

Yoga for women in reproductive age

Introduction

In any community mothers and children constitute a priority group. In sheer numbers, they comprise approximately 70% population of the developing countries. In India women of child bearing age group (15-44 yrs) constitute 19% of total population. By virtue of their numbers, they should be the ideal consumers of health sciences. But unfortunately, the health of Indian women is intrinsically linked to their status in society. It is said that women enjoyed equal status with men in all fields of life in ancient India. Scriptures such as *Rigveda*, *upanishadas*, mention about sages and seers notably *Gargi* and *Maitrayi*.

But still today modern woman is fighting for the survival amidst the crisis such as dowry, female infanticide, sex selective abortions, health and domestic violence. This makes a total negative impact on reproductive health of women.

A tremendous stress of work in working women outside the house and inside the house is creating increasing physical and mental burden with

increased incidence of menstrual cycle related and psychosomatic problems.

There is increase in the incidence of polycystic ovarian syndrome by almost 40% in adolescent girls. These are alarming figures. In one of study conducted by one NGO, women do more than 67% of the hours of work and earn only 10% of the world's income. At the same time, 67% of world's illiterate adults are women. In India child **sex ratio has dropped to 927** females per 1000 males in 2001. 92% of women suffer from gynecological problems. In spite of efforts done at personal, social, governmental level, woman all over the world in 21st century still remains a victim of wrong social customs and attitudes. In spite of all MCH care facilities India remains second highest in world in maternal mortality rates. The woman has little control over her fertility and reproductive health. In short, in our culture even today, the 'mainstream' remains very much a 'male stream.'

The female reproductive system consists of external genital and internal reproductive organs. The external genitalia comprise of structures visible externally from the pubis to perineum, that is, the mons pubis, labia majora and minora, clitoris,

hymen, vestibule, urethral opening, and various glandular and vascular structures.

The internal reproductive organs are uterus, oviducts (fallopian tubes), ovaries and vagina.

1. **Uterus:** The size and configuration of uterus undergoes dramatic changes throughout the life. It is a unique organ in that sense. In a girl child uterus is very small and inactive, it increases in size at an age when a girl starts menstruating.

It expands and attains a size of 7-8 cms along long axis, 5 cms broad and 3-4 cms in length during reproductive age and it involutes, shrinks and atrophies after menopause.

Pregnancy provokes an enormous increase in size of uterus to accommodate the growing fetus and other products of conception.

The uterine cavity is triangular in shape. The mucosa of uterine cavity is shed off cyclically every month in the form of menstrual cycle.

The mucosal lining gets replaced every month if there is no conception. It is under the influence of ovarian hormones.

2. **Cervix:** Cervix projects through the wall of vagina. It is 3-4 cms in length. It provides receptivity

to sperms for fertilization. It plays an extremely important role at time of parturition.

3. **Fallopian Tubes:** They are two long tubular structures on either side of body of uterus, opening in the endometrial cavity.

The fertilization of egg by sperms occurs in fallopian tubes. But how the fertilized egg (zygote) is transferred into the endometrial cavity is one of the most challenging secrets of nature.

4. **Ovaries:** They are pearly white structures, two in number on either side of uterus under the fallopian tubes. They have an irregular surface with presence of mature or immature follicles on them.

Ovaries serve as important endocrine glands secreting estrogen and progesterone hormones.

5. **Vagina:** It is a long musculo- membranous passage extending from cervix to vulva and it opens on the perineum between the urethra and the anus. It has an ability to expand enormously at time of birth of baby. It has mucous secreting glands allowing lubrication.

- **Menstrual Cycle:**

The attitudes, opinions, practices and superstitions beliefs about the natural phenomenon of menstrual cycle make a young adolescent stepping into

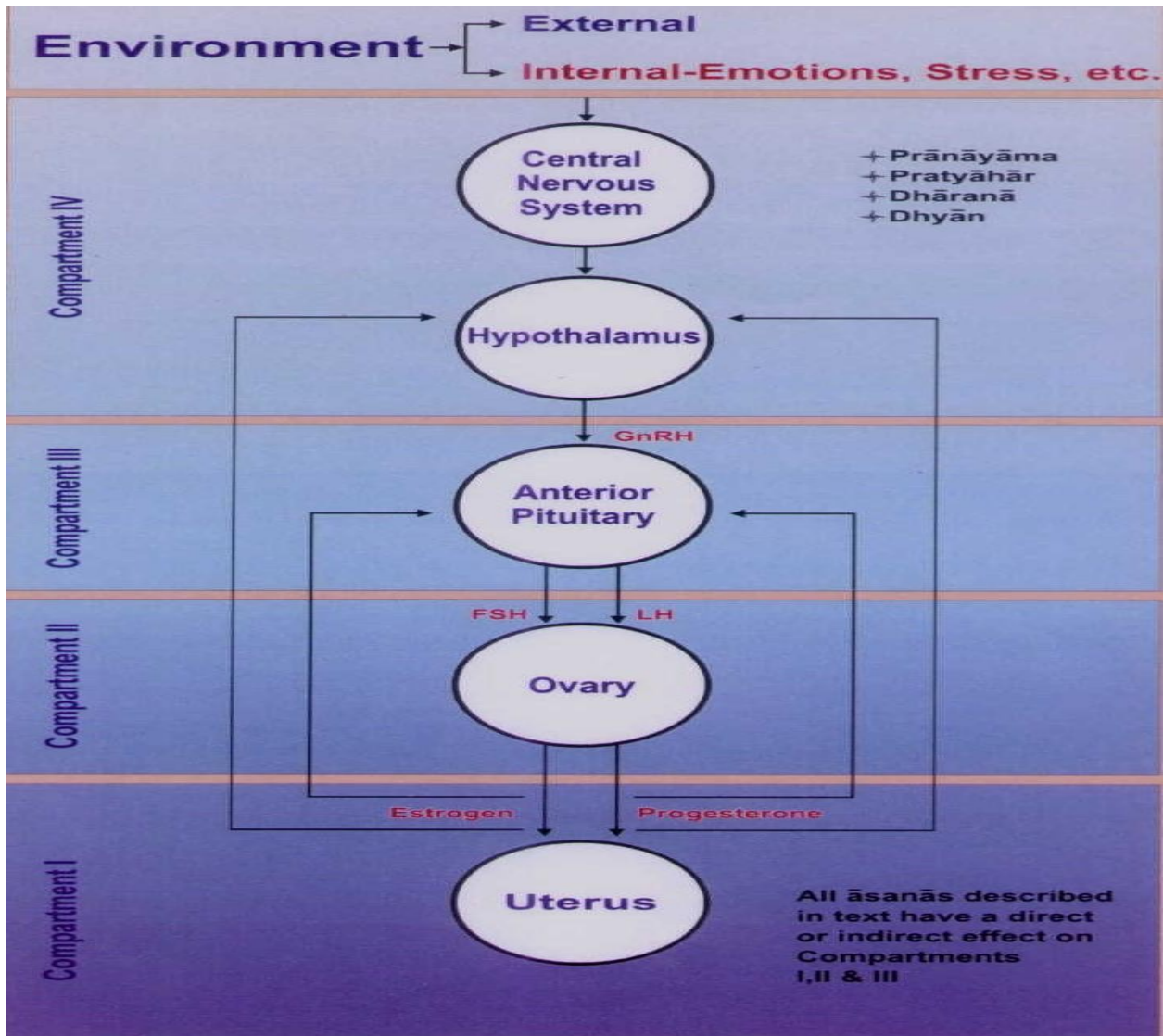
adulthood feel as if something unwanted has happened in their life. Actually, the rhythmical and harmonic hormonal changes of cyclic nature have made it the most remarkable biologic event in female body.

Menstruation is a periodic and cyclic flow of menstrual blood from the uterus. It is a biologic process dependant on complex hormonal and physiological changes that can be disturbed by a variety of factors. (Sheth, Sutton).

The normal cyclicity is 24 to 35 days but it varies with individual women.

Menstrual cycle is an outward and visible sign of the periodic activities of the ovaries. This point is of clinical importance because; alteration in menstrual rhythm can only be due to a disturbance of ovarian activity.

Regulation of menstrual cycle is done by signals from hypothalamus and pituitary gland.



Spiritual significance of menstrual cycle

“Just as body is casting off substances it doesn’t need any more, so we too can throw off worn out ideas and self images and make

**the most of this opportunity for self renewal.”
Says *swamiji paramahansa satyananda
saraswati***

Epidemiology

Menstrual disorders are common gynecological problem for medical visits among women of reproductive age.(1) Heavy menstrual bleeding affects up to 30% of women in their reproductive period.(2) infertility is a big problem of this age group and According to WHO, the national prevalence of primary and secondary infertility in India is 3 %and 8 % respectively. (3,4) Menstrual problems were noticed in 35.36 per cent of women with almost equal distribution in urban and rural areas. The commonest menstrual problem was

dysmenorrhoea in 27.41 per cent of subjects while it was 25.2 per cent in another study. (5)

Physical problems in various phases of females of reproductive age

In a total span of 30 years of reproductive age of a woman, she is exposed to various changes in hormones depending on the need at the particular time. Lack of exercise, lack of adequate sleep, irregular life style, improper food habits are mainly responsible for development of variety of health issues like

PCOS, AUB, hypothyroidism, anaemia, deficiency of vitamins and many other problems related to digestion and other systems including metabolic syndrome.

Incidence of fibroid uterus, endometriosis, malignancies is also increasing which demands an urgent attention of health providers.

Polycystic ovarian syndrome

Although first described by Stein and Leventhal in 1935, it is becoming one of the most prevalent life style related multisystem disorder of modern age today. Global prevalence of PCOS is 2.2% to 26%

One in 15 women worldwide, depending on the population studied (*Lancet*, 2007).

Suffers from pcos.

In India, incidence in North India is 3.7% between 18-25yrs¹.

In Mumbai it is around 22.5% for age group 15-24yrs².

Pcos leads to a lot of hormonal problems leading to irregular menses, heavy or scanty menses, growth of unwanted hair, infertility and diabetes.

Abnormal Uterine Bleeding

AUB is reported to occur in 9 to 14% women between menarche and menopause³

. The prevalence varies in each country. In India, the reported prevalence of AUB is around 17.9%⁴

Descriptive terms that have been used to characterize AUB patterns include menorrhagia, metrorrhagia, polymenorrhea, dysfunctional uterine bleeding and heavy menstrual bleeding.

To standardize nomenclature of AUB, a new system known by the acronym PLAM-COEIN

(Polyp; Adenomyosis; Leiomyoma; Malignancy and Hyperplasia; Coagulopathy; Ovulatory Disorders; Endometrial factors; Iatrogenic; and Not classified)

was introduced in 2011 by the International Federation of Gynecology and Obstetrics (FIGO)⁵

The psychological issues in various phases of females of reproductive age

The modern woman of today is overburdened because of load of variety of responsibilities related to stress of study, career and family.

It is the breakneck speed of life ,mismatch of speed at physical level and mental level, failure of fulfillment of expectations from self and others which is the root cause of psychosomatic problems. Depression, emotional upsurges, lack of confidence, irritability can become major issues leading to major health related issues like onset of hypertension and diabetes at an early age.

Tackling the psychological problems depends not only on cultural and financial background, but also on education and learning to cope up with demands and a total positive attitude in life. A value added enriched yogic lifestyle helps achieve the goal.

social and security issues of females

From inside the womb, till her death, a woman is always faced with danger. In the womb, the chances of being killed, even before seeing light, when being born and growing, she faces harsh brutalities like molestation, abusing, physical and mental tortures.

The gender bias and social stigma

In the traditional society the inequality between males and females existed to a large extent. Women were looked down socially, economically and politically. Women became scape goats of many traditions and customs. She was brutally killed in the name of Sathi. Women's role was restricted to domestic life especially kitchen work and bearing and rearing of children. She has no place in economic and political activities. Girl children were discriminated in terms of basic necessities of life such as food, clothing and shelter.

. Empowering women regarding the own reproductive health care is extremely important and has been taken up by government as priority. c But still women continue to suffer from many social and economic disadvantages since the attitudes did not change as fast as the change in laws. We need a

change in mindset in terms of attitudes and behavior of both men and women of all dimensions.

Role of counseling and proper education to females of reproductive age

Counseling plays an extremely important role in the management of various diseases.

The role of counselor is to be empathetic and not sympathetic. A good yoga instructor should try to be a good listener. It is important to remove all misconceptions about yoga as therapy, at the same time to try and build confidence in the mind of the beneficiary. It is a skill to talk and find out the root cause of trouble. Counselling should be helpful to vent out negativity and build positivity.

Releasing stress itself doubles the benefit of practices.

Pregnancy-a special condition

Pregnancy is a unique time in a woman's life wherein it is of prime importance that various dimensions of her being are in harmony (18).

Though pregnancy and childbirth are not unnatural events, the physical, mental and emotional adaptive changes in body largely determine her good health and a positive outcome of pregnancy. The normal growth of fetus can be affected by a number of factors such as PIH, or even psychosomatic stress.²⁶

It is known that hypothalamus-pituitary-adrenal axis (HPA) reacts to sustained stress. This affects the uterine circulation in turn decreasing the blood flow reaching the decidua affecting the implantation site. Stress makes a woman abortion prone, as well as other medical complications of pregnancy. Pregnant women were also advised by Hippocrates to beware of unnecessary psychic stress. Psychological and physical stress have seldom been formally studied but seem intuitively important says William's textbook of obstetrics.

Maternal stress reacts to sustained stress (HPA axis) resulting in endocrine disturbances, repeated abortions, pregnancy induced hypertension, anxiety

and functional impairment, immune maladaptation, premature delivery, small for gestational age fetus and post partum depression. (Tracey et al Med Sci sports Exerc 36 (12): 2024-2031, 2004. , Williams Obstetrics, twenty second edition p 178, 859, 1241, Shamankamani J of Indian Medical Association: JIMA Vol 103 No. 11 Jan 2005).

The Diet and Nutrition in various phases

Since reproductive age represents a major portion of woman`s life, it is important to understand the dietary needs in different phases of reproductive age. The needs of recommended nutritional considerations would vary depending on physical activity ,age, gravid or non gravid state, lactating or non lactating mother.

On one hand we have the problem of mal nutrition with deficiency of iron and vitamins in developing countries ,on the other hand obesity is becoming an epidemic.

Both these extremes can have adverse effects on menstrual cycle ,outcome of pregnancy.

Apart from balanced diet with adequate proteins, carbohydrates, fats, vitamins ,minerals ,fibre and water yogic literature describes diet full of

Trigunas i.e. tamasik,rajasik,satwik diet.Diet has to be satwik,seemit i.e in moderate quantity,santulit i.e. balanced.

Food according to yoga not only forms the body but is also responsible for *kriyashakti and manashakti*.

Diet of mind is equally important. Give good food for thought, avoid mental or emotional excitation while eating, do not curse the food you are eating.

Always pread ay before starting .

Do not watch TV ,enter into controversies ,read when you are enjoying food.

Role of yoga in various phases

Yoga, far from being mere physical or breathing acrobatics, is a science of body and mind; it is an attitude towards life elevating us to manifest the immense potentialities dormant in us.⁵

The investigations and the research into the physiological, biochemical, neurological, psychological aspects of yogic practices have provided deeper understanding about effects of yoga on various systems of body.^{3, 4, 5, 6, 22, 23, 24, 25} A study by shamanthakamani etal claims an improved birth weight with reduction in occurrence of complications of pregnancy as a result of consistent yogic practices in pregnancy. Pregnancy is a state of physiologic stress demanding a lot of adaptive changes at physical, mental and emotional level. Transmission of maternal stress on fetus can cause a reduction in transplacental blood flow, placental transfer of stress hormones and increased rate of premature delivery.²⁷

Pregnancy seems to be an ideal situation to test the effects of yogic practices. There have been studies to prove correlation of high state of anxiety with high RI of uterine artery and presence of prediastolic notch (PDN)¹².

Yogic practices decrease the sympathetic tone; they bring about decrease in peripheral vascular resistance^{23, 24}. In a study reported by Damodaran

Asha et al, yogic practices bring reduction in blood pressure, blood glucose, VMA catecholamine levels. They suggest decrease in sympathetic oxidant stress due to regular yoga practices. Regular practice of asanas also probably promotes placental growth and vascularity. It might prove useful to reverse maternal endothelial dysfunction ^{4,5,6,31,32}. Practice of Pranayama improves respiratory adaptability in pregnancy ^{16, 17, 32}.

Stress is known to affect menstrual cycle . Yoga being the science of mind, helps to cope up with the stress in a better way.

Yogic practices help to relieve symptoms of anxiety associated with PMS.

Practices of Mantra, Japa, devotional Songs, Naadayoga can bring about a balance in levels of hormones elevating the mood.

Special note on Different Yogic Practices Performed

Once we have realized and understood yoga as a science of body, mind and spirit every effort should

be done to attain highest level of sensitivity to experience the beneficial effects of practices.

Dehasadhana: (Physical Practices)

It can be controversial whether we should perform many asanas each day, or different asanas for different disorders. What is more important is relaxation in final posture of a particular asana. We should be physically and mentally stable and comfortable (sthirsukhamasanam- Patanjali Yoga sutras) we should be able to meditate on the infinity (ananta samapattibhyam) , in the final posture of asana.

Therefore, even few simplified asanas done in a perfect state of mind prove beneficial.

Yogic kriyas help us bring control over uncontrollable reflexes, whether physical or mental.

Pranasadhana:

Main purpose of *pranayama* is mind control through breath control. *Pranayama* is not simply a breathing practice, but much more than that. It is controlling 'prana' which is nothing but embodied consciousness. It is not at all easy. Practice of *pranayama* has to be done with awareness of *prana*. We have to develop higher level of sensitivity to feel presence of 'prana' flowing in the *nadis*. Breathing

is a useful tool to bring a balance in flow of *pranic* energy to cure disease or discomfort.

Bhavasadhana:

Bhavasadhana is culturing and sublimation of emotions. Diverting or channeling the emotions for a more constructive purpose is the aim of *Bhavasadhana*.

Chanting *mantra* (*Japa*), devotional songs can have physical, mental, emotional, spiritual beneficial effects.

Naadyoga has been introduced by *Swami Pramahansa Satyanand Saraswati* of 'Bihar school of yoga', Munger. *Naadyoga* uses seven pure notes of Indian classical music for concentrating on various chakras of body. A beautiful correlation of *shuddha swara* with each chakra in body makes one sensitive to progressively higher levels of consciousness.

Naadyoga is a practice of listening to antar naada or anahat naada while mantra yoga is listening to outer sound vibrations. *Naada*, according to *Hatha pradeepika* is the means of achieving liberation or *kaivalya*. (H.P.kaivalyadhama edition 4.90/91)

Practice of *Naadyoga* involves '*arohana and avarohana* of seven *suddha swaras*. Attitude of

satisfaction, fulfillment can be cultured with *naada yoga*.

Divya Sadhana (divine practices)

The practices described for *antaranga sadhana* are *pratyahar*, *dharana* and *dhyana*. *Divya sadhana* helps to make us realize our own potential. It opens the treasure of happiness which is core of all of us.

Divya sadhana is process of self realization, it is thoughtless state of mind it is useful to treat stress related diseases as this *sadhana* can handle weak, agitated , excited, irritated, restless, impure mind .

Evidence based research on yoga and female health issues

Method of instruction for different phases of womanhood

The instructions to sadhakas have to be absolutely clear as the practice are going to be different for every group.

An adolescent would be enthusiastic to practice asanas while special precautions need to be taken conducting practices for pregnancy.

Certain common rules and principles should be common for all.

Exaggerated or tall claims about benefits of yogic techniques have to be avoided.

Practices have to be performed as per own capacity. Do not force any sadhana on anyone.

The need is to advice tailor made Yoga which suits the need of individual rather than common protocol.

There should be no hesitation consulting the doctor Concerned if there is a need to do so.

Simplification of practices can be done.

A selfed motivated sadhaka responds better to yoga therapy.

Refer to protocols discussed below, discuss with your yoga teacher and then finalise the plan.

Practices should be performed daily at least for 45 minutes daily. Relaxation at the end is a must.

Yoga protocol for females of reproductive age

Yoga module for pregnancy

Common for all trimesters

Sequence of daily

practice

- 1 Any comfortable posture -
For beginning with ! tratak
Eg. Sukhasana, ardha Padmasana, Padmasana
vajrasana
Mudra to be practised _ Drona , Jnana,
dhyana
2. Prayers.
3. Loosening Practices : -
 - 1) Padanguli Namana / Gulpha namana
 - 2) Gulpha Chakra
 - 3) Gulpha Ghurnana
 - 4) Janu Namana
 - 5) Janu Cakra
 - 6) Ardha Titali Asana
 - 7) Shroni Chakra
 - 8) Purna Titali a sana
 - 9) Mustika bandhana
 - 10) Mani bandha Namana

- 11) Mani bandha Chakra
- 12) Kehuni Namana
- 13) Skandha chakra
- 14) Greeva Sancalana

Co - relation of these movements is to be done with inhalation / exhalation.

Practising asanas

Dehasadhana: sitting

vajrasana,Marjarasana,Mandukasana,hanumantasana
,sulabha ushtrasana,bhadrasana,sulabha
parvatasana,vrushabhasana,

standing :

sulabha chakrasana, utkatasana

Supine:

Sulabha

Uttthit

ekpadasana,Vamangasana,Setubandhasana,anantasan
a,uttana vakrasana,uttana bhadrasana,shavasana

Mudra:

Brahma mudra,Simha mudra,jnana mudra, dhyana
mudra,namana mudra

Cleansing practices:

Kunjali kriya,Jyoti trataka

Pranasadhana:

Deep breathing,yogic breathing,anuloma
viloma,bhramari,sheetali,seetkari

Bhavasadhana:

Om chanting, devotional songs, mantra, japa

Divyasadhana:

Pratyahara, dharana, dhyana,

An advice on diet and counseling are also equally important.

Specification in pregnancy

First Trimester : May practice Vamana or Kunjal Kriya for excessive vomiting

- Sheetal, Sitkari Pranayama to reduce nausea.

Second trimester : - Practice asanas pranayama, ! kar relaxation maximum.

Third trimester - More simple practices, focus more on bhavasadhana.

eg. ! kar chanting, Devotional songs, etc.

Intrapartum i.e. at time of delivery : - Practice Abdominal breathing, ! kar chanting, in between labour pains / contractions.

Post partum i.e. after delivery : To resume all practices as soon as possible.

Practices for menstrual disorders /PCOD

1) To start with Trataka on ! in any comfortable body posture.

Kapalbhati 25 - 50 rounds

2)prayers

. Loosening Practices : -

- 1) Padanguli Namana / Gulpha namana
- 2) Gulpha Chakra
- 3) Gulpha Ghurnana
- 4) Janu Namana
- 5) Janu Cakra
- 6) Ardha Titali Asana
- 7) Shroni Chakra
- 8) Purna Titali a sana
- 9) Mustika bandhana
- 10) Mani bandha Namana
- 11) Mani bandha Chakra
- 12) Kehuni Namana
- 13) Skandha chakra
- 14) Greeva Sanchalana

15) Chakki chalan

Followed by -

Surya Namaskara s minimum 12, associated with breathing .

Practising asanas

1) **Asanas in sitting position -**

- Vajrasana
- Parvatasana
- Marjara sana
- Yogamudra
- Ustrasana
- Bhusirasana -
- shirsasana

2) Asanas in supine position

- Utthita ekapadasana
- Utthita twipadasana
- Viparita Karani mudra
- Sarvangasana
- Tadagi mudra
- Uttana Vakrasana

3) Prone positon

- Bhujangasana
 - Salabhasana
 - Naukasana
 - Dhanurasana
- 4) Standing Position
- Cakrasana
 - Ekapada Tolasana
 - Vraksasana
 - Hastapadasana

Pranayama :

- Anuloma Viloma / All to be Practised with abdominal breathing
- Sheelali, Seetkari
- Bhramari

Yoga nidra - everyday - Mandatory.

Module for menopause

Surya namaskaras as per capacity.

Focus intensely and more on praty nara,
Phavana , Dhyana

- Practice of devotional songs, Naad yoga,

1)To start with Trataka on ! in any
confortable body posture.. and prayers

Kapalbhati as per capacity

. Loosening Practices : -

- 1) Padanguli Namana / Gulpha namana
- 2) Gulpha Chakra
- 3) Gulpha Ghurnana
- 4) Janu Namana
- 5) Janu Cakra
- 6) Ardha Titali Asana
- 7) Shroni Chakra
- 8) Purna Titali a sana
- 9) Mustika bandhana
- 10) Mani bandha Namana
- 11) Mani bandha Chakra
- 12) Kehuni Namana
- 13) Skandha chakra
- 14) Greeva Sancalana
- 15) Chakki chalan

Followed by -

Surya Namaskaras as per capacity
Practising asanas

1) **Asanas in sitting position -**

- Vajrasana
- Parvatasana
- Marjara sana
- Yogamudra
- Ustrasana

5) Asanas in supine position

- Utthita ekapadasana
- Utthita twipadasana
- Viparita Karani mudra
- Uttana Vakrasana
- Pawanmuktasana
- setubandhasana

6) Prone positon

- Bhujangasana
- Salabhasana
- Naukasana
- Dhanurasana

- 7) Standing Position
- Cakrasana
 - Ekapada Tolasana
 - Vraksasana
 - Hastapadasana

Pranayama :

- Anuloma Viloma / All to be Practised with abdominal breathing
- Sheelali, Seetkari
- Bhramari

Yoga nidra - everyday - Mandatory.

Conclusion

Yoga is a methodized effort towards self perfection bringing an attitudinal change. It is a journey from information to

transformation. It is a life style. One should start it as a part time activity only to incorporate it fully in our life for twenty four hours .

It is master key to handle stress of life.

There is enough scientific evidence to prove the fact that stress interferes with normal functioning of reproductive health.

Regular yogic practices probably help tuning our psycho neuro endocrine axis ,which is proved by correction of hormonal status .

Let us realize and utilize Yoga as a powerful component of scientific medicine to treat menstrual disorders.

It is safe, economical, non-invasive, non-pharmacological useful treatment modality.