related to 1. AATMA or soul i.e. mind, morality etc. (ADHYAATMIKA), 2. Interaction of body with inner and outer physicochemical and Biological environment (AADHIBHAUTIKA) and 3. Interaction with the higher planes of existence termed, DEVAS, YAXAS, GANDHARVAS, ASURAS etc... In SANSKRIT these existences are categorized as TIRYAKYONIS (AADHIDAIVIKA). AADHIDAIVIKA diseases are a very interesting, curious and perplexing category. It is not possible to demonstrate the exact nature of these factors / forces or influences of entities responsible for AADHIDAIVIKA diseases. In the author's view a subtler and subtler perception may resolve this question, rather than cheaply and simplistically condemning this kind of category as non-scientific and / or hoax / fraud. However one must also keep in mind that effects such as those of radiations [when radiation was not known at all], could well have been categorized as AADHIDAIVIKA.

TRIDOSHAS: - Since individual human life has been viewed as descent or 'extension' like 'Sun ray' of the PURUSHA or cosmic consciousness, it was natural for the TRIDOSHA theory of life and disease processes to emerge. TRIDOSHAS

are three entities governing life. VAATA is one which leads to every kind of mechanical, chemo-mechanical or chemo-electrical activity. PITTA is one, which leads to production of heat in the body through metabolic processes involving tissue respiration, ATP breakdown etc. KAPHA is the one, which lends to stability to the substrate of life i.e. body constituents. When these are in harmony they lead to health and when in disharmony they lead to disease. One can appreciate that this is a broad generalization full of wisdom. This is a different perspective of homeostasis. Excessive neural and endocrine activity resulting in tremors etc. is a hallmark of VAAT VRUDDHI. Excessive activity of catabolic neuroendocrine activities associated with excessive increase in metabolic rate [calorigenesis] is equivalent to PITTA VRUDDHI. Excessive anabolic neurohumoral activities leading to reduction in catabolism is the feature of KAPHA VRUDDHI. One can appreciate that if neural activity is reduced, or overall metabolism is reduced or if specifically catabolism or overall processes of normal destruction are reduced then they are called as VAATAKSHAYA, PITTAKSHAYA and KAPHA KSHAYA respectively because KSHAYA means decrease or reduction.

One should appreciate the continuity between the DOSHAS and hence never consider them as water tight compartments. Moreover it should be recognized that increase or decrease in one or more of these can be in different permutations and combinations. Having clearly understood the regulatory nature of DOSHAS, I should be able to see how DOSHA VAISHAMYA should be appreciated as a disturbance of homeostatic neural, neurocrine, endocrine, paracrine, autocrine regulatory mechanisms.

The effects of disturbances, DOSHA VAISHAMYA, in case of DOSHA VRUDDHI can be accumulation (SANCHAYA) and spread (PRAKOPA). For example VAATA SANCHAYA and VAATA PRAKOPA may be manifested as generalized seizures or generalized tremors respectively. Other phenomena or consequences such as spread and covert

effect is called PRASARA and localization in a region or organ of the DOSHA as called STHAANA SANSHRAYA. Overt manifestation of disease pathology is called VYAKTI. This is because the word VYAKTI comes from the word VYAKTA meaning manifest. Lastly the distinct sequelae characteristics of diseases which follow are called BHEDA. These are obviously penetratingly ingenious conceptions or methodological approaches to understand etiology, pathophysiology, pathology and consequent clinical syndromes. This is a brilliant insight into clinico-pathological correlation.

What the DOSHA - theory needs to be supplemented with is the detailed observations with respect to DOSHA, DHATU and MALA VIKRUTI or disturbances. This can make the understanding of disease processes more complete. This is a holistic approach which unravels the common reality from which AYURVEDIC and ALLOPATHIC understanding of disease processes springs and thrives.

It is really interesting to appreciate that excess VAATA, excess PITTA and excess KAPHA is called SANNIPATTA. Thus it should be clear that contrary to commonplace presumption, DOSHAS are not opposed to one another but serve apparently opposite but essentially complementary functions, so as to enrich health. This is why excess of all these do not lead to mutual cancellation but disease called as SANNIPAATIKA meaning resulting from SANNIPATA.

CORRELATION: - One must also appreciate in this context the complimentary action of YIN and YANG, IDA and PINGALAA NADIS, sympathetic and parasympathetic systems, anabolic and catabolic hormones, sensory and motor neurons, excitatory and inhibitory neurons etc. This will make it amply clear how excitation or inhibition of both members of above pairs beyond limit does not cancel out their effects but on the contrary and in fact is incomplete with; life. This unravels the wisdom underlying TRIDOSHA theory of diseases.

Some examples of disease processes will make TRIDOSHA

theory even more clear. Thus VAATASANCHAYA is characterized by constipation.

Obviously this corresponds to local sympathetic over activity. VAATAKSHAYA causes inertia, lassitude, lack of interest in the surroundings etc. PITTA-SANCHAYA is associated with increased basal metabolic rate, yellowish discoloration, low grade fever etc. PITT AKSHAYA is characterized by reduced digestive capacity, feeling of coldness, loss of luster of skin etc. One can see that these are typical features of myxedema. KAPHASANCHAYA is associated with increase in weight, dryness, loss of natural lubrication, weakness and lack of stability in general. Response to starvation, aging, stress may be equivalent to KAPHA KSHAYA. In this discussion I have not included the subtypes of VAATA, PITTA and KAPAA. This is because (1) space is limited (2) The discerning readers can easily explore correlation between such different subtypes and various pathological and pathophysiological details which they are already familiar with. Thus they can find the unity / continuity / harmony underlying ayurvedic and allopathic concepts of disease processes.

SROTASA: - Before one 'asks a question or expresses a doubt about the vagueness of TRIDOSHA concept of diseases vis-à-vis allopathic pathophysiological findings one must look at the concept of SROTASAS. SROTASA must be viewed as a "pathway" of physical or chemical progression. This concept is a historical proof of the fact that searches for TRUTH whether in oriental or occidental culture have never been static or stagnant. But SROT ASA concept also has the same accommodative character as that of TRIDOSHA. This is a characteristic of alternative / parallel perspectives of medicine. They are not the same in exact details but bear an insight which accommodation the larger principles. One can consider YIN & YANG, for that matter to appreciate this point.

SROTASASA VAIIGUNYA: - This is an abnormality in SROTASAS. It can be a blocking of calcium channels,

block in production of cortisol due to congenital / genetic deficiency of relevant enzymes or simply paralytic ileus leading to constipation SROTARODHA i.e. block of the pathway of which the above are few examples, can also manifest as blockage of arteries, ducts of glands. bronchi etc. Alternatively diarrhea, hyperventilation, hyperdynamic circulation could be viewed as excessive or "thoroughfare", like behavior of SROTASAS. Thus one can see that calcium channel blockers or vasodilators are actually influencing SROTASAS in body. Not only that, even purgatives affect the GIT a great ANNAVAHASROTASA itself.

AAMA: - This is a more specific concept. It is a proposed factor or product resulting from partial digestion of certain food products and having a characteristic predilection for joints. PITTA KSHAYA, VAATAVRUDDI and KAPHA KSHAYA may be involved leading to indigestion, constipation, dryness of joints respectively. AAMA is supposed to be involved in rheumatoid arthritis and in which case it may as well have autoimmune properties, which goes well and is likely, with partially digested or completely undigested proteins.

STHANAS: - If I consider the sites of origin called as STHANAS, I can see that the sites of pranas in the body, viz. PRAANA, APAANA, VYAANA, SAMANA, UDAANA, VAAYUS or PRANAS correlate well with VAATASTHANAS. Different sites of manifestation of VAATA and VAYUS in the body roughly correspond predominantly to nervous activity and probably also to electrical fields. PITTA STHANAS may be related to areas / regions with predominantly high blood supply and high excitatory / catabolic neuroendocrine activity. KAPHA STHANAS may correlate with predominantly inhibitory/anabolic/neuroendocrine activity. Abdomen, chest and throat are mainly VAATA, PITTA and KAPHA STHANAS. They can be correlated with the CHAKRAS of YOGIC concepts and also 'with the neuroendocrine organs systems. One must appreciate that the concept of DOSHA STHANAS is not a vagary of thinking. Afferent fibers from about 30 feet long

gastrointestinal tract from stomach onwards can and does influence CNS & ANS activity tremendously. In a living person one must search for such interactiveness to understand disease processes holistically. Moreover this is a region of suprarenal glands, gonads & plexuses. PITTA STHAANA is obviously that where from oxygen and food I fuel are poured into all tissues of the body. This is a region of lungs and heart and cardiac plexus. Similarly KAPHA STHAANA is region of pituitary thyroid parathyroid and 'C' cells and correlates Ill with their influence on the body whereby they determine musculoskeletal constitution; strength and stability.

It is for this reason and with this insight that one can plan a treatment in a holistic manner wherein one can use for instance, PANCHAKARMA, DHANURAASANA and ANTACID simultaneously and with great effectiveness.

The processes such as inflammation, repair, hyperplasia, fibrosis, hypertrophy, dystrophy, degeneration, atrophy, necrosis, putrefaction, dysplasia, metaplasia, anaplasia, neoplasia etc. have to be appreciated as effects and hence not the cause of diseases in true sense. But it is not just the cause of the disease that is important but also the effect. Thus whatever be the cause, the fracture must be treated with respect to the effect on bone! I should consider this point seriously while developing holistic perspective of disease processes and treating the disease process at all the "levels". This is especially important and in contrast to the opinion of some homeopaths who do not allow simultaneous use of remedies from other disciplines. It is true that NIJAVYAADHIS may actually behave according to the appropriate drugs proved in homeopathy the cause of which may be in subtle forces / fields surrounding or inside the body (which may actually be inseparable sources of DOSAS extending beyond body), apart from their existence in body. This can be further clarified by considering disease processes as event complexes. Whenever I consider any phenomenon in general and disease phenomenon in particular I usually

commit an error of 'linking' or 'delinking' the event with its background / ethos inadvertently and describe the 'effects' of that event as if they alone constituted the event entirely which is unrealistic illusory and / or fragmentary. One can easily appreciate this if one takes into account how unrelated effects and causes are sometimes linked and related causes and effects ignored while studying disease processes. In case 'of diseases what has been ignored so far is the space-time continuum through which the disease processes progress. It must be appreciated that concept of e.g. a stone cannot be complete and realistic without reference to the space occupied by every atom of stone and also the stone proper. Similarly the time through which this space-matter 'exists' has also to be taken into account in view of many particles do not 'exist' even for a nanosecond. In short; temporo-spatial- aspects of disease processes are completely ignored. In fact this aspect is like a 'field' and the material/ or manifest aspect of the disease is like a contingent or apparent aspect of the disease process. One can appreciate this even more clearly by comparison of disease processes with the whirlwind. The description of present day pathology-pathophysiology is like description of sand movement in the whirlwind. However, appreciation of event nature and temporo-spatial aspect gives insight into the "forces" responsible for the whirlwind. It is this perspective which is holistic in true sense and can possibly help us understand how homeopathic treatment works, whenever it really does. This multidimensional comprehension of disease process is our contribution and highlights fundamental unity between homeopathic perspective of the diseases on the one hand and allopathic and ayurvedic and other perspectives on the other.

One of the most crucial question is that of the process of death. Contrary to the view that death is the end of pathological process the authors think that the concepts of STHOOLA SHARIRA, LINGA SHARIRA, SUKSHMA SHARIRA and KARANA SHARIRA should be provisionally

accepted. These are of very great importance for several reasons. Even though it is true that one cannot actually 'see' LINGA, SUKSHMA and KARANA SHARIRA their existence certainly fits in a broader and logical hypothetical framework. Moreover this helps us to visualize the genotype as the contingent of the behavior of the LINGA SHARIRA which 'LIVES' after the demise of body and LINGA SHARIRA which as the contingent SUKSHMA and SUKSHMA SHARIRA which is contingent of KARANA SHARIRA which remains unperturbed in any situation irrespective of any event. KARANA SHARIRA may be "trans-temporal" consciousness same as PURUSHA. Thus genetic diseases do not remain a matter of coincidences or secondary to heredity alone only but possibly are the function of LINGASHARIRA. Are the LINGA SHARIRA, SUKSHMA SHARIRA and KARANA SHARIRA time space-consciousness phenomenon? What is their exact nature? Answers to these remain enigma at the moment. But that the life and therefore disease processes are only part of the iceberg appears to be certain. In this light the AADHIDAIVIK concept of diseases do not remain mere flights of imagination but areas open for intense research with open mind. Moreover the relationship between DOSHAS, LINGASHARIRA and time-space-consciousness continuum has to be explored. The procedures described in AYURVEDA in PUNASAVANA VIDHI which is meant for getting a male 'Child must be scrutinized in this light. In addition, the behavioral counseling for a pregnant mother must be studied in light of this so that one can get insight into how influence of time (KAALA-VIPARYAYA), influence of thinking (AATMA, MANA), influence of behavior (KARMA VIPARYAYA) and whether or not these can really govern the health of the fetus. Through this one can get insight into how exactly DOSHA such as VAATA (and LINGA. SHARIRA) possibly could influence characteristic organizations of genotype during meiotic and mitotic; divisions and zygote formation.

The concept of diseases in terms of event complexes lends

specimens to the concepts of SHUBHA and ASHUBHA MUHURTA which are generally ridiculed as hoax. SHUBHA or auspicious time and ASHUBHA or inauspicious time is to be looked at as certain of characteristic situations. Because, time-space-consciousness are continuum and can influence the energy and matter that our bodies and minds are. Moreover the idea that SHUBHA and ASHUBHA can be overcome by the processes of BHAKTI, KARMA, RAAJA, DNYAANA, MANTRA, LAYA YOGAS and other forms of worship can be explained on the basis of the transcendental individual consciousness merging or uniting with the universal consciousness and thus becoming immune to aforesaid influences !

To summarize then, the individual life and therefore the diseases are event complexes. Time-space-consciousness continuum, KAARANA, SUKSHMA, LINGA SHARIRA, DOSHAS, AADHI DAIVIK, ADHYAATMIK causes, TIRYAKYONI, PURUSHA, KAALA and KARMA VIPARYAYA, AAMA, NIJA and AGANTUKA rebirth and KARMAPHALA etc. all are possibly involved in disease processes and hence have to be looked into with more open attitude so as to get a more complete i.e. holistic picture of disease.

The visible disease processes, pathology and pathophysiology clinical features are those of STHOOLASHARIRA. These relate to the interaction or influence of DOSHAS with DHAATUS after KSHAYA or VRUDDHI, SANCHAYA, PRAKOPA, PRASARA, STHANASANSHRAYA leading to manifestations of characteristic nature viz. VYAKTI and BHEDA.

As mentioned earlier it seems that DOSHA concept should not be taken as restricted to STHOOLA SHARIRA alone but extending into and being continuous with rest of the universe, directly. DHATU and MALA concepts are almost entirely pertaining to STHOOLA SHARIRA and hence are subservient to DOSHA influences. In this respect DOSHAS are not merely neuroendocrine metabolic influences. The “neuroendocrine metabolic homeostatic regulatory

mechanisms” are an extension or part of the DOSHAS. These parts are in association with the STHOOLA SHARIRA.

Thus, pathophysiology and pathology as is studied in allopathy is actually nothing else but modern and more technical extension of DOSHA DHATU and MALA VIKRUTI VIDNYANA! Only thing is DOSHAS, are not taken into account entirely and DOSHAS, DHATUS and MALAS are not seen as descent or extension of the universal consciousness. Realizing this fact I should appreciate which one is causative or governing aspect of a disease process and which one is subservient, subsequent or ‘effect’ aspect of a disease process. This is important to develop insight into ‘biological properties of AYURVEDIC and homeopathic drugs and other modes of treatment. This is also important to shift the emphasis of research from micro molecular reductionist approach (though, of course not condemning or rejecting it) to more holistic or realistic one, thus concentrating on treatment modalities without excessive hassle with respect to chemical structure!

HOLISTIC approach does not point to subtler aspects of disease process alone, it also points to the importance of DHATUS and especially MALA. Actually the role of catabolic, degenerative, excretory, destructive processes which can be called MALAPRAKRIYA has not been given due importance by many authorities. Diseases which lead to accumulation - e.g. hyperlipemia, high triglycerides, high VLDL, high cholesterol, high lipofuscin and hypertrophy of prostate or obesity, must be considered as failure of MALAPRAKRIYA, in addition to DOSHA VAISHANYA and DHAATUV AISHAMYA. If one understands this mechanical attitude or approach of substitution therapy or deprivation therapy would not get undue importance or would be used only judiciously. To give an example, patients with high cholesterol and / or high VLDL would not be deprived of fats indiscriminately but the processing of fats in their body would be targeted for improvement.

Thus holistic approach to disease processes highlights subtler, cruder, causative, consequential and all such aspects of disease processes more completely thereby revealing intrinsic unity / continuity amongst different approaches and opens new possibilities of more effective prevention and cure.

HOLISTIC PERSPECTIVE OF DIAGNOSIS

Diagnosis is a Greek word. It means discerning or distinguishing. “Dia” means apart or through and “gnosis” means inquiry or investigation. Another possible root of this word is “gignoskein”, which means to learn or to know. In general most of us and even the dictionaries interpret the word diagnosis as “the act or process of finding out what disease a person or an animal has by examination and careful study of a person.

However, it must be appreciated that this interpretation is not adequate enough. The word Diagnosis actually should be interpreted as a careful study of the facts about something (in this case a person) to find out its essential features, faults or other characteristics, (though this interpretation is included in World Book dictionary as figurative meaning).

One can easily understand the importance of this interpretation, if one recognizes the tendency in the medical world to ‘identify’ the name of the disorder or syndrome. This tendency is an intellectual error. Another point to be noted is, a diagnosis can also be N.A.D. i.e. No Appreciable Disease. This also shows, how, merely pointing towards the name of the disease is not a diagnosis, or at least not a proper diagnosis from HOLISTIC point of view.

Of course one can argue that identification of the name of the disorder almost always entails the associated aspects of that disorder. Moreover it may be argued that with advent of super specialties in investigative and diagnostic techniques, the diagnosis has become far more precise.

These arguments are true in some cases, where there are clearly defined disease processes but NOT TRUE in the wide variety of poorly defined processes leading to ill health.

Hence diagnosis has to be interpreted as the act of learning about the person's life. This would include anatomical, physiological, pathophysiological, pathological, etiological aspects responsible for the ill health. Besides, vector, predisposing factors (familial or environmental) have to be searched for. Lastly therapeutic 'diagnosis' has to be made in an appropriate manner.

Prognosis also becomes an important part of diagnosis. But most importantly this i.e. holistic diagnosis would include study of those phenomena/processes in the person's life which form the background "Playground" or "battleground" for the disease processes.

Having understood what comprises "diagnosis", it may be easy to appreciate that a more complete diagnosis can be made if different planes of human existence are studied. This can be possible if I carefully study the concepts of life propounded in HOMEOPATHY, AYURVEDA, YOGA, CHINESE MEDICINE etc. This will enable us to appreciate with increasing clarity the disorders at different planes in a human being. This would also enlighten us with respect to the hitherto neglected or hidden aspects of the disease processes.

This concept of diagnosis is more complete and hence is important for clearer comprehension of community ill health also. Thus epidemic, endemic, pandemic etc., or even prevalence of certain types of ill health, e.g. diarrhea, dysentery, vomiting, lassitude, absenteeism etc. can be studied and understood more fully.

Methods of Diagnosis: One of the most important aspects of diagnostic methodology and equipments is the discerning eye of the physician. However, this is NOT emphasized even by the often quoted aphorism "what the

mind does not know the eyes do not see". It is obvious that knowledge of the subject is important equipment in the diagnostic process. But I wish to point out here the importance of subtler aspects of the perception of the physician, such as lack of selfish motives, prejudices, preoccupations, biases, etc. and ability to relate oneself with the person concerned, with concern! These qualities are absolutely essential and can be acquired by chanting the holy name of God either silently or loudly.

One of the greatest saints and seers Shri Brahmachaitanya Gondavalekar Maharaj from Gondavale, dist. Satara, Maharashtra State (1844 to 1913) has advised a physician to chant the holy name to improve diagnostic ability by clearing the vision.

I should comprehend the wisdom in this advice so as to achieve clearer vision which is so fundamental to our diagnostic ability. This is especially important in view of the increasing dependence of the medical community on the technology and simultaneously deteriorating sense of judgment, discretion and also blurring acuity of the inner vision. The chanting of the holy name transforms one's vision from mechanistic and crude into realistic and subtle, by opening one's inner eyes. The readers can verify this with themselves instead of at once accepting or rejecting this view of the authors.

The next equipment in the diagnosis is the ability to communicate. This is vital to the ability of eliciting the otherwise hidden history. All the qualities described above are essential for accurate history taking. This is because the accuracy of the history depends upon how much confidence the patient has in his doctor and this in turn depends largely on the qualities of the doctor described earlier.

I wish to point out that history is not merely a window to the disease process as is usually thought to be.

Like smell of the flower the history is 'smell' of the disease.

It should be treated as a subtler and inseparable part of the disease process [or processes] and its background, playground or battleground viz. the patient's existence. I therefore feel that homeopathic history taking should be adopted after careful and thorough study at least in chronic, relatively subtler and functional disorders. In other disorders also after the acute stage is over one should combine homeopathic approach with the allopathic.

One can easily be convinced of our view about history if one realizes that history and symptomatology is actually a conscious concomitant of the neurological, neurohormonal effects of the disease process/ or its background/playground/battleground. It is known that the so called symptomatic treatment is actually THE COMPLETE TREATMENT in many instances. This again confirms our view that the symptomatology is integral part of the disease process & patient's existence.

History therefore should not be viewed as mere indicator of the disease process.

This concept of history or symptomatology is important because it teaches us to consider and treat the patient as a whole and NOT merely the pathological change which is merely a fragment of the disease process and its background/playground/battleground.

This is important also because through this I learn to consider the quality of life the person lives with, rather than partial or total removal of the pathology. I learn to treat a diabetic person with a characteristic personality and a characteristic social, family, cultural background and NOT merely diabetes mellitus.

This concept of diagnosis, history and symptomatology is very effective even in the field of engineering and hence the word diagnosis is used with similar meaning or interpretation in the field of engineering. Thus "diagnosis" of plane crash by engineers actually does in fact consider NOT merely the damage in the crash which may be

considered analogous to pathological change but considers causes (etiology), predisposing factors, human errors, construction of the plane, compatibility of the plane, pilot, etc. with intricate interrelationship of all the events and so on. Thus the engineers who study the event/s so thoroughly and give amazing results happen to endorse our view of the disease processes as even complexes and also our concept of the diagnosis, as more complete and more effective.

As far as the clinical examination of the patient is concerned I have suggestions so as to make the diagnosis more complete.

I wish to point out that the concepts of AYURVEDA with respect to the physiognomy, pulse examination, determination of constitution (PRAKRUTI) effects of food (AHAARA), and effects of behavior (ACHAARA) have to be investigated, verified and incorporated in our routine examination of the patients. The evaluation of a patient on the basis of Chinese understanding of human existence (including disease processes) has also to be studied and developed.

The need for evolving and coordinating these approach of clinical evaluation of a patient can be appreciated if I realize that many common signs such as dark circles around eyes, early graying of hair, perspiration in palms, or feet, stammering, the peculiar melanization associated with pregnancy on the one hand and alcoholics on the other are hardly understood in terms of the physiological/pathophysiological processes and mechanisms involved in them.

Many more signs can be shown to be poorly understood and hence inadequately interpreted.

A plethora of information is available on the above suggested methodological improvements, in regular textbooks of AYURVEDA as well as other texts such as KAMASHASTRA of VATSYAYANA.

The access to 'fourth dimension' as claimed by or attempted by palmistry. Astrology, numerology has to be verified so as to be able to evaluate a patient more completely. The development of dermatoglyphics is one such fairly successful endeavor.

Before I pass on to the question of investigations I must take into account the therapeutic aspect of the doctor's dialogue with patient as well as that of the clinical examination made by a doctor.

The caring, consoling, reassuring, kind words of the doctor sprung from genuine concern for the patient and the healing warmth in the doctor's touch during examination have immense therapeutic value. This general and wise observation is confirmed by the patients world over, though NOT sufficiently endorsed by "double blind laboratory tests" or "double blind clinical trials".

Let us now consider the investigations. It is true that I have a massive number of investigative techniques at our disposal. What is the scope and limitation of these techniques?

These techniques do reveal to us many physical and chemical phenomena inside the body with a very great fidelity. Such revelation certainly adds to the understanding of the ailment/s.

But it must be remembered that while revealing the physical and chemical aspects of the disease processes and the human body, the investigative techniques tend to mask the intrinsic resources of the patient himself/herself which are so vital to the recovery or deterioration. Since these resources are not accessible to the techniques they are NOT adequately studied. Due to miraculous achievements of transfusions, transplants, prosthesis and other physical/chemical manipulations incorporated in the various operative techniques the intrinsic potential of a patient in terms of recovery and possible derangements in the same are neglected or ignored!

It is necessary that I keep reminding ourselves that patients are NOT merely physical and chemical systems (though I do not understand anything beyond it) .They are NOT therefore evaluated properly if I rely entirely on the observations of physical and chemical parameters.

Thus, lop sided emphasis on investigations and negligence towards patient's intrinsic potentials can mar our judgment with respect to diagnosis and the treatment. This is especially important in the psychological, psychosomatic, gastrointestinal, neurological and to some extent cardiological disorders. Major surgeries may be performed or avoided inadvertently and disastrously due to lop sided dependence on present day investigations.

Though it is true that I do not have any equipment to quantify the patient's inner strength and our own inner growth, the chanting of the holy name does seem to help us understand, judge and even add to the inner power of the patient.

The Therapeutic Implication of the Holistic Perspective of Diagnosis

One of the major dilemmas that disturbs a thinking doctor is with respect to the consideration of the past and future behavior of the patient.

Let us clarify this point. Treatment of a patient who has committed a crime and treatment of a patient who subsequently i.e. after recovery commits a crime is likely to give a deep sense of frustration or depression to the treating doctor.

Obviously this is because I 'diagnose' as ill as treat superficially and inadequately and in a mechanistic manner, leaving aside the major part of the ailment undiagnosed and untreated.

Holistic concept of diagnosis helps us to understand the disease process and its background/playground/ battleground more completely and thus enables us to treat it more completely. With this concept the doctor

realizes the necessity of treating his own as ill as the patient's inner aspects. He/she realizes the social hazards of the conventional inadequate diagnosis & treatment vis-à-vis social benefits of the more complete diagnosis and treatment. The treatment of the inner aspects of the patient assures social welfare also. This can relieve the doctor of his dilemma. This fundamental attitudinal and behavioral treatment is possible by chanting of the holy name as alluded to earlier.

A Cursory Glance at an Example of Holistic Diagnosis:

Let us take an example of a person who has developed loss of power in his lower extremities.

Let us for the time being assume that I have accepted the idea of cleansing our inner being and trying to open our inner eyes.

In this case our objective would be to study:-

- 1) Extent of functional deficit
- 2) Immediate cause of this deficit viz. structural lesion
- 3) Location and extent of the lesion
- 4) Etiological or pathological
- 5) Predisposing factors responsible for this pathological process such as trauma, tuberculosis, tumor elsewhere in the body. This will give us an allopathic perspective of the ailment and an idea about allopathic treatment.

Next, I will try to study this from AYURVEDIC angle and evaluate it as VAATAVYAADHI. This will suggest us AYURVEDIC modalities of treatment such as PANCHAKARMA BRUHAT VAATACHINTAAMANI, MAHA-AVATVIDHVANSA TRIPHALA and ASHVA-GANDHAA.

I should now evaluate the situation from HATHAYOGA point of view. Thus, I will get a hint with respect to

treatment of the ailment with BHUJANGAASANA, MAKARAASANA, SHALABHAASANA, NAUKAASANA, PAVANAMUKTAASANA etc, which stimulate the VAATA STHAANA region of umbilicus which is supposed to remarkably and beneficially affect the spinal cord function. One may also think of PADMAASANA, VAJRAASANA etc. Besides I may think of CHANDRABHEDANA PRANAAYAAMA in case of spastic and SURYABHEDANA PRAANAYAM in case of flaccid paralysis. One may think of BHASTRIKAA also in case of flaccid paralysis.

When I look at the patient from Chinese view point (G-J) I may realize that point 99 i.e. vertex and point 98 atlas could be the sites of acupressure benefits. This as Ill as yoga view can be explained provisionally not on a strict anatomical basis but rather on the basis of bioelectrophysiological fields and their interactions.

Homeopathy gives us yet another perspective of the ailment in terms of subtler and characteristic individual perceptions of the disease event complexes. This can suggest us a remedy e.g. conium which can work in a way proposed in our hypothesis about the possible mechanism of action of homeopathic remedy, to be published in the international journal of homeopathy. From the point of view of AYURVEDIC philosophy I recognise the five KOSHAAS or planes of human existence as Ill as the 'life' after death. These concepts however describe phenomena which are called AVYAKTA. They are called AVYAKTA for two reasons. First is that they are not "manifested" and hence are not perceptible by five senses. They are not even deducible intellectually. Second reason why they are called AVYAKTA is because they cannot be expressed by the languages which describe three dimensional qualities or quantities (mathematics is classically referred to as a language of quantities).

Methods of astrology, numerology and palmistry which claim to or try to reveal the AVYAKTA aspects of human life and disease are esoteric and not completely accessible

to reason. But their exploration with unbiased and unprejudiced approach is essential.

In my view astrology, palmistry etc. should not be condemned as hoax or fraud. These efforts signify the “extension” of three dimensional mapping and using mariner’s compass or RADAR for smooth sailing in the unknown and unseen paths of time and also temporal aspects of human life extending in past and future. I recognize the extreme degree of variability and subjective element intrinsic to these methods and hence do not propose to lend credibility to these at once.

I only suggest that various methods indigenous to different parts of the world have to be explored in order to comprehend the AVYAKTA more meaningfully, predictably and in the interest of Welfare of the mankind.

Techniques such as dowsing, planchette are in vogue just as various methods used by DEVARSHIS (The aboriginal/traditional individuals who “Practice” consultation and treatment in AADHI DAIVIKA VYAADHIS.)

Medical world while cleansing itself should also enrich itself from the careful and ongoing study of these various methods. It should minimize the element of obscurity and ambiguity which catalyses cheating & exploitation in the atmosphere of obscurity.

Holistic concept of diagnosis has in it a great promise for the HEALTH and Welfare of mankind.

A HOLISTIC PERSPECTIVE OF THE POSSIBLE MECHANISM OF CURE IN HOMEOPATHY

One of the most important assets of the allopathic or present day medical thinking is its insight into the physico-chemical characteristics of the structures and functions in body. This has made medicine more predictable and precise.

But ironically the result of this is the advent of obsession

for a number of generalizations, standardizations, etc. This obsession is especially absurd in view of the variable milieu of life. This absurdity is due to an aggrandizement of the scope and negligence towards the limitations of one's intellectual premises. Majority of medical men, however, continue to disregard/ undermine the variability in living systems and blatantly spread/ advertise/ popularize or sell the myth of simplistic explanations for biological/ physiological phenomena and ready-made formulations as treatments for various ailments irrespective of the variations in the personality. This trend of thinking has made the present day medicine in general, less wise, less accommodative and more imposing. This is precisely the reason why there has been hasty and fanatic disapproval or hostility towards others' point of view and suspicion with respect to the successes encountered in the practice of other system/ s of medicine.

It is necessary to transcend the aforesaid approach if I wish to attempt any explanation with respect to the mode of action of the homeopathic remedies.

In order to attempt an explanation for the homeopathic remedy it is also necessary to avoid the error of expecting/ insistently demanding an explanation in terms of physical sciences for ALL the biological phenomena including those related to the drugs or food consumed.

On this premise let us try to understand how homeopathic remedies may be acting.

Characteristics of Homeopathic Remedies which have to be explained by any Hypothesis/Speculation:

Homeo means similar.

The homeopathic philosophy is based on:

I) SIMILIA SIMILIBUS CURENTUR: which means like cures like. Dr. Hahnemann observed that cinchona used for the treatment of fever caused fever when taken by a healthy individual. He experimented with many drugs with multiple symptoms in normal men and women.

These symptom effect complexes are referred to as DRUG DISEASES. When the drugs are used in an individual having similar symptom complex they showed an ability to cure it.

2) DILUTION INCREASES THE POTENTIATION:

Hahnemann also discovered that if the drugs are serially diluted their efficacy/potency increased with each step and to everyone's surprise the drugs are active even in such a dilution when there did not remain even a single molecule of the drug in the solution.

Thus any explanation for the mode of action of homeopathic remedies should EXPLAIN these characteristics also.

MY HYPOTHESIS:

I consider various ailments/ diseases as being EVENT COMPLEXES.

What is the meaning of this coined- term EVENT COMPLEXES? I will try to explain.

Whenever I refer to any phenomenon in general and the disease phenomenon in particular I usually commit an error of linking or delinking and describing ONLY the observable effects. Sometimes apparently unrelated effects are ignored and sometimes seemingly related effects are grouped together. It has to be appreciated that this is incorrect and inadequate comprehension of a phenomenon.

A distinct and very important aspect of any phenomenon in general and ailments/ diseases in particular is totally ignored/neglected. This distinct and subtler aspect of ailments or diseases is in fact CAUSATIVE in nature.

To understand this more clearly let us take a simple example of existence of a stone. The space that occupies a stone is actually part of the existence of the stone. The space occupying every atom and even electrons etc. of the stone is also a part of the existence of the stone. In absence of this space, there can be NO existence of the

stone at all. Apart from the space the time (TIME SPACE CONTINUUM) that SO TO SAY OCCUPIES the stone is also part of the existence of the stone.

Thus, ailments/diseases can be more completely comprehended; if temporo -spatial aspects of their existence are kept in mind.

I use the term EVENT COMPLEXES to highlight these subtler aspects of the diseases.

If I understand the apparently passive role of time- space continuum with respect to the existence of matter and/or processes then it would be possible to appreciate the apparently passive role of time space continuum and its importance as an aspect of the ailments or disease process.

With this understanding, the usual description of ailments or diseases viz. description of material/apparent counterpart of diseases becomes contingent and the 'time space continuum' or the FIELD becomes more important aspect of ailments or diseases.

To comprehend it even more clearly, I can take an example of WHIRLWIND/SANDSTORM where the forces or pressure changes are causative or determining aspect of FIELD and the particles of sand moving in the storm are apparent resultant contingent aspect of the whirlwind or sandstorm.

This hitherto unexplained and unarticulated intuitive understanding of diseases is fundamental to homeopathic therapeutics. Since it (disease process) has so far remained an enigma, homeopathic therapeutics remained more or less an enigma, homeopathic therapeutics remained more or less an empirical practice based on experience and observations and at times, mere faith.

The nature of homeopathic remedies can be best described stating that they constitute event complexes where the material/effect/result aspect has assumed a much smaller proportion and causative temporo-spatial aspect

has assumed much greater dimension,

Homeopathic remedies are like 'time space continua'. Their only physical counterpart is the vehicle in which they are prepared, as the process by which they are prepared is also physically not apparent.

It is precisely due to this characteristic that the principle SIMILIA SIMILIBUS CURENTUR is obeyed by homeopathic remedies.

HOMEOPATHIC REMEDY acts as, a kind of "specific slot" of time space continuum for the disease which on administration shifts/sucks the disease from its manifest material effects to its temporo-spatial aspect and thus in a way facilitates its smooth sailing through today. This leads to smooth and quick passage of the disease through body/mind (in short human existence) and material/physico-chemical manifestations are in a way pulled out of the body. This is thus one of the most brilliant and most meritorious way of averting the course of (and curing) disease. Our concept of material and time space aspects of an ailment or disease process and homeopathic remedies can be understood even better if I compare it with the following phenomenon viz. movement of two stones X and Y from point A to point B.

Disease is like a stone (X) rolling over from point A to point B. The forces involved in disease are similar to those involved in rolling of stone. The body/mind/ human existence which sustains the damage is like the ground which is damaged due to the rolling stone.

Homeopathic remedy is like a crane carrying a stone Y carry more stones along with it swiftly from point A to point B without leaving impact on the ground.

The drug disease produced by the homeopathic remedy sets in after beginning of treatment but swiftly overtakes the disease process and guides it through the body smoothly and quickly.

Homeopathic remedy is like a group leader who guides a

lazy clumsy and chaotic crowd creating nuisance in the area. The crowd would not follow the leader unless it is in agreement with the leader.

Another beneficial analogy could be that of a bus. If the disease is compared to a stranded bus, then homeopathic remedy is like a squad of traffic assistance police who share the characteristic movement as ill as the route of the bus and facilitate its smooth journey! Thus the nuisance of bus on road and that of disease on body & mind is removed. This conceptual aspect of our hypothesis is different from the one evident in the phenomenon of vaccination induced disease. Vaccination produces a disease in a less virulent form but NEVER CURES an already manifest disease. But if one would like to explore at least some commonality then one would be struck by the fact that vaccination induced disease also, by virtue of being an event complex, though of cruder nature usually passes through the body swiftly with minimal damage to the body. Moreover, though not an already existing, it does avert a "would be" disease!

If I extend the logic of vaccination then it does point to the fact that with dilution the temporo - spatial aspect increases even further in homeopathic remedies and empowers them to avert even a well established disease.

DILUTION INCREASES THE POTENTIATION: Earlier when I was intrigued by the potentiation by dilution. I thought it was the BROWNIAN MOVEMENT which typically increases on dilution that could be responsible for the potentiation on dilution. But this explanation based on BROWNIAN MOVEMENT has its limitations. It cannot have any effect in absence of a molecule in the solution/suspension.

THE BROWNIAN MOVEMENT however has to be studied with respect to its lasting effect which could be related to the efficacy of the homeopathic remedy.

With respect to Benveniste's controversial contention that

there remains a 'memory' of the molecule which is far more effective in bringing about cure, it appears that our concept can fruitfully enrich it. The 'memory' per se and in isolation can not have curative influence.

Homeopathy has (intuitively) developed an ingenious approach to the understanding of the disease. It is homeopathy which realizes that apparently unrelated symptoms could be a part of the same disease process and pathological changes, so much emphasized and so much obvious, may at best represent only small and peripheral aspect of the disease process. The extensive history taking in homeopathy has this ingenuity at its root.

Some more characteristics of homeopathic remedies include:

- 1) **THE DILUTION HOWEVER IS ASSOCIATED WITH TRITURATION.**
- 2) **THERE IS NO EXPIRY FOR HOMEOPATHIC REMEDIES:**

In some homeopaths' experience that even if the solution dries. still one gets the results. i.e. there is no expiry for the homeopathic medicine.

- 3) **ACCORDING TO MANY. STRONG ODORS INTERFERE WITH THE EFFECT OF THE REMEDY:**

The fact that THERE IS NO EXPIRY FOR HOMEOPATHIC REMEDIES is easily explained, [though tentatively], in the foregoing discussion because the time & space specific to remedies won't expire.

Two more points viz. STRONG ODORS INTERFERE WITH THE EFFECT OF THE REMEDY and TRITURATION during dilution MAY LEND THE POTENTIATION to the remedy need further verification. Hahnemann's original observations do not refer to such entities.

THE SCOPE & LIMITATIONS OF OUR HYPOTHESIS & HOMEOPATHIC REMEDIES:

I am aware of the speculative nature of my hypothesis. But this is because homeopathy is in gray area/zone where science and philosophy converge. In the light of the recent advances in physical sciences our hypothesis can serve as useful clue for further conceptual and experimental work in this area.

As far as homeopathic remedies are concerned, the clinicians have to realize that just as in some cases there can be severe disease as a result of vaccination, similarly there can also be different/unexpected responses to homeopathic remedies. Using the same analogy one can easily appreciate that if a stone is too heavy or the ground is too soft, then no crane can shift it! This is precisely the limitation of the homeopathic remedy.

What should be the moral of this discussion? The homeopathic remedy NEED NOT BE GIVEN IN ISOLATION i.e. homeopathic and allopathic remedies NEED NOT be mutually exclusive. To substantiate this I can use the same analogy of stone. When the ground is too soft and/ or the stone is too heavy, it is necessary to utilize additional LEVERAGE which allopathy/ ayurveda/ massage/physiotherapy /hathayoga etc. may provide.

HOLISTIC INSIGHT INTO THE POSSIBLE MECHANISMS OF HEALTH PROMOTION & HEALING IN YOGA

This theoretical work aims to focus on the mechanisms underlying effects of yoga practice on (A) The practitioner of yoga (B) On his external environment and (C) the connection between the two. It includes the effects and mechanisms, which are (A) previously demonstrated, (B) some of those which are claimed and (C) those thought to be possible by the author.

The sequence of presentation follows the eight aspects

/components or 'angas' of yoga-practice. Thus various mechanisms are considered under each anga separately. The purpose of this presentation is to remove theoretical obstacles in the path of individual and social emancipation.

The Obstacles in view are:

A) Indolence as regards proper attention towards this rich "heritage".

B) Apathy as regards study & investigation in this field which has enormous potentials.

C) Inertia as regards thinking boldly and fearlessly without slavish submission to whatever has been stated in the old texts and scriptures.

D) Crudity and Lethargy as regards realizing the limitations of the process of thinking and scientific methodology thus not transcending these.

E) Incompetence in realizing the cosmic continuity and unity and supreme consciousness.

It is hoped that this theoretical work will contribute in the process of self realization and thereby conceptual unity in mankind which in turn would catalyze the development of harmonious, peaceful and blissful human society.

INTRODUCTION

The effects of yoga practice must be understood in terms of the physical (transphysical) and/ or chemical (transchemical) processes involved. However such processes are not completely accessible to reason and concepts of physics, chemistry and mathematics at this stage. Therefore the discussion in this project work is mostly hypothetical. However it can serve as a ground work for future research that may take place in the course of time.

The yoga-practice involves eight aspects. These are yama, niyama, asana, pranayama, pratyahara, dharana, dhyana & samadhi.

The work as regards the mechanisms underlying yama and niyama has not undergone any degree of scientific scrutiny.

The mechanisms underlying the effects of asanas and pranayama are relatively more extensively studied and have undergone physiological verification to a greater extent. Many modern works include those of Swami Rama, Green, Kuvalayananda, Yogendra, Gopikrishna, S.L. Vinekar, S.P. Nimbalkar, K. Makwana, N. Kirwaskar, H.C. Gupta, M.S. Malhotra, J. Sengupta, N.T. Joseph, T. Shrikrishna, S.C. Jain, U. Sachdeva, G.S. Chinnai, B. Singh, O.P. Bagga, A. Gandhi, P. Kaul, D. Brahmachari, H.N. Choudhary, S. Mitti Mohan, J.M. Bahugna, M. M. Gore, M.V. Bhole, J.S. Rao, R. Yogi, M. Sunitha, P.S. Raju, K.J.R. Murthy, R. Bhargava, M.G. Gogate, J.F. Mascarenhas, B.K. Anand; M.A. Inger, B.K. Bagchi, Ravi Narayan, Abhinav Karnat, Manish Khanolkar, Shamee Kamat, Sandeep R. Desai, R.A. Dhume, R. Sheela Devi, A. Namasivayam, R. Eccles etc.

There is no scientific work scrutinizing effects of pratyahara.

As far as dharana, dhyana and samadhi are concerned, they are similar to some meditational techniques such as transcendental meditation developed by Mahesh Yogi. Some studies are available on these, where electroencephalographic and electromyography techniques are utilized along with other methodologies; involving autoanalyzer, spectrophotometry etc. The works include those of Mahesh Yogi, Swami Rama and others.

What has been observed in these works is, the investigators have in general observed/verified effects of yoga, (mainly asana, pranayama, and meditation) in normal people or in different clinical conditions. These works are important because they contribute towards authenticity as regards effectiveness and application of yoga. But as far as mechanisms underlying are concerned hardly anything has been achieved.

Even the hypothetical work regarding mechanisms (which attempts to reconcile with classical knowledge of physiology and anatomy) needs further analysis, scrutiny and evolution. The concepts of modern physics and chemistry must be applied in this endeavor and overpowering influence of mechanistic and reductionist approach and thinking must be overcome.

This work attempts to throw light on dark and gray areas in the field of yoga.

Before I begin the actual descriptive or hypothetical aspects it must be stated here that the approach of the author does not accept conformation to any religion, ideology or even scientific methodology in a restricted sense, because, such an acceptance makes the vision tubular and the truth then eludes the student/observer.

The author wishes to establish transideological, transscientific, transcultural, trans-religious, trans-regional and trans-racial holism - a nearly objective theoretical concept of the final stage of consciousness viz. samadhi or self realization as envisaged in yoga practice.

It may be appreciated that without such approach it is not possible to explore objective reality hidden in many apparently subjective experiences and effects resulting from yoga practice.

DISCUSSION

Let us consider one by one the mechanisms (or possible mechanisms) underlying the effects of eight components of yoga-practice.

Yama: Yama means self-control or restraint. The five components of yama are satya, ahimsa, asteya, brahmacharya & aparigraha. Each of these five components must be understood clearly and more deeply so as to comprehend the nature of effect of these on the practitioner of yoga.

Satya: Being truthful in life helps the person in

understanding oneself correctly without the influence of ego. The underlying moral is that the truth is absolutely objective. For realizing truth, one has to shed off one's personal, narrow, deceptive, petty and ephemeral perceptions and personality.

The realization of truth follows impersonal assertion of facts. Such assertion subsequently & in the course of time helps the person to see the universe with least of passion, expectations, anger, grief, attachment, jealousy, and such veils of subjectivity, and also illusions & delusions created by sensory and intellectual perceptions (because these also are otherwise full of subjective element). There is no concrete account of such a theoretical foundation coordinating and correlating objective reality with the yogic concept of Satya, included in yama.

But Kathopanishada 1.3.15, 1.2.9., 1.2.20, Kenopanishada, Brihadaranyakopanishad, Mundakopanishada and other philosophical works such as Bhagavadgeeta, Dnyaneshwari, Dasabodha give ample evidence of the real meaning of the yogic concept of truth and its scope which is universal. The moral precepts of various religions regarding being truthful are not merely egalitarian or utopian ideas, empty and impotent in nature. They certainly spring from the enlightenment of the seers who not only know but are physically one with the supreme reality - the Brahman. Since this ultimate level of consciousness is beyond space and time, the concepts coming there from are said to be APAURUSHEYA meaning trans-human, superhuman or supra-human. They cannot be comprehended or described by mere reductionist thinking about matter, energy, space, time etc. Such an approach became prevalent with Democritus, Leucippus and developed into classical physics till Newton's time. This approach relied on isolated perceptions vis-à-vis the perception of cosmic continuity.

Today's physics however has opened new vistas of knowledge. It has made it possible to think in terms of

physical characteristics of the state of consciousness and/ or being truthful.

It has made it possible to conceptualize the (trans) physical and (trans) chemical dimensions and characteristics respectively of mental, intellectual and spiritual aspects of human being such as feelings, thoughts, memory, dreams, foresight, insight etc. and extra sensory perceptions, as well as continuity of this (apparently) inner world with (apparently) outer world -the cosmic reality.

David Bohm says, as Fritjof Capra quotes in *Tao of Physics*: “One is led to a new notion of unbroken wholeness which denies the classical idea of analyzability of the world into separately and independently existing parts... I have reversed the usual classical notion that the independent ‘elementary parts’ of the world are the fundamental reality; and that the various systems are merely particular contingent forms and arrangements of these parts.

Rather, I say that inseparable quantum interconnections of the whole universe is the fundamental reality and that relatively independently behaving parts are merely particular and contingent forms within the whole”.

Prof. Frank A Brown Jr. (1906-83) is quoted by Cyril W. Smith and Simon Best in *Electromagnetic Man*. He states “No clear boundary exists between the organism’s metabolically maintained electromagnetic fields and those of its geophysical environments.”

It must be appreciated that final stage of being truthful, is thus the merging of individual physico-psycho-spiritual existence with the supreme cosmic continuum which encompasses “time space continuum” and is referred to by the term Brahman. Yoga which means to join must be appreciated in this sense of the word.

The mechanism of effect of being truthful in day to day life presumably involves an ‘inner voyage’ consisting of several processes leading to the above mentioned stage. The ways in which it exerts its influence are almost

certainly bioelectric in nature and involve systematic activation of several parts of the central nervous system including hypothalamus, hippocampus and parietal and frontal cortex. This activation and/ or co-activation can certainly influence in terms of psychic (transphysical and transchemical) aspects of existence on the one hand and physiological (autonomic nervous, endocrine, immune, metabolic) aspects on the other. Some of the crude effects on the body are likely to be demonstrable by lie detector machine.

The field of science which studies such phenomena, involving cosmic connections and conceptual unity is called psychotronics and is studied keenly in East European Countries. More concrete information is expected to enrich mankind sooner or later from these studies. The psychosocial and psychophysiological effects may then become measurable and the electromagnetic, bioelectric and other mechanisms underlying these effects become clear.

The discussion about the yogic concept of Satya cannot be concluded without reference to one important point.

If an individual does not possess the perspective described in the foregoing, there always remains a very good chance that one may not remain steadfast on the point of being truthful. This is because truthfulness in day to day practice without proper perspective of truth, can lead to personal tragedies, trials, tribulations of varying nature. In fact, such experience may develop antipathy and disgust about the yogic concept of Satya.

When considered with respect to society this may turn into a grave value crisis with enormous detrimental effect on the progress of the individual as well as that of society.

b) Ahimsa:

One meaning of "ahimsa" is nonviolence, and the other is security.

Though ahimsa is commonly understood as non-violence,

there is a reason to believe that ahimsa has much more profound meaning.

The ancient seers Ire enriched with intuitive knowledge and realization of many facts which modern physics has begun to appreciate in this century. Pakudh Katyayan (623 B.C.) who was contemporary of but older than Buddha maintained that there is nothing that is really created and nothing that is really destroyed. Nothing is generated and nothing is lost. (Patil Narendranath B., The seven planes of Yoga, Tattvaloka, Aug. Sept. 1991, P27).

Many modern physicists concede this valuable intuitive wisdom of oriental philosophers, notable amongst whom are Niels Bohr and Heisenberg.

These facts suggest that ahimsa really means appreciation of indestructibility of one's true self. What follows from such appreciation is divine and profound fearlessness. Fear of death vanishes. Since violence in a large measure springs from fear, fearlessness leads to non-violent interactions with other individuals and animals. Since non recognition of one's true self leads to overpowering sense of insecurity, knowledge one's eternal self leads to non-violent interactions with others. Since the true Self encompasses time, the petty desires and obsessions disappear and conduct becomes magnanimous.

It may be appreciated that this interpretation tallies with the concept of ahimsa, concept of sthitapradnya, and also the concept of rebirth (as shall be discussed latter) and concept of yoga in Bhagavadgeeta.

However, this profound meaning of ahimsa being difficult to appreciate, the precepts of non-violence (which actually should be the result of or the function of comprehension of the universal concept of indestructibility) became prevalent and popular in restricted sense i.e. non-violence. Thus, extreme degree of non-violence at times turned into irrational dogma.

Even Mahatma Gandhi apparently pressed it in the form

of arbitrary egalitarian ethic of non-hurting, non-killing etc. rather than in its true perspective viz. result of divine wisdom and enlightenment and self realization.

This does have sense however. This is because; killing is usually due to ignorance and for petty selfishness resulting there from. Non killing therefore does help an individual to liberate himself from his own petty identity and bigotry.

Thus, the process of being truthful is in harmony with observance of non-violence, because both are conducive to transformation of an individual and society into higher state of existence.

How does this characteristic awareness and responsiveness affect the total being of an individual?

Continuous and prolonged practice of the principle of ahimsa would act as a behavioral therapy for the individual for overcoming subjective lowliness and becoming kind.

The clues for probable mechanisms involved in the effects of ahimsa include the following:

1. Cerebral morphogenetic radiation (C.M.R) system responsive to extraneous electromagnetic field as hypothesized by Roger Coghill (1988, 1989). It is certainly probable that final perspective of ahimsa sets an appropriate state of equilibrium between 'internal' world and consciousness of the individual and the cosmic 'external' world in every conceivable dimension, thus leading to neuroendocrine and neuro-immuno-endocrinological effects. The details of these are however to be found in textbooks of respective disciplines. Suffice it to say that many physiological phenomena and clinical conditions including Sudden Infant Death Syndrome and AIDS are thought by Coghill to be influenced by CMR.

2. The field of developmental neuroimmunoendocrinology developed by Norman Geschwind is remarkable in this respect and established brilliant correlation between psychic, neural, embryological, immune and endocrine

phenomena in body and elucidates intricate relationship between apparently unrelated systems.

3. Electromagnetic field [E.M.F.], through variable coherence may affect biological organisms including man. Harold Burr and Northrop expounded Electrodynamical Field Theory of Life. The field is also called "L- Field". Leonard Ravitz a pupil of Burr's maintains that EMF pattern the nervous system and regulate every component part of it from within and without and define living matter in terms of four dimensional time-space and energy. (Smith C., Electromagnetic Man, Pg 38-39).

Thus not in the crude sense of the word "behavior", which behaviorist Watson used but in broader and realistically profound sense of the word, thoughts, feelings, attitudes, perspective etc. probably constitute 'living' aspects of physics.

One may call them physical aspects of life or consciousness as Ill, or super or supra physical or transphysical entities. Ambitious theory of 'Superstring' expounded by Green and Schwarz attempts to prove these phenomena mathematically. Moreover, modern concepts of physics with the proposition of eleven dimensions also support this view of continuum with higher levels of consciousness "existing" in peculiar "non- yes, non-no existence", (quite dissimilar to perceptible existence) incorporating everything in the universe.

If ahimsa is not understood properly, it can be turned into meek and disastrous submission or listless and dangerous prostration in front of the enemies of mankind. One of the greatest forces assisting conscious evolution of mankind gets, transformed in this way, into a worst possible self destructive weapon. The arbitrary precept ~ of non violence can lead to confusion, disbelief, frustration and sometimes worst violence as a result of explosion of suppressed aspirations and injustice imposed by enemies of mankind.

3) Asteya:

“Asteya” means non stealing in routine sense of the word. The deeper meaning however is conviction that one’s own self is such that nothing can be added or nothing can be removed from it.

With this conviction the petty desire of stealing can no more seize the person.

The social significance of this is obvious. One performs his day-to-day activities and professional activities without bringing in petty motivations and vested interests. But he does it as a service to the universal will or God’s will. Exploitation gradually ceases due to practice of asteya.

Asteya has many psycho-physiological influences which are beneficial to the yoga practitioner, (though these are not scientifically shown).

In absence of asteya one constantly dwells in the illusory petty identity of one’s self. This leads to a) Fear or dreams of future, b) Guilt or pride about the past, c) Fear of death, d) Worry about the progeny, e) Fear of thefts. All these and many other such feelings constitute the causes of stress and affect the body of the person adversely.

The mechanisms underlying are not clear. But may involve Central Pattern Generators (CPG), limbic system, hypothalamus, autonomic nervous system and endocrine glands etc. affecting metabolic activities in different parts of body.

Asteya in true sense can avert psychosomatic disturbances such as hyperacidity, insomnia, lassitude, pains & aches of unknown origin, cervical spondylitis & bronchial asthma.

However, when arbitrarily imposed or practiced, asteya can cause confusion, disbelief and value crisis.

4) Aparigraha:

This means Non hoarding.

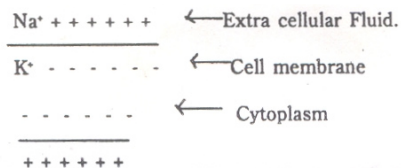
The concept of Aparigraha must be conceived as overcoming obsession and/ or attachment towards possessions. This concept is born out of knowledge of and practice of satya, ahimsa, and asteya.

Meaningless pursuit of petty objectives leads one to perpetually ignore one's true self and vice versa.

This makes person cling to petty desires and ambitions to such an extent that even if he gets psychosomatic diseases, he cannot get rid of them.

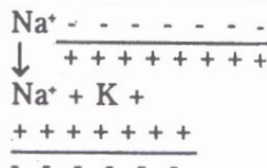
Aparigraha even if arbitrarily practiced opens up the channels by removing obstacles of petty identity and pursuits, between individual self and the cosmic consciousness. The nature of this effect is not clear. But the obsession for possession and attachment in hoarding i.e. 'trishna' and 'aasakti' are (trans) physico-chemical activities resulting from the bioelectric currents in the nerves, (Fig. 1) synthesis and release of neurotransmitters and combination of these with specific receptor (Fig. 2). Crick's (Noble prizewinner) ideas of molecular psychology come close to this concept (Crick, Times of India, December 8, 1991).

Fig 1 a]



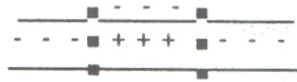
Resting Nerve cell with negativity inside, and positivity outside

Fig1 b]



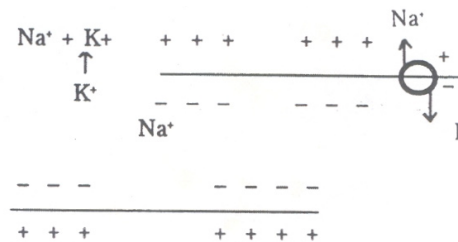
Reversal of polarity (depolarization) on stimulation, due to sudden increase in permeability of membrane to Na^+ influx of Na^+

Fig 1 c]



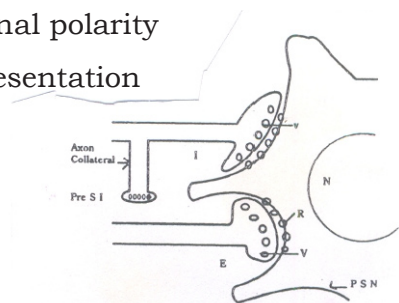
Depolarization is followed by flux of local currents depolarizing the adjacent areas

Fig 1 d]



Repolarization is return to original polarity

Fig 2 Synapse: Schematic Representation



E & I [Excitatory & Inhibitory] axon terminals, R - Receptors on the membrane of the post synaptic cells, N - Nucleus, PSN -Post Synaptic Neuron, Pre SI -Pre Synaptic Inhibition, V -Synaptic vesicles containing inhibitory and excitatory neurotransmitter

“Aparigraha” establishes an objective, concrete and healthy communication between ‘internal’ and ‘external’ world and is associated with subjective feeling of strength and bliss.

Brahmacharya:

Brahmacharya is defined as celibacy by many. The other meaning of it is process of learning DHARMA. The deeper meaning of this term is existence of the individual in ever rising state of consciousness.

It is interesting to note that the original site of KUNDALINI is said to be at SWADHISHTHAN chakra which is located halfway between the navel and the sex organs i.e. about 9 inches from the seam of the perineum in adults. This site roughly corresponds to the site of germinal epithelium from which the gonads develop at around 8 week of intrauterine life I.U.L. (Gray's Anatomy, 37th Edition, P. 89) 72000 nadis are said to arise from MULADHARA chakra. This is the final site of 'quiescent' KUNDALINI.

This according to author is: a) Kundalini represents vital and primal life 'force' which is responsible for the most potent instinct to live and procreate and also to merge with the supreme reality. b) Nadis are not nerves. Nerves and spinal cord etc. are vehicles of nadis which are fountains of transphysical 'force'.

c) The awakening of and union of kundalini with Shiva represents conscious evolutionary transformation of soul which is materialized into life force and which is associated with and responsible for the zygote, organogenesis, germinal epithelium, gonads and germ cells formed therein. The transformation and union of kundalini thus represents return of the soul into its original state.

This view, though intuitive corroborates Ill with the modern scientific concepts on the one hand and the Indian philosophical concepts such as REBIRTH on the other. It is notable that the concepts of others in this regard do not encompass the transphysical nature of soul, kundalini or consciousness.

The brahmacharya may be manifested as a poised gentle grihastha or as a total celibate.

The mechanism of the effects involves unfolding of 'frozen' soul kundalini into its original 'more than three' dimensional existence. This then alters the acuity of and capacity of perception of the individual. Besides, this is associated with all the consequent changes (physiological) essential for body.

The social effects of YAMA are unity of hearts, integration of souls and harmony of thoughts. Since this integrity is very real, concrete and intrinsic its effects in terms of social welfare follow in a natural fashion and in all the fields of life.

Niyama:

Ashtangayoga prescribes five aspects of Niyama viz., shaucha (purity) I santosha (contentment) tapa (penance), swadhyaya (Self study), Ishwara- pranidhana.

Shaucha:

Shaucha is transformation of individual consciousness into objective and selfless consciousness where cosmic consciousness 'flows' through the individual.

Shaucha constitutes smooth and uninterrupted cascade of neural and neurohumoral events as well as appropriate events such as secretions of exocrine glands and muscular activity and metabolic activity. It is associated with metabolic excretory products. Shaucha of psyche is achieved by observance of yama and that of body by care of personal hygiene and kriyas. More extensive shaucha is achieved by care of environment.

Mechanisms underlying shaucha probably constitute the same processes as in case of yama.

Santosha:

This means contentment

It is essential to appreciate that arbitrary prescription of contentment has no meaning and can in fact turn an individual fatalistic. The deeper meaning of contentment or santosha has therefore to be realized. Santosha is a result of successful effort to prevent entropy of psychic 'energy', stasis of mind and meanness resulting there from. Santosha is a result of one's own subjective perceptions and transient nature of the phenomena all over.

The mechanisms underlying the effect of santosha also

are probably the same as for the yama.

Tapa:

Tapa means penance.

The true meaning of tapa however involves not merely arbitrary restraint but cognitive and cognizant ascent of one's senses. It is transformation of one's senses. It is altered outlook and altered taste of the individual. It is refined taste and refined choice of an individual.

The effects and the underlying mechanisms are similar to those described for the santosha, but complementary.

Swadhyaya:

Swadhyaya means Self study.

The Self here is not the same as interrupted by many. It is not the same as the personality. Therefore it is not study of one's inclination's aptitudes, likes, dislikes etc. Swadhyaya means study of one's true nature, one's true and transphysical existence. This study involves systematic negation of one's lower or petty identities resulting from lower levels of consciousness.

The effects of swadhyaya are mainly attitudinal and intellectual and therefore mainly neural in nature. They are complementary to the effects of yama and other aspects of Niyama. The physical and chemical substrates for the effects need further study and scientific evaluation.

Ishwara Pranidhana:

The popular meaning of this is devotion to God. Real meaning is submission to the cosmic wisdom by negating one's petty identity. It is necessary however to understand that this involves transintellectual thinking and not nonintellectual non thinking. It is necessary to practice Ishwara Pranidhana in this spirit and not to embrace indolence. It is important to understand the concept of relative reality and negate crude inaction.

The effects of this are probably similar to and

complementary to those of yama and other Niyama.

Yama and Niyama thus should not be interpreted as commandments for asceticism. Unfortunately this has happened in the past. The fountains of life in and around us must be tapped. Man's supremacy lies in the fact that he can recognize his existence being in continuity with the supreme.

ASANA:

Asana means systematic assumption of certain postures or positions. Asanas are procedures to buttress the effects of other angas of yoga. It is thought appropriate to consider in brief the effects of kriyas, bandhas and mudras along with asanas.

Asanas have psychological bearing. Many asanas mimic animals: Many mimic plants. Many mimic nonliving objects. Asanas are important for feeling of oneness with the living and nonliving universe. They are important for getting rid of pride and achieving self effacement.

Asanas constitute churning of the whole body so as to get the cream of spirit in terms of Self realization which is a result of awakening of kundalini when practiced along with yama and other angas of yoga.

Asanas involve co-coordinated, smooth, steady, disciplined contractions and/ or relaxations of muscles, systematic squeezing of tissues, stimulations of receptors, alteration in the blood flow, alteration in the characteristics of blood, stimulation of spinal cord and a varieties of regions of brain during neuromuscular activity, as a result of receptor stimulation and as a result of stimulation due to altered local metabolites. Asanas are associated with direct stimulation of brain, spinal cord, as Ill. It is not yet completely understood as to how these simple maneuvers such as compression, stretching, pressing twisting, distension etc. lead to such profound changes in one whole being, or at least complement or synergize such

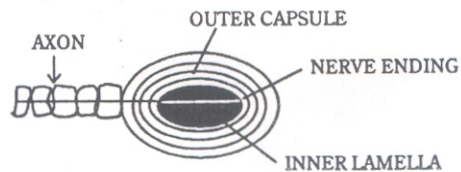
changes. However effort has been made to probe in these gray areas.

All asanas cause stimulation of internal and external neural receptors. (Fig3)

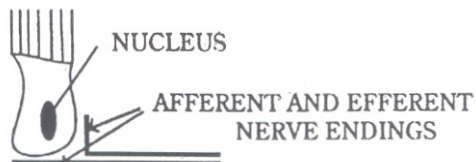
FIG. 3: RECEPTORS

Receptors are sensory transducers

A) Mechanoreceptors - Pacinian corpuscle



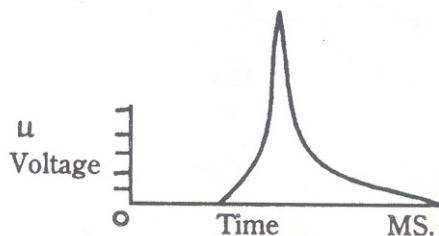
B) Sound receptors



C) Chemoreceptors -

This causes stimulation of several parts of central nervous system. Asanas cause stimulation of autonomic and peripheral nervous system also. The nature of this stimulation is studied by physiologists and is depicted in the figure in a schematic manner. (Fig 4)

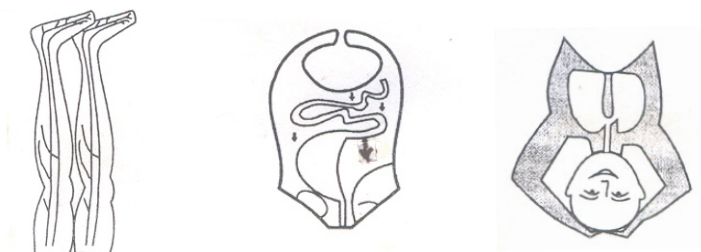
FIG.4: Record of electrical change in nerve



However quantification of these effects merits attention and extensive investigation.

Some asanas such as sheershasana are associated with change (Fig 5) in posture and therefore besides stimulation of receptors it causes hemodynamic changes, displacement of viscera causing local changes which may involve blood flow as well as metabolic changes.

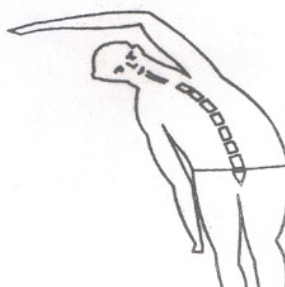
FIG. 5: Effect of SHEERSHASANA



Effects of sheershasana include or may include hemorrheological changes as well as stimulation of receptors in the carotid vessels. Long term effects of gravitation may include reversal or altered calcification/ degeneration in bones.

Asanas such as chakrasana twist the vertebral column and cause stimulation of nerve roots at different levels (Fig 6).

FIG. 6: Chakrasana



These asanas stimulate local blood flow and prevent congestion degeneration, fibrosis, osteoporosis etc. in vertebral column and vertebral joints.

Quantification of these effects is however essential. This is because careful evaluation of yogasana effects will enable effective application of yoga in therapy, Periodic X-rays, range of joint movements, muscle spasms, electromyographic records, measurement of blood flow etc. will prove valuable. Other effects subsequent to these local effects must also be studied.

Asanas such as sarvangasana cause compression of thyroid and parathyroid. But the effects must be studied in terms of increase or decrease in hormone levels. Other metabolic parameters such as serum electrolytes, lipid profile and hemogram would also prove valuable. While studying hemodynamic effects one must pay attention towards lower extremities, pelvic viscera, abdominal viscera, lungs, heart and brain.

It must be noted that the effects or benefits of asanas in various disorders are not merely due to mechanical changes resulting from asanas and hence studies involving measurements of change in pressure or such parameters alone are inadequate in assessing the therapeutic utility of asanas.

Asanas such as mayurasana, kukkutasana, vrishchikasana, sheershasana require recruitment of new input and output pathways for regulation of posture. This is likely to give rest to routine pathways active in regulation of posture and establish new synaptic connections in the newly recruited pathways. Assumption of this posture is likely to alter psychological orientation and attention thus proving beneficial in anxiety states. Studies such as those mentioned earlier must be supported by studies of electromagnetic, bioelectric and bioelectromagnetic fields. This is true for all asanas in any case. Moreover these studies must be performed with several permutations and combinations as regards their chronological relationship with each other and interactions.

Asanas such as padmassana are supposed to help an individual collect one's personality. Yoga considers the

concrete physical and physiological factors and recognizes their importance in the process of self relaxation because it comprehends the fact that the cosmic consciousness is in fact in continuity with physico-physiological processes.

But though this is agreeable on intuitive and subjective grounds objective evidences must be searched using high tech procedures to measure nano and pico volts of voltage femto and atto seconds of time involved in many changes.

At the moment N.M.R, computerized axial and positron emission tomography immunocytochemical techniques, Kirlian photography etc. are available and must be made use of in the field of yoga.

The concept of 'closing' circuit/s of bioelectricity in asanas and mudras must be evaluated. It must be found out if there is prevention of entropy or reversal of entropy and if so, to what extent.

Asanas such as chakrasana involve alternate compression and decompression of lungs. These compression and decompression however have to be further studied to understand the manners in which they are likely to influence the health status.

Mere measurements of air entry and air exit are not enough for one may have to study the volley of sensory impulses and motor output

The asanas may also influence the body processes on the basis of stimulation of acupressure points. This possibility with respect to asanas such as Vajrasana, Padmasana and asanas in general where unusual part are pressed, must be explored.

The concept of meridians, the concept of nadis, the concept of bioelectric fields, and the concept of evolutionary transformation in 'frozen' soul must be corroborated.

Some asanas have very obvious mechanical effects. Take for example Pavanamuktasana. In pavanamuktasana

benefit of compression and antigravity movement of gases from rectosigmoidal contents is taken.

MUDRAS AND BANDHAS:

Bandha means tying or closing tightly. This apparently is to close the leakages of the vital or life 'energy' Actually bandhas are, contracting anal sphincter (mulabandha) or closing tightly the laryngopharynx from oropharynx Jalandharabandha} or contracting abdominal muscles (uddiyana bandha).

It is essential to understand the nature of life force to understand various changes/benefits associated with bandhas. Hathayoga revolves around the primal force or life force and its sublimation into subtler force of higher consciousness. It is known that this life force does not obey and is independent of the laws of physics. This life force is named kundalini, and as seen earlier, is associated with germinal epithelium. It seems this life force is associated in the living being with germinal epithelium not as a coincidence. Actually this life force is responsible for sexual behavior of would be parents. The life force is responsible for selection of a specific sperm for fertilization with the ovum. This selection of sperm depends on the 'SANKALPA' of the life force, and the 'purvasanchita' of previous birth. The zygote in this way is a function of non random choice of sperm with the ovum. This explains the peculiar constitution of the person who is to be born. The person thus born therefore can manifest many phenomena both explainable by genetics because the genetic constitution itself is the result of 'SANKALPA' of the life force. This life force it seems is beyond four dimensions which I tend to understand or believe. Coming back to bandhas they cease to remain mere physical or physiological closures or contractions. They seem to influence through, a yet un-understood connection, the life force.

But this all needs further exploration. The point is, the bandhas assist in channelization of the primal force to be sublimated and merged into cosmic consciousness.

The 'mudras' are peculiar arrangements of toes, fingers, limbs etc. Thus, brahmamudra, dronamudra, yonimudra and yogamudra seem to influence the life force.

DRISHTI:

While a person is performing asana he is advised to adopt bhrumadhya drishti (focusing one's eyes on the point between the two eyebrows), nasikagra drishti (focusing eyes on tip nose), or closure of the eyes. The drishti presumably helps to integrate one's thinking with one's feelings, intuitions, passions etc. At least, there is a subjective experience to this effect. This is important because many psychological disturbances are due to lack of such integration. This effect must be studied carefully especially with due attention towards the concurrent neural input in optic nerves, activity of muscles of eye balls, neural activity in parietal cortex, occipital cortex and other related regions, activity in other body muscles and all other physico-physio-psycho-spiritual concomitants.

Drishti puts in action certain muscles of eye ball and lets the others rest. The ones which are put in action are usually at rest and vice versa. This allows diversion of mind, from painful or disturbing or distressing issues. Drishti is associated with calm expressions on the face and relaxation of the related muscles of face. This apparently helps the individual to break the vicious cycle of pain, anxiety causing wry face and / or wry expressions.

Another possible benefit of drishti is synergism between the two cerebral cortices which probably perform distinctly different but complementary functions, viz. intuitive and intellectual. The drishti apparently helps in differential relaxation of the body muscles, composure of the personality, concentration of the mind. The value of stereopsis is known in this connection.

As far as kriyas are concerned there are some difficulties in accepting and the conceding of the point of their safety. Trataka and kapalbhati however, appear to be safe.

However, it is essential to avoid them in diseased states involving related organs.

The effect of kapalbhati seems to be in terms of reverting the gravitational effects without gross changes in the posture of the body.

Suryatrataka, agnitrataka etc. however must be done by only under expert's (with thorough scientific background as Ill) guidance, in view of effects of U.V. and other. radiations. As regards vamanakriya, it may prove useful in cases of what is called ADHMANA, i.e. dyspepsia resulting from distension or hyperacidity. This is because vamaana may assist the timely relaxation of lower esophageal sphincter in times needed.

Kriya, such as basti, helps, if used judiciously and with due precaution, in hygiene of bowel, especially in those who have constipation of functional nature.

Other kriyas such as involving cleaning of teeth, ears, mouth, tongue, eyes, nose, skin etc. are obviously form important items in the daily routine and must continue to do so.

PRANAYAMA:

The process of pranayama involves systematic and disciplined inspiration and expiration with retention of breath or holding of breath in specific proportion and specific manner. The pranyama is divided into mostly eight but variable number of categories. This classification is based on the parts involved and also the manner and intervals in the process of pranayama. The effects of pranayama as claimed in various texts have a very wide range.

Pranayama is apparently a bridge between unconscious and superconscious realms of the individual. The exact nature of .this bridge or the exact nature of this bridge or the exact natural dimensions of the bridge are not known.

Pranayama which is a seemingly bodily process only, actual influences the reticular formation tremendously besides influencing the autonomic nervous system, most parts of central nervous system, neuroendocrine and endocrine systems, immune system and all the metabolic activities in the body.

Pranayama thus encompasses 'close to non living unconscious phenomena as well as 'close to consciousness of cosmic nature' or 'close to superliving' super conscious phenomena.

Pranayama probably with varying degree of transformation of an individual practitioner is associated with imbibition of pranic 'energy'. The ascent of the practitioner probably represents various 'LOKAS' such as swargaloka, vishnuloka etc.

Nothing has been proved as regards 'SIDDHIS' associated with pranayama. Effects so far observed include some neuromuscular and biochemical effects which make a breakthrough in the research in the field and effects of pranayama concepts such as those of kaluza and Clein have to be studied extensively.

This is because concepts of 'compactification' as proposed by modern physics, seems to correlate well with concepts of 'kalpa' and 'kalpanta' also.

The pranayama is associated with a) rhythmic stimulation of stretch receptors, b) rhythmic stimulation of various centers in brainstem, c) rhythmic stimulation of cortical and sub cortical centers d) rhythmic stimulation of or inhibition of various endocrine and metabolic activities in the body. But these effects or mechanisms of effects do not explain or disprove "SIDDHIS" claimed in pranayama.

PRATYAHARA, DHARANA, DHYANA AND SAMADHI:

Pratyahara means withdrawal of senses, dharana means fixation of mind on any object, dhyana means meditation or one pointedness of mind. Samadhi means self realization.

These four headings do not seem to represent separate stages however, Pratyahara associated with capacity to transcend all material temptations representing 'cruder energy' dharana associated with focusing of the total being on the supreme reality, and samadhi associated with total sublimation of the individual or total merger of the individual consciousness with cosmic consciousness.

The study of these states required bold and modern concepts, sophisticated gadgetry and dedication to the subject with individual practice and introspection.

CONCLUSION:

The foregoing is a glimpse of YOGA, as can be sensed today. It is clear that it does not confine to today's scientific knowledge alone or today's perception of yoga practitioners as found in their writings, or the texts of yoga. It leaves us at the edge of infinity because YOGA is a process of infinitesimal enlightenment and voyage to the supreme cosmic strength.

HOLISTIC INSIGHT INTO LOCOMOTION AND HEALTH PROMOTION

Locomotion is a characteristic of most of the animal species. But as far as we, the human beings of this era are concerned locomotion has been replaced by automation [vehicular motion]. Our legs are neither used for 'supporting the body nor for balancing it. They simply exist. They simply hang from our chairs or merely rest on the cushioned foot-rest under the table. Even economically weaker sections are seen avoiding walking. Those who have to do it per force, do so, but very reluctantly.

It will be easy to understand why the phylogenetic aspect of walking is very important if I recall from the previous articles on YOGA that the many YOGASANA i.e. postures simulate the postures of many animals and plants. In other words, simulation of the postures of animals is one of the brilliant and effective ways of evolving YOGASANAS.

It will surely be wise to appreciate and conceptualize and practice walking as “LOCOMOTIVE OR MOBILE YOGASANA” from Spiritual point of view.

ADVANTAGES:

GAMANA VIPASHYANA, the method of meditation involving walking is already known but not yet adequately popularized. This is because its advantages are not sufficiently understood and/or appreciated. GAMANA VIPASHYANA as a method of mediation is especially good for most of us who find it difficult to sit in one place with patience and stable mind. Walking gives sense of moving forward on the one hand and holds back uncontrolled flights of mind on the other. It does it naturally and gradually helps improve stability of our mind. It prevents the mind from getting dragged behind the fears or worries of the future.

From physiological point of view, walking involves synchronous activation of general sensory afferents in the nervous system and the general motor (somatic) afferents in the central nervous system. This fairly synchronous activation of the general sensory and motor nervous system involves relative sparing of prefrontal, limbic and related structures which involve reverberating circuits. The reverberating circuits can cause disturbing and distressing effects as are experienced by most of us in the form of repeated and irresistible appearance of the memories of painful or sad events, insults, trauma, fear, loss etc. This makes the mind disturbed.

If walking is practiced intelligently and with this understanding, then it can be evolved into a most effective technique of acquiring HOLISTIC HEALTH.

While walking one should do NAMASMARANA which simply means JAPA or chanting the name of God. One need not utter the name of God or Guru loudly but just remember it. This can be done with a rhythm that can be synchronized with steps. NAMASMARANA is a time tested

meditative way of self realization. It is a key to and also a cardinal sign of individual and universal Ill being. It is impossible to describe the advantages of NAMASMARANA in one article. Because NAMASMARANA is a subject of books. Another point is observing MAUNA. MAUNA is observing silence. Not talking. MAUNA is an essential and overlooked aspect of life. MAUNA helps us develop a safety valve between emotional upsurges and correspondingly disastrous speech, plans and actions. MAUNA helps us to develop VIVEKA. MAUNA is called as MANASA TAPA. Walking usually provides an excellent opportunity for solitude i.e. EKANTA. EKANTA is one of the most neglected necessities of life. Man needs reflection, upon himself so that healthy self-criticism is evolved and this gives rise to healthier and tolerant approach to life which is especially important in family, working places, but as such it is important in every field.

Walking has a great potential to free us from addictions, obsessions. And dominance of one's life. Walking in general but especially the walking for longer and longer time associated with NAMASMARANA, MAUNA, EKANTA, can be a good way of overcoming addictions. Because mind and body acquire a sort of rhythm and pleasant tiredness as every step is synchronized with NAMA. Backbiting promotes inconsiderate attitude. It promotes self aggrandizement. Walking can save us from this sick attitude and promote positive thinking and thus strengthen our mind. This process is called VACHASHUDDHI.

Walking gives us compulsory mental rest from crushing mental preoccupations. Businessmen, executives etc. have their so-called priorities under which they gradually get crushed. Denying oneself a vehicle and deciding to walk, prevents one from getting trapped into such self imposed tortures.

Walking and NAMASMARANA help us rise above the onslaughts of pains and pleasures and ride on the situation. Thus it gradually makes us less and less miserable and

less and less pitiable and less and less helpless in our own eyes!

From physical point of view one of the most important things I lack is sweating. Air-conditioners, fans, indoor sedentary work or all of these together almost deprive us of sweating. This lack of sweating is likely to lead to blockade of our sweat glands and favor skin infections. Walking and subsequent sweating opens the pores of the sweat glands and thus promotes skin health. Saline dressing, described in surgery is favorite of many surgeons. Saline prevents bacterial growth. Sweat contains saline viz. sodium chloride, Sweat thus mechanically by washing and also by chemically by acting as antibacterial help to prevent bacterial skin infections. In addition to sweating, exposure to sun has the benefit of promoting vitamin D production. But in addition to this the bilirubin is converted to lumirubin which is more soluble and hence this is an additional mechanism for facilitation of excretion of bilirubin. The sweating may reduce the burden of excretion on kidney. (This is author's unpublished hypothesis). Excess Weight can create multiple problems. These problems include wide range of illnesses ranging from skin infections to heart disease and diabetes to arthritis. Besides (overweight is usually associated with abnormal hike in expenses on food, clothes as ill as deodorants).

The advantages of moderate exercise are known to most of us. But walking is an exercise of lower extremities and this strengthens the skeletal muscle pump involved in venous return. This reduces the load on the heart and thus contributes to the prevention of ischemic heart diseases.

Walking is invariably associated with sound sleep which is rare in sedentary jobs.

According to AYURVEDA our existence is PANCHAMAHAUTIKA i.e. constituted by five basic elements. Contact with all these is important for health. This is the basis of naturopathy. Thus, contact with mud

[PRUTHWI], water [AAPA]. Sun [TEJA], breeze [VAYU] and open space [AKASHA] are beneficial to health. Excepting mud and water walking provides all these. As far as water is concerned, rainy season provides opportunity to get it and march towards health at least when I am on our way back to our home.

Since walking does not involve aerobic type of caloric expenditure and increase in heart rate and cardiac output [The volume of blood pumped by each ventricle per one full minute] it is safer than such exercises even for patient who have border line ischemia [Reduction in the blood supply] of heart.

Health of lungs and stomach and skin:

Phylogenetically [i.e. through evolution] our skin has developed from the sheath through which several processes essential for life used to take place. Can some of these be reactivated? Not likely. But can not deny the possibility entirely,

By walking in open air I promote many functions of skin including thermoregulation, vitamin D synthesis etc... Walking is associated with generalized increase in blood supply to the skin as well as mucous membranes. This would facilitate healing of various chronic lesions of skin and promote production of protective mucus in stomach thus prevent or alleviate ulcer in stomach. Improved circulation would also promote mucus secretion in lungs and promote secretion as well as removal of mucus and with it bacteria and other particles by ciliary movement.

From economy point of view money is of great importance even though it is next in importance to our conscience. Hence saving money when feasible is very essential. Saving on bus fare, car and petrol or taxi is thus coupled with health. Chauffeur driven air-conditioned car contributed to one's RAJASA pleasure but simultaneously bloats one's ego as well as the abdomen! Further it stuffs the sinuses in many!

If I take a bus for a distance of say 4 or 5 bus stops, and then it may take about 20 to 25 minutes to reach the working place. This is variable depending upon the arrival of the bus and lose the opportunity to exercise then I may have to spend time in reaching a health club or a swimming pool or a yoga center. This involves spending of extra time and extra money. Instead, walking averts the waiting time and saves the time and money one may have to spend for going to health club.

Petrol and oils are important sources of energy and their saving is a valuable service to humanity and to the nation.

From psychological point of view anxiety is usual in our society due to day to day problems which may vary in their nature from rich to poor. Moreover sense of insecurity is also common. But like the moderate exercise walking also is most likely to be associated with endorphin release and thereby reduction of anxiety.

Many of us need attention from others. This is not abnormal but a kind of borderline hysteria. Thus when I don't get attention from others I start unconsciously dejecting ourselves. When we are walking we see that people at large do not get attention. Gradually I learn to live without the crutches of others attention with independent sense of dignity...

Waiting on the bus stop is almost always associated with restless and impatient moments and grumbling and complaints. This is because we are eager to reach home. Walking automatically removes this unpleasant and sickening element from our life.

Walking (especially to your working place) is a treat to heart as well as soul. This is because such walking is not the sort of walking which the excessively health conscious persons are busy with. Natural walking derives inspiration from the youthful and dynamic efforts for survival unlike the walking of health freaks from which I get infected by

the anxiety about Weight, age, or disease!

Walking gives us physical confidence which is of enormous value during convalescences in general but especially during recovery from debilitating illnesses and other situations such as advancing age and diffidence in one's physical capacity due to many causes such as sedentary job.

Walking gives us extraordinary sensation of the presence of every tissue which I become unaware of due to disuse! This sensation is some sort of likable rawness in leg muscles tendons, joints etc.

From social point of view, awareness of the social reality is very important. Many of us dwell in a state of mind where the hardships of others are unknowingly ignored. This creates an undue concern about pure problems. This leads to simply magnifying our problems and in turn being over-sensitive about it

It is always necessary to remember that for achievement of our goals no one else is responsible other than us. I should not expect other to fulfill our dreams of our goals. But by the same logic I should not get distracted by indulging in gossips or small talks. Walking automatically makes this possible without any bitterness.

Walking brings peace. This is because I no more compete for train, bus or taxi, or interactions with bus conductors and taxi drivers which are usually unpleasant are completely avoided.

By being out of the bus or train I reduce the pain of the fellow passengers.

Walking is the most romantic thing. The sight of love and warm interactions amongst the pavement hutment dwellers can inspire and excite even the most depressed and cynical individual. This can teach most us, how to love in spite of differences and difficulties!

From cultural point of view, exposure to the life of the

people from a variety of professions, businesses, jobs which is important and is much more than what is described in books. This exposure makes our mind and vision broader and healthier. This gives us immensely broad base and thereby stability to our mind and it also gives us strength to overcome times of stress and struggle. Walking offsets our bookish and dogmatic concepts and fossilized thinking and uplifts to new profundity and dynamism which can match the true nature of life.

From hygienic point of view, traveling in trains, buses and even taxis can result in infections. Walking avoids this possibility. Sun light is known to be antimicrobial so this would contribute to disinfectant effect.

From environmental point of view, the vehicular horns and engines create noise which contributes to stress and stress related diseases such as diabetes, hypertension, anxiety and such other disorders. Air pollution caused by vehicles causes respiratory disorders. The more I walk the lesser I contribute to such pollution.

Walking precludes the buying of vehicles and their use and hence it reduces the crowding of vehicles on roads and parking places as well as reduces their use and thereby reduces their wear and tear.

Accidents a very common cause of deaths and morbidity:

Pedestrians have been harassed and endangered by psychopathic / ignorant / irresponsible driving of many, but the pedestrians themselves never endanger others lives. Walking thus contributes to health of others by virtue of being non violent

From political point of view, if the ministers and the other policy makers as well as the top executives begin to walk then their planning and implementation of programs can achieve new and humane dimensions.

From geriatric point of view walking has distinct advantage over many other forms of exercises. Thus it does not cause jerks. This consideration is especially important

with advancing age. The jerks associated with some forms exercise or games such as jogging, tennis etc have a potential risk of causing muscle sprain, tendon tear, ligamental sprain or trauma (noticeable or otherwise) to the Weight bearing cartilages. Walking which is associated with no jerks is thus far safer than other such exercises or games.

From aesthetic point of view, tanning may be welcome phenomena for some but calamity for the others. But tanning can be avoided if desired by use of umbrella. Weight reduction is one more factor that may give better and desirable shape to the body.

Are there any LIMITATIONS? NO.

Some distances are too much to walk and hence impossible and some are too short so walking your way to office does not involve walking as such! But this limitation of distance can be overcome by walking part of the distance, walking for shopping, climbing few staircases etc. depending on the situation and feasibility...

Is there anything paradoxical in walking? NO. The author is fully aware that many of us are forced to walk miles together for their survival as they have no other choice. But this article does not address to only elite masses. It is to be noted that if they [economically handicapped people] appreciate these advantages of walking and then walk their way then their walking also would not be as much miserable as it is considered by them to be. Moreover if others [economically privileged] appreciate the advantages of walking then their feeling of superiority will be uncoupled from the vehicles!

Are there any disadvantages of walking? NO. Walking seems to have one disadvantage! While walking we are endangered to some extent by irresponsible or psychopathic driving, stray dogs, cumulative deposits of garbage and

filth especially in cities like Mumbai. One can never argue in favor these things. But it is to be remembered that in cities like Mumbai these things are ubiquitous, present everywhere and not associated with walking alone. But be that as it may, with some degree of patience, tolerance, caution while crossing as ill as walking and alertness with respect to open manholes, broken and uneven footpaths and such things, one can walk and enjoy its advantages.

HOLISTIC CONCEPT OF EMOTIONS

- 1) INTRODUCTION:
- 2) DEFINITION:
- 3) CLASSIFICATION:
- 4) TYPES OF EMOTIONS:
- 5) PHYSIOLOGY IN BRIEF:
- 6) METHODS OF STUDY:
- 7) APPLIED ASPECTS:

1) INTRODUCTION:

Emotions are commonly experienced phenomena. But their subtler subsets are very difficult to comprehend. In fact the intricacies of human emotions are so complex that they are not understood in their entirety even by individual who experiences them, The concept that the emotions are not restricted to the body but are in and around body adds further complex dimension to the understanding of emotions. Even more difficult to understand are mechanisms underlying them:

The most important characteristic of emotions is that on the one hand they intricately and inseparably associated with our body and on the other hand they are inseparably associated with our consciousness and phenomena such as religion, law, ethics, social conventions and interpersonal relationships.

Emotions therefore can be cause of our bodily health or

disease as Ill they can be cause of the health or disease of the society.

Emotions can drive us towards eternal life and they can lead us to suicides. Emotions can propel us towards inner harmony and universal harmony as Ill as they can be conducive to personal agonies or universal strife.

2) DEFINITION:

It is difficult to define emotion exactly .It is a more or less purposive and organized response of an individual to environmental (external and internal) stimuli and is marked by neuroendocrine responses and conscious concomitant. The actual physical nature of the experience and the conscious concomitant has not be known to us so far SANKHYA philosophy describes and discusses these issues in a convincing, but not in a demonstrable manner.

3) CLASSIFICATION:

Emotions can be classified in various ways. Thus one can consider.

i) Emotions which are close to instincts such as emotions associated mother instinct. parental instinct, sexual instinct, protective instinct and feeding instinct.

ii) Emotions associated with beliefs such as those towards the idols which are worshipped.

iii) Emotions associated with social conventions e.g. emotions related to fame, respect, position, richness etc.

iv) Emotions related with ethical concepts in a given society e.g. Polygamy, Monogamy, adultery, promiscuity, prostitution, premarital sex, drinking of alcohol, eating vegetarian or non-vegetarian food etc.

v) Emotions related to family structure and social relations thus emotions associated with relationships such as DADA-PITA, NANA-POTA, MAMA- BHANJA, CHACHA-BHATIJA, BHABHI-DEVAR, BAHAN-BHAI-BAHANOI,

FUFI, MAUSI, SASUR-SANS-BAHU, MATA-PITA BETA-BETI.

One can appreciate that the versatility, of these relationships and richness and profundity of emotions associated with them is unique to India. One can not translate these relationships (and many more) in appropriate a manner in English.

vi) Emotions associated with identity of place of birth, language, caste, creed, color of the skin, one's country, one's religious identity etc. are of great significance if I consider the social dimensions they have and the unrest caused by or quelled by these emotions. ,

vii) Emotions associated with particular ideology .One can easily think of emotions of those who dedicate themselves to and remain in fold of a particular ideology. Such emotions can be really potent and lead to major upheavals in world.

viii)The concept of Geeta teaches us of state of being in which an individual is beyond the influences of emotions. The individual however is not without emotions. This state is called STHITAPRAJNYA. The individual is said to have (through his consciousness) merged with the rest of the universe and has therefore risen above the influence of emotions.

4) TYPES OF EMOTIONS:

It is interesting to note that BHAGAVAD GEETA has described in 16th, 17th and 18th chapter different types of attitudes, intelligence, knowledge, perspectives, meditations, yajnyas, donations, behaviors etc. associated with various types of emotions.

I will try to the purport of the same. The emotions associated with total ignorance about one's SELF are hatred. malice, jealousy. pride, lust etc. These lead to perceptions and behavior which are reflected in personal. familial. social, professional life of the person. It would be reflected in political life also.

Thus the individual would be lazy or erratic in his personal behavior. He would eat and drink at the cost of his own wife, his children, his parents etc. Socially he would display the worst standards of civic sense and may be criminal as Ill. Professionally he would indulge in all types of antisocial activities such as destroying the hutments for personal gains, taking bribe and still not doing the work, doing appendectomy or caesarean sections without any indications etc. These are characteristics of behaviors resulting from such emotions. In political life he would be associated with terrorism or fanaticism. People in rule would manifest these emotions in craving for personal gains. They would keep planning things in such way that at they themselves be benefited at the cost of people. These traits are classically termed, TAMAS.

The emotions associated with some degree of evolution are associated with consideration of others' views. Knowledge of SELF is present but very indistinctly. These emotions are selfishness, greed, enthusiasm, want of respect and fame, hypocrisy, desire to dominate excessive competitiveness etc.. The individual would attend to his bodily desires excessively and would be very active. But he would also do it to others in his family with intense feelings but also would expect the same in return. Socially the person would always try to project himself or herself at every possible opportunity. He or she would try measures beyond acceptable norms to achieve success. But this could not generally involve harm to severe to others. Thus corruption would be no bar there would be certain norms observed in the corruption! Politically speaking the planning would be for personal gains but without completely ruining the people's interests. These type of emotions and the resultant behaviors are classically termed RAJAS.

The individual who has undergone fair degree of evolution gets at least glimpses of his true SELF and his mind broadens. His emotions are love and caring for the family and friends without expecting anything in return, He feels

sad for the misery of others. He is kind empathic. These emotions of love and friendliness lead to considerate attitude, magnanimity and hence generosity, helpfulness or public service, mutual respect, charity, activities for the justice and Welfare for everyone. By virtue of these a person would be truthful, honest, committed to his/her duty, fearless, and usually involved in political, cultural, intellectual or environmental, economic and such struggles (directly or indirectly) for universal justice and harmony. In classical parlance this is called SATVIKA.

For social as well as personal point of view when the SATVIKA is overshadowed by TAMAS & RAJAS the society and its members go through emotional tortures and tribulations. Whenever a particular society or mankind is being ruled by TAMAS emotions one can safely conclude that the society is heading towards destruction.

5) PHYSIOLOGY IN BRIEF:

Experience Vs Expression:

The mechanism of experience or awareness of the emotional tone is not known. What scans the top scanner areas in brain?

Expression: Cortical areas, limbic system, hypothalamus, basal ganglia, the muscles concerned and glands such as lachrymal glands are involved in the expression of emotions. It has to be appreciated that body posture, associated limb movements, abdominal and respiratory muscles also play part in expression of the emotions.

6) METHODS OF STUDY:

A) Methods used in man

- a) Experimental and clinical and
- b) Those employed by Indian sages and rishis.

B) Methods used in animals

A) Methods used in man:

a) Experimental and clinical:

i) In man various methods can be used involving techniques such as study of EEG patterns and their association with particular emotions.

ii) In Neurosurgery cases where the patient is conscious one can use stimulation of surface of the cerebral cortex and association with emotions.

iii) The polygraphs can be used to detect autonomic changes associated with various emotions and thereby neuroendocrine parameters can be studied in details.

iv) Study of patients with disturbed emotions by using various instrumental or clinical tests e.g. TAT test.

b) Those employed by Indian sages and rishis

The Indian sages evolved the art or method of enabling oneself to rise above petty self, observe, understand and handle one's emotions. They also evolved various systems of yoga

B) Methods used in animals

1) Ablation

2) Stimulating (electrical and chemical)

3) Electrical recording

4) Implanted electrodes

In all 1, 2 and 3 one can use stereotactic surgical technique so as to be precise and accurate.

5) Neurohistological techniques (precise and elegant in animal experiments but lacks correlation with subjective perception. The neurohistology in humans is not elegant though the perceptual details are relatively vast.

In animals rage, placidity, pleasure and behavioral patterns associated with reproduction are studied.

SHAM RAGE: Goltz and Ewald [1896] studied decorticated dogs and cats. Lashing of tail, erection of hairs, protrusion

of claws, dilatation of pupils, biting, struggling etc. Ire observed. These point to SYMPATHETIC OVERACTIVITY.

This condition is called sham because true rage cannot exist in absence of higher cortical mechanisms. This is not Ill directed hence relatively innocuous. Posterior and ventral portions of diencephalon are responsible for the above because if hypothalamus, is cut entirely .then sham rage disappears.

Wheatley's: Selective destruction of satiety centers leads to true rage phenomenon. In this case there is direction and the animal is really vicious and chronic and incurable and savage.

It is important and interesting to extrapolate (though very carefully and cautiously) these facts to the behavior of criminals and psychiatric patients.

7) APPLIED ASPECTS:

Having considered the importance of emotions in an individuals as Ill as mankind's life I can enumerate some measures which will surely help in emotional stability, maturity and evolution. Further it can help in mastery over emotions and thus utilization of (instead of being used by) emotions.

- a) PRANAYAMA of suitable type.
- b) Long walk every day.
- c) Sound sleep every day.
- d) Moderation in eating and drinking and other personal habits..
- e) Use of flowers and plants for interior decoration.
- f) Use of appropriate colors, fragrance, music etc.
- g) Practice of NAMASMARAN in the morning before attending to anything or anybody else and also whenever feasible. NAMASMARAN is chanting in mind, or loudly of the name of God or Guru. This can be done according to

one's customs, traditions or choice.

h) Cold or warm bath everyday morning and preferably in the evening as Ill.

i) Slow and deep breathing intermittently.

j) Making a list of activities and its regular prioritizing.

k) Everyday evaluation of social utility and even the quality of the social utility of one's activity.

HOLISTIC ASPECTS OF PROMOTION OF EMOTIONAL HEALTH & PERFORMANCE

1) INTRODUCTION

2) PHYSIOLOGIC ANATOMY

3) CONNECTIONS

4) PHYSIOLOGY AND BIOCHEMISTRY OF EMOTIONS

5) APPLIED ASPECTS

6) HOW TO ADDRESS ALL THESE?

7) REFERENCES

INTRODUCTION

In the last article I considered the nature of emotions and their types as enunciated in Geeta. I also learned about the methods of studies. I also enumerated in brief some ways to promote emotional health.

In this article I will learn more about the physiology of emotions and holistic ways to promote emotional health -and thereby performance in day to day life.

The emotional experience and expression in general, are associated with:

a) Passage of impulses to and from different parts of brain.

b) Release of neurotransmitters at the nerve endings,

c) Combination of these neurotransmitters with receptor

molecules present on another neuron,

d) Release of catecholamines and peptide hormones at nerve endings of autonomic and enteric nervous systems.

e) Release of several hormones and their combination with receptor molecules present in the target gland cells or target tissues cells.

f) Variations in the metabolism as well

The emotions seem to correspond with the concepts viz. MANOMAYA KOSHA, though they are also intricately and inseparably associated with ANNAMAYA, PRANAMAYA, VIJNYANAMAYA and ANANDAMAYA KOSHA (KOSHA can be considered to be layers of existence with vast range with respect to subtlety and size).

This is why promotion of emotional health and performance (which is a part of holistic health) demands a real holistic approach and not simple drug treatment or simplistic counseling. Simple food fads or so called workshops cannot help restore emotional health substantially. Neither suppression of individual aspirations nor uncontrolled fulfillment of individual desires can usher in emotional health.

Keeping this in mind, I will try to understand PHYSIOLOGIC ANATOMY of emotions.

PHYSIOLOGIC ANATOMY

1) Olfactory brain i.e. temporal lobe cortex lying on medial surface of cerebral cortex called orbitofrontal and orbitoinsular region of temporal lobe cortex. In short, structures lying at the hilum of the cerebral hemispheres on its medial side.

Olfactory areas play a role in emotions. Dogs have tremendous sense of smell. It never forgets it. This is associated with the loyalty and love for the master. Pheromones are substances which are secreted in animals. Animals recognize and get attracted to the substances

secreted by opposite sex even from a great distance.

In human beings sense of smell is associated with pleasant or unpleasant feelings present in sexual attraction. This has a lot of significance in terms of pleasant or unpleasant memories which last long. In fact this phenomenon is used in the manufacture of some sex specific perfumes as well as decoration of honeymoon room with fragrant flowers!

With respect to food, taste and smell can cause vomiting and sense of disgust thus showing association of gastrointestinal system and emotions. Feeding and satiety are coupled with pleasant emotions and lack of food or enforced dirty food is associated with unpleasant ones.

Association of gastrointestinal system, emotions and autonomic nervous system is proved by the fact that stimulation of different regions in limbic system may cause sympathetic or parasympathetic response.

Thus stimulation of orbitofrontal region causes increase in blood pressure [BP] and heart rate [HR] due to sympathetic effect and increase in motility and secretions in gastrointestinal tract [GIT] due to parasympathetic effect. Stimulation of temporal region causes fall in blood pressure [BP] and fall in heart rate [HR] due to parasympathetic effect and fall in motility and fall in secretions due to sympathetic effect in GIT.

Hence the expression “my heart is bleeding” and not my brain is bleeding. To express emotional suppression I say “I am suffocated” and not “my brain is suppressed”. To express jealousy I say “he has heart burn” and not “brain burn”. To express courage I say he has “guts” and not “he has thoughts of bravery”!

2) Temporal lobe also is involved in emotions. Temporal means related to time. With increasing age (passage of time) the graying of hair starts in front of ears. The bones, muscles as well as part of brain in this area are therefore called TEMPORAL. Apart from other structures optic radiations pass through the temporal lobe.

It receives afferents via inferior colliculi (inferior corpora quadrigemina) and medial geniculate bodies (part of thalamus) from COCHLEA, via olfactory tracts from OLFACTORY NEUROEPITHELIUM and via fornix ["fornix" means arch] from MAMILLARY BODIES and probably from VESTIBULAR NUCLEUS on its posterior aspect where equilibrium sense is projected.

Efferents go to all areas from where afferents are received, thus forming reciprocal connections.

Temporal lobe is a primary center for hearing. This audiosensory area is concerned with appreciation of intensity quality and pitch of the auditory sensation. It has point to point projections from cochlea. Next to this is audiotpsychic area concerned with analysis and interpretation of auditory sensation and its integration into more complex perception. Audiotpsychic area is unilateral being present on left side in right handed persons. Equillibratory sensation is projected in posterior part of first temporal convolution (gyrus).

Sense of smell is projected in uncus ["uncus" means hook] and hippocampus which are also parts of temporal lobe on medial aspect.

Lesions of temporal lobe in man are associated with:

a) Attacks of auditory disorders e.g. tinnitus i.e. sensation of ringing in ears in absence of any noise. This is subjective sensation of noise. Auditory hallucinations are imaginary hearing of some talk etc. in its absence. Cochlea is bilaterally represented and hence unilateral cortical lesion is not associated with deafness.

b) Subject is in a dreamy state in which he may become destructive and violent and may even tear off his clothes. He has no control over his activity and later describes as having been similar to dream.

3) Limbus means border. French physiologist Paul Broca used the term LIMBIC LOBE to designate the border of neocortex and the primitive brain. Originally this was

called rhinencephalon and was thought to be concerned with olfaction (Sense of smell) only. Limbic lobe consists of part of cerebral cortex. Mclean included subcortical structures and called the whole complex LIMBIC SYSTEM. It is concerned with emotions and emotions are involved in memory, social behavior, sexual behavior etc.

Limbic system influences copulatory reflexes which are integrated at spinal and brainstem levels and gives them the additional dimension of emotional pleasure or pain. Thus the urge to copulate and coordination of the acts of male and female are dependent on limbic system. In lower animals learning is not necessary for successful mating. In primates and man previous experience is necessary for successful mating. In man sexual act is encephalized and hence emotional, social and psychological factors play a role. Hence the development of emotions associated with monogamy, chastity, celibacy, illegitimacy, promiscuity etc.

Bilateral removal of temporal lobe, amygdala and hippocampus leads to excessive increase in the sexual drive irrespective of sex, species and even animate or inanimate nature of the object. This has some relevance to psychopathic behavior in human beings.

4) Amygdala or amygdaloid nucleus is called window of the limbic system. Afferents from all structures of limbic system reach the amygdala.

Stimulation of amygdala in lower animals causes sense of olfaction. In higher animals a) increase or decrease in blood pressure [BP] and heart rate [HR]. b) Gastrointestinal [GIT] activity c) defecation d) micturition e) pilorection f) pupillary dilation g) raising head i) bending body.

Responses via hypothalamus: Some areas show fear when stimulated and like hypothalamus its stimulation also may cause sexual responses. When temporal lobe is removed along with amygdala, KLUVER BUCY SYNDROME results. It is associated with

- i) Excessive tendency to examine any object with mouth called ORAL TENDENCY.
- ii) Loss of fear
- iii) Decreased aggressiveness.
- iv) Changes in dietary habits. Herbivorous may become carnivorous.
- v) Psychic blindness called visual agnosia.
- vi) Excessive sex drive where discretion with respect to maturity, species, sex and even living or non living is lost.

Stimulation of Amygdala stimulation causes rage and sympathetic effects whereas bilateral temporal damage leads to docility and lack of emotional expression. In normal individuals there is a balance between rage and docility. Only major stimuli can disturb this balance and not the minor ones.

5) Emotional expression is associated with analysis of the situation, comparison with the past experience and assessment with respect to future effects. This involves CEREBRAL CORTEX and limbic system.

Ablation of anterior portion of cingulate gyrus and subcallosal gyrus is associated with rage reaction and the animal becomes dangerous.

6) HIPPOCAMPUS (Ammon's horn): the cortex of hippocampus is allocortex which is 3 layered. It is important for emotions in an indirect manner. Hippocampus means a small marine animal called sea horse. Hippocampus has connections with various systems through fornix. Various effects caused by the lesions of hippocampus are:

a) Ability to learn new tasks or perform the tasks learned previously is lost. This is called antigrade amnesia i.e. inability to learn. Thus it is important in consolidating memory.

b) Sometimes there is retrograde amnesia i.e. loss of

memory of the past events.

Bilateral hippocampal lesions cause loss of recent memory which is observed in aging also. Thus ageing may involve degeneration of limbic system. Past memory is not lost. This is one of the reasons why aged people seem to possess lesser intensity of emotions and appear to have become self centered or selfish.

7) Dopamine and Norepinephrine [N E] for rage reaction. Fall in NE causes depression and rise in NE causes elevation of mood. Antidepressant drugs may increase biological amines in brain.

8) Orbitofrontal cortex is related to sleep and restfulness as ablation results in insomnia and restlessness. This may play a role in causation of anxiety and induce sleeplessness, sometimes desirably and sometimes dangerously.

9) If median forebrain bundle is stimulated there is motivation. The organism presses the lever which stimulates this part electrically. This is important as when all other factors are same it is the motivation which plays a major role in performance. It is essential to find out other factors affecting motivation as well as simple means to develop motivation.

CONNECTIONS

1) PAPEZ CIRCUIT: Papez 1937. Hippocampus -> Fornix -> Mamillary bodies -> Anterior nucleus of thalamus -> Thalamocortical fibers via internal capsule -> Cingulate gyrus -> via cingulum -> parahippocampal and dentate gyrus.

The cortex of the cingulate gyrus is juxtallocortex or paleocortex 4 to 5 layered (Majority of the cerebral cortex is 6 layered and is called isocortex.).

2) Mamillary bodies to dorsomedial nucleus of the thalamus and reticular nucleus of the thalamus to non limbic portion of cortex (prefrontal and temporal not precentral). Conduction is fast. a and b are called nonlemniscal

pathway and convey information from ascending reticular activating system [ARAS].

3) Afferents from all viscera and body walls i.e. practically all sensations are relayed to hippocampus and its electrical activity is increased. Hypothalamus gets information from external environment to hippocampus via mamillo thalamo cingulo fornico hippocampal pathway.

The connections show REPETITIVE DISCHARGE OR AFTER DISCHARGE. Hence emotional experiences linger in mind for long time and appear even in dreams.

Conduction is slow. Thus emotions are not as quick as a withdrawal reflex or a stretch reflex. Such quick or fast reflexes take place without emotional experiences.

PHYSIOLOGY AND BIOCHEMISTRY OF EMOTIONS

Happiness, pleasure, love, hatred, care, esteem, pity, anger, lust, greed, reverence, disgust, enthusiasm, depression, frustration, grief, self pity associated with humiliation, self aggrandizement associated with respect, power etc., agony associated with insult, sadness associated with loss of life money, other possessions etc. are varieties of emotions. Their intricate nature does not permit identification of one to one association of a particular emotion or one of its shades, with anyone specific structure, physiologic process or neurotransmitters. But I have some understanding of these.

Norepinephrine (Noradrenalin) (N E) is present in locus ceruleus present in the pons, tegmentum of midbrain and hypothalamus. Insufficiency of NE causes depression.

Dopamine (prolactin inhibiting hormone [PIH]) is found in substantia nigra as well as in hypothalamus.

It is interesting to note reduction in lactation associated with anxiety which is associated with dopamine reduction or inhibition. Levels of dopamine are raised in schizophrenia.

The serotonin is found in limbic system, hypothalamus

and spinal cord. It is concerned with sleep, emotions and pain perception.

Various other hormones such as adrenocorticotrophic hormone, somatostatin, enkephalins, acetyl choline, gama amino butyric acid etc. are found in brain. Various peptide hormones found in GIT are also found in brain.

APPLIED ASPECTS

The drugs such as tricyclic antidepressants (TCAD) e.g. imipramine prevent the reuptake of the NA.

Monoamine oxidase inhibitors (MAOI) e.g. isocarboxazide inhibit the Mono amine oxidase which catabolizes the NE and thus prolongs the life of NE.

Thus TCAD & MAOI increase availability of NE in synapses. Since NE deficiency is associated with depression they are used as antidepressants.

It is essential to look at the various procedures of PRANAYAMA and ASANAs in HATHAYOGA from the point of view of altering NE concentrations in human beings. Moreover plane exercise like walking has to be assessed from this point of view. If such experiments have already been conducted and found even marginally successful their results must be widely publicized and utilized in curative and health promoting measures.

Drugs such as phenothiazines (e.g. chlorpromazine) which cause reduction in dopamine act as tranquilizers on the one hand; can cause increase in lactation on the other. Further these drugs are known to be beneficial in schizophrenia in which levels of dopamine are found be raised.

A complication of the treatment can be reduction of dopamine in substantia nigra leading to drug induced Parkinsonism.

Drugs like lysergic acid diethylamide (LSD) which is banned can possibly cause reduction in pain perception but also cause hallucinations.

But even as I understand above facts and use hundreds of antidepressants and anxiolytics I fail to curb the undesirable emotions leading to unprecedented and horrendous violence of mankind towards mother earth, mother nature, plants, animals and towards men of different caste, creed, religion, race, nationality, language etc. I find violence even amongst brothers, sisters and so on.

Physiologically and psychologically our emotional status seems quite acceptable. One cannot detect and pinpoint any gross "emotional abnormality" or any conspicuous syndrome in us. But our social fabric reflects emotional chaos, degeneration and perversions. Moreover if I introspect honestly then I find that I contribute to the emotional morbidity of our society.

This necessitates that I study this topic with holistic perspective.

In as much as homeostasis of an organism affects all the cells to a greater or lesser extent, just the same way social cosmic homeostasis, global homeostasis, social homeostasis which constitute our environment influence each and every one of us to greater or lesser extent.

The perspective of global unity, plans and policies born out of it in different fields (such as environment, nuclear weapons, economy, health etc.), administrative programs (in these variety of fields), strategies of their implementation and their actual implementation at various (international, national, regional and local levels) affect each and everyone of us to a greater or lesser extent in every possible way.

Thus it has to be clearly seen and appreciated that our emotions can not be understood as isolated phenomenon. They are inseparably integrated with environment and heredity.

The corollary of this is that: Proper diagnosis and treatment as well as prevention of emotional disorders and promotion of emotional health (even at individual level) can not be

efficient enough unless, individual and environment are taken together.

HOW TO ADDRESS ALL THESE?

My working hypothesis or feeling is that NAMASMARAN which is advocated and practiced in most religions holds the key to this problem.

NAMASMARAN as I understand involves following activities:

i) Chanting or remembering repeatedly the name of God, Guru or deity in whom an individual has either faith or respect or love. This may be loud or silent.

ii) Exploration through introspection and observation of the results in terms of:

A) Broadening of perspective leading to decline in religious, regional, ideological and other forms of bigotry and consequent bitterness,

B) Development of ability to see things from various perspectives and thus in a holistic sense,

C) decline in obsessive, compulsive and fanatic thoughts and increase in tolerance and considerate attitude, decline in the suffocating and disturbing effects of mean emotions, be it happiness, pleasure, love, hatred, care, esteem, pity, anger, lust, greed, reverence, disgust, enthusiasm, depression, frustration, grief, self pity associated with humiliation, self aggrandizement associated with respect, power etc., agony associated with insult, sadness associated with loss of life, money, other possessions etc. or any other emotion.

D) Gradual development of positive, optimistic, joyous and dynamic approach in the accomplishment of challenging tasks and goals as ill as day to day errands.

E) Improvement in relationships at working place, family, neighbors etc.

F) Manifestation of globally beneficial policies, plans,

programs and their implementation at all levels.

iii) Spreading one's observations and experiences in terms of scope of such chanting / remembering

It can be easily appreciated that NAMASMARAN is not suggested as an exclusive measure. But it is suggested as a common and constant feature of everything that I do! Thus, NAMASMARAN should be practiced irrespective of any circumstance, religion, caste, age, sex, profession and so on and so forth.

Having seen the inevitability of holistic approach for emotional health and importance of NAMASMARAN I can then consider other measures useful in curing emotional diseases and promotion of emotional health. These are general measures and hence, for grave and uncontrolled emotional disorders treatment from a specialist should be sought.

a) Waking up: Wake up only after the sleep is complete and sufficient. Inadequate sleep usually causes irritability. This can cause unnecessary skirmishes and quarrels.

b) Defecation: This is called SHAUCHA which actually means cleaning. Regular bowel habit precludes the possibility of restlessness and consequent lack of concentration and hence poor grasp and poor communication. This can reduce the level of performance and cause bitter encounters especially at working place.

c) Bath: Bath has rejuvenating and refreshing effects and contributes to positive thinking.

d) Use of appropriate perfumes. If there is dirty smell of one's own body or in the surroundings then one can get disturbed. Keeping fragrant flowers in house is recommended.

e) Use of properly fitting clothes, shoes, spectacles etc.

f) Change of posture, rest, refreshment, cordial interaction during working hours etc nurture us emotionally can be really rewarding. Protracted work without refreshment can

cause disturbing hypoglycemia which can upset mind.

g) Ambulation/locomotion. Daily walk can be very useful in relieving hypokinetic stress and make us emotionally stable and profound.

h) Massage is useful by virtue of i) relaxing muscles and ii) breaking the positive feed back developed due to stress and tightness which aggravate one another turn by turn.

i) Deep and slow breathing whenever possible presumably helps to harmonize the activity of reticular activating system and thereby all parts of brain.

j) Head massage by application oils such as BRAHMI oil.

k) Judicious socialization and interactions amongst friends is also important in life for emotional harmony.

l) Suitable instrumental and vocal music helps to change the mood.

m) For temporary but immediate relief from distressing emotions resorting to comics can be very effective.

BUT n) NAMASMARAN which was practiced by all time greats such Mahatma Gandhi plays the important role even in enabling us to practice at least few of the above.

HOLISTIC INSIGHT INTO PANCHAKARMA

1] INTRODUCTION:

2] WHY STUDY PANCHAKARMA?

3] DEFINITIONS

4] POSSIBLE MECHANISMS

5] APPLIED ASPECTS

6] FUTURE PROSPECTS

1] INTRODUCTION:

PANCHAKARMA literally means five procedures. These

are procedures

followed to cure diseases as well as to promote health.

The PANCHAKARMA [five procedures] are described in CHARAKA SAMHITA, SUSHRUTA SAMHITA and ASTHANGA HRUDAYA OF VAGBHATA. They are also described by CHAKRAPANI, ARUNDATTA and DALHAN.

Two sets of procedures are known. They are as follows.

A]

- 1] VAMANA
- 2] VIRECHANA
- 3] NIRUHA ASTHAPANA
- 4] ANUVASANA
- 5] SHIRO VIRECHANA / NASYA

B]

- 1] VAMANA
- 2] VIRECHANA
- 3] BASTI
- 4] NASYA
- 5] SIRA MOKSHA RAKTA MOKSHANA.

Apart from these KARMAAs which are called PRADHANA KARMAAs i.e.,

five main procedures, there are PURVA KARMAAs and PASCHAT KARMAAs, i.e. procedures to be followed before and after the main procedures respectively.

PURVA KARMAAs are:

1] PACHANA 2] SNEHANA 3] SVEDANA and PASCHAT KARMAAs are: 1] DHOOMA 2] GANDUSHA 3] SANSARJANA KRAMA 4] RASAYANA

2] WHY STUDY PANCHAKARMA?

a] Just as I study physiology of adaptations to changes in temperature, ambient pressure e.g. at high altitude or in space or during exercise, YOGASANAs etc. it is also essential to study physiology of the adaptations to these relatively simple and commonly used procedures.

b] Even grater reason to study these is that these and similar procedures form an integral part of Indian culture [and many Other cultures as well] and hence their study and inclusion in main stream medicine would make the medical care more aligned to the people. □ A□ □ A□

c] It would bring about greater and appropriate and optimal utilization of Indian herbs and thus save national wastage. □ A□ □ A□

d] It would mpower the people to be more self sufficient and less dependent on drugs and doctors and alien sources of drug production or corporate institutions catering medical care at prohibitive costs.

3] DEFINITIONS:

VAMANA:

URDHVABHAGENA DOSHA HARANAM KAROTI

CHARAKA SAMHITA KALPA STHANA 1.40

VAMANA means induced vomiting.

VIRECHANA:

ADHO BHAGENA GUDENA DOSHA HARANAM KAROTI

CHARAKA SAMHITA KALPA STHANA.

VIRECHANA means induced loose motion. Thus this can be aperient, laxative, purgative or cathartic.

NIRUHA / ASTHAPANA:

SHARIRA ROHANAT DOSHA NIROHARANAT
ACHINTYA VERYA PRABHAVATAYA CHASMI
HASAMBHAVANNIRUHA ITI SUSHRUTA SAMHITA

NIRUHA means one which removes the DOSHA. The other meaning is related to ROHA which means one which builds the body. The third meaning is derived from the word UHA which means logical conjecture or imagination. Thus NIRUHA means the influence of which is unimaginable.

The other word for this is BASTI i.e. enema. This is one type of BASTI. This does not contain any oily matter as against the ANUVASANA in which there is oil or ghee present.

ANUVASANA:

ANUVASAN API NA DUSHAYATI ANUDIVASAMAPI DEEYATE ITI ANUVASANAM

ANUVASAN means retention BASTI or enema characterized by oily materials such as TAIL [oils] , TOOP [Ghee], VASA [lard] also called MEDA and MAJJA [marrow] by some.

SHIRO VIRECHAN / NASYA:

VIRECHANAM SHAMANAM BRUHANAM CHA

This removes the defects from the nose.

PURVAKARMA

PACHANA, SNEHANA and SIDANA:

PACHANA

YADUPAYUKTAM ANNAPANAUSHADHAM APAKVANAM SAMANAM PACHANE SAMARTHAM

TAT,PACHAYATE ITI PACHANAM.

One which promotes the digestive process to digest the useful food, liquid and medicinal matter. One which digests.

SNEHANA

SNEHANAM CHA ANILAHANANAM DEHAMARDAVA KARAM MALASANGA NASHANAM.

SIDANA:

STAMBHA GAURAVA SHEETAGHNAM SIDANAM
SIDAKARAKAM □ A □ One which cures or prevents rigidity
or akinesia or reduced activity, over Weight and tendency
for reduced basal metabolic rate [BMR].

PASCHAT KARMA

DOOMA:

This is a procedure of producing smoke from medicinal
plants or cow dung sheep dung, boar dung etc. In Chinese
system there is a similar procedure called moxibution.

GANDOOSHA:

This is a procedure in which person is supposed to hold
in mouth, mouthful of medicated liquid oily or otherwise.

SANSARJAN KRAMA:

Giving gradually liquid, semisolid and solid and very light,
light and heavy i.e. very easy to digest, easy to digest and
difficult to digest foods.

RASAYANA:

During PANCHAKARAMA some loss of energy can take
place and to recuperate that RASAYANA CHIKITSA i.e.
which facilitates fuller and quicker recovery are given.

4] POSSIBLE MECHANISMS

The concepts underlying the PANCHAKARMA are a]
DOSHA STHANA b] Traveling of DOSHAS to respective
region/ organ. c] The DOSHAS are removed from the
body from their original location. DOSHAS are control
mechanisms, or better still they can be called as forces
or energies responsible for the functioning of the control
mechanisms. They can be compared with the controlling
centers in brain such as hypothalamus or centers in the
brain stem, responsible for autonomic activities. Thus
when I eat ANS, endocrine activities lead to exocrine
secretory and smooth muscle motility changes. This in
AYURVEDIK terms is called reaching of or traveling of
DOSHAS from their sites, i.e. STHANA i.e. original sites to

GIT. □ A□ It is presumed that there is disturbance in the DOSHA STHANA and This is rectified by treatment of the region to which the DOSHAs have reached, thus it may be nose, stomach, colon etc This is similar to a concept of SWADHARMA. In 18th chapter of GEETA the 45th and 46th verses explain how a man reaches his original abode through his KARMA. □ A□ □ A□ Thus DOSHAs, which have effect on the peripheral parts through certain routes, are rectified by KARMA which influence the DOSHA sthana THROUGH THE SAME ROUTES and influence/rectify them.

In POORVA KARMA the actions are on skin, GIT, and also all cells and vessels.

SNEHANA

1] STHAVARA JANGAMA SNEHA □ A□ VASA, MAJJA, GHRUTA, TAIL.

2] SANYOGA BHEDA.

YAMAK SNEHA, TRIVRUT SNEHA and MAHA SNEHA

3] BAHYA / ABHYANTAR □ A□ BAHYA: ABHYANGA: Just application SANVAHANA: massage.

4] ABHYANTARA: ACCHAPANA and VICHARANA. Drinking only SNEHA and drinking SNEHA mixed with food respectively.

SNEHAPURVA KARMA

ATURPARIKSHA, SNEHAPURVABHOJANADIVYAVASTHA AUSHADHI TATHA UPAKARANA VYAVASTHA SNEHA PRADHANA KARMA: MATRA, KAALA, SNEHA PRASHANA VIDHI, SNEHA JEERNA LAKSHANA PARIKSHA, SNEHA SNIGDHA LAKSHANA PARIKSHA and SNEHA VYAPADA and its CHHIKITSA.

MATRA UTTAMA, MADHYAMA and RHASVA. SNEHA JEERNA PARIKSHA means test to see if SNEHA is digested or not. If oily belching after warm water then incomplete digestion if clear belching then SNEHA is digested. In

PASCHAT KARMAS the actions are simple to imagine as they are mostly local in nature. DHOOM is used even today to aid quicker and efficient post partum recovery. SAUNA BATH and STEAM BATH are examples SIDANA.

5] APPLIED ASPECTS

Appropriately followed PANCHAKARMA CHIKTSA is found to be effective in chronic cases of migraine, epilepsy, insomnia, obesity etc.

6] FUTURE PROSPECTS

PANCHAKARMA can be developed further by using procedures such as lung wash, bladder wash, syringing of ears, washing of eyes etc.

If one uses Ayurvedic medicines then these procedures can be made more beneficial if when already followed or used.

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