

Chapter – I

INTRODUCTION

In 1986, the WHO, in the Ottawa Charter for Health Promotion, said that health is "a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities". Overall health is achieved through a combination of physical, mental, emotional and social well-being which together is commonly referred to as the health triangle **(WHO, 1986)**.

The health status is usually measured in terms of life expectancy at birth, infant mortality rate, fertility rate, crude birth rate and crude death rate. These indicators of health are determined by numerous factors such as per capita income, nutrition, housing, sanitation, safe drinking water, social infrastructure, health and medical care services provided by government, geographical climate, employment status, incidence of poverty and the like **(Reddy and Selvaraju 1994, Dadibhavi and Bagalkoti 1994)**.

It is a well-known fact that India is, next only to China, the second largest country in terms of population in the world. But the health status of a great majority of the people is far from satisfactory as compared to China and other developed countries. However, over the last five decades or so, India has built up health infrastructure and manpower at primary, secondary and tertiary care in government, voluntary and private sectors and made considerable progress in improving the health of its population **(Ray 2003, Bhat and Babu 2004)**.

However, India is one of the major countries where communicable diseases are still not under control. The incidence of new fatal diseases such as AIDS / HIV,

hepatitis-A is on the increase tuberculosis and malaria still takes a high toll. Chronic non-communicable diseases such as heart diseases, diabetes and cancer are also in the rise (**Bhat and Babu 2004**).

MENSTRUATION

The menstrual cycle is the cycle of natural changes that occurs in the uterus and ovary as an essential part of making reproduction possible. Its timing is governed by endogenous (internal) biological cycles. The menstrual cycle is essential for the production of eggs, and for the preparation of the uterus for pregnancy. The cycle occurs only in fertile female humans and other female primates. In human females, the menstrual cycle occurs repeatedly between the age of menarche, when cycling begins, until menopause, when it ends.

A periodic discharge of a bloody fluid from the uterus occurring at more or less at regular interval of 28 days in woman from the age of puberty to menopause is known as menstruation. The flow of altered blood along with endometrial and stoma cells, glandular secretion and occasional blood clots occurs for 3 to 5 days through a vaginal passage. Menstruation ceases during pregnancy. Its failure to occur may result from some abnormalities, physical disorders and emotional and hormonal disturbances.

In humans, the length of a menstrual cycle varies greatly among women (ranging from 21 to 35 days), with 28 days designated as the average length. Each cycle can be divided into three phases based on events in the ovary (ovarian cycle) or in the uterus (uterine cycle). The ovarian cycle consists of the follicular phase, ovulation, and luteal phase whereas the uterine cycle is divided

into menstruation, proliferative phase, and secretory phase. Both cycles are controlled by the endocrine system and the normal hormonal changes that occur can be interfered with using hormonal contraception to prevent reproduction.

By convention, the length of an individual menstrual cycle in days is counted starting with the first day of menstrual bleeding. Stimulated by gradually increasing amounts of estrogen in the follicular phase, discharges of blood (menses) slow then stop, and the lining of the uterus thickens. Follicles in the ovary begin developing under the influence of a complex interplay of hormones, and after several days one or occasionally two become dominant (non-dominant follicles atrophy and die). Approximately mid-cycle, 24–36 hours after the Luteinizing Hormone (LH) surges, the dominant follicle releases an ovum, or egg, in an event called ovulation. After ovulation, the egg only lives for 24 hours or less without fertilization while the remains of the dominant follicle in the ovary become a corpus luteum; this body has a primary function of producing large amounts of progesterone. Under the influence of progesterone, the endometrium (uterine lining) changes to prepare for potential implantation of an embryo to establish a pregnancy. If implantation does not occur within approximately two weeks, the corpus luteum will involute, causing sharp drops in levels of both progesterone and estrogen. The hormone drop causes the uterus to shed its lining and egg in a process termed menstruation.

From puberty until menopause a women's reproduction system under goes many cyclic changes. The cyclic changes are related to the changes in the endometrium, breast, ovaries, vagina, hormone secretions, and even emotional attitudes. The cyclic reproduction changes of the human female are marked by menstruation, during which some cells, uncoated blood from ruptured blood vessels, other fluids and uterine endometrial are released through the cervix and vagina. Each

menstrual cycle occurs about every 28 days and last for 4 – 5 days. The menstruation occurs 12 to 14 days after the ovum is released from the ovary, about one in four weeks. The periodicity of cycle varies with individuals, after fertilization, menstruation ceases and it is the first indication of pregnancy.

In the menstrual cycle, changes occur in the female reproductive system as well as in other bodily systems (which can lead to breast tenderness or mood changes, for example). A woman's first menstruation is termed menarche, and occurs typically around age 12-13. The end of a woman's reproductive phase of life is called the menopause, and this commonly occurs somewhere between the ages of 45 and 55.

MENSTRUAL DISORDER

A menstrual disorder is an irregular condition in a woman's menstrual cycle. Anything that interferes with the normal menstrual cycle, causing pain, unusually heavy or light bleeding, or missed periods. Typically, a woman of childbearing age should menstruate every 28 days or so unless she's pregnant or moving into menopause. But numerous things can wrong with the normal menstrual cycle, some the result of physical causes, others emotional. These include amenorrhea, or the cessation of menstruation, menorrhagia, or heavy bleeding, and dysmenorrhea, or severe menstrual cramps. Nearly every woman will experience one or more of these menstrual irregularities at some time in her life.

AMENORRHEA

Amenorrhea is the absence of a menstrual period in a woman of reproductive age. Physiological states of amenorrhea are seen during pregnancy and lactation (breastfeeding), the latter also forming the basis of a form of contraception known as the lactation amenorrhea method. Outside of the

reproductive years there is absence of menses during childhood and after menopause. There are two types of amenorrhea: primary and secondary. Overall, they affect 2 to 5 percent of childbearing women, a number that is considerably higher among female athletes (possibly as high as 66 percent).

Primary amenorrhea (menstruation cycles never starting) may be caused by developmental problems such as the congenital absence of the uterus, failure of the ovary to receive or maintain egg cells, and genetic diseases such as 5-alpha-reductase deficiency which causes one to be intersex. Also, delay in pubertal development will lead to primary amenorrhea. It is defined as an absence of secondary sexual characteristics by age 14 with no menarche or normal secondary sexual characteristics but no menarche by 16 years of age.

Primary amenorrhea occurs when a girl of at least 16 is not menstruating. young girls may not have regular periods for their first year or two, or their periods may be very light, a condition known as oligomenorrhea.

Secondary amenorrhea (menstruation cycles ceasing) occurs in women of childbearing age after a period of normal menstruation and is diagnosed when menstruation has stopped for three months. It can occur in women of any age.

It is often caused by hormonal disturbances from the hypothalamus and the pituitary gland, from premature menopause or intrauterine scar formation. It is defined as the absence of menses for three months in a woman with previously normal menstruation or nine months for women with a history of oligomenorrhoea.

According to some evidence, the four major causes of primary amenorrhea (in which a woman has never had a period) are the following: ovarian failure (48.5% of cases of amenorrhea); born with no uterus and vagina (15.2%); deficiencies in

reproductive hormones, such as in hypogonadotropic hypogonadism (8.3%); and delayed puberty (6%). until recently, the great majority of these women were unable to become pregnant. advances in reproductive techniques, however, are enabling many to have children. There are many causes of secondary amenorrhea, including eating disorders, polycystic ovarian syndrome, and a number of medications and medical conditions.

DYSMENORRHEA

Characterized by menstrual cramps or painful periods, dysmenorrhea, which is greek for "painful menstruation," affects nearly every woman at some point in her life. It's the most common reproductive problem in women, resulting in numerous days absent from school, work and other activities. There are two types: primary and secondary. Tensesness, the symptoms typically start a day or two before menstruation, usually ending when menstruation actually begins. Secondary dysmenorrhea has an underlying physical cause and primarily affects older women, although it may also occur immediately after a woman begins menstruation, however.

These are abdominal and pelvic pains experienced before and during menstruation. Menstrual cramps may last for hours or up to three days. The cramps may be mildly or severely painful and can be debilitating and can interfere in regular activities, sometimes leading to absences from work, school or other functions. dysmenorrhea is caused by uterine contractions and can be aggravated by emotional stress. dysmenorrhea can be classified into primary dysmenorrhea and secondary dysmenorrhea.

PREMENSTRUAL SYNDROME (PMS)

Another form of menstrual disorder is the premenstrual syndrome or PMS. This is characterized by uncomfortable mental and physical symptoms that can occur up to two weeks prior to the onset of menstruation. Though most experts believed that it is caused by the estrogen level, they also consider that a combination of psychological, genetic, nutritional, and behavioral factors are likely to be involved. Some psychological manifestations of PMS include anxiety, depression, irritability, anger, confusion, forgetfulness and the exacerbation of existing psychiatric ailments. Physical symptoms include tenderness of breasts, migraine, nausea, changes in energy level, swelling of arms and legs, feeling bloated, back pain and difficulty in sleeping.

Treatment for PMS includes the intake of vitamins and minerals like calcium, vitamin b6 and magnesium. A person who experiences the psychological symptoms of PMS will also need a deeper self-knowledge and social support in order to cope with the changes in mood and behavior. Changes in lifestyle and diet will also help in dealing with PMS. Having a healthy diet will facilitate in alleviating irritability, fluid retention, joint aches, breast tenderness, anxiety, fatigue, and depression. Caffeine, alcohol, simple sugars, salt, and fats should also be avoided to decrease bloating, fatigue, depression and tension.

Several yoga poses are proven to ease menstrual pain. It can also help mind and body adapt with stress, anxiety and depression making feel relaxed and calm, and enabling to cope with psychological symptoms of PMS. Having a generally relaxed mind and body can also help in alleviating the menstrual pain. The healthy yoga diet can also help by supplying the body with the necessary vitamins and minerals to counteract the symptoms of PMS. However, it is important to recognize the need to

slow down and practice yoga gently. The abdomen should remain soft and inactive throughout the practice so that the menstrual flow can continue unobstructed. Twists and inverted positions are not suitable as this may reverse the flow or squeeze the abdominal area and interfere with the natural discharge of menstrual fluid.

DELAYED PUBERTY

The most common cause of primary amenorrhea is delayed puberty due to some genetic factor that delays physical development. Being short is the most common sign of this, although sometimes a family history of delayed menstruation can indicate this situation. Time usually resolves the problem.

FUNCTIONAL HYPOTHALAMIC AMENORRHEA (FHA)

Functional hypothalamic amenorrhea (FHA) is the absence of menstruation due to disturbances in the thyroid gland and hypothalamus-pituitary-adrenal (HPA) system, which regulates reproduction and other important functions. The eating disorders anorexia and bulimia are most often associated with FHA. FHA may be due to other different factors, most unknown. Severe weight loss, changes of appetite, or both appear to cause hormonal abnormalities that can cause FHA. How this occurs is not entirely clear. Some observations include the following:

Extreme weight loss and reduced fat stores lead to hormonal changes that include low thyroid levels (hypothyroidism) and elevated stress hormone levels (hypercortisolism). These changes effect a reduction in reproductive hormones. Some experts theorize that such changes may be due to a primitive protective biologic

mechanism that was designed to prevent potentially harmful pregnancies during times of famine.

Amenorrhea can also occur in young women with eating disorders whose weights are normal or above normal. Factors other than low fat stores, then, may be involved in reproductive abnormalities. Changes in appetite itself may have an effect on chemicals in the hypothalamus. One such important chemical in this system that may play a major role in FHA is leptin. Leptin is involved with regulation of appetite and is released by fat cells. Levels fall as less fat is stored in the cells. Low levels of leptin appear to interfere with reproductive hormones, particularly luteinizing hormone and so may contribute to amenorrhea.

A syndrome known as the female athlete triad is associated with hormonal changes that occur with eating disorders in young women who excessively exercise. It comprises anorexia (severe weight loss), amenorrhea, and osteoporosis (decrease in bone density). One 2001 study suggested that repeated exercise modifies the hormonal responses to both activity and rest and may interfere with cyclic variations in reproductive hormones, particularly luteinizing hormone (LH), which triggers ovulation.

Treatments for functional hypothalamus amenorrhea- in one small 2002 study, 70% of women with FHA recovered with no therapy at all after an average of eight years. The important factors associated with recovery were weight gain or maintenance of normal weight, lowering stress hormone levels, and restoring normal estrogen levels. If anorexia is the cause of FHA, it should be treated immediately and aggressively, since severe anorexia can be life threatening. An important goal is to reduce or prevent bone mass depletion, which occurs in almost 90% of women with anorexia. Estrogen replacement is usually not useful, but there are many available

bone protective agents, such as calcium and vitamin d supplements and bisphosphonate, such as alendronate (fosamax).

POLYCYSTIC OVARIAN SYNDROME (PCOS)

Polycystic ovarian syndrome (PCOS) is a condition in which the ovaries produce high amounts of androgens (male hormones), particularly testosterone. PCOS occurs in about 6% of women, and amenorrhea or oligomenorrhea (infrequent menses) is quite common. According to a 2002 study, nearly 30% of obese women with PCOS had amenorrhea. (The rate was lower--4.7%--in women with normal weight.). If the ovaries produce too much androgen (hormones such as testosterone) a woman may develop male characteristics. This ovarian imbalance can be caused by tumors in the ovaries or adrenal glands, or polycystic ovarian disease. virilization may include growth of excess body and facial hair, amenorrhea (loss of menstrual period) and changes in body contour. In PCOS, increased androgen production produces high LH levels and low FSH levels, so that follicles are prevented from producing a mature egg. Without egg production, the follicles swell with fluid and form into cysts. Every time an egg is trapped within the follicle, other cyst forms, so the ovary swells, sometimes reaching the size of a grapefruit. Without ovulation, progesterone is no longer produced, whereas estrogen levels remain normal. The elevated levels of androgens (hyperandrogenism) can cause obesity, facial hair, and acne, although not all women with PCOS have such symptoms. Other male characteristics, such as deepening voice and clitoral enlargement, are rare.

PCOS also poses a high risk for insulin resistance, particularly in women who are also obese. Insulin resistance is associated with diabetes type 2, in which insulin

levels are normal or high but the body cannot use this hormone efficiently. about half of PCOS patients, in fact, also have diabetes. The drug valproate (used to treat seizures and bipolar disease) has been associated with PCOS. In most cases, the cause of PCOS is unknown. In women who are both obese and have PCOS, this approach has produced marked improvements in PCOS symptoms and in hormone levels. Metformin. Metformin (glucophage) is commonly used to increase insulin levels and control blood sugar in people with type 2 diabetes. This agent and similar ones used in diabetes are showing great promise in reversing symptoms, reducing male hormones, and restoring regular menstrual cycles and ovulation in some women with PCOS. Studies suggest it might even be beneficial in non-obese women and in those who are not insulin resistant.

Oral contraceptives (OCS) may be used to restore regular periods in women who do not wish to become pregnant or who are not candidates for other approaches. It should be noted that OCS can be estrogen plus progestins or progestins alone. The progestins in any OCS should be newer ones, which are less apt to produce male characteristics.

PCOS has typically been treated with clomiphene, even for women who do not want to conceive. This fertility drug blocks estrogen, which tricks the pituitary into producing the reproductive hormones FSH and gonadorelin (gnrh) administered in pulses, used alone or in combination with clomiphene, gonadotropins, or oral contraceptives, has been successful in some cases where clomiphene alone has failed. Women who want to become pregnant can take either clomiphene or superovulation agents (FSH agents or hmg) with or without assisted reproductive technologies (art).

Male-hormone blockers agents that block male hormone, such as flutamide, spironolactone, or finasteride, may be helpful alone or in combination with ocs to

reduce male symptoms. They can cause birth defects in male offspring and so should be used by women who are also taking an oc. D-chiro-inositol. this natural substance, found in fruits and vegetables, improves insulin sensitivity and is under investigation. Drugs that treat prolactin drugs, such as cabergoline or bromocriptine, which reduce hyperprolactinemia, (high levels of prolactin) may be useful for some women with pcos. (They do not appear to be useful in women with PCOS and normal prolactin levels.)

Ovarian procedures:- Operations that cauterize or open up the ovaries may be helpful for some women. A procedure called ovarian drilling, in which the surgeon opens six to 12 small holes in the ovary, is proving to be safe and effective for PCOS. It also reduces the risk for multiple pregnancies compared to fertility treatments. Ultrasound guided injection of hot saline (salt water) into the ovaries has achieved ovulation in 73% of women and is a promising alternative to ovarian drilling.

ELEVATED PROLACTIN LEVELS (HYPERPROLACTINEMIA)

Prolactin is a hormone produced in the pituitary gland that stimulates breast development and milk production in association with pregnancy. High levels of prolactin (hyperprolactinemia) in women who are not pregnant or nursing can reduce gonadotropin hormones and inhibit ovulation, thus causing amenorrhea. it is the cause of between 10% and 40% of cases of secondary amenorrhea. Secretions from the breast not related to pregnancy or nursing (called *galactorrhea*) is a telltale symptom of high prolactin levels and should be investigated.

Hyperprolactinemia can be caused by hypothyroidism or pituitary adenomas. (These are benign tumors that secrete prolactin. they can cause headache and visual

problems as well as breast secretions.) Some drugs, including oral contraceptives and some antipsychotic drugs, can also elevate levels of prolactin. Medications used to *treat hyperprolactemia*. Agents known as dopamine agonists are used for women with hyperprolactinemia caused by tumors in the pituitary gland.

- Bromocriptine (parlodel), the standard agent, reduces prolactin levels by 70% to 100% and also shrinks tumors. Treatments are given for one to two years then stopped when prolactin levels are normal. Common side effects include nausea, constipation, headache, dizziness, and fatigue. (Dopamine agonists are also used in parkinson's disease.)
- Cabergoline (dostinex), another dopamine agonist, is proving to be more effective than bromocriptine in shrinking tumors and may have fewer side effects. Once ovulation starts, women who want to become pregnant should stop cabergoline one month before attempting conception.

Surgery: Surgery may be needed for women who do not respond to medications or whose tumors are large, but recurrence occurs in as many as 40% of patients within five years.

PREMATURE OVARIAN FAILURE (POF)

Premature ovarian failure (POF) is the early depletion of follicles before age 40, which, in most cases, leads to premature menopause. It affects about 1% of women and is typically preceded by irregular periods, which might continue for years. In this condition, follicle-stimulating hormones (FSH) are elevated, as they are during perimenopause. Premature ovarian failure is a significant cause of infertility and

women who have this condition have only a 5% to 10% chance to conceive without fertility treatments.

Causes of Premature Ovarian Failure: there are a number of causes of POF. Often the cause of this disorder or other causes of POF is unknown. In some cases, it may represent an acceleration of the aging process.

The following may conditions may produce POF:

- Adrenal, pituitary, or thyroid gland deficiencies.
- Genetic factors related to the x chromosome. A woman needs two functioning x chromosomes for normal reproduction. When one is abnormal, ovarian function fails. The most severe example is Turner's syndrome, a genetic condition, in which one of the two x-chromosomes is missing or malfunctioning. Milder cases of ovarian failure can occur in fragile x syndrome and other rare inherited conditions that cause partial x-chromosome abnormalities.
- Other genetic factors: Some cases of POF and amenorrhea may be due to other genetic abnormalities. For example, researchers have reported POF in women with genetic defects in the production of growth factors called inhibins, which are produced by the ovaries. as yet, however, investigators have not identified specific genetic factors that might explain many cases of POF
- Cancer treatments (radiation, chemotherapy, or both). Women who are undergoing such treatments and who want to become pregnant should ask about assisted reproductive technologies, possibly freezing embryos before their cancer treatments, which give them the best odds. Ovarian transplantation

procedures are under investigation. Investigators are testing a natural hormone called a gonadotropin-releasing hormone analogue that puts women in a temporary pre-pubescent state during chemotherapy and which may preserve fertility in many women.

- Autoimmunity: autoimmune diseases, including diabetes type 1, systemic lupus erythematosus, autoimmune hypothyroidism, and autoimmune Addison's disease, are associated with a higher risk for early menopause. Autoimmunity, however, may also play a role in some cases of POF without the presence of specific autoimmune diseases. In such cases, antibodies specifically attack the cells that secrete reproductive hormones thus causing ovarian failure.
- Other causes: sarcoidosis, mumps, some sexually transmitted diseases, and tuberculosis. Women with epilepsy are at higher risk for POF.

Managing premature ovarian failure: There is no treatment available that will restore ovarian function in women with premature ovarian failure. Women who wish to be pregnant usually will require in vitro fertilization with donor eggs. Hormone replacement therapy may be used to prevent bone loss and reduce menopause symptoms. Freezing ovarian tissue is under investigation for women who are at risk for premature ovarian failure, such as young women with a genetic history of this condition or those who need to undergo cancer treatments.

IDIOPATHIC HYPOGONADOTROPIC HYPOGONADISM

Idiopathic hypogonadotropic hypogonadism is a rare condition in which follicle-stimulating hormone (FSH) and luteinizing hormone (LH) are under produced and prevent the development of functional ovaries. There are no other abnormalities

in the hypothalamus-pituitary axis (such as tumors or abnormal stress hormones or prolactin). In most cases, the causes of hypergonadotropic hypogonadism are unknown. Genetic factors, including Kallman's syndrome, have been identified in about 20% of these cases.

STRUCTURAL PROBLEMS CAUSING OBSTRUCTION

In some cases, structure problems or scarring in the uterus may prevent menstrual flow. Inborn genital tract abnormalities may also cause primary amenorrhea. Asherman's syndrome, for example, is scarring in the uterus that can cause obstructions and secondary amenorrhea. It may be caused by surgery, repeated injury, or unknown factors. A specific malformation called Müllerian agenesis, in which no vagina or uterus develops, is rare but still causes about 16% of primary amenorrhea cases.

MEDICAL CONDITIONS THAT CAUSE SECONDARY AMENORRHEA

Epilepsy is associated with a number of reproductive disorders that cause amenorrhea, including polycystic ovary syndrome, functional hypothalamic amenorrhea, hyperprolactinemia, and high levels of male hormones. Evidence suggests that any of the following conditions may account for such associations:

- Brain lesions that cause epilepsy may also affect hormonal production.
- Drugs that treat epilepsy can affect reproductive hormones in different ways.
- Complications of epilepsy can cause weight changes that increase the risk for conditions such as polycystic ovary.

Thyroid problems, either too much thyroid hormone (hyperthyroidism) or too little (hypothyroidism), can interrupt cycles. Hypothyroidism can result in excess prolactin. Most women with hypothyroidism fail to produce eggs, and they may receive a diagnosis of hypothyroidism for the first time during a fertility evaluation. Metabolic syndrome is a set of conditions referred to metabolic syndrome (also called syndrome x) consists of obesity marked by abdominal fat, unhealthy cholesterol levels, high blood pressure, and insulin resistance. Metabolic syndrome is a pre-diabetic condition that is significantly associated with heart disease. A 2002 study also reported that, as with PCOS, women with metabolic syndrome have higher levels of male hormones and are, therefore, at risk for irregular periods and infertility. a 2002 study estimated that 24% of the population now has this condition. Other conditions Cushing's disease, which is a disorder of the adrenal gland, can cause amenorrhea. Other medical conditions associated with delayed puberty and amenorrhea includes Crohn's disease, sickle cell disease, HIV, kidney disease, and diabetes.

OTHER FACTORS THAT MAY CAUSE TO AMENORRHEA

Physical and emotional stress may block the release of luteinizing hormone, causing temporary amenorrhea. Obesity is a significant risk factor for amenorrhea, independent of its association with polycystic ovarian syndrome (PCOS). In 2003 study, overweight women without PCOS were classified in one of five grades, depending on the severity of the obesity. The risk for irregular or absent periods increased two fold with each increase in grade. In this group, amenorrhea was also highly associated with type 2 diabetes and other blood sugar abnormalities.

YOGIC CONCEPT OF BODY

The subtle anatomy of the humans is divided into five energetic sheaths known as 'pancha kosha'. "Pancha", meaning five and "Kosha", meaning layer or sheath. This ideology describes the human being "as multi-dimensional, with the source or foundation in a spiritual dimension." The so-called 'spiritual dimension' is pure consciousness which is hidden by the other four koshas, the outermost layer being the most dense, physical body. Each kosha can be thought of as energy vibrating at a different frequency. The physical body therefore vibrates at the slowest rate and the 'inner light of consciousness' or 'atman' vibrates at fastest rate or frequency. Although, all five layers interpenetrate one another (**Bhavanani Anandha Balayogi, 2004**).

These five sheaths can be divided into three bodies:

- i. **Sthula Sharira / Physical Body** - Annamayakosha
- ii. **Sukshma Shariria / Astral Body** - Pranamayakosha, Manomayakosha, Vijnanamayakosha
- iii. **Karana Shariria / Causal Body** - Vijnanamayakosha, Anandamayakosha

Of all these, the Anandamayakosha is not bound by time or space and does not die. When the practitioner resides in this sheath, they have remembered or realized their true nature, reached enlightenment and health will pervade all layers.

ANNAMAYA KOSHA (Food Sheath)

This describes the physical body composed from the five elements but mainly from food and water. Any malfunction in this kosha is noticed as illness or disease and changes to diet and exercise regime can offer remedies.

PRANAMAYA KOSHA (Pranic or Energy Sheath)

The pranic or energy sheath comprises the prana vayus , nadis and the chakras . Hence it is also called the "vital sheath" or "vital body". Prana, the vital breath which man lives by, is the bridge between the gross and subtle bodies as well as between the other koshas. Any malfunction in this sheath is noticed as afflictions of the breath, sensory issues and nervous problems; therefore, pranayama is the most effective remedy.

MANOMAYA KOSHA (Mental or psycho-emotional Sheath)

The third sheath is concerned with the metabolism of emotion as it is mainly concerned with feelings and imagination. If emotion is either over-indulged or suppressed, the imbalance in this sheath will have a knock-on effect upon the pranamaya kosha and the annamaya kosha. Imbalance is signified by difficulties in relationships, worry and psychological issues. Remedies include visualization, meditation and mantra chanting.

VIJNANAMAYA KOSHA (Intellectual Sheath)

There are two levels to this sheath, one relating more to manomaya kosha and being concerned with mental calculation and thought and the higher aspect relating more to anandamaya kosha and being concerned with the perception and will. This sheath is the seat of the ego or in Sanskrit, 'ahamkara' and malfunctions can include poor memory, confusion, communication issues, lack of will-power and a loss of reality. Mental exercises including mantra, meditation and spiritual study can harmonise the functioning of this sheath.

ANANDAMAYA KOSHA (Bliss Sheath)

The 'bliss sheath' is the seat of the inner essence or Atman and is where all metabolise the experience of Samadhi. The mind is said to rest in its intrinsic natural

state which is pure bliss. There are no malfunctions at this level as the mind is free from 'chitta vrittis' or mental confusions and distractions.

The human body has several glands, many of which are ductless. The various hormones they produce kill germs in the body as they mingle with the blood. If these glands work as well as they should, all would be disease-free. Yoga gives strength to these glands to do their job properly. Each gland secretes a different fluid that affects a different function in the body (**Bhavanani Anandha Balayogi, 2004**).

The pituitary and pineal body glands are situated inside the back of the head, thyroid and para- thyroid are situated in the neck region, the thymus is located in the chest, and the pancreas is situated below the stomach. Different glands and organs are activated by various yogasanas in unique ways as follow

1. Pituitary – Sirasasana and Sarvangasana.
2. Para thyroid – Sarvanagasana and Halasana.
3. Thyroid – Matsyasana and Usartasana
4. Pancreas – Padma Hasta Asana, Halasana, Nauli, Uddiana,
Sivalingasana, and Paschimothasana
5. Adrenal – Chakrasana, Gomukhasana, Halasana,
Paschimothasana.
6. Liver – Sarvagasana, Urdhva Padmasana

Hormones secreted by ductless glands are very important for a healthy life. When hormones are at a particular performance level, the body can function to its optimum. The improper functioning of these glands is usually the primary cause of most diseases. Fortunately, there are yogasana that activate each of these glands (**Bhavanani Anandha Balayogi, 2004**).

Yoga is one of the six orthodox systems of Indian philosophy. Yoga is the union of the jivatma with the paramathma. It was collated, coordinated and systematized by Patanjali in his classical work, the Yoga Sutras, which consists of 196 terse aphorisms in which it is stated that yoga is a state where all activities of the mind are channelized in one direction; or the mind is free from distractions. The word Yoga is derived from the Sanskrit root **Yuj** meaning to bind, to unite, join, and attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion. It means the disciplining of the mind, intellect, the emotions, the will, which that yoga presupposes; it means a poise of the soul which enables one to look at life in all its aspects evenly.

Yoga is not merely doing an asana by the body, through the body, and for the body. The sadhakas learn to unite one part of the body with another part of the body, the body with the mind, the body with the breaths and senses, also the breath with the mind and senses and this takes one to the self realization path. It is this unification which justifies the definition of the word yoga which means, 'to unite (**Iyengar, 2006**).

One of its valuable qualities is that it builds up a store of physical health through the practice of a system of exercise called asana which keep the body clean and fit. Yogic training are essential for speedy removal of toxins for good blood circulation and for all internal process to function smoothly. Apart from the physical side of life, yoga provides beneficial effects to the mental faculties also. Different breathing exercises, quiet the mind and brain; offering inner peace and an ability to face upheavals and deal with the problems. Yoga therefore has a role both in every day practical life, and in the more thoughtful, idealistic scheme of things. Its valuable needs are to be experienced and savoured (**Iyengar, 1999**).

ASHTANGA YOGA

Ashtanga Yoga is one of the timeless and most effective classical yoga texts to expound the obstacles to inner freedom, ignorance, false perception and why one suffer. Through the "eight limbs" one can attain the goal of perfection, and expand the knowledge of one's microcosmic connection to the wisdom of the greater macrocosmic matrix of life.

Yoga is an ancient art based on a harmonizing system of development for body, mind and spirit. It is a practical aid, not a religion. Patanjali has refined yoga, through the eight fold path namely

1. Yama or disengagement
2. Niyama or detachment
3. Asana or physical postures
4. Pranayama or regulation of breathing
5. Prathyara or withdrawal of senses
6. Dharana or interrupted fixation (concentration)
7. Dhyana or uninterrupted fixation (meditation)
8. Samadhi or knowing directly higher self

Yama is aimed at five universal commandments to create a better world. The five principles are non violence or ahimsa, freedom from greed, satya or truthfulness, charity, freedom from desire. Five principles of Niyama are cleanliness, contentment, austerity, study of one's own self, which includes the body mind, intellect and ego and the final principle is a devotion to God. Practice of postures (Asana) and conscientious practice of the various types of posture. Practice of breath control (Pranayama) is practicing breathing techniques with care and determination. Detachment from worldly activities (Pratyahara) is developing a non – attached

attitude of body and mind. Concentration (Dharana) is being able to hold on to a subject mentally. Meditation (Dhyana) is developing a quiet, meditative stage. Trance (or) state of bliss (Samadhi) is reaching a state of absorption in a subject (or) in the Divine (**Iyengar, 1999**).

WOMEN AND YOGA

Women from all walks of life, and from all parts of the world, are beginning to appreciate the benefits of yoga. In modern society, women's roles have expanded considerably. All women would like to be beautiful enough to admiring stares. Women generally tend to take greater interest in their health and beauty than men. But only a few women recognize that yoga is the perfect way to get healthy and beautiful, and is also the ideal way to lead a happy life. True beauty comes from inner health a strong heart, and inner organs that function well. This is only possible through the dedicated practice of yoga. A lean and well toned body makes a women look and feel more beautiful. Incorrect posture or slouching makes women look unnecessarily obese or awkward. Yoga has the capacity to help women feel happy and confident from the inside (**Asana Andiappan 2004**).

BENEFITS OF YOGA

Yoga is a science that has been practiced for thousands of years. The benefits are grouped into three categories i.e. psychological benefits, physiological benefits and biochemical effects. This is based on the regular practice of traditional asana, pranayama and meditation (**Swami Sivananda, 2002**)

PSYCHOLOGICAL BENEFITS

Self-actualization, Social skills, Well-being, Mood improves and subjective well-being increases and Concentration, Memory, Attention, Learning efficiency, Mood improves and where as Anxiety and Depression decrease

PHYSIOLOGICAL BENEFITS

Stable autonomic nervous system equilibrium, Galvanic Skin Response (GSR), Cardiovascular efficiency, Respiratory efficiency, Grip strength, EEG - alpha waves increase (theta, delta, and beta waves also increase during various stages of meditation), Eye-hand coordination, Dexterity skills, Reaction time improves and where as Pulse rate, Respiratory rate, Blood Pressure, EMG activity decreases

BIOCHEMICAL BENEFITS

HDL cholesterol, Cholinesterase, ATPase, Hematocrit, Hemoglobin, Lymphocyte count, Thyroxin, Vitamin C, Total serum protein increases where as Glucose, Sodium, Total cholesterol, Triglycerides, LDL cholesterol, VLDL cholesterol, Catecholamines, Total white blood cell count decreases

NATUROPATHY

Naturopathy can be termed as the science of living. It believes or describes human beings as the epitome of Universe. Accordingly visualizing self in the universe, and the universe in the self, represents the most evolved state of man. Naturopathy believes in this holistic approach of health, which can be achieved by following the laws of nature (Physical Health), Rules of good conduct (Mental/ Social Health) and developing a philosophical attitude and practicing meditation and Yoga (Spiritual Health). Naturopathy believes that unless there is harmony between body, mind and spirit, one cannot enjoy healthy life.

Naturopathy is the multi disciplinary approach, which uses the healing power of natural resources like foods, herbs, earth, water and air to allow the body to heal itself. It also lays an emphasis on the importance of positive attitude in determining the state of one's existence. To conclude the Naturopathy is the science of holistic health, creating a balance with the nature and a positive living.

Naturopathy is the science of holistic health, creating a balance with the nature and a positive living. We live in a largely synthetic and artificial world. World, which has increasingly stepped away from nature. This denial of the pristine, has contributed too many of the ills that plague modern living. Naturopathy or cure through Nature is as old as life on earth. Animals have used the bounty of Mother Nature, for every ailment ever encountered by them. Ever since our advent on planet earth, we have not only used the cures offered by nature, but with typical human ingenuity, have created diverse applications and usages of herbs, medicinal plants, leaves, barks, roots. Entire systems of medicine have grown around the curative processes of extracts from plants. Entire cultures, from the Druids of the West to Medicine Men of Africa, to the Vaidas of India, have discovered, sustained, enhanced and preserved the curative power of Nature in different, but complementary ways.

In its modern, more systematized form this ancient knowledge, employed eclectically is called Naturopathy. Resurgence in Naturopathy is due to recognition of the limitations of the current medical system and the efficacy of Naturopathic medicine. Although the term "naturopathy" was first used at the turn of the century, the philosophical basis and many of the methods of naturopathic medicines go back at least to 400 B.C. when Hippocrates became famous for his treatment of diseases in accordance with natural laws. Particularly in terms of his teaching that "nature is healer of all diseases" and his formulation of the concept *vis medicatrix nature* -- "the healing power of nature.

Naturopathy is a system of medicine aimed to diagnose and treat any human ailment, pain and injury through the use of natural elements - Space, Air, Fire, Water and Earth. Naturopathic Medicine is a natural approach to health and healing that

recognizes the integrity of the whole person. Naturopathy is a system of Medicine represents the "vitalistic" tradition of medicine in our Western world. That is, it treats disease through the stimulation, increase, and support of the person's inherent healing capacity. These treatments are chosen to work with the patient's vital force, respecting the natural healing processes of nature. Naturopathic medicine treats health conditions by utilizing the body's inherent ability to heal. This is a very safe, natural therapy which utilizes the services of several different alternative medicine techniques to heal prospective patients

Naturopathy / Nature cure is a system of healing without the aid of medications. Nature cure is both curative and preventive. If one looks around us we find there are basically five elements present in nature. They are:

1. Space Element - Akash Tattva
2. Air Element - Vayu Tattva
3. Fire Element - Agni Tattva
4. Water Element - Jal Tattva
5. Solid Element - Bhumi Tattva

The food we eat comes from animal and/or plant source. The basis of food for plants is minerals and water from earth, sunlight and air from the atmosphere. Of course if there was no space it would not have been possible for the plant or animal to grow and/or reproduce. Thus we all depend on the basic five elements listed above for our survival. Accordingly these five elements form basis for our cure.

AIMS, OBJECTIVES & CONCEPT OF NATUROPATHY

Naturopathy is based on the principles of the workings of nature. Naturopathy's aim is to promote health and wellness instead of confronting disease. It

tries to educate people on how to improve their lifestyle to stay healthy and prevent illness. Naturopathy came about through observation and application. Its principles were developed through observing nature. Early humans used their instincts, just as animals do to this day. Animals, when ill, stop eating, and try to cool inflamed parts. Or they seek warmth when chilled. Early humans learned to use air, water, sunlight, and local plants for relief of aches and pains. Hippocrates, the Father of Medicine, realized the importance of nature's healing power. He wrote about natural hygiene and recognized that a fever was nature's way of trying to heal. Bathing for health was a science for ancient Roman's, and they establishes spas which served in the relief of many physical disorders.

Naturopathy believes that it is what we put into our body that controls our resistance to disease. If we burden it with impurities, invading micro-organism will find a way to multiply; because of the physical, emotional, or biochemical imbalances caused by the bad environment we create within our bodies. Naturopathic medicine tries to restore balance in our functions, by helping us to overcome negative emotions, teaching us ways to cope with stress, and also teaching us about proper nutrition that will sustain healthy body chemistry. Through these steps, the body can heal itself or fight invading organisms. Naturopathy believes that fevers, colds, and discharges are the body's way of recovering from illness. Naturopaths have long advocated the importance of nutrition for the maintenance of physical, mental, and emotional well being, and these days, research confirms these beliefs. Naturopaths treat illnesses and ailments with special diets, fasting, hydrotherapy, and vitamins and herbs, and advocate the "ounce of prevention" way of life.

It is a system of non-invasive healthcare and health assessment, in which neither surgery nor drugs are used ; dependence being placed only on education, counseling, naturopathic modalities and natural substances, including the use of foods, food extracts, vitamins, minerals, enzymes, digestive aids, botanical substances, topical natural substances, air, water, heat, cold, sound, light, the physical modalities of magnetic therapy, naturopathic non-manipulative bodywork and exercise to help stimulate and maintain the individual's intrinsic self-healing processes. Naturopathic medicine is a distinct healing philosophy and practice, which seeks to promote health, by using the body's life force and inner protecting mechanism for stimulating and supporting the body's inherent power of regaining harmony and balance.

PRINCIPLES OF NATUROPATHY

Naturopaths follow six key principles in their practices:

1. The Healing Power of Nature

Naturopathic medicine recognizes an inherent self-healing process in each of us which is both ordered and intelligent. Naturopaths act to identify and remove obstacles to healing and recovery, and to facilitate and augment this self-healing ability. The body has an inherent ability to establish, maintain, and restore health. The healing process is ordered and intelligent; nature heals through the response of the life force. The physician's role is to facilitate this process, to identify and remove obstacles to health and recovery, and to establish or restore a healthy internal and external environment.

2. **Identify and Treat the root cause**

Naturopaths seek to identify and remove the underlying causes of illness, rather than to merely eliminate or suppress symptoms. The basic cause of disease is not bacteria. Bacteria develop after the accumulation of morbid matter when a favorable atmosphere for their growth develops in body. Basic cause is morbid matter and not the bacteria. Acute diseases are our friends not enemies. Chronic diseases are the outcome of wrong treatment and suppression of the acute diseases. Illness does not occur without cause. Underlying causes of disease must be discovered and removed or treated before a person can recover completely from illness. Symptoms express the body's attempt to heal, but are not the cause of disease. Symptoms, therefore, should not be suppressed by treatment. Causes may occur on many levels including physical, mental, emotional, and spiritual. The physician must evaluate fundamental underlying causes on all levels, directing treatment at root causes rather than at symptomatic expression.

3. **First Do No Harm**

Naturopaths follow these precepts to avoid harming the patient. Utilize methods and medical substances which minimize the risk of harmful side effects, using the least force necessary to diagnoses and treat. Avoid when possible the harmful suppression of symptoms. Acknowledge, respect and work with the individual's self healing process. Refer for appropriate treatment when naturopathic therapies are inappropriate.

4. Doctor as Teacher:

Naturopaths educate their patients and encourage self-responsibility for health. They also recognize and employ the therapeutic potential of a good doctor-patient relationship.

5. Treat the Whole Person:

Naturopaths treat each patient taking into account individual physical, emotional, mental, spiritual, genetic, environmental, social and other factors.

6. Preventive Medicine:

Prevention is the best cure. Naturopaths emphasize the prevention of disease assessing risk factors, heredity and susceptibility to disease and making appropriate interventions in partnership with their patients to prevent illness. Naturopathic medicine is committed to the creation of a healthy world in which humanity may thrive.

According to Naturopathy, "Food is Medicine". Naturopathy does not use medicines. According to Gandhi Ji "Rama Nama is the best Natural Treatment", means doing prayer according to one's spiritual faith is an important part of treatment. In short, Naturopathy includes all the available non-invasive treatments and diagnostic modalities which do not interfere with the body's natural functional capacity and healing process and are in affirmity with Nature's constructive Principles.

Our body is made up of cells, some of which continuously die and are replaced by new ones. The old dead cells need to be eliminated, but often they stay

within the body. The negative effect is compounded by new/living cells, which also generate toxic wastes during metabolism. In addition, sedentary lifestyles, substance abuse, bad eating habits etc combine to create excess toxins. When these toxins are not eliminated at a reasonably fast rate, a diseased condition is created. Because Naturopathy is an approach to health care and not a treatment there are many treatment modalities, which can be employed. However, they should always be employed in a way that works with the body's own healing efforts and should be used in accordance with the principles of naturopathic treatment. Treatments may primarily be concerned with the biochemical, structural or emotional depending upon the nature of the problem. The following are some modalities that may be employed are Acupuncture and acupressure, Yoga therapy, Colon Hydrotherapy and enemas, Compresses and the use of packs and fomentations, Detoxification methods e.g. bowel cleanse, Hydrotherapy, Massage and other soft tissue techniques e.g. Neuromuscular technique, Nutritional therapy and supplementation, Physiotherapy: Herbal medicine including the use of essential oils, Psychotherapy and counseling, Reflexology, Magneto therapy, Mud therapy, Heliotherapy.

Modern naturopathic physicians use therapies that are primarily natural and non-toxic. These include clinical nutrition, botanical medicine, hydrotherapy, physical medicine, and counseling. Naturopathic physicians continue to use these therapies as their main tools and advocate a healthy dose of primary prevention. In addition, they conduct and make practical use of the latest bio-chemical research involving nutrition, botanicals, and other natural treatments. For many diseases and conditions (a few examples are ulcerative colitis, asthma, menopause, flu, obesity, and chronic fatigue), treatments used by naturopathic physicians can be primary and even curative. Naturopathic physicians also function within an integrated framework, partnering

with practitioners of conventional medicine. Naturopathic therapies can also be employed to complement treatments used by conventionally trained doctors. The result is a team-care approach that recognizes the needs of the patient to receive the best overall treatment most appropriate to his or her specific medical condition.

Naturopathic Medicine, or Naturopathy, is a system of medicine that uses natural substances to treat the patient and recognition that the patient's mental, emotional, and physical states must all be treated for a lasting effect. The foundation of Naturopathic medicine is the philosophy of the healing power of nature. This means that within every human organism there is a healing energy, which influences our immune system in the fuller sense of both the physical and the psychic. Following this first premise is the second, that the therapies used to support and stimulate this healing power of nature must be in "the gentlest, least invasive, most efficient manner possible". The third Naturopathic premise is "to diagnose and treat the cause". Naturopaths do not simply treat the manifestation of the disease, but seek the cause and treat it. In a few years, Naturopathy has made great progress. In the developing world, where traditional knowledge still survives; Naturopathy has always been widely used. The first years of a new millennium, as we look out towards a better, more mature, and wiser world, where the oneness of all things is beginning to be understood, Naturopathy will reinforce long forgotten links with Mother Earth on one hand, whilst fostering a healthier world on the other.

EARTH - MUD THERAPY

Of the five elements of nature, mud represents Earth and has tremendous impact on the maintenance of health and prevention of diseases. Minerals and trace elements present in the mud are known for its renowned effects and healing

properties. Mud also has the remarkable property of holding moisture for a long time, which has a cooling effect on the part of the body applied. Mud treatments bring relieve to arthritis, spondylitis, psoriatic arthritis, rheumatism, tendonitis, bursitis, some post-traumatic muscular hypotonic, hypotrophy and muscular rigidity. Mineral-enriched mud helps people who are suffering from psoriasis, eczema, acne and variety of other skin ailments.

WATER – HYDROTHERAPY

This uses the therapeutic properties of water. This medium was made use in therapeutics hundreds of years ago. Water has great healing properties and exhibits different properties at different temperatures. The temperature of the water for any treatment depends on the effect desired. Kellogg is considered to be the Father of Hydrotherapy. Water is used internally and externally in all its forms- steam, liquid or ice, to cleanse and restore health. It is used in the form of Baths, Jets/Douches, Packs, Compresses and Immersions to name a few. Hydrotherapy treatment helps in Immune enhancement, Digestive problems, Asthma, Bronchitis, Cold, Premenstrual syndrome, Menstrual cramps, Cancer, Varicose veins, Hypertension, Arthritis, Diabetes, Depression, Psoriasis etc.,

AIR – BREATHING EXERCISE

Breathing is life. It is one of our most vital functions. Pranayama or Breathing Exercise promotes proper breathing. In a naturopathy point of view, proper breathing is to bring more oxygen to the blood and to the brain, and to control Prana or the vital life energy.

FIRE - SUNBATH

Sunbathing is popular for the cosmetic and potential health benefits, in which a person sits or lies in direct sunshine. People often sunbathe in comfortable places where there is ample sunlight. Sunlight promotes the proper formation of teeth, speedy growth of hair, and quick and deep breathing. Blood pressure is brought down, and the kidneys become more efficient. By the action of sunlight, skin diseases are cured, blisters are burst and wounds are healed more speedily. Sunlight maintains and even increases the amount of alkali in the blood.

SPACE (ETHER) - FASTING

Fasting is primarily the act of Voluntary abstinence from taking food for definite period of time is called fasting. A fast may be total or partial concerning that from which one fasts, and may be prolonged or intermittent as to the period of fasting. A complete fast in its traditional definition is abstinence of all food and liquids except for water. Fasting for religious and spiritual reasons has been a part of human custom since pre-history. It is mentioned in the Bible, the Qur'an, the Mahabharata, and the Upanishads. Fasting is also practiced in many other religious traditions and spiritual practices.

NATUROPATHY TREATMENT

FASTING

Voluntary controlled abstinence from food has been used is therapeutically for over 2,000 years. It was advocated by Rishis, Gurus in India. Even Hippocrates prescribed it for many diseases because it allowed the body to focus its resource on fighting the diseases rather than the process of digestion. Fasting has a reputation as

an excellent and safe treatment for obesity, high blood pressure, arthritis, rheumatism, cold, sinusitis, allergies and other diseases. Fasting is an opportunity for the inner mechanism to rest, repair, rejuvenate and cleanse.

MUD TREATMENT

Mud treatment consists of mud application directly on the skin and enclosed in fine cotton wrappers. Mudpacks / baths help remove toxins form the body.

HYDROTHERAPY (WATER TREATMENT)

This is the use of hot and cold water for healing in the form of baths, on packs, compresses, sprays, enemas and douches.

MASSAGE

Helps improve blood circulation, muscle tone and strength. The treatment consists of massaging various parts of the body scientifically.

EXERCISE AND YOGA

Proper blood circulation, muscle tone and strength are essential for good health. Yoga and exercise help achieve these. They also straighten the spinal cord and regulate endocrine secretions and balance the body and mind.

SUNBATH

Every part of the body is refreshed by coming in contact with tender sunshine and fresh and healthy air. Sun and air are essential foods for all. Sunshine helps the body to produce vitamin D.

HERBAL TREATMENT

This is an ancient Indians science for restoring good health. Simple herbs and planet lives are used in this therapy.

REFLEXOLOGY (ACUPRESSURE)

This therapy energizes the nerve centers and improves and balances the functioning of various glands and organs.

MAGNET THERAPY

Application of permanent and electro-magnets are very effective for the treatment of various diseases. Magnetic water is also useful. It balances the polarity of the body.

ACUPUNCTURE

Acupuncture is an age-old Chinese method of activating the nervous system by the insertion of fine needles in different parts of the body.

CHROMO THERAPY

Sun rays have seven colors: violet, indigo, blue, green, yellow, orange and red. These colors are employed through radiation on the body or by administering charged water, oil and pills for treatment.

HYDROTHERAPY

Hydrotherapy is one of the oldest forms of medical treatment. It involves the use of water for soothing pains and treating diseases. The use of water as a therapeutic agent was used by the ancient Egyptian, Greek and Roman civilizations. The credit for the revival of interest in hydrotherapy goes to the Dominican monk Sebastian Kneipp who wrote a book called “My Water Cure” in the 19th century. Today, hydrotherapy is utilized to successfully affect a variety of cures in conditions such as arthritis, burns, musculoskeletal disorders and paralysis. Drinking large quantities of water daily helps the blood carry nutritive parts of the digested food to relevant parts of the body. It also increases blood and lymph circulation and helps glands function

normally. Drinking water has a bath-like effect on the internal organs and helps purify and dilute the blood. It also increases the output of urine by activating the kidneys, and assists waste removal. Specific conditions can be treated by the right intake of water. Those suffering from hydrops (an abnormal collection of watery fluid in some parts of the body) should drink two to three liters of water at a go in the morning and evening and none during the day. This increases the volume of urine and helps reduce the volume of accumulated fluid. To compensate for the water lost through evaporation during fever, a glass of water every hour.

Cold water application dilates blood vessels of the skin, increases its redness and decreases pulse, respiratory rate and blood pressure. Cold water can be applied on the skin directly, as compress or ice. Ice therapy is the local or general application of cold for therapeutic and preventative uses. When ice is applied to the skin it melts and removes heat from the tissues—the energy required to change its state (the latent heat of fusion). The rate at which cooling occurs depends on the duration of the application, type of tissue (e.g. the thermal conductivity of muscle is greater than that of fat) and the patency of the blood vessels. Therapeutically, ice can be used to relieve pain and muscle spasm, reduce swelling, reduce spasticity, facilitate muscle contraction, increase muscle endurance, reduce Haematoma formation, prevent pressure sores and promote healing of wounds. Ice can be applied in towels, as a pack or by immersion in a bath. Damp towels dipped in an ice-and-water mixture, or containing crushed or flaked ice, can be wrapped round painful and swollen joints. Towels are applied longitudinally along muscles to reduce spasm. The towels are changed every few minutes. Ice baths containing 50–60% ice to water are used for painful swollen hands or feet. Spasticity can also be reduced by immersion in a bath. In ice massage, an ice cube or ice lolly is wrapped a towel at one end and the free end

is massaged over the skin. This can act as a counter-irritant if applied for 5–7 minutes to relieve pain and muscle spasm and as a preventative measure to avoid pressure-sore breakdown. This method may be used to facilitate the conditions like Muscle contraction, joint pains, spasm, hypertension, diabetes, obesity etc.,

Therapeutic use of local cold application for the treatment of various diseases and disorders is known as cryotherapy. In past it was often termed as hypothermy. Heat abstraction or cooling by cryo therapeutic agents mostly occurs by conduction except in case of vapocoolant spray. The magnitude of cooling depends on; area of body surface exposed to cold, time of exposure, temperature difference between body tissues and cooling agent, thermal conductivity of the tissues and type of cooling agent. The physics of cooling is based on Newton's law of cooling.

Physiological effects

Physiological effects of cryotherapy are reduced body temperature, reduction in blood supply, reduction in metabolism and behavioral changes.

Body temperature

Cold causes fall in local body temperature. However, severe local cooling may result in hypothermia. Hypothermia is a condition where the core temperature is below 35°C. It may be a life-threatening situation.

Circulatory effect

Cold application causes reflex vasoconstriction of cutaneous vessels. Application of cold causes increase in sympathetic nerves activity, smooth muscle contraction and may increase viscosity of blood. All these changes result in reduced blood flow in the area that is directly cooled. However, when the temperature is

reduced below 10°C then cold induced reflex vasodilatation may occur. Reflex vasodilatation tends to occur in a cyclic manner and is believed to result from an axon reflex. Reflex vasodilatation following cold application was first recognized and reported by Lewis in 1930. The repeated cyclical vasodilatation is known as Huntington's reaction. Cooling, more than 10°C causes pain. Pain impulse or afferent impulse is carried antidromically towards skin arterioles. Once again continued cooling causes vasoconstriction and these events are repeated.

Metabolism

Cooling of tissue decreases the metabolic activity and hence the energy and oxygen requirements of cells get reduced. This effect is one of the most important effects of cryotherapy especially from the acute injury point of view.

Behavioral changes

Person receiving cold application for prolonged time may adapt a contracted posture. Arms and legs may be drawn up to the body by which the surface area exposed to cooling can be minimized. It is said that contracted posture can reduce the heat loss by up to 60%.

Therapeutic effects

Pain relief

Cold is one of the highly effective physiotherapeutic modality in relieving pain. It is commonly used for the relief of acute pain. It can also be used for the relief of acute exacerbation of pain on the chronic background. Pain relief may occur due to counter irritation, reduced nerve conduction, decreased inflammatory process and relief of muscle spasm.

Muscle spasm

Cryotherapy is effective in relieving the muscle spasm. Relief of spasm may occur due to decreased muscle spindle activity and secondary to the relief of pain.

Inflammation

It may bring about early resolution of inflammation by reducing vascular or cellular component of inflammation as a result of vasoconstriction.

Swelling

Cold application can reduce the swelling following an acute injury. It may be due to vasoconstriction of arterioles and reduction in extravasations of fluid into interstitial space.

Connective tissue extensibility

Cryotherapy increases tissue viscosity and consequently decreases the extensibility of the connective tissue. Patient may report an increase in stiffness after cold application and hence thermotherapy is a better choice in the treatment of tightness, contracture and stiffness.

Trauma

Cryotherapy is one of the very effective modality in the treatment of acute injuries. Cryotherapy reduces pain, bleeding and swelling. In addition to this, cryotherapy increases the survival rate of the tissues. Death of cells following injury may occur due to hypoxia and increased enzyme activity. Hypoxia may occur due to physical tears of blood vessels, oedema and vascular congestion. Since, the

cryotherapy application reduces the metabolism and enzyme activity, the survival rate of the damaged tissues increases.

Muscle tone

Cryotherapy can reduce the muscle tone. Hence, it is used in the treatment of spasticity. Reduction in spasticity may occur due to decreased activity of efferent gamma fibers.

Muscle strength and endurance

Muscle strength may increase with short-term application of cryotherapy. But on long-term application muscle strength gets reduced. However, one hour after the cessation of cooling, muscle strength may increase. Motor endurance decreases after cooling below 27°C .

Peripheral nerves

Cold can reduce the velocity of sensory conductivity, motor nerve conductivity and synaptic activity if the temperature of the nerve decreases. Cooling below 12°C may cause paralysis of local sensory and motor nerves.

Cold packs

Cold packs are canvas bags containing silicate gel. Cold packs are available in various sizes and shapes to contour the area to be treated. These packs can be stored in a special refrigeration unit or in a household freezer. Storage temperature should be -5°C for at least two hours before use. These packs are reusable; do not reduce the skin temperature as quickly as ice bags, the patients who do not like the cold therapy can

tolerate them, cold packs can easily mold to the body part and they do not open easily as ice packs.

Technique of application

After removal of a cold pack from refrigerator, it is applied on top of the body part to be treated. Then check in between the use. For hygienic reasons, a layer of towel can be placed between the pack and the skin surface. Patient should not lie on the top of the cold pack. Many physiotherapists apply a wet towel first to the skin and then apply the cold pack and cover it with other towel or sheet to insulate the area. If the towel is wet with the room temperature or lukewarm water, the initial contact will be more comfortable for the patient. A strap can secure the cold pack so that the area is well supported. Cold packs are usually applied for 20 minutes. After the removal of cold pack from the treatment area, they should be refrozen for at least two hours before the next use of them. For the longer use, the pack should be replaced with another cold pack.

Cold Compress

A compress is a fold of cloth / soft material, applied firmly to a part for the relief of inflammation / prevention of hemorrhage. In cold compress, a piece of cloth is dipped in either cold or ice water and applied on the head, neck, chest, back and abdomen to reduce pain and swelling from a sports or activity injury to soft tissues or for any disease condition. The therapy is especially useful for sprains, strains, pulled muscles and pulled ligaments. Duration of the treatment is around 3 to 45 min, with temperature 45° to 60° F

Cold compression wraps should be used for 20 minutes every two hours the first day a soft tissue injury occurs. Thereafter they should be used 2 to 4 times a day until pain and swelling diminishes or till the required effect is gained. This water treatment is useful in controlling the inflammation of abdominal organs as liver, spleen, kidney, stomach, intestines and brain and pelvic organs as bladder, uterus. It is also applied externally to the eyes to reduce the inflammation. When applied as throat compress is effective for hoarseness of voice, laryngitis, pharyngitis, tonsillitis, irritation of throat, hypothyroidism and hyperthyroidism. As Chest pack recommended for lung disorders such as emphysema (wherein lung tissues lose their elasticity and gases decrease), pleurisy (inflammation of the lining of the lungs resulting in labored breathing and acute pain), pneumonia, bronchitis and asthma. Chest packs should be used for at least an hour on a daily basis. When applied as abdominal pack, this pack is recommended for flatulence, indigestion, acidity, ulcers, jaundice and hepatitis.

Cold Hip bath

Hip baths are one of the widely used hydrotherapy treatment. In hip baths, the patient has to dip the hip and abdominal region below the navel in water. The patient is made to sit in tube, so as to make his body up to navel from below to immersed in water. Hip bath is given in hot, cold, neutral and other temperature. As the name suggests, this mode of treatment involves only the hips and the abdominal region below the navel for which a special type of tub is used. The tub is filled with water in such a way that it covers the hips and reaches upto the navel when the patient sits in it. Four to six gallons of water is required generally for the bath and a support may be

placed under one edge to elevate it by two or three inches. (However, even a common tub may be used in case the special tub is not available.)

A Hipbath is given in cold, hot, neutral or alternate temperatures, whereby the water temperature should be from 45° to 50° F. The duration of the bath is usually 10 minutes, but in specific conditions it may vary from one minute to 30 minutes. If the patient feels cold or is very weak, a hot foot immersion should be given with the cold hipbath. The patient should then rub the abdomen briskly from the navel downwards and across the body with a moderately coarse wet cloth. The legs, feet and upper part of the body should remain completely dry during and after the bath. The patient should undertake moderate exercise like yogasanas, after the cold hip bath, to warm the body.

A cold hip bath is a routine treatment in most diseases. It relieves constipation, indigestion, and obesity and helps the eliminative organs to function properly. It is also helpful in uterine problems like irregular menstruation, chronic uterine infections, pelvic inflammation, piles, hepatic congestion, chronic congestion of the prostate gland, seminal weakness, impotency, sterility, uterine and ovarian displacements, dilation of the stomach and colon, diarrhea, dysentery, hemorrhage of the bladder and so on. The cold hip bath should not be employed in acute inflammations of the pelvic and abdominal organs, ovaries and in painful contractions of the bladder, rectum or vagina. A cold hip bath is also used for treating indigestion, obesity and constipation. This helps in relieving problems related to urethra, bladder and inflammations of uterus, ovaries and tubes.

Kuhne's Friction Sitz Bath

Louis Kuhn is one of the founders of hydrotherapy including the hip bath and the true sitz bath. These 2 styles of hydrotherapy are some of the most powerful healing methods ever used. It works on expelling stored mucous and toxins as well as retoning the nervous system quickly. This procedure is a must have in the tool belt of healing methods and can be used in almost all cases of acquiring better health. In the hip bath tub a foot – stool / wooden seat is set. Water is poured then up to the level of the upper edge of the seat, leaving the top dry. The patient sits on the dry seat, dips a cotton cloth into the water and begins gently to wash the genitals and abdomen, by brining the water with the cloth. Warm the body immediately after the bath. The temperature of water is around 50° to 65°F and the duration of the treatment is for 10 min to 1 hour.

"Hip-baths" differ from "Sitz baths" in that the former are given with the patient sitting in water up to his iliac spines, whereas in the latter the patient sits on a stool, the seat of which is on a level with the surface of the water; the water then being lifted up and rubbed vigorously about her hips with a coarse linen cloth. Vigorous friction is used in either case, using the linen cloth. This bath is continued from 5 to 20 minutes. After the bath, the patient is warmed by exercise, or, if too weak, by being put to bed. Sitz or hip bath can be cold, hot or neutral. The hip region is immersed in water in a tub. Sitz bath activates the internal organs of the abdomen and pelvis by increasing blood circulation to the surface, and reduces congestion of abdominal organs and inflammation. It is recommended for piles or hemorrhoids, constipation and all chronic digestive disorders. Neutral sitz bath can be taken for a cooling effect against burning sensations or flatulence. Hot sitz bath helps reduce

urinal disorders, cramps and lower back pains. Alternate hot and cold sitz baths are used to treat diseases of the abdomen. Louis Kuhne used this method for every disease, and people came to his sanitarium from many parts of the world. To the Naturopath who has the true pathology of disease well in mind it is very evident why this method should be applicable to all classes of diseases, and I personally regard Kuhne's system as among the most valuable of hydrotherapeutic methods. Benefits of Sitz bath is it stimulates the circulation towards the pelvic and digestive organs relieves constipation, flatulence and indigestion, Helps set right the menstrual disorders like dysmenorrhea, menorrhagia, leucorrhoea, Helps strengthen the hips and lumbar sacral spine and the coccyx and relieves pain and beneficial in relieving hemorrhoids.

PHYSIOLOGICAL VARIABLES

Yoga has become increasingly popular in Western cultures as a means of exercise and fitness training; however, it is still depicted as trendy as evidenced by an April 2001 Time magazine cover story on "The Power of Yoga." There is a need to have yoga better recognized by the health care community as a complement to conventional medical care. Over the last 10 years, a growing number of research studies have shown that the practice of Hatha Yoga can improve strength and flexibility, and may help control such physiological variables as blood pressure, respiration and heart rate, and metabolic rate to improve overall exercise capacity.

(James A. Raub, MS, 2004)

BLOOD PRESSURE

Hypertension happens when the pressure in your system gets high enough leading to risks in your system. It is also commonly known as high blood pressure, which refers to the amount of pressure in your arteries. In diagnosing hypertension, several readings must be taken. If the rate of blood pressure reaches to as high as 140/90, then hypertension is present. **(Chobanian AV, et al. 2003).**

In order to manage hypertension, lifestyle management, one of which is Yoga Lifestyle, helps treat and prevent hypertension through mind and body activities.

Yoga helps to keep the heart healthy by lowering the blood pressure. Those who have already heart problems can remain healthy by meditation practice.

Scientists of yoga discovered why people who practice yoga daily had significantly lower blood pressure than those who did not. High Blood pressure is the major cause for heart disease. Yoga keeps the blood vessels open & thus lowering the blood pressure. Indian Yoga Gurus also says that long term meditation practice generally lower the blood pressure & keeps the constant mood swings. **(Dr. Arumughan Riaz, 2006)**

RESPIRATORY RATE

The number of breaths per minute or number of movements of inspiration and expiration per minute. In practice, the respiratory rate is usually determined by counting the number of times the chest rises or falls per minute. By whatever means, the aim is to determine if the respirations are normal, abnormally fast (tachypnea), abnormally slow (bradypnea), or nonexistent (apnea). **(G J Tortora & N P Anagnostakos, 1990).**

BIOCHEMICAL VARIABLES

The liver is like a big factory that regulates blood sugar being an important chemical compound. The excess blood sugar is stored in the liver as glycogen and released when the blood sugar level lowers. Glycogen molecules are larger molecules containing thousands of glucose molecules. But glycogenolysis individual muscle cells during exercise breakdown glycogen to glucose to provide energy for contraction. Glycogen is also broken down in liver, with the free glucose being released in to the blood stream and transported to tissues throughout the body **(Power and Howley, 1996)**.

The exercises produce biochemical changes in the cardio respiratory system and other important alterations in body composition such as high density lipoprotein, low density lipoprotein, blood cholesterol, blood glucose and triglyceride levels **(Fox and Mathews, 1981)**.

HEMOGLOBIN

Hemoglobin (Hb or Hgb,) is the iron-containing oxygen-transport metallo protein in the red blood cells of all vertebrates (with the exception of the fish family Channichthyidae) as well as the tissues of some invertebrates. Hemoglobin in the blood carries oxygen from the respiratory organs (lungs or gills) to the rest of the body (i.e. the tissues) where it releases the oxygen to burn nutrients to provide energy to power the functions of the organism in the process called metabolism. In mammals, the protein makes up about 96% of the red blood cells' dry content (by weight), and around 35% of the total content (including water). Hemoglobin has an oxygen-binding capacity of 1.34 mL O₂ per gram of hemoglobin, which increases the

total blood oxygen capacity seventy-fold compared to dissolved oxygen in blood. The mammalian hemoglobin molecule can bind (carry) up to four oxygen molecules.

Hemoglobin is involved in the transport of other gases: It carries some of the body's respiratory carbon dioxide (about 10% of the total) as carbamino hemoglobin, in which CO₂ is bound to the globin protein. The molecule also carries the important regulatory molecule nitric oxide bound to a globin protein thiol group, releasing it at the same time as oxygen.

Hemoglobin is also found outside red blood cells and their progenitor lines. Other cells that contain hemoglobin include the A9 dopaminergic neurons in the substantia nigra, macrophages, alveolar cells, and mesangial cells in the kidney. In these tissues, hemoglobin has a non-oxygen-carrying function as an antioxidant and a regulator of iron metabolism.

Hemoglobin and hemoglobin-like molecules are also found in many invertebrates, fungi, and plants. In these organisms, hemoglobin may carry oxygen, or they may act to transport and regulate other things such as carbon dioxide, nitric oxide, hydrogen sulfide and sulfide. A variant of the molecule, called leg hemoglobin, is used to scavenge oxygen away from an aerobic systems, such as the nitrogen-fixing nodules of leguminous plants, before the oxygen can poison the system.

THYROID-STIMULATING HORMONE (TSH)

Thyroid-stimulating hormone (TSH, thyrotropin) is generally elevated in hypothyroidism and decreased in hyperthyroidism. It is the most sensitive test for thyroid hormone function. TSH is produced in the pituitary gland. The production of TSH is controlled by TRH, which is produced in the hypothalamus. TSH levels may be suppressed by excess free T₃ or free T₄ in the blood. Total thyroxine is rarely

measured, having been largely superseded by free thyroxine tests. Total thyroxine (Total T_4) is generally elevated in hyperthyroidism and decreased in hypothyroidism. It is usually slightly elevated in pregnancy secondary to increased levels of thyroid binding globulin (TBG). Total T_4 is measured to see the bound and unbound levels of T_4 . The total T_4 is less useful in cases where there could be protein abnormalities. The total T_4 is less accurate due to the large amount of T_4 that is bound. The total T_3 is measure in clinical practice since the T_3 has decreased amount that is bound as compared to T_4 .

T3 AND T4

Both T_3 and T_4 are used to treat thyroid hormone deficiency (hypothyroidism). They are both absorbed well by the gut, so can be given orally. Levothyroxine is the pharmaceutical name (INN) of levothyroxine sodium (T_4), which is metabolised more slowly than T_3 and hence usually only needs once-daily administration. Natural desiccated thyroid hormones are derived from pig thyroid glands, and are a "natural" hypothyroid treatment containing 20% T_3 and traces of T_2 , T_1 and calcitonin. Also available are synthetic combinations of T_3/T_4 in different ratios (such as liotrix) and pure- T_3 medications (INN: liothyronine). Levothyroxine Sodium is usually the first course of treatment tried. Some patients feel they do better on desiccated thyroid hormones; however, this is based on anecdotal evidence and clinical trials have not shown any benefit over the biosynthetic forms.

Thyronamines have no medical usages yet, though their use has been proposed for controlled induction of hypothermia, which causes the brain to enter a protective cycle, useful in preventing damage during ischemic shock. Synthetic thyroxine was first successfully produced by Charles Robert Harington and George Barger in 1926. Today most patients are treated with levothyroxine, or a similar synthetic thyroid

hormone. However, natural thyroid hormone supplements from the dried thyroids of animals are still available. Natural thyroid hormones have become less popular, due to evidence that varying hormone concentrations in the thyroids of animals before they are slaughtered leads to inconsistent potency and stability. Levothyroxine contains T4 only and is therefore largely ineffective for patients unable to convert T4 to T3. These patients may choose to take natural thyroid hormone as it contains a mixture of T4 and T3, or alternatively supplement with a synthetic T3 treatment. In these cases, synthetic liothyronine is preferred due to the potential differences between drug lots of natural thyroid products. It would be counterintuitive to supplement with T4-only if the patient cannot convert T4 to T3. Some natural thyroid hormone brands are F.D.A. approved, but some are not. Thyroid hormones are generally well tolerated. Thyroid hormones are usually not dangerous for pregnant women or nursing mothers, but should be given under a doctor's supervision. In fact, if a woman who is hypothyroid is left untreated, her baby is at a higher risk for birth defects. When pregnant, a woman with a low functioning thyroid will also need to increase her dosage of thyroid hormone. One exception is that thyroid hormones may aggravate heart conditions, especially in older patients; therefore, doctors may start these patients on a lower dose & work up to avoid risk of heart attack.

PSYCHOLOGICAL VARIABLES

Yoga induces a "relaxation response" associated with reduced nervous system activity and a feeling of well-being probably due to an increase in antioxidants and lower levels of the stress hormone cortisol; Yoga not only helps in prevention of lifestyle diseases, but can also be "a powerful adjunct therapy when these diseases arise,"

Yoga is a form of exercise and it's this form of activity provides great benefits psychologically. In studies done in Finland in 2000, participants were asked to partake in exercises. Based on this study, scientists discovered a connection between mood and recreational exercise. Those who participated in exercise at least two times a week had some positive effects on mood. There were fewer signs of depression and anger found among these individuals. Moreover, the ones who participated in these exercises more than twice a week were prone to be sociable, allowing one to be less stressful.

STRESS

The modern man suffers more psychological stress than the physical stress. Human is trying to live a successful life as per the expectation and norms of the society and is continually challenged with rapidly accumulating stresses. In this fast moving social set up, with high standard of living and innumerable changes the individual have no time to look back and think about what is happening to his body and mind. This accumulated stress for prolonged period leads him to the so called stress induced disorders, like heart attacks, high blood pressure, Diabetes, Asthma, Back pain and other psychological problems.

A change in attitude and life style is necessary to help the individual to come out these health hazards and to cope with the future. Traditional yoga philosophy, regards human being an individual entity. The root cause of ailment of a stress, through the various therapeutical techniques of yoga one can pluck out this cause and can provide health and harmony. **(Davidson. G.C and Neal J.M 1990).**

Most types of insomnia are stress-related, so a gentle yoga practice that calms the nervous system and reduces stress levels will naturally relieve insomnia as

well. The calming effects of a yoga help people fall asleep sooner and gives a more restful sleep. Many yoga postures increase the blood circulation to the brain, including the sleep center of the brain, which helps normalize the sleep cycle and provides natural relief for insomnia.

The most common presenting symptoms of stress is insomnia. American Journal of Managed Care experienced through their research some form of insomnia, either difficulty going to sleep, trouble staying asleep, or insomnia so severe that it disrupts daytime activities. And insomnia is often (though not always) stress-related. Because sleep is so important to overall health, insomnia can affect your life in many ways. A sleep deficit can make you feel mentally slower and more emotional, which can exacerbate your experience of stress. Dealing with lasting insomnia can cause stress, too, which can lead to more stress-related insomnia. **(Elizabeth Scott, M.S., 2008).**

Stress is the most prominent causes of mental fatigue. It consumes energy, breeds negativity and depression. Yoga believes that a healthy mind is essential for a healthy life. Regular yoga helps to clear the mind of negativity and clutter. Through breathing techniques and meditation, yoga teaches your body to breathe fully. This increases the supply of oxygen to the body which in turn helps reduce stress, increase energy flow and ensure mental clarity. **(Patricia 2008).**

DEPRESSION

Everyone occasionally feels blue or sad, but these feelings are usually fleeting and pass within a couple of days. When a person has a depressive disorder, it interferes with daily life, normal functioning, and causes pain for both the person with

the disorder and those who care about him or her. Depression is a common but serious illness, and most that experience it need treatment to get better.

Many people with a depressive illness never seek treatment. But the vast majority, even those with the most severe depression, can get better with treatment. Intensive research into the illness has resulted in the development of medications, psychotherapies, and other methods to treat people with this disabling disorder. (Altshuler LL, et al, 1998).

Depressed people may lose interest in activities that once were pleasurable, experience difficulty concentrating, remembering details, or making decisions, and may contemplate or attempt suicide. Insomnia, excessive sleeping, fatigue, loss of energy, or aches, pains or digestive problems that are resistant to treatment may be present. Either early middle or late insomnia consistently for an extended period of time, and there is no singular, identifiable stressor causing your insomnia, then you might be suffering from an underlying depression or anxiety syndrome.

Yoga is a relaxing form of exercise that can help alleviate depression. Meditation and yoga poses can help to attack the root cause of depression - the feeling that can't handle the demands of life. It tones the nervous system, stimulates circulation, promotes concentration, and energizes mind and body.

Practice a daily yoga routine that includes 30 minutes of meditation and at least 20 minutes of poses. Yoga stretching exercises help improve blood circulation making it easier to break through the lethargy that often accompanies depression. (Holistic care foundation 2009)

OBJECTIVES OF THE STUDY

1. To explore whether naturopathy and yogasana shows any changes on selected physiological, biochemical, and psychological variables among Menstrual Irregularity Women Students.
2. To analyze the effect of Isolated and Combined Practice of Naturopathy and Yogasana on Selected Physiological, Biochemical and Psychological Variables in Menstrual Irregularity Women Students.

REASONS FOR THE SELECTION OF THE TOPIC

The researcher has taken interest in Menstrual Irregularity Women Students, because in this modern world the lifestyle and food habits are changing day by day. Hence most of the students are affected by Menstrual Irregularity. To create awareness to the women's the researcher has selected this topic. The researcher selected naturopathy, yogasanas and combined (naturopathy & yogasana) to identify the changes on physiological, biochemical and psychological variables among Menstrual Irregularity Women Students. Physiological, biochemical and psychological variables are needed to analyze the various changes take place in their physical and mental level before and after the training period.

The researcher took this topic because there are lacks of literature and limited studies in this field and especially for Menstrual Irregularity Women Students. Hence the researcher wants to find out the effect and isolated of naturopathy, yogasana and combined (naturopathy and yogasana) separately on Menstrual Irregularity Women Students.

REASONS FOR THE SELECTION OF THE VARIABLES

Menstrual irregularity women students are increasing day by day because of current life style and food habits and lack of exercises. Menstrual irregularity women students have high cholesterol deposit, more sweating, normalize systolic and diastolic blood pressure, respiratory rate etc., as well as and also bio-chemical problems like hemoglobin, TSH, T3 and T4 etc., psychological like stress, depression etc Thus the investigator has chosen these variables for the present study. Physiological, bio-chemical and psychological variables are selected as dependent variables where naturopathy, yogasana and combined (naturopathy & yogasana) are selected as independent variables.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out effect of isolated and combined practice of naturopathy and yogasana on selected physiological, biochemical and psychological variables in menstrual irregularity women students.

HYPOTHESIS

On the basis of conclusion drawn through review related to the study the investigator has framed the following hypotheses

1. It was hypothesized that there would be significant differences in naturopathy group than control group on selected physiological, biochemical and psychological variables in menstrual irregularity women students.
2. It was hypothesized that there would be significant differences in yogasana group than control group on selected physiological, biochemical and psychological variables in menstrual irregularity women students.

3. It was hypothesized that there would be significant differences in combined (naturopathy & yogasana) than control group on selected physiological, biochemical and psychological variables in menstrual irregularity women students.
4. It was hypothesized that there would be significant differences between naturopathy group, yogasana group and combined (naturopathy & yogasana) group on selected physiological, biochemical and psychological variables in menstrual irregularity women students.

SIGNIFICANCE OF THE STUDY

1. The findings of the study would help to explore the status of the naturopathy training in menstrual irregularity women students.
2. This study would bring out the effect of isolated and combined Practice of naturopathy and yogasana in menstrual irregularity women students.
3. This study will describe the changes in physiological, biochemical and psychological variables due to naturopathy and yogasana in menstrual irregularity women students.
4. This study helps for the menstrual irregularity women students in maintaining their mental and emotional stability i.e. by reducing stress and depression.
5. This study would give an idea in maintaining the normal level of systolic blood pressure and diastolic blood pressure and respiratory rate.
6. This study would give an idea in maintaining the normal level of hemoglobin, TSH, T3 and T4.
7. The findings of the study would help to adopt the suitable training programme to maintain the good health for menstrual irregularity women students.

8. The findings of the study would be helpful for the further research studies, also helpful for the academy of menstrual irregularity women students.

DELIMITATIONS

The following delimitations were taken into consideration in the interpretation of results:

1. The study was confined to women who have menstrual irregularity.
2. The age of the subjects were ranging from 18 to 24 years.
3. The total numbers of subjects were 60 menstrual irregularity women students, in which 15 for experimental group I (naturopathy), and 15 for experimental group II (yogasana) and 15 for experimental group III (combined) and 15 for control group, were taken for the study.
4. The subjects were selected from Annamalai University, Chidambaram.
5. The subjects were experimentally treated with naturopathy, yogasana, as well as combined training.
6. The study was conducted on dependent variables such as systolic blood pressure, diastolic blood pressure, respiratory rate, hemoglobin, TSH, T3, T4, stress and depression.
7. The experimental period was fixed as 12 weeks and six days in a week between 6am to 7 am

LIMITATIONS

The study was limited in the following aspects.

1. The socio-economical status was not taken into consideration.
2. Certain factors like life style, body structure, personal habits and family heredity were not taken into consideration for this study.

MEANING AND DEFINITION OF THE TERMS

YOGA

The term yoga comes from a Sanskrit word which means yoke or union. Traditionally, yoga is a method joining the individual self with the Divine, Universal Spirit, or Cosmic Consciousness. Physical and mental exercises are designed to help achieve this goal, also called self-transcendence or enlightenment (**Stuart Ray Sarbacker, 2005**).

NATUROPATHY

Naturopathy can be termed as the science of living. It believes or describes human beings as the epitome of Universe. Accordingly visualizing self in the universe, and the universe in the self, represents the most evolved state of man.

YOGASANA

Asana is steady comfortable posture (**Iyengar, 2001**).

MENSTRUAL CYCLE

The menstrual cycle is the cycle of natural changes that occurs in the uterus and ovary as an essential part of making reproduction possible. Its timing is governed by endogenous (internal) biological cycles. The menstrual cycle is essential for the production of eggs, and for the preparation of the uterus for pregnancy. The cycle occurs only in fertile female humans and other female primates. In human females, the menstrual cycle occurs repeatedly between the age of menarche, when cycling begins, until menopause, when it ends.

MENSTRUAL DISORDER

A menstrual disorder is an irregular condition in a woman's menstrual cycle. Anything that interferes, with the normal menstrual cycle; causing pain; unusually heavy or light bleeding or missed periods. Typically, a woman of childbearing age should menstruate every 28 days or so unless she's pregnant or moving into menopause. But numerous things can go wrong with the normal menstrual cycle, some the result of physical causes, others emotional. These include amenorrhea, or the cessation of menstruation, menorrhagia, or heavy bleeding, and dysmenorrhea, or severe menstrual cramps. Nearly every woman will experience one or more of these menstrual irregularities at some time in her life.

BLOOD PRESSURE

Blood pressure is defined as the force of pressure which the blood exerts against the walls of the blood vessels. The blood pressure namely expressed is arterial blood pressure. It has two phases (**Sivaramakrishnan, 2006**).

SYSTOLIC BLOOD PRESSURE

This occurs during the systole of the heart. When the left ventricle forces blood in to the aorta the pressure rises to the risk (maximum). This is called systolic blood pressure. The range of the pressure is about 100 to 120mmHg for a normal adult (**Sivaramakrishnan, 2006**).

DIASTOLIC BLOOD PRESSURE

This occurs during the diastole of the heart. The lowest value in pressure is called diastolic blood pressure. Diastolic pressure is about 60 to 80mmHg for a normal adult (Sivaramakrishnan, 2006).

RESPIRATORY RATE

The number of breaths per minute or, more formally, the number of movements indicative of inspiration and expiration per unit time.

HEMOGLOBIN

Hemoglobin also spelled haemoglobin and abbreviated Hb or Hgb, is the iron-containing oxygen-transport metallo protein in the red blood cells of all vertebrates (with the exception of the fish family Channichthyidae) as well as the tissues of some invertebrates.

TSH

Thyroid-stimulating hormone (also known as TSH or thyrotropin) is a peptide hormone synthesized and secreted by thyrotrope cells in the anterior pituitary gland, which regulates the endocrine function of the thyroid gland.

T3

Triiodothyronine (T3) is a thyroid hormone. It plays an important role in the body's control of metabolism. A laboratory test can be done to measure the amount of T3 in your blood. T₃ is metabolically active hormone that is produced from T₄. T₄ is deiodinated by two deiodinase enzymes to produce the more-active triiodothyronine

T4

T4 (thyroxine) is a hormone produced by the thyroid gland. A laboratory test can be done to measure the amount of T4 in your blood. Action T4 was described as euthanasia by some of the officials responsible for carrying the program out. At the Nuremberg trials the program was determined to be illegal and punishable as murder under the law, even if it was called euthanasia, and moreover the Nuremberg Tribunal concluded that under the German law, euthanasia as such was illegal and punishable as murder, and also was a war crime and a crime against humanity.

STRESS

Stress may be defined as the “Response pattern of an organism to prepare itself for Fight or Flight” (**Latha 1997**).

DEPRESSION

Everyone occasionally feels blue or sad, but these feelings are usually fleeting and pass within a couple of days. When a person has a depressive disorder, it interferes with daily life, normal functioning, and causes pain for both the person with the disorder and those who care about him or her.