WHO Collaborating Centre for Traditional Medicine

Morarji Desai National Institute of Yoga
Ministry of Ayush, Government of India

YOGA FOR WOMEN OF REPRODUCTIVE AGE

ACTIVITY OF WHO CC -TM (Yoga)-IND 118

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Yoga for Women of Reproductive Age

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MESSAGE

I am delighted to present **"Yoga for Women of Reproductive Age"**, published as a part of the WHO Collaborative Centre (WHO-CC) in Traditional Medicine (Yoga) activity.

Morarji Desai National Institute of Yoga (MDNIY) has been designated as the WHO Collaborating Centre for Traditional Medicine (Yoga) in India since April 2013. The institute serves as an effective Yoga resource centre for information exchange on Yoga and plays a prominent role in developing Yoga standards to promote rational use.

There has been an upsurge in global demand for authentic information and knowledge about Yoga worldwide, particularly after the United Nation's declaration of 21st June as the International Day of Yoga on 11 December, 2014.

MDNIY has developed this book after an extensive review process, which is reflected in the quality of the content and its presentation, making these books a great source of knowledge and information. The main emphasis of this book is on developing physical fitness, emotional stability, concentration, and mental development among women of reproductive age.

This book will be a significant addition to the existing repertoire of knowledge bringing to the forefront new ideas, developments, and trends in the field of Yoga to promote all aspects related to Women of Reproductive Age. This is a one-of-a-kind, unique book that serves the purpose of providing holistic knowledge among Yoga practitioners and grooming the student community and those who are interested in the field of Yoga.

This collaborative project has also prepared a mobile app i.e., WHO mYoga App. This app carries videos of various Yoga practices performed by trained professionals, with the objective of guiding Yoga aspirants.

All these efforts are aligned to make Yoga accessible to everyone. This publication would go a long way in opening new vistas and adding further depth to the subject.

I congratulate the Director, MDNIY, and his team for the laudable effort in putting together this extremely useful publication. I hope it will go a long way in imparting yogic values to lead a healthy and meaningful life.

(Rajesh Kotecha)

Date: 19.06.2023

PREFACE

WHO Collaborating Centre in Traditional Medicine (Yoga) -IND 118 of Morarji Desai National Institute of Yoga (MDNIY), Ministry of Ayush, Government of India, takes pride in contributing to its WHO-CC activities through this book entitled " Yoga for Women of Reproductive Age."

WHO has recognised the important contribution of traditional medicine to provide essential health care. In view of supporting WHO in the development of WHO benchmarks for training in Yoga, Morarji Desai National Institute of Yoga, New Delhi, has been designated as WHO collaborating centre in Traditional Medicine (Yoga)-IND 118 in India. MDNIY, as the collaborating centre for traditional medicine (Yoga), aims to harness the potential of traditional medicine through modern science, research, and technology to improve the health and wellness of people and make preventive and curative healthcare affordable and also accessible to all.

The objectives of the WHO Collaborating centres are diverse and include the collection and dissemination of information on Yoga, standardization of terminology, methods, and procedures, generating evidence-based information on the safety, quality, and cost-effectiveness of traditional medicine products and therapies, development, and application of appropriate technology, provision of reference substances and other services, participation in collaborative research as well as capacity building through various training programmes.

Yoga has evolved over thousands of years and deals with the physical, physiological, psychological, and spiritual well-being of human beings, especially women. This publication will be a valuable addition to the literary traditions of Yoga. It traces essential yogic practices and contains varied information for healthy living for women. This book consists of thirteen units. The first unit is introductory in nature, and the remaining twelve units present a brief description of menstruation issues, pregnancy, diet and nutrition for pregnant women, the role of Yoga in women of reproductive age, etc. It also educates about the role of counselling in the prevention and treatment of several mental health disorders and discusses the importance of the different stages of pregnancy in women. Evidence-based research describes the importance of Yoga in women of reproductive age. The language and explanations are simple and illustrative, allowing learners to understand and practice Yoga with ease. It is indeed a comprehensive book of Yoga, from a knowledge perspective, and a remarkable treatise on the ancient science of well-being.

Good health is one of the foundations of happiness and well-being. Whether one is a career-oriented professional, a middle-aged homemaker, or is entering her twilight years, this book will help everyone understand and manage the key yogic principles and practices for a healthy life. When the health system grapples with change, the least we can do is take charge of our health. Contributions on each subject and topic are based on the Consultative Committee's rigorous efforts, procedures, recommendations, research, and deliberations meant to share the best yogic practices.

I hope the publication will be very useful for Yoga enthusiasts, particularly the women population and the inquisitive minds searching for timeless truths in modern-day lifestyle.

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This endeavour would not have been possible without the guidance and support of the Ministry of Ayush, the Government of India, New Delhi. I sincerely thank *Vaidya Rajesh Kotecha,* Secretary, Ayush, for his timeless motivation and guidance, and also Special Secretary, Joint Secretaries, and Senior officials of the Ministry of Ayush, Government of India, for their consistent guidance and support in all activities of WHO-CC.

I would like to express special thanks to *Dr. Arpan A. Bhatt,* who contributed to the preparation of the "concept paper" and for providing technical inputs during the preparation of the document and is highly acknowledged.

I would like to express my special thanks to *Dr. Ulka Natu Gadam,* Senior Consultant & Senior Yoga Expert Director, Prajnana Yoga Anusandhana Kendra, Ghantali Mitra Mandal, for her insight and unparalleled support in preparing "zero draft" and in disseminating this document on the topic " Yoga for Women of Reproductive Age".

I am extremely grateful and express my heartfelt thanks to the consultative committee members- *Dr. Kim Sung Chol, Late. Dr. Mukund Vinayak Bhole, Dr. Ulka Natu Gadam, Dr Arpan A. Bhatt, Yogacharya Shri S. Sridharan, Ms. Suchitra Pareekh, Dr Rajvi H Mehta, and Prof. R.S. Bhogal*, who, despite their busy schedules, played a decisive role in providing unceasing encouragement, assistance, and attention to making the document unique.

In this sequence, I would like to thank *Dr. D Elanchezhiyan*, Project Coordinator (WHO-CC), for his contribution in the preparation of the document and *Dr. Khushbu Jain* (Assistant Professor, Biochemistry) for reviewing the document. I would also like to thank *Ms. Purnima Singh* and *Ms. Shuchi Mohan* for their assistance in preparing this document.

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I would also like to thank the institute's officials, faculty & colleagues for their assistance throughout the project and all those individuals who have helped directly or indirectly in the publication of this book.

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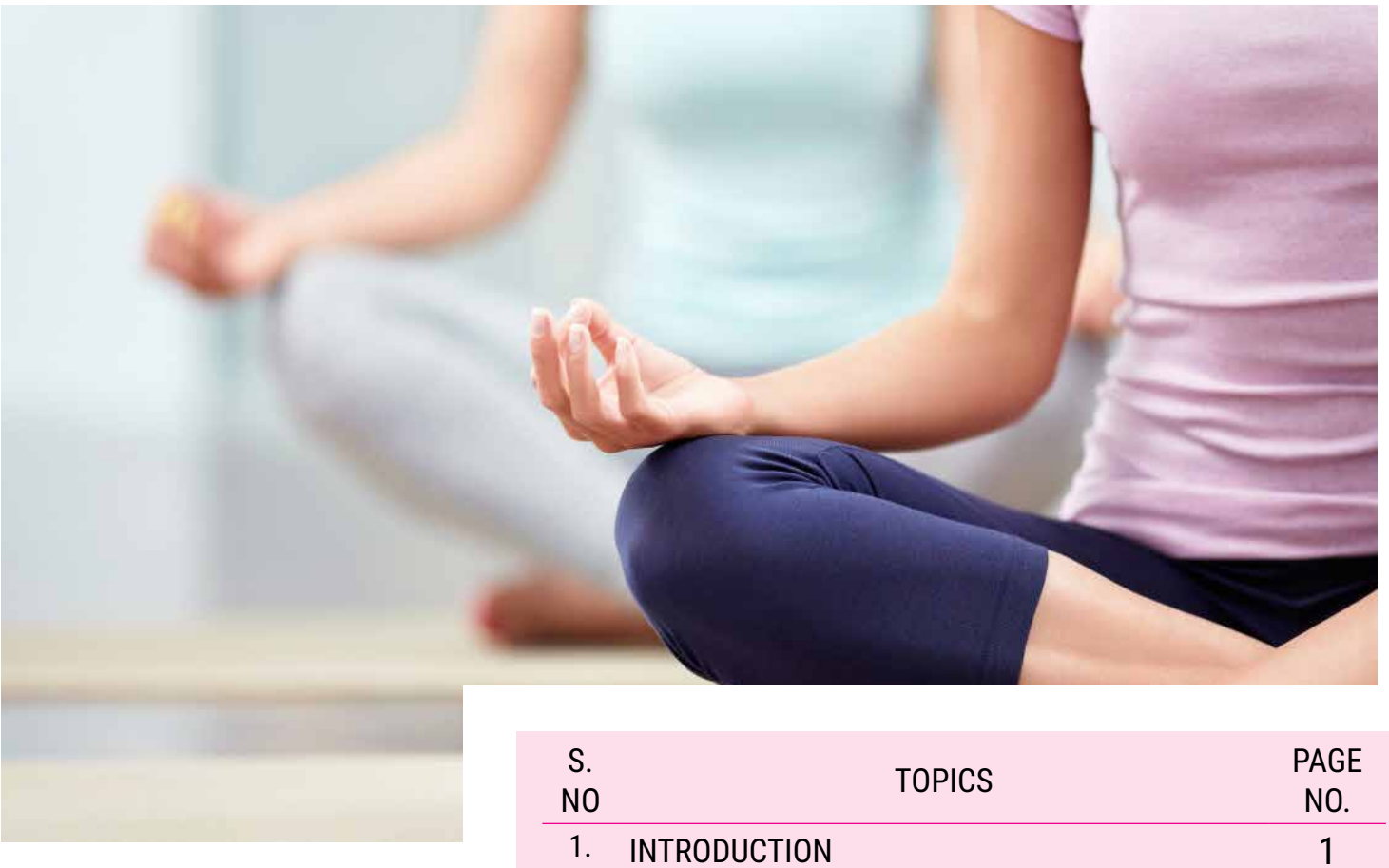

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01 INTRODUCTION

(Life is purposeful if it is aligned with the truth of existence .If the woman, who is 'Shakti' incarnate is disgraced, not given due respect and is not given freedom to make her contribution, then society has to suffer- 'Swami Vivekanand'.

This chapter makes us understand the Anatomy and Physiology of reproductive system .It is important to understand the feminine strength, the physical and the spiritual- as it has the capacity to move towards the goal, overcoming the obstacles it encounters like river. Men are strong, but women as tough ones. Motherhood is the highest honour not only for woman but also for a man. Woman gets it by nature, but man has to strive for it. We should respect womanhood, respect her self dignity, give her options and occasions for self development.)

1.1 Introduction

Women of today face multiple challenges in life. Caring for the elderly people, children, and others in the house, managing the household chores, cooking food, etc. are tasks carried out by women at the household level. The pressures of working women are even more. Women belonging to socio-economically vulnerable sections of society, especially in rural areas, face the additional burden of low access to quality medical facilities. The social stigma and the veiled threat of being subjected to various social evils make them feel insecure and unsafe, both in rural and urban areas. As they fight discrimination at various levels, situations sometimes reach a stage where one starts to wonder whether being born as a woman is a bane or a boon.[1]

In any community, mothers and children constitute a priority group. The legal age group of child bearing in India, which is15–45 years[2,3], constitutes 22.2% of total population (about 140 crore)[4], Women belonging to reproductive/child-bearing age group face innumerable challenges ranging from issues of dowry, female infanticide, sex selective abortions, and lack of access to education and health care to being subjected to domestic violence and so on. All these social evils and discrimination from a predominantly patriarchal society have a negative impact on the reproductive health of women.

The high stress levels of working women within and outside the house pose severe physical and mental burden on them. More often than not, such stress levels lead to increased incidence of menstrual cycle-related and psychosomatic problems. There is an increase in the incidence of polycystic ovarian syndrome by 30%–40% in adolescent girls.[5] These are alarming figures. A study conducted by a non-governmental organization (NGO) states that women do more than 67% of the total hours of work and earn only 10% of the world's income. At the same time, 67% of world's illiterate adults are women.[6] In India, child sex ratio has dropped to 929 females per 1000 males in 2021.* 92% of women suffer from gynecological problems. In spite of all maternal and child health (MCH) care facilities, India remains second highest in the world in maternal mortality rates. Women have little control over their fertility and reproductive health. There have been efforts made at personal, social, and governmental levels, but women continue to remain victims of wrong social customs and attitudes[7]. (*https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1782601)

1.2 Female Reproductive System and Menstruation[8]

The female reproductive system consists of external genitals and internal reproductive organs. The external genitals comprise 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.

Uterus: In a non-pregnant condition, the uterus is pear shaped. The size and configuration of uterus undergo dramatic changes throughout the life. It is a unique organ in that sense. In a girl child, the 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 cm in long axis, 5 cm in breadth and 3–4 cm in length transversely during reproductive age. After menopause, it involutes, shrinks, and atrophies. To accommodate a growing foetus and other products of conception, the uterus increases in size during pregnancy. The uterus has an outer covering layer called the serous peritoneal layer, a thick middle layer or the myometrium, and the inner mucous layer of glands and supporting stroma called endometrium. The uterine cavity is triangular in shape. The mucosa of uterine cavity is shed off cyclically every month in the form of menstruation. The mucosal lining gets replaced every month if there is no conception. The uterus is under the influence of ovarian hormones – estrogen and progesterone.

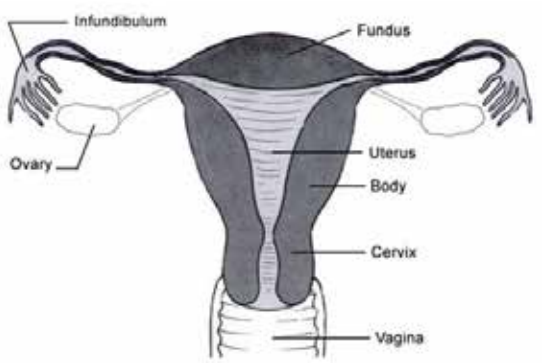

Figure 1: Anatomy of Female Reproductive System

Cervix: Cervix projects through the wall of vagina. It is 3–4 cm in length. It provides receptivity to sperms for fertilisation. It plays an extremely important role at the time of parturition. It is hard and fibrous in non-pregnant state. Cervix has an internal and an external os opening in the vagina. At the end of gestation and during labour, the internal os gradually disappears, the cervical canal becomes part of lower part of uterus leaving only the external os.

Fallopian Tubes: Fallopian tubes are two long tubular structures on either side of the uterus, opening in the endometrial cavity. The fertilisation of egg by sperms occurs in fallopian tubes.

Ovaries: Ovaries are pearly white structures, two in number, 3–4 cm in size on either side of uterus under the fallopian tubes. They have an irregular surface with the presence of mature or immature follicles on them. Ovaries do the most important function of producing an egg in the reproductive period of life. Onset of menarche or first menstural cycle signals maturation of the reproductive system. Ovaries serve as important endocrine glands secreting estrogen and progesterone hormones.

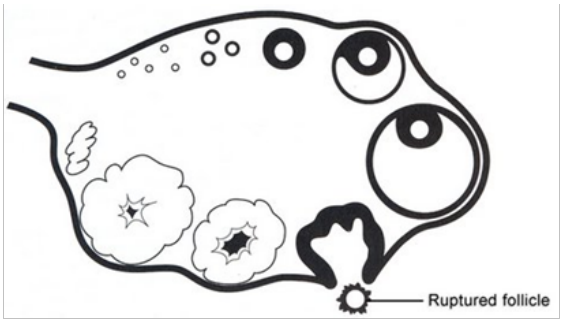

Figure 2: Ovary

Vagina: Vagina is a long fibro-musculo-membranous tubular 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 the time of the birth of a baby. It has mucous secreting glands allowing lubrication. Even in normal condition, vagina is capable of great distension, but in pregnancy the ability is increased many times. During pregnancy, the blood supply increases, the wall lengthens, and vaginal discharge increases.

1.3 Menstrual Cycle

Menstrual cycle is the monthly cycle. This is the process of changes in ovaries and endometrium (uterus lining) starting with the preparation of egg for fertilization. This is at intervals of about one lunar month (28 days). The cycle starts from puberty until menopause, except during pregnancy.

Physiology of menstrual cycle[9–15]

Menstrual cycle describes the changes in a woman's body going through menstruation, the follicular phase, ovulation, the luteal phase, and then back to menstruation.

Phases of the menstrual cycle

Primarily regulated by the hypothalamus and the anterior pituitary gland in the brain and maintained by feedback from the ovaries and uterus, the menstrual cycle may be elaborated upon in terms of distinct events or phases. The terminology of menstrual phase is based upon the area of the female body being investigated; however, the all terms describe the same 28-day menstrual cycle.

Menstrual cycle is discussed in terms of the hormones released during those 28 days–follicle stimulating hormone (FSH) and luteinizing hormone (LH). The menstrual cycle is also described based on the cell structures developed in the ovaries (follicle and corpus luteum) as a response to the hormones secreted by the anterior pituitary gland. Both these perspectives yield the terms follicular phase and luteal phase. If the focus is on the output function of the ovaries, the release of hormones again allows for a distinction in phase terminology–the estrogen (or estrogenic) phase and the progesterone (or progestational) phase.

Menstrual cycle is divided into phases based on the changes in the endometrium: menstrual phase, proliferative phase, ovulatory phase, secretory phase, and premenstrual phase. Figure 3 shows four graphic depictions of the menstrual cycle based on different points of focus.

1. FSH and LH released by the anterior pituitary gland throughout the cycle.
2. Ovarian hormone levels of estrogen and progesterone are charted across the 28-day cycle.
3. Activities of the ovary engaging in follicle formation, ovulation, and corpus luteum formation.
4. Endometrium changes inside the uterus are drawn to indicate tissue sloughing or the degeneration of the uterine wall during the menstrual phase and then growth or the thickening of the uterine wall across later phases.

Figure 3 elaborates each phase and the accompanying roles of the anterior pituitary gland, ovaries, and uterus.

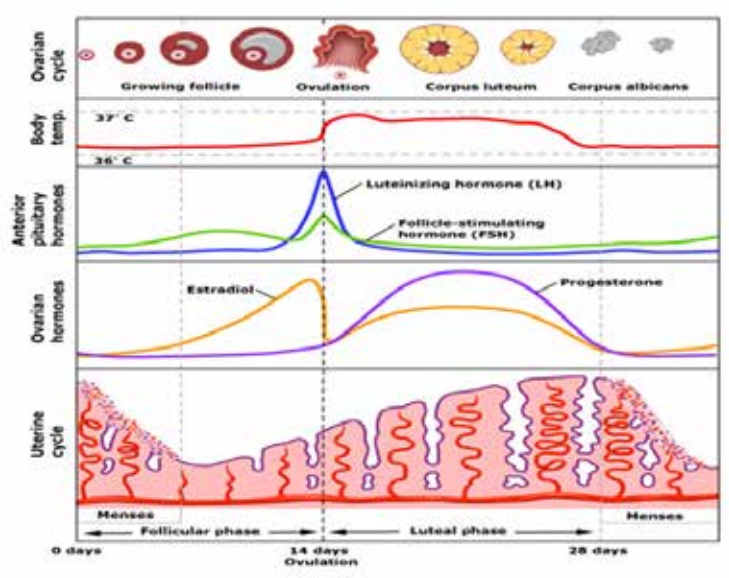

Figure 3: Representation of different phases of menstrual cycle along with changes occurring in uterus, pituitary, and ovarian hormones

Menstrual phase (Days 1–5): In the menstrual phase (also known as menstruation, period, flow, and menses), the lining of the uterus start to disintegrate and are shed as blood, endometrial tissue, tissue fluids, and mucus. Ovarian activity is minimal and ovarian hormonal levels of estrogen and progesterone are relatively low.

Proliferative, estrogenic, or follicular phase (Days 6–12): In the proliferative, estrogenic, or follicular phase, the FSH and LH secreted by the anterior pituitary gland stimulate the formation of fluid-filled sacs or cell clusters called follicles. Each follicle houses a developing ovum (egg), but only one follicle reaches full maturity.

Ovulatory phase (Days 13–15): During the ovulatory phase of the menstrual cycle, after about 16–24 hours following the peak in LH (others estimate 30 hours), the mature follicle ruptures and releases the ovum it has developed. Fertilisation can occur within this window of time; ovulation (the release of the ovum) usually occurs on day 14.

Secretory, progestational, or luteal phase (**Days 16–23):** During this phase, the empty follicle transforms its endocrine cells into a structure called a corpus luteum. This mass of tissue secretes large amounts of progesterone and some estrogen. Progesterone maintains the thickening of the uterine walls and causes the cells of the uterus to release other hormones and enzymes to prepare the endometrium for implantation of a fertilised ovum.

Premenstrual phase (Days 24–28): In the premenstrual phase, the fertilised ovum is not implanted in the uterine lining; the corpus luteum starts degenerating and the estrogen and progesterone levels starts to decline. This drop in hormones leads to spasms of the arterioles that cause a breakdown of the endometrium. The high concentrations of prostaglandins cause the uterine muscles to contract, which sheds the lining as tissue, mucus, and blood.

After the 28th day, menstruation (bleeding) begins and the female is returned to day 1 of the menstrual cycle.

1.4 Absence of Phases of Menstrual Cycle: Follicular Phase, Ovulatory Phase, and Luteal Phase[16]

The important phases of menstrual cycle are as follows:

- Follicular (before the release of the egg)
- Ovulatory (release of the egg)
- Luteal (after the release of the egg)

These phases are regulated by endocrine hormones –luteinising hormone (LH) and follicle stimulating hormones (FSH)–produced by the pituitary gland. These hormones promote ovulation and stimulate the ovaries to produce estrogen and progesterone. Estrogen and progesterone stimulate the uterus and breasts to prepare for possible fertilisation. Irregular secretion or lack of hormonal secretion leads to irregular menstrual cycle.

Follicular phase: It is often the longest phase of the menstrual cycle. It is also the most variable phase. It begins on the first day of period and ends during ovulation. Hypothalamus sends signal to the pituitary gland to release FSH. FSH stimulates the ovaries to produce follicles where the eggs are present. Estrogen make the eggs mature and the thickening of uterine lining. This lining is important for a possible implantation of fertilised egg. Any disturbance in FSH, LH, and estrogen leads to faulty linings and pre-matured eggs/quick ripening of follicles.

Ovulatory phase: It occurs at the middle of menstrual cycle approximately on the 14th day. In this phase, the mature egg is released from the ovary. Raised estrogen in the follicular phase sends signals to the pituitary gland to secrete LH, which starts the process of ovulation (release of matured egg from the ovary).Medications, lifestyle factors such as overweight or underweight and irregular diet pattern affect the hormone levels and cause irregular hormone production or damage the ovaries, resulting in ovulation issues.

Luteal phase: The luteal phase is usually about 12–14-days long. During this time, ovaries release a hormone called progesterone. If the ovaries do not release enough progesterone or the lining of the uterus does not respond to the hormone, it leads to a condition called the luteal phase defect. It causes more frequent periods, heavy uterine bleeding, miscarriage, spotting between periods, etc.

The attitudes, opinions, practices, superstitions, and beliefs about the natural phenomenon of menstrual cycle make a young adolescent stepping into adulthood feel as if something unwanted has happened in her life. Actually, the rhythmical and harmonic hormonal changes of cyclic nature have made it the most remarkable biologic event in a female body. Unfortunately, a lot of mis-beliefs and wrong correlation with religion make it the most unacceptable natural phenomenon. Although it is an extremely important natural event as with any other natural system of body. Wrong use of hormonal medication either to prepone or postpone the menstrual cycle can definitely harm the body with a lot of undesirable side effects.

Menstruation is a periodic and cyclic flow of menstrual blood from the uterus. It is a biological process dependent on complex hormonal and physiological changes that can be disturbed by a variety of factors[17]. The normal cycle is 24–35 days but it varies with each individual woman. 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 in the ovarian activity. Regulation of menstrual cycle is done by signals from hypothalamus and pituitary gland.

1.5 What is Hypothalamus?

Hypothalamus is a very tiny portion of the brain that is responsible for maintaining homeostasis, body rhythm, and harmony. Hypothalamus can be considered as a major centre in the local area network (LAN) of the body. It receives and controls signals from endocrine glands. Among the endocrine glands, the pituitary gland with both its anterior and posterior portions is in close relation to hypothalamus. Pituitary gland and hypothalamus have a connecting network of capillaries called portal vessels. The delivery of hormones secreted from hypothalamus is done through this circulation to pituitary gland.

This is the 'hypothalamus–pituitary' axis. Functions of hypothalamus touch almost every important function in a human body.

Hypothalamus–Pituitary–Ovarian (HPO) axis[18]

Hypothalamus secretes two groups of hormones;

1. Releasing or stimulatory hormones.
2. Inhibitory or suppressor hormones.

Various hormones are carried via portal circulation to anterior pituitary and posterior pituitary. Pituitary gland secrete different types of hormones acting on other body organs such as uterus, ovaries, breasts, kidneys, thyroid and adrenal gland and general growth affecting the aging process.

Hormones from hypothalamus are corticotropin-releasing hormone (CRH), growth-releasing hormone (GRH), thyrotropin-releasing hormone (TRH), prolactin-releasing hormone (PRH), prolactin-inhibiting hormone (PIH), and gonadotropin-releasing hormone (GnRH)/Gonadotropin-inhibiting hormone (GnIH).

Stimulation of hypothalamus (H) leads to stimulation of pituitary (P). This further leads to stimulation of the target organ (Ovary).

Any stressful situation leads to stimulation of CRH from hypothalamus causing stimulation of ACTH or adrenocorticotropin hormone from anterior pituitary leading to raised corticoids from adrenal glands (target organ). This is H–P–O axis.

1.6 Effect of Emotions[19,20]

Limbic system of brain controls emotional behavior. Hypothalamus with its related structures holds a key position in the limbic system, it is the headquarter of the limbic system.

Entire human emotional framework is based on the training of hypothalamus. Hypothalamus is less than 1% of the brain mass, but it has an important role to control vegetative, endocrine functions and emotional drives. Emotions are powerful thoughts. Emotion is experience and expression. The word emotion arises from a Greek word'E-movera', which means to stir up. Intense thinking or pondering over a thought repeatedly gives rise to emotions.

Positive emotions release a lot of endorphin, which acts as a natural opioid or pain killer. Negative emotions increase the blood levels of epinephrine, norepinephrine, cortisol and, and other stress-related substances. It is extremely important to control emotions to prevent disease. Aristotle has put it in correct words:

'Anyone can become angry. That is easy but to be angry with right person, to right degree, at right time, for right purpose, in right way is not easy'.' A stressful event in life or evil thoughts disturb the neuro-endocrine axis.

SEM–HPO axis[22]

SEM–HPO axis stands for Spirituality, Emotions, Mental State–Hypothalamus, Pituitary Organ / (Target Organ) axis.

Spirituality gives a firm foundation of thinking. If a person develops a spiritual attitude, he tries to go nearer to his own self. As we have already seen, an attitude of introspection makes a person egoless.

'E' stands for emotions. As discussed earlier, emotions arise as a result of the influence of either internal or external environment. Emotions act upon the mind and the mind acts upon the body. This is SEM–HPO axis (Figure 4). Only a perfect balance of physical (HPO), spiritual, emotional, and mental (SEM) axis can bring about perfect homeostasis or harmony in body.

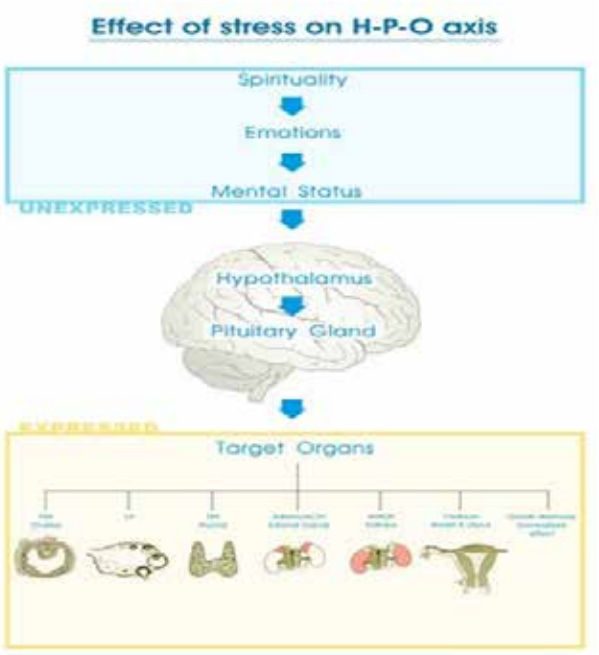

Figure 4: Representation of stress on axis[22]

Probable mechanism of effect of stress on menstrual cycle[21]

Stress activates the release of CRH from hypothalamus. CRH activates sympathetic nervous system and also regulates ACTH secretion. Probably, excessive stress stimulates the production of cortisol and endorphins. This reduces the release of gonadotropins necessary for the process of ovulation. It suppresses secretions of FSH and LH. This could probably play a role in the genesis of an ovulatory cycles.

A lot of hormones responsible for maintaining the menstrual cycle are disturbed because of stress. They include hormones from thyroid gland, adrenal gland, and pituitary gland, including FSH, LH, and prolactin.

Women with hypothalamic amenorrhea demonstrate hypercortisolism suggesting that this could be the pathway by which stress interrupts the reproductive function. A similar mechanism could be explained in the stress of modern lifestyle predisposing to problems of Poly Cystic Ovarian Disease (PCOD), obesity-related menstrual disturbances.

The role of pineal gland to maintain circadian rhythm, which contributes to the normal menstrual cycle rhythm, cannot be neglected. Pineal gland serves as an interface between the environment and hypothalamic pituitary function. Pineal activity can be viewed as the net balance between hormone and neuron-mediated influences.

'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, *Swami Paramahansa Satyananda Saraswati.*

1.7 Yoga and Women of Reproductive Age

Yoga practices have the potential to maintain a balance and harmony between the whole body and the reproductive system. This balance and harmony can provide greater vitality and radiant wellness to women of reproductive age. Yoga practices such as *Shat Kriyas*, *Sukshma* and *Sthulavyayamas*, *Pranayama*, and meditation help treat menstrual disorders, poly cystic ovarian diseases (PCODs), hormonal imbalances, psychological and psychosomatic disorders, metabolic disorders (obesity, diabetes, etc.). Regular practice of Yoga helps in the development of muscular strength, prevents obesity, assists in the development of reproductive organs, and in maintaining a hormonal balance. A few modules on Yoga have been prepared and presented in this publication with the aim of providing evidence-based Yoga therapy for women of reproductive age.

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02 EPIDEMIOLOGY

There are five reproductive stages in a woman's reproductive life cycle. These are (1) pre-menarche (before the first menstrual period) stage; (2) the reproductive, pre-menopausal stage; (3) the early menopausal transition stage; (4) the late menopausal transition stage; and (5) menopause. Between menarche (puberty) and menopause (roughly the age between 12 and 49 years) a woman can get pregnant and bear children. The reproductive system in the body of women is a delicate and complex system. Women's health and women's reproductive health are high priorities for the healthcare systems/departments. As per Population Reference Bureau, the population of women aged 15–49 is estimated at 1742.3 million worldwide and 323 million in India.[1]

2.1 Complications of Pregnancy

Complications of pregnancy are health problems that are caused by or during the period of pregnancy. Approximately 87%–94% of women report at least one health problem immediately after the postpartum period.[2,3] Long-term health problems such as anemia, obesity, and urinary tract infection (UTI) (persisting after 6 months of postpartum) are reported by 31% of women.[4] The relationship between age and complications of pregnancy is now being researched with greater impetus.[5] Commonly seen complications are miscarriage, premature labour and birth, pre-eclampsia, low amniotic fluid (oligohydramnios), gestational diabetes, ectopic pregnancy, and placenta previa.

2.2 Menstrual Disorders and Infertility

Menstrual disorders are a common gynecological problem among women of reproductive age.[6] Pre-menstrual Syndrome (PMS) is a common health problem of women in the reproductive age and is defined as a collection of emotional symptoms, with or without physical symptoms, related to a woman's menstruation cycle.[7] PMS occurs during the luteal phase of menses; however, it disappears with menstrual flow. The prevalence of PMS has been reported in 20%–32% women in their pre-menopausal stage[8] and in 30%–40% of the reproductive female population.[9]

Heavy menstrual bleeding affects up to 30% of women in their reproductive period.[10] Infertility is a big problem of this age group. According to the World Health Organisation (WHO), the national prevalence of primary and secondary infertility in India is 3% and 8%, respectively.[11,12] Menstrual problems were noticed in 35.36% of women with almost equal distribution in urban and rural areas. The common menstrual problem of dysmenorrhea was found in 27.41% of subjects; another study reported 25.2%.[13]

2.3 Polycystic Ovary Syndrome

Polycystic ovary syndrome is a common heterogeneous endocrine disorder characterised by irregular menstrual cycle, hyper-androgenism, and polycystic ovaries. The prevalence of PCOS varies depending on the criteria used to make the diagnosis, but is as high as 15%–20% in women of reproductive age. Risk factors associated with PCOS in adults include Type 1 diabetes, Type 2 diabetes, and gestational diabetes. Insulin resistance affects 50%–70% of women with PCOS leading to a number of comorbidities including metabolic syndrome, hypertension, dyslipidemia, glucose intolerance, and diabetes.[14]

2.4 Vitamin A Deficiency

As per a WHO report, over 7.2 million pregnant women in the developing world are Vitamin A-deficient (serum or breast-milk vitamin A concentrations <0.70 µmol/L), and another 13.5 million have low Vitamin

A status (0.70–1.05 µmol/L); >6 million women develop night blindness (XN) during pregnancy annually. Roughly 45% of Vitamin A-deficient and xerophthalmic children and pregnant women with low-to-deficient Vitamin A status lives in South and Southeast Asia.[15]

2.5 Anaemia

WHO estimates the prevalence of anaemia in pregnant women at 14% in developed countries, 51% in developing countries, and 65%–75% in India. This would mean that about one-third of the global population (over 2 billion) is anaemic.[16, 17]

2.7 Chronic Pelvic Pain

As per a review article, the prevalence of chronic pelvic pain (CPP) ranges between 5.7% and 26.6%. There are many countries and regions without any basic data in the field of CPP. CPP has a major impact on health-related quality of life, work productivity, and health-care utilisation. It is the single-most common indication for referral to women's health services, accounting for 20% of all outpatient appointments in secondary care.[18, 19]

2.8 Urinary Incontinence[20]

For a study conducted in European and Asian populations during a 12-month period, 1250 women of reproductive age responded to the standard urinary incontinence questionnaire. All these women were admitted to the outpatient clinic with various gynaecologic complaints, except for women whose main complaints were urinary incontinence. The prevalence of urinary incontinence was 24.5% in 6.6% women, the incontinence occurred at least once daily. The lowest prevalence was found in the younger age-groups (18–29 years) and the highest in 40–44 years of age.

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03 WOMEN OF REPRODUCTIVE AGE: PHYSICAL PROBLEMS IN VARIOUS PHASES

During the 30 years of reproductive age of a woman, she is exposed to various changes in the levels of hormones, which are reflective of a particular time in her life. Lack of exercise, lack of adequate sleep, irregular life style, improper food habits are mainly responsible for the development of a variety of health issues like Polycystic Ovary Syndrome (PCOS), Abnormal Uterine Bleeding (AUB), hypothyroidism, anaemia, deficiency of vitamins, and many other problems related to digestion and other systems including metabolic syndrome. Incidence of fibroid uterus, endometriosis, and malignancies is also increasing, calling for the urgent attention of health-care providers.

A high percentage of women all over the world suffer from menstrual disorders and AUB. The first mention of heavy uterine bleeding (HUB) was in the ancient literature by Hippocrates, who was born in 460BC. Since then, the concept of normal and abnormal uterine bleeding has been ever evolving. As we see, patho-physiology, diagnosis, changing concepts of modalities of treatments, etc. are all examples of such evolution.

The following parameters are be taken into consideration to describe normality or abnormality of menstrual cycle:

- Regularity of menstruation: Irregular, regular, or absent (Amenorrhea).
- Frequency of menstruation: Frequent, normal, or infrequent (Oligomenorrhea).
- Duration of menstrual flow: Prolonged, normal, or shortened.
- Volume of menstrual flow: Heavy (Menorrhagia), normal, or light (Hypomenorrhea).

Any other abnormality like inter-menstrual bleeding, premenstrual or post-menstrual spotting should also be specified.

A. Problems related to non pregnant state

3.1 Polycystic Ovarian Syndrome

Although first described by Stein and Leventhal in 1935, it is becoming one of the most prevalent lifestyle-related multi-system disorders of modern age today. Global prevalence of PCOS is 2.2% to 26%. One in 15 women worldwide, based on the population studied, suffers from PCOS[1]. In India, incidence in North India is 3.7% between 18 and 25 years[2]. In Mumbai, it is about 22.5% for the age group 15–24years.[3]PCOS leads to a lot of hormonal problems leading to irregular menses, heavy or scanty menses, growth of unwanted hair, infertility, and diabetes.

3.2 Abnormal Uterine Bleeding

Abnormal uterine bleeding (AUB) is reported to occur in 9%–14% women between menarche and menopause.[4] The prevalence varies in each country. In India, the reported prevalence of AUB is about 17.9%.[4] Descriptive terms that have been used to characterise AUB patterns include menorrhagia, metrorrhagia, polymenorrhea, dysfunctional uterine bleeding, and heavy menstrual bleeding.[5]

3.3 Classification of Causes of AUB

A universally accepted system of nomenclature and classification seems a necessary step for medical education. It is important to distinguish acute from chronic AUB in non-pregnant women. Chronic AUB is defined as abnormally high bleeding from uterine corpus, the regularity and/or the timing of which

has been present for at least three months. It does not need urgent interventions. Acute AUB, on the other hand, is an episode of bleeding that needs immediate intervention. There may or may not be an underlying element of chronic AUB.

Most accepted definition today is the 'PALM-COEIN' classification system, an acronym that describes etiology of AUB. It will be out of the preview of this discussion to go in to the details of this classification system and the basis behind this classification. All those interested may refer to the standard textbooks in gynaecology. However, for uninitiated, the PALM-COEIN classification depicts following:[6]

- P : Polyp
- A : Adenomyosis
- L : Leomyoma
- M : Malignancy and hyperplasia
- C : Coagulopathy
- O : Ovulatory dysfunctions
- E : Endometrium
- I : Iatrogenic
- N : Not classified

3.4 Obesity

The prevalence of obesity is rising. The WHO estimates that over 1 billion people are overweight, with 300 million meeting the criteria for obesity[10]. 26% of non-pregnant women aged between 20 and 39 are overweight and 29% are obese[11].

Obesity affects the health of women in many ways. Being obese increases the risk of diabetes and coronary artery disease, lower back pain, and knee osteoarthritis. Obesity also affects both contraception and fertility. Maternal obesity negatively affects pregnancy outcomes (increased risk of neonatal mortality). Obese women are at higher risk of breast cancer, endometrial cancer, cervical cancer, and ovarian cancer.

3.5 Macro and Micro Nutrients Deficiency

Nutrients like Vitamin A, Vitamin D, Vitamin B12, iodine, folate, and iron are required for the normal physiology of human physiological functions. While these nutrients are more common in women after attaining puberty, deficiency of these nutrients leads to anaemia, thyroid disorders (hypo or hyper), low immunity, etc[13,14].

3.6 Uterine Prolapse

Uterine prolapse happens due to the sliding down of the uterus from the pelvic cavity into the vaginal canal due to weakening of the pelvic supporting connective tissue and the pubococcygeus muscle and aging. Uterine prolapse occurs most commonly in women who have had one or more vaginal births[12].

B. Problems related to Pregnancy

3.7 Preeclampsia

Preeclampsia is the high blood pressure (hypertensive) disorders of pregnancy. It leads to maternal and perinatal mortality (stillbirths and deaths of new-born within a week of life) and morbidity.

Preeclampsia occurs in about 10% of all pregnant women around the world. In India, the incidence of preeclampsia is reported to be 8%–10% among pregnant women. According to a study, the prevalence of hypertensive disorders of pregnancy was 7.8% with preeclampsia in 5.4% of the studied population in India.[7]

3.8 Hyperemesis gravidarum

Hyperemesis gravidarum is extreme, persistent nausea and vomiting during pregnancy. It can lead to dehydration, weight loss, and electrolyte imbalances. Morning sickness is mild nausea and vomiting that occurs in early pregnancy.

3.9 Musculoskeletal Disorders

Most chronic pains occur due to musculoskeletal disorders. During the pregnancy period, many hormonal and anatomical changes take place in the female body, which may cause various musculoskeletal problems.[8] Biomechanical factors also play a major role along with hormonal influences to produce symptoms in mild to late pregnancy.[9] Usually, weight gain during pregnancy results in postural changes that produce pain and musculoskeletal problems. Lumbar lordosis, forward flexion of the neck, and downward movement of the shoulders also occur to compensate for the enlarged uterus and change in the centre of gravity.

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04 WOMEN OF REPRODUCTIVE AGE: PSYCHOLOGICAL ISSUES IN VARIOUS PHASES

Women of today are overburdened due to various responsibilities related to stress of study, career, and family. The breakneck speed of life, mismatch of speed at the physical and mental levels, failure of fulfillment of expectations from the self and others remain the root cause of psychosomatic problems.

Depression, emotional upsurges, lack of confidence, irritability, and disturbed interpersonal relationships can lead to major health related issues such as 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, the ability to cope with demands of life, and a total positive attitude in life. A value-added enriched yogic lifestyle helps to achieve the goal.

Common psychological problems seen in women are listed below[1].

- Depression
- Anxiety and specific phobias
- Post-traumatic stress disorder (PTSD)
- Suicide attempts
- Eating disorders

4.1 Psychological Issues of Women after Puberty[2, 3]

Puberty is the process of hormonal and physical change that causes a young person to reach sexual maturity. The process may extend from one to three years. Girls usually attain puberty about a year earlier than boys. During this adolescent stage, they experience many physical and psychological changes, resulting in confusion, anger, and being rebellious. They need support and understanding to survive this stage and emerge as mature adults. Learning about the most concerning psychological changes that take place during puberty can help the adolescent to prepare himself or herself better this stage.

A few common problems seen among adolescents are listed below.

- Bodily dissatisfaction and low self-esteem
- Mood swings
- Asserting independence
- Sexual awakening

4.2 Psychological Issues of Women During Pregnancy[4, 5]

Pregnancy is a roller coaster of emotions and to sail through this ninemonths journey, every woman should be given utmost care and emotional support[13*].

Pregnant women may feel many changes at the physical, social, and mental levels. During pregnancy, a woman's emotional state undergoes various changes and plays a vital role in pregnancy. As hormonal fluctuations are on a rise, high stress levels cannot be avoided. It may also cause feelings of nausea or vomiting, causing huge discomfort.

Usually, mood swings, concerns about the health of the baby and her own, and irritability are approached with slight indulgence. However, when these are intense and prolonged in time, they may slowly develop into mental disorders. Many external factors such as lack of support from family, friends, and the living environment also cause mood swings. The prevalence of major depression is higher in women than in men. In 2010, its global annual prevalence was 5.5% and 3.2% for women and men respectively, representing a 1.7-fold greater incidence in women[6]. The prevalence rate of depression in India ranges from 1.5/1000 to 37.74/1000. Higher rates of depression have been reported in the rural population compared to the urban population[7].

4.3 Postpartum Issues[8]

Post pregnancy, most mothers find it difficult to cope with the new situation. Mothers undergoing this situation is generally said to be having 'baby blues' or 'postpartum blues'. The onset of postpartum blues begins on the third or fourth day after delivery, and lasts for about two weeks. Clinically, it falls within a sub-depression state, with symptoms such as nervousness, embarrassment, sadness, crying, and mood swings.

4.4 Psychological Issues of Women During Menstruation[9,10]

Recent research surveys say that approximately 19% of women aged between 18 and 55 years' experience menstrual-related problems like heavy bleeding, cramp, or premenstrual syndrome (PMS).

Other problems commonly seen include feeling sad, dysphoric mood, nervousness, restlessness, low energy levels, hopelessness, or worthlessness. Cigarette smoking, alcohol, drug abuse, and being overweight or obese are also frequently reported among women with menstrual-related problems than those without menstrual related problems.

4.5 Psychological Issues of Women During Perimenopause, Pre-menopause, and Menopause stages[11, 12,]

Perimenopause is a defined period of time beginning with the onset of irregular menstrual cycles until the last menstrual period; it is marked by fluctuations in reproductive hormones. This period is characterised by (a) menstrual irregularities; (b) prolonged and heavy menstruation intermixed with episodes of amenorrhea, decreased fertility, and vasomotor symptoms; and (c) insomnia.

Menopause is one of the most significant events in a woman's life, which brings in a number of physiological changes that affect the life of a woman permanently. Menopause is the permanent cessation of menstruation resulting in the loss of ovarian follicle development. Some important psychological disorders during menopause are listed below.

- Schizophrenia
- Bipolar disorders
- Panic disorder
- Obsessive-compulsive disorder (OCD)
- Anxiety, mood swings, irritability, and depression

Other issues include night sweats, insomnia, fatigue, loss of confidence, feeling of neglected and hot flashes (Hot flash is the sudden feeling of warmth in the upper body, which is usually most intense over the face, neck and chest.).

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05 ROLE OF COUNSELLING AND PROPER EDUCATION TO FEMALES OF REPRODUCTIVE AGE

5.1 Importance of Education in Women

If you educate a man you educate an individual, however, if you educate a woman you educate a whole family. Women empowered means mother India empowered.

Pt. Jawaharlal Nehru (First Prime Minister of India)

Educating female children helps to make healthier, wealthier, and safer communities. Education also helps to reduce child deaths, improve maternal health, and deal with the spread of communicable diseases. Education has a profound effect on girl's and women's ability to claim other rights and achieve their rightful status in a society, such as economic independence and political representation. Educated women tend to become role models and an inspiration to others. Education gives them the ability to positively influence their lives, their families and in wider communities. Educated women have an ability to take leadership roles, especially within the community and focus on societal development. Education enables them to take proper decision with confidence, empowers them, and strengthens their voice in the modern society. Therefore, educating female children is more critical for the development of communities and the society as a whole. In general, education also helps address the current global challenges such as poverty, health issues, ignorance, lack of tolerance and conflicts, etc.

5.2 Importance of Counselling in Women

Currently there is a growing interest in the area of women's health, including women's mental health. Women are the biggest consumers of health care worldwide, they make more visits to their doctors, fill more prescriptions and have more surgeries as compared to men.[1] Women have unique health needs across the reproductive lifecycle related to menstruation, fertility, pregnancy, and menopause. They have only received attention from mental health professionals later. One must also be concerned about the social context (poverty, violence, discrimination, work inequities, etc.) that affects women's mental health.

Gender differences leading to mental health problems have long been recognised. These occur more frequently in women than men, especially depression and anxiety related disorders[2]. Anxiety disorders are common and are seen in one among ten individuals. The number of women who develop anxiety disorders is far greater than men. The term anxiety refers to an unpleasant and overriding mental tension. Anxiety disorders refer to a range of specific mental illnesses, which include phobias, panic disorder, post-traumatic stresses disorder, and obsessive-compulsive disorder. Studies have documented high rates of comorbidity between major depressive disorder (MDD) and anxiety, concurrently within episodes of illness and over the lifetime of individuals[3,4]. Within anxiety symptoms are more likely to precede depressive symptoms than to follow them and tend to predate the onset of major depression. Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration. Today, depression is a major public health problem, and considered as the second greatest cause of death and disability worldwide[5]. Epidemiological data worldwide demonstrates that depression is approximately twice as common in women than in men, as its onset peaks during the childbearing years of life[6]. Research studies also show that gender disparity in the rates of the first onset of depression (around 13–15 years of age) and that this disparity is maintained throughout life.

Counselling is helpful in the prevention and treatment several mental health disorders that appear in women of reproductive age. Counselling is a mode of educational system that helps both genders to develop their capacities to the full in the terms of intellectual, social, physical, and moral capacities. Without a proper and systematic intervention to remove the gender discrimination in education, half of the human resources in most countries will be under-utilised or un-utilised. Socio-cultural beliefs and practices in schools often discourage girls from learning and subsequently lower their aspirations leading to disturbances in mental health. Effective counselling helps to improve the self-image of girls and women of reproductive age, and also broadens their educational and occupational ambitions.

5.3 Role of Counselling during Physiological Changes in Women

Physiological changes that occur in women of reproductive age are mainly due to hormonal changes during the ageing process. In this period, women will be more prone to mental disturbances and mood swings. These disturbances may be prevented by proper guidance and counselling to the individual.

5.4 Role of Counselling during Puberty

Children during 12–19 years of age, especially female gender, start seeing changes in their bodies. This physiological process is called puberty. The changes in hormones start affecting their moods and thoughts psychologically too. Due to these physiological and psychological changes, they experience a great deal of physical and mental modifications. They become extremely sensitive and start experiencing mood swings and fluctuations in the level of confidence. If children are not guided or counselled properly, they could end up following the wrong path and become prey to negative things (drugs, peer pressure, etc.) that could ruin their lives. To prevent this, children of these ages should be subjected to counselling for addressing their feelings and thoughts properly and allowing them to grow into healthy, sound-minded adults.

Premarital counselling for women is also essential for identifying their assumptions/expectations and helping them deal with potential conflicting outcomes. Counselling would also help them develop the skills to recognize the strengths and weaknesses of their partner and deal with the partner suitably to bring happiness in the married life. It enables women to live together without losing their individual identities. This means not only spelling out what is common to both but also accepting and appreciating their differences.

5.5 Importance of Antenatal, Natal, and Postnatal Counselling

Pregnancy may give happiness, joy, and many other positive emotions to pregnant women. However, a whirlwind of emotions, mental distress, anxiety, sadness, and a sense of inadequacy may also occur during the period of pregnancy. They have to create a new identity as a mother, which is challenging, and they have to deal with physical, psychological, relationship, and emotional changes too. Proper guidance and counselling can help them overcome the emotional difficulties and deal with their new identity as a mother.

Prenatal counselling for pregnant women helps to heal any old psychological injury, so that pregnant women can be mentally free any kind of stress. For instance, traumas experienced in their childhood have the potential to give them a negative impact on their physical and psychological well-being, either consciously or unconsciously. Such situations can be avoided through prenatal counselling. Postnatal counselling will facilitate a good relationship and a healthy attachment with the new-born baby.

5.6 Counselling at the Stages of Pre-menopause and Onset of Menopause

Menopause is the normal, natural transition in a woman's life that happens between the ages of 40 and50. During this time, ovaries get smaller and stop producing the hormones estrogen and progesterone that control the menstrual cycle. During this time, there will be depletion of eggs due to which fertility declines. Eventually, women at this stage are no longer able to become pregnant. Menopause has three stages – premenopausal, menopause, and post menopause. About 3.5 years before the onset of menopause, the secretion of estrogen starts to reduce leading to irregular menstrual cycles; this condition is called premenopausal stage. Women may feel the signs and symptoms of hot flashes, sleep disturbances (insomnia), mood changes(irritability, depression, anxiety, etc.) during these three stages of menopause.

Counselling helps them understand the physiological and psychological changes and maintain their mental and physical health.

Yoga and Counselling in the management of diseases[7]

The role of a counsellor is to empathetic and not sympathetic. A good Yoga instructor should try to be a good listener. It is important to remove all mis-conceptions about yoga as therapy, and at the same time to build confidence in the mind of the beneficiary. Skillful talking is essential 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.

Counselling plays an important role in the management of various diseases. Given below are a few instructions that could be useful to yoga therapists (as counsellors) and also to those who aspire to become counsellors.

1. Give a very warm welcome to the beneficiary with a smiling face.
2. Establish intimacy with the beneficiary by taking her into confidence.
3. Patience is mandatory.
4. Show limited compassion.
5. Try to find out skillfully the root cause of sufferings.
6. Beneficiary will not open out fully in one sitting. So, have more sittings, if necessary.
7. Some beneficiaries talk too much, stop them skillfully. They should not feel insulted.
8. Try to collect family history and also history of the disease.
9. Try to ascertain the nature of the beneficiary (whether sensitive, emotional, bold, timid, reserve minded, open minded, etc.).
10. In some people, too much discipline or expectation of being perfect is also a cause of tension. Advise them to change the thinking pattern and make necessary adjustments to cope with unwanted happenings.
11. Bear in mind that all persons are not alike. This factor should be given due consideration while fixing the treatment modalities.
12. The tremendous speed of the mind is the cause of most diseases or sufferings. Therefore, slowing down the speed by adopting certain yogic practices is the remedy.
13. Make her understand that acceptance is half the solution, so accept whatever has come to her.

14. Remove the fears, phobias, and complexes and infuse intense desire to come out of the trouble. This type of motivation and determination is necessary.
15. Change her attitude towards life in general and the disease in particular.
16. Convince to change her lifestyle.
17. Advise to enjoy some hobbies and also life not for material gains but for true happiness and satisfaction. Real happiness does not depend upon material things, it comes from within.
18. The modern concept of managing the disease is:'Programming can be changed, it must be changed'. ('I am definitely going to suffer from asthma because my parents are suffering from it'; this is a programmed mind.)
19. Look at the sufferings from different perspectives. Take it as an opportunity to bring total transformation.
20. Make the beneficiary understand her own hidden potential for self-healing. If she firmly resolves to come out of the sufferings, nothing is impossible.

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06 PREGNANCY: A SPECIAL CONDITION

(The purpose for Atman to take birth on this planet is to realize its true nature as part of cosmic consciousness .

Parents and society can help before conception , during pregnancy to give positive and healthy input to Annamaya kosha, Pranayama kosha and Manomaya kosha to experience a blissful journey from womb to external world. This input is in the form of good diet and incorporation of Yogic life style.)

Pregnancy is the period of nine months or so during which a woman carries a developing embryo and fetus in her womb. For most women, it is a time of great happiness and fulfillment[1]. During pregnancy, it is of prime importance that various dimensions of her are in harmony.

The period of pregnancy (gestation) is divided into three periods or trimesters consisting of 14 weeks each (40 weeks i.e. 280 days is normal duration of gestation period) [2, 3].

1. **First Trimester (1–14 weeks):** The womb grows to the size of a lemon in 8 weeks, and from the time the respiration increases by 40%, discomforts like nausea, tenderness in breasts, etc. appear during this period[4]. The following physical changes and signs can also be observed:-
    - Extreme tiredness
    - Tender, swollen breasts
    - Dyspepsia with or without vomiting (morning sickness)
    - Cravings or distaste for certain foods
    - Mood swings
    - Constipation (trouble having bowel movements)
    - Need to pass urine more often
    - Headache
    - Heartburn
    - Weight gain or loss
2. **Second trimester (15–28 weeks):** The uterus size expands up to 20 times its normal size, women begin to put on weight and the morning sickness will start to subside and eventually fades.

    The following are the common physical changes and signs seen during this time.
    - Body aches, such as back, abdomen, groin, or thigh pain
    - Stretch marks on the abdomen, breasts, thighs, or buttocks
    - Darkening of the skin around nipples
    - A line on the skin running from belly button to pubic hairline
    - Patches of darker skin, usually over the cheeks, forehead, nose, or upper lip. Patches often match on both sides of the face. This is called the mask of pregnancy.
    - Numb or tingling hands
    - Itching on the abdomen, palms, and soles of the feet
    - Swelling of the ankles, fingers, and face

3. **Third trimester (29–42 weeks):** Weight gain occurs the most in this period. The abdomen starts to transform in shape due to the foetus turning in a downward position for birth.[5]

- The physical changes and signs that happen during this period are as listed below.
- Shortness of breath
- Heartburn
- Swelling of the ankles, fingers, and face
- Tender breasts, which may leak a watery pre-milk called colostrum
- Trouble sleeping
- The baby 'dropping', or moving lower in abdomen
- Contractions, which can be a sign of real or false labour

Though pregnancy and childbirth are not unnatural events, the physical, mental and emotional adaptive changes in the body largely determine women's good health and a positive outcome of pregnancy. The normal growth of foetus can be affected by a number of factors such as pregnancy induced hypertension (PIH), or even psychosomatic stress[2].

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 deciduas affecting the implantation site. Stress makes a woman prone to abortion, 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[3].

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 gestational age for foetus and post-partum depression[8].

Yoga is a simple and natural method that helps in the preparation of the mother and baby for childbirths. Yoga helps to keep body and mind fit during the gestation period and also in the period of pre and postnatal periods. Further, Yoga develops flexibility in both body and mind and helps to reduce the labour pain, and helps in normal delivery.

Yoga practice for lactating mothers [9-12]

Multiple factors influence the failure of breastfeeding during the lactating period. 80% of failure in lactating mothers occurs due to psychological conditions, especially stress. Stress affects the secretion of oxytocin hormone (the hormone that stimulates the production of breast milk). This leads to incomplete desire of a mother to breastfeed her baby as the milk formation is not smooth or no milk comes out at all, this is called lactation failure. Failure of exclusive breastfeeding will reduce the number of brain cells by 15%–20%, which can inhibit the baby's intellectual development at a later stage.

Yoga is easy to practise and is cost-effective too as it can be practised at home. Yoga provides relaxation to lactating mothers and also smoothens the process of the production of breast milk. Yoga movements help to stimulate the pituitary gland and enable it to release the hormones called oxytocin and prolactin to produce breast milk. Oxytocin signals to 'let down reflex' for release of milk, which meets the nutritional needs of infants. The main Yoga exercises for lactating mothers are to strengthen the area of chest around the breasts. The breast exercises become powerful when done along with deep breathing practices or *Ujjayi* pranayama as well as relaxation and meditation. These movements will provide relaxation and a feeling of confidence in the mother for successful breastfeeding.

1. **Exercise the muscles around the breast:** Exercise helps to improve blood circulation around the breasts, strengthens the supporting muscles of breasts for respiration, and opens the chest cavity in all directions.

2. **Movements of *Asana*:** A*sana* focuses on stretching and strengthening of particular body parts and helps to increase the blood flow and secretion of hormones from glands (endocrine) in the body. *Asana* practices help to align, strengthen, and cleanse the nervous system, especially the spine. Practice of *Asanas* improves the general health and wellbeing of the body, mind, and emotion/state of mind.

3) **Movement of *Pranayama:*** *Pranayama* is regulated controlled breathing technique / practice in Yoga. Breathing technique is important because it helps to maximise the capacity of the lungs, improves the strength and pliability of the body, relieves tension, increases peace, and generates new energy.

4) **Relaxation:** Relaxation stage is helpful to raise self-awareness. Practicing relaxation posture helps to release the hormones, more stably and smoothly into the blood for circulation. This relieves muscle tension, feeling more peaceful with quietened mind.

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07 DIET AND NUTRITION IN VARIOUS PHASES

(It is said -"The best doctors in world are doctor diet , doctor quiet and doctor merryman."

This chapter gives us important information on healthy diet, important nutrients, minerals, vitamins in our diet. Eating ' *Satvik* ' , balanced food in limited quantity in a happy frame of mind is necessary to maintain health.)

Reproductive age represents a major portion of a woman's life. Therefore, it is important to understand the dietary needs in different phases of reproductive age. The nutritional requirements in a woman vary depending on physical activity, age, gravid or non-gravid state, and during lactating or non-lactating stage.

Women in developing countries often face the problem of malnutrition due to deficiency of iron and vitamins. Besides, obesity among women is becoming an increasing phenomenon. Both these extremes can have adverse effects on the menstrual cycle and the outcome of pregnancy.

Apart from a balanced diet with adequate proteins, carbohydrates, fats, vitamins, minerals, fibre, and water, Yogic literature describes a diet full of *Trigunas* (i.e., *Tamasic*, *Rajasic*, *Satwic* diet). Diet has to be *Satvik* and *Seemiti*, which means a balanced diet (*santulit*) in moderate quantity.

Food, according to Yoga, not only forms the body but also helps in increasing the *kriyashakti* (power to act) and *manashakti* (will power) in an individual. Diet of mind is equally important. In that context, the following points may be kept in mind.

- Have good food for generating good thoughts.
- Avoid mental or emotional excitation while eating.
- Do not curse the food you are eating.
- Always pray before you start eating.
- Do not watch TV or enter into controversies or read when you are enjoying food.

As per Yoga, the quantity of intake of food attains as much importance as to the quality of the food. *Gheranda Samhita* prescribes the following tips in this regard.

Divide stomach into four equal parts. Two portions of the capacity of stomach should be filled with solid food, the third portion should be filled with water, and the fourth portion should be left empty for movement of gases. This is a general guideline, should not be taken literally.

Durando faulty diet/stale food not only invites ill health, but also disturbs the mind and emotions and causes diseases.

A good diet is an absolute prerequisite for *Yoga Sadhana*. Swami Swatmarama describes six important reasons for failing to achieve the goals of Yogic practices.

Hathpradipika (H.P) captures the six reasons in the following verse:

अत्याहारः प्रयासश्च प्रजल्पो नियमग्रहः।
जनसंगश्च लौल्यं च षड्भिर्योगो विनश्यति॥ १.१५॥

atyaharaḥprayasaschaprajalponiyamaghrahaḥ ।
jana-sangghaschalaulyaṃ cha ṣhaḍbhiryoghovinasyati ॥ H.P 1.15 ॥

(Meaning: Yoga becomes futile by overeating, exertion, talking too much, severe austerity, public contact, and fickleness of mind. Ref.:Kaivalyadham H.P.)

Atyahara (over-eating) tops the list. *Swatmarama* further advises not to eat stale, too salty, too bitter, too sour food or food which is heated over and over again.

An ideal diet, according to him, should be:

पुष्टं सुमधुरं स्निग्धं गव्यं धातुप्रपोषणम्।
मनोभिलषितं योग्य योगी भोजनमाचरेत्॥१.६३॥

puṣhṭaṃsumadhuraṃsnighdhaṃghavyaṃdhatu-prapoṣhaṇam I
manobhilaṣhitaṃyoghyaṃyoghibhojanamacharet IIH.P 1. 66 II

(Meaning: A person who wants to follow Yogic path should eat food that is nourishing and healthy, with enough fat content derived from cow's milk. Such food, when eaten in a happy mood and with contentment, nourishes *Saptadhatu*.)

7.1 Importance of Diet at Different Phases

Diet at the stage of puberty[1, 2]

Proper diet and nutrition are more important in pubertal age, especially in a female. At the puberty stage, certain physical and psychological changes take place during the transition of childhood to young adulthood. These changes prepare the human for reproduction. This transition affects the body shape, size, structure, and composition and also involves maturation of sexual organs and starts to gain secondary sexual characteristics. Any type of nutrient deficiency in this stage leads to ill effects on the future health of the individual and also to her children. Inadequate diet leads to delayed sexual maturation and some type of retarded physical growth.

Adolescents need more energy because of their increased activities and basal metabolic rates. They need minimum 2200 kcal/day to meet this energy need for which they have to take proper food containing carbohydrates, protein, and fat in a balanced combination. Their diet at this phase should consist of lean protein sources, dairy products, whole grains, nuts, vegetables, and fruits.

Nutrients required during pubertal stage[3]

- Children at this stage are recommended 25% of total energy as fat, with less than 10% of it from saturated fat.
- Protein need of adolescents lies between 45 and 60 grams/day.
- Approximately 45% of peak bone mass is attained during adolescence, therefore, adequate calcium intake (approx. 1200 mg/day) is important for developing a dense bone mass.
- Iron is an important nutrient at the stage of puberty. Deficiency in iron leads to anemia and menstrual disorders. Iron plays a vital role in the rapid growth and expansion of the blood volume. The Recommended Dietary Allowance (RDA) for iron is 12–15 mg/day.
- Other micro and macronutrients like zinc, folate, magnesium, potassium, and selenium also play important roles in this stage.

7.2 Diet during Pregnancy[4]

The diet of a pregnant woman can have a profound and lasting effect on her child's health. The general expression that you are what your mother eats during the pre-natal period stays true in this context.

During pregnancy, a woman is eating for two, including her foetus. The extra energy need can be easily met by having one or two snacks of smaller amount of food, which helps in alleviating uncomfortable side effects of pregnancy such as vomiting, nausea, and heartburn.

Earlier, the recommendation for energy intake during pregnancy was 300 kcal/day in the second and third trimester periods. Now it has been revised to 340 kcal/day for the same period. There is no recommendation for increase in calories during the first trimester.

Comparison of nutrients needs

Acceptable micronutrients distribution range (AMDR)			
Nutrients (unit of measure/day)	**Adult women (non-pregnant)**	**Pregnancy**	**Lactation**
Vitamin A (mcg)	400–600	500–700	800–1000
Vitamin B6 (mg)	1.1–1.3	1.6–1.9	1.7–2.0
Vitamin B12 (mcg)	2.0–2.4	2.2–2.6	2.4–2.8
Vitamin C (mg)	60–85	70–100	90–130
Thiamin (mg)	0.9–1.1	1.2–1.4	1.2–1.4
Riboflavin (mg)	1.1–1.3	1.4–1.7	1.5–1.8
Niacin (mg)	14–18	17–22	17–22
Folic acid (mcg)	320–400	520–600	450–500
Vitamin D (mcg)	10–15	10–15	10–15
Vitamin E (mg)	12	12	15
Vitamin K (mcg)	140	140	140
Calcium (mg)	800–1000	800–1000	800–1000
Phosphorus (mg)	580–700	580–700	580–700
Magnesium (mg)	170–240	170–240	170–240
Iron (mg)	10–18	22–27	8–11
Zinc (mg)	7–8	9–11	10–13
Copper (mg)	0.7–0.9	0.9–1.2	1.2–1.6
Selenium (mcg)	45–55	45–55	59–70
Iodine (mcg)	150	220	290

Macronutrients[5, 6]

Protein:

It is estimated approximately 925g of protein is accumulated during pregnancy. Protein is made up of amino acids, which are the building blocks for human cells. It is important for the growth of the foetus, especially the brain, and also for the growth of breast and uterus. It is even more important to get enough protein during the 2nd and 3rd trimesters as the foetus grows faster at this stage. These increased demands must be met by the maternal diet. Pregnant women should consume 75–100g/day of protein (about 20% of calorie intake).

Fat

Pregnant women should consume about 33% of their calories from healthy fats (about 40–60g/day). This energy from fat is used for foetal growth and development, specifically the brain and vision. It also serves as a source of fat-soluble vitamins and essential fatty acids.

Omega-3 fatty acids: DHA and EPA

Omega-3 fatty acids are essential for the development of human body. As our bodies cannot synthesise these fatty acids, the demand should be fulfilled through diet. Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) occur naturally together in foods. During pregnancy, DHA is extremely important for the development and growth of the foetal nervous system. Consuming adequate DHA and EPA during pregnancy is linked to higher intelligence, better vision, and a more mature central nervous system (CNS). Also, inadequate DHA during pregnancy has been linked to an increased risk for maternal depression. The minimum recommended amount of DHA for daily consumption is 300mg/day.

Carbohydrates

It is recommended that 45%–65% of calories should come from carbohydrates, i.e., a minimum of 175g/day. These sources should be coming from cereals, vegetables, fruits, and whole grains, which are rich in fibre.

Weight Gain during Pregnancy (Comparison)

Pregnancy Body Mass Index	Recommended Total Weight Gain During Pregnancy with a Single Baby (in Pounds)	Rate of weight gain in the Second and Third Trimesters* (Pounds per Week)	Recommended Weight Gain During Pregnancy with Twins (In Pounds)
Under weight (BMI less than 18.5)	28–40	1.0–1.3	–
Normal weight (BMI 18.5–24.9)	25–35	0.8–1.0	37–54
Over weight (BMI 25.0–29.9)	15–25	0.5–0.7	31–50
Obese (BMI more than 30)	11–20	0.4–0.6	25–42

Content source: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. (2022)

Recommended daily energy intake during Pregnancy

Energy Intake per Day	First Trimester	Second Trimester	Third Trimester
Total calories per day	18,000	2,200	2,400
Grains	6 ounces	7 ounces	8 ounces
Vegetables	2.5 cups	3 cups	2 cups
Fruits	1.5 cups	2 cups	2 cups
Dairy	3 cups	3 cups	3 cups
Protein foods	5 ounces	6 ounces	6.5 ounces
Fats and 0ils	5 teaspoons	7 teaspoons	8 teaspoons

Key vitamins and minerals required during pregnancy

Nutrient (Daily Recommended Amount)	Why You and Your Baby Need it	Sources
Calcium (1300 mg for ages 14–18 years;1000 mg for ages 19–50 years	Builds strong bones and teeth	Ragi, milk, milk products
Iron (27 mg)	Helps red blood cells deliver oxygen to your baby	Green leafy vegetables, sweet potatoes, string beans, strawberries
Vitamin A (750 micrograms for ages 14–18 years; 770 micrograms for ages 19–50 years)	Forms healthy skin and eyesight, helps with bone growth	Sweet potato, carrot, yellow fruits
Vitamin C (80 mg for ages 14–28 years; 85 mg for ages 19–50 years)	Promotes healthy gums, teeth, and bones	Citrus fruits, kiwi, grapes
Vitamin D (600 international units)	Builds your baby's bones and teeth, helps promote healthy eyesight and skin	Sunlight
Vitamin B_6 (19 mg)	Helps form red blood cells, helps body use protein, fat, and carbohydrates	Peanuts, soya beans, wheatgerm, oats, bananas, milk
Vitamin B_{12} (2.6 micrograms)	Maintains nervous system, needed to form red blood cells	Milk, cheese
Folic acid (600 micrograms)	Helps prevent birth defects of the brain and supports the general growth and development of the fetus and placenta	Legumes, leafy greens, citrus fruits, broccoli

Micronutrients[7]

Essential vitamins and minerals necessary for human body are collectively called micronutrients. These micronutrients play a vital role during pregnancy. Deficiency in any of the micronutrients may lead to risks or complication during the time of delivery or gestational period. It may also lead to growth retardation, congenital abnormalities, and neurobehavioral retardation, etc.

Daily recommended micronutrient for women of reproductive age[8]

Micronutrient	Pregnant women	Non pregnant women	Sources
Iron	27 mg/day	18 mg/day	Dark leafy green vegetables, dried fruit.
Zinc	1011 mg/day	8 mg/day	Pumpkin seeds, beans
Calcium	1000 mg/day	1000 mg/day	Milk, almonds
Phosphorus	1000 mg/day	1000 mg/day	Sunflower and pumpkin seeds
Iodine	220 µg/day	150 µg/day	Potatoes, bananas
Selenium	65 µg/day	60 µg/day	Brown rice, barley, chia seeds

Vitamin A	800 µg/day	700 µg/day	Barley, chia seeds, brown rice
Vitamin B			
Vitamin B1 (Thiamin)	1.4 mg/day	1.1 mg/day	Beans, lentils
Vitamin B2 (Riboflavin)	1.4 mg/day	1.1 mg/day	Almonds, spinach
Vitamin B3 (Niacin)	18 mg/day	14 mg/day	Brown Rice, avocados
Vitamin B6	1.9 mg/day	1.9 mg/day	Peanuts, soya beans, wheatgerm, oats, bananas, milk
Vitamin B12	2.6 µg/day	2.6 µg/day	Milk, cheese
Folate	600 µg/day	400 µg/day	Legumes, leafy greens, citrus fruits, broccoli
Vitamin C	60 mg/day	45 mg/day	Citrus fruits, kiwi, grapes
Vitamin D	5 µg/day	5 µg/day	Sunlight
Vitamin E	7 mg/day	7 mg/day	Almonds, avocados

Note: For some micronutrients these are different recommendations for young women (aged 14-18 years).

7.3 Postnatal and Lactation Diet[9–11]

A woman goes through the blissful stage of motherhood with the realisation that she is bringing forth a new life. In the process of child birth, she becomes a life giver, vulnerable to losing her own life also. Postnatal period is the scientific term for the 6-week period following childbirth. During this period, the body tissues, particularly the genital and pelvic organs, return to the pre-pregnant state. Diet taken by the mother in this period directly affects this process. Inadequate diet can result in anemia and malnutrition and it can cause infections and excessive blood loss in puerperal period.

Healthy eating is important when the mother is breastfeeding. Mother's body has a greater need for most nutrients. Some of the extra energy required for breastfeeding comes from body fat stored during pregnancy. However, to meet the extra nutrient needs, it is important to eat a variety of nutritious foods. The increase in energy utilisation during post-partum period increases the need for some specific nutrients such as thiamin and niacin. Recommended intakes for other nutrients (e.g., copper, iodine, manganese, biotin, choline, riboflavin, and folate) are increased, based on the amount of nutrients secreted in milk.

Iodine:[12]Adequate iodine in breast milk is essential for baby's growth and brain development. It is recommended that all breastfeeding women should take a supplement containing 150 micrograms of iodine.

Calcium:[13,14] The recommended daily allowance for lactating woman ageing 19–50 is 1000 mg/day (pregnant and non-pregnant). Calcium and Vitamin D are essential for the growth and prevention of rickets in children. Vitamin D is essential for the absorption of calcium from the intestines.

Iron:[15,16]The daily requirement for iron in pre-pregnancy and post-partum periods is 15 mg/day. Iron deficiency during lactation leads to reduction in immunity and anemia in lactating mothers leads to clogged milk ducts, mastitis, nipple sores, etc., according to MOBI Motherhood International. All of this leads to a negative impact on the quality of breast milk and its volume.

7.4 Criteria of a Balanced Diet

1. Diet should consider age, sex, body weight, habits, physical activity of the person. Consider likes and dislikes, if possible.
2. Total dietary fat should be less than 30% of the energy intake. Carbohydrates about 60% and 10% of proteins (1 g/kg) is an ideal diet.
3. Use of unsaturated fatty acids i.e., use of vegetable oils and fish oils, is advisable. Restrict use of butter and hydrogenated oils.
4. Cholesterol intake should be minimised.
5. Salt intake should be within limits (not more than 5 g/day).
6. Use high fibre containing food. Do not cook an item, which can be eaten raw, and do not fry an item, which can be boiled, do not eat fried food.
7. Less spicy, less oily, freshly prepared (within 3 hours.) *Satvic* food is advisable.
8. Pay attention to eating. A meal shared with family or with colleagues in a happy mood, with exchange of thoughts and views without any differences of opinion helps to digest food properly. Do not watch TV while eating.
9. Frequent small meals at spaced intervals are more ideal. A proper morning breakfast, adequate lunch, and light dinner should be ideal. There should not be overloading under any circumstances.
10. Avoid irregular timings of eating food.
11. Our tradition considers food as 'Brahman' (Pure Consciousness). Treat food like that and consume with great respect for it.
12. Constipation is a common problem during pregnancy and also post pregnancy. To prevent this, the diet should include plenty of fluids, high fibre foods (whole meal/wholegrain breads and cereals), fruits, prunes, vegetables, legumes, nuts, and seeds.

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08 ROLE OF YOGA IN WOMEN OF REPRODUCTIVE AGE

(India is a county of rich cultural heritage, Indian classical music and Yoga have been the greatest gift of Indian Culture to the world . "Yoga is heritage of yesterday, need of today and culture of tomorrow" - Swami Pramahansa Satyananda Saraswati .

Yoga means, value added enriched life style . The purpose of celebrating 21st june as International day of Yoga, is to make us understand the potential of Yoga to make this world a better place to live .This chapter explains potential of Yoga for good reproductive health.)

8.1 Role of Yoga

Yoga is the science of living. Yoga is equanimity. It is a perfect lifestyle to bring joy, happiness, peace, and harmony to human beings.

Yoga helps to train emotions. A person with a mastery over emotions views happiness and misery without any difference.

Yoga means spiritually evolving, Yoga means emotion culturing, Yoga means controlling mind, and Yoga means physical reconditioning. Thus Spiritual-Emotional-Mental-Hypothalamus-Pituitary-Organ (SEMHPO) axis works collectively to integrate all the Levels[1].

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[2].

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[3-7]. 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 during pregnancy. Pregnancy is a state of physiological stress demanding a lot of adaptive changes at physical, mental, and emotional levels. Transmission of maternal stress on the foetus can cause a reduction in trans-placental blood flow, placental transfer of stress hormones, and increased rate of premature delivery[8].

Pregnancy seems to be an ideal situation to test the effects of yogic practices. There have been studies to prove the correlation of a high state of anxiety with high resistance index (RI) of uterine artery and the presence of pre-diastolic notch (PDN) [9].

Yogic practices decrease the sympathetic tone hence, they bring about a decrease in peripheral vascular resistance.[10,11] In a study by Damodaran Asha *et al*, it has been reported that yogic practices bring reduction in blood pressure, blood glucose, and

vanillylmandelic acid (VMA) catecholamine levels. They also report a decrease in sympathetic oxidant stress due to regular yoga practices. Regular practice of *Asanas* also promotes placental growth and vascularity. It might prove useful to reverse maternal endothelial dysfunction[12]. Practice of *Pranayama* improves respiratory adaptability during pregnancy[13,14].

Stress is known to affect menstrual cycle. Yoga being the science of mind helps to cope with the stress in a better way.[15]Yogic practices help to relieve symptoms of anxiety associated with PMS. Practices of

Mantra, *Japa*, devotional songs, and *Naada Yoga* can elevate the mood by bringing about a balance in the levels of hormones.

8.2 Special note on different Yogic practices performed

Once Yoga is understood as a science of body, mind, and spirit, every effort should be done to attain the highest level of sensitivity to experience the beneficial effects of practices.

Dehasadhana (Physical practices)

The important aspect of performing an *Asana* is to attain relaxation in the final posture. In other words, one should be physically and mentally stable and comfortable (*Sthirsukhamasanam* - Patanjal Yoga sutras) and should be able to meditate on the infinity (*Anantasamapattibhyam*) in the final posture of *Asana*.

Principle of *Sthirasukhamasanam*

Sthirasukhamasanam means being physically and mentally stable and comfortable while performing a particular *Asana*. *Asanas* are supposed to be performed in five stages, as briefed below.

1) **Primary or preparatory stage:** In the primary stage, a person begins to perform an *Asana* (i.e., sitting position, lying supine, lying prone, standing position).
2) **Marching towards goal:** This has to be smooth, rhythmic motion with full awareness.
3) **Final posture:** Once the final posture is attained up to individual limits, stay in that posture for a few breaths with concentration on breath (*Pranadharana*). One should not compete with others to achieve the final posture. There should be no force applied. Stability and comfort in the final posture is the ultimate goal.
4) **Reverse action:** Reverse action is the way of releasing the posture. It should be gradual and systematic.
5) **Primary stage:** To get back to the state where one started from and relax in the preparatory/primary stage, before going ahead with the next practice.

Only the group of muscles that are involved in active movement should be contracted and other groups of muscles have to be relaxed. There should not be any undue stretch or strain on any muscle. Practice of *Asanas* is done to 'relax' and not to exert one's self. Therefore, even a 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 (Breath practices)

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 the *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 a higher level of sensitivity to feel the presence of *prana* flowing in the *nadis*. Breathing is a useful tool to bring a balance in the flow of *pranic* energy to cure a disease or discomfort.

Bhavasadhana (Emotion)

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

Chanting *mantras* (*Japa*) and singing or listening to devotional songs can have physical, mental, emotional, and spiritual beneficial effects.

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

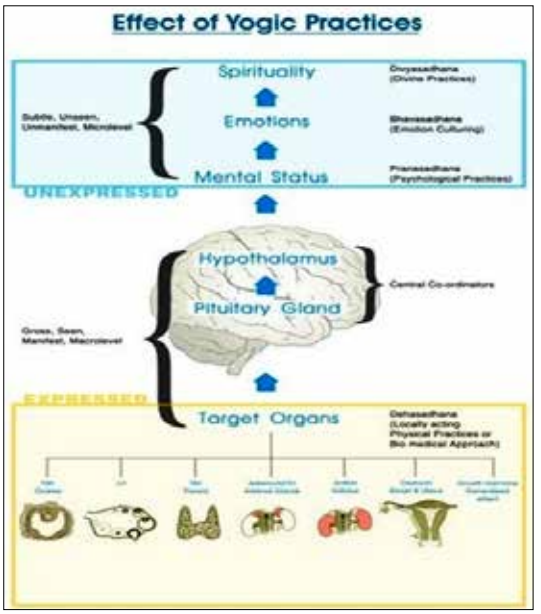
Naadyoga is the practice of listening to *Antarnaada* or *Anahatnaada* while *mantra* Yoga is listening to outer sound vibrations. *Naada*, according to *Hatha Pradeepika*, is the means of achieving liberation or *kaivalya* (H.P.Kaivalyadhama edition 4.90/91).

Practice of *Naadyoga* involves *Arohana* and *Avarohana* of seven *Suddhaswaras*. Attitude of satisfaction, fulfillment can be cultured with *Naadyoga*.

Divya Sadhana (Divine practices)

The practices described for *Antaranga Sadhana* are *Pratyahar*, *Dharana*, and *Dhyana*. *Divya sadhana* helps to make us realise our own potential. It opens the treasure of happiness, which is core of all of us.

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



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09 YOGA AND FEMALE HEALTH ISSUES: EVIDENCE-BASED RESEARCH

Studies have shown that Yoga can be used as a therapeutical agent for women during their reproductive age. A few studies that establish Yoga's therapeutical value have been briefly explained below.

9.1 Yoga for Pregnant Women

Narendran, Shamanthakamani, *et al.* (2005) conducted a study to find out the efficacy of Yoga in pregnancy. For this study, 335 (169 Yoga Group + 166 Control Group) women attending the antenatal clinic were enrolled. Yoga practices such as *Asanas*, *pranayamas*, and meditation were practised by the Yoga Group for one hour daily, from the date of entry into the study until delivery. The members in the Control Group did only walking for 30 min daily. Results have shown that the birth weight of babies in the Yoga Group was significantly higher as compared to the babies of those in the Control Group. Preterm labour was significantly lower in the Yoga Group. Complications such as isolated intrauterine growth retardation (IUGR) and pregnancy-induced hypertension (PIH) with associated IUGR were also significantly lower in the Yoga Group. There were no significant adverse effects noted in the Yoga Group. The results indicate that an integrated approach to Yoga during pregnancy is safe[1].

A research study by Hawrelak, J., & Myers, S. (2009), Shown 30 mins yoga practice at least three times per week for the last 10–12 weeks of pregnancy is found to be more effective means for facilitating maternal comfort during and after labour, decreasing pain during labour and shortening labour duration.[2]

Beddoe, Amy E., *et al.* (2009), have studied the effect of 7 weeks of mindfulness-based Yoga intervention combined with Iyengar Yoga and mindful-based stress reduction programming women going through the second trimester and third trimester. The results show that women practicing mindfulness Yoga in their second trimester reported significant reductions in physical pain from baseline to post intervention compared to women in the third trimester whose pain increased. This preliminary research supports Yoga's potential efficacy in these areas, particularly if started early in the pregnancy[3].

In a research review conducted by Jiang Q *et al*. (2015), a total of 10 randomised controlled trials on Yoga for Pregnancy/Postnatal/Prenatal were evaluated. The findings of this research review consistently indicate the benefits of Yoga intervention such as lower incidences of prenatal disorders ($p \leq 0.05$), small gestational age ($p < 0.05$), lower levels of pain and stress ($p < 0.05$), and higher score of relationship ($p < 0.05$). In addition, Yoga can be safely used for pregnant women who are depressed, at high-risk, or experience lumbopelvic pain. Yoga was also found to be a more effective exercise than walking or standard prenatal exercises.[4]

In a pilot trial conducted by Battle CL, *et al.* (2015), 34 depressed pregnant women underwent 10 weeks of prenatal Yoga programme. Maternal tension and depression were measured before and after the intervention and the results showed significant reduction in the depression level in the post-intervention scenario. This study suggests that prenatal Yoga may be a viable approach to overcome antenatal depression. The practitioner may have advantages in terms of greater acceptability and feasibility in application than standard depression treatments.[5]

9.2 Yoga for Menstrual Problems

Rani, Monika, *et al.* (2013), conducted a study to find out the effect of *Yoga Nidra* in 150 subjects with menstrual irregularities. The duration of yogic intervention was 35–40 min/day, five times a week for 6 months. Results have shown a significant reduction in the thyroid-stimulating hormone, follicle-stimulating hormone, luteinising hormone, and prolactin in the intervention group, compared with the control group.

This indicates the efficacy of *Yoga Nidra* on hormone profiles and in patients with menstrual irregularities such as dysmenorrhea, oligomenorrhea, menorrhagia, metrorrhagia, and hypomenorrhea.[6]

The study of Rani, Khushbu, *et al.* (2011), pertained to determining the effect of *Yoga Nidra* in the psychological general well-being of patients with menstrual irregularities. For this study, 150 patients with menstrual irregularities were enrolled. The *Yoga Nidra* intervention, developed by *Swami Satyananda Saraswati* (School of Yoga, Munger, Bihar, India), was used, which consisted of 35 min/day, five days a week for 6 months. The results have shown improvements in all aspects of well-being such as anxiety, depression, positive well-being, and general health in the Yoga group when compared to the control group subjects. These findings indicate the efficacy of *Yoga Nidra* in subjects with menstrual irregularities[7].

Rakhshaee Z (2011), studied the effect of three *Asanas* in women with primary dysmenorrhea. 92 patients in the age group of 18–22 with primary dysmenorrhea were enrolled and were divided randomly into experimental group (50) and control group (42). Three *Asanas*, namely *Bhujangasana* (Cobra pose), *Marjariasana* (Cat pose), and *Matsyasana* (Fish pose) were practised during the luteal phase. Visual analogue scale was used to measure the intensity, the duration of pain was calculated in hours; and a questionnaire regarding menstrual characteristics was also filledup. The experimental group reported significant reduction in the intensity and duration of pain as compared to the control group[8].

Yang NY *et al*. (2016), conducted a case control study in 40 students with menstrual cramps and distress. The subjects were randomly allocated in exercise group (20) and Yoga group (20). Menstrual cramps and menstrual distress levels were measured by using the Visual Analogue Scale (VAS) for pain and the Menstrual Distress Questionnaire for distress. Baseline and post-therapy data comparison has shown significant decrease in both menstrual pain intensity and menstrual distress scores in the Yoga group as compared to exercise group. These research findings indicate that Yoga interventions may be helpful reducing menstrual cramps and menstrual distress in females with primary dysmenorrhea[9].

In a study conducted apparantely 50 healthy females in the age group of 18–20 years were randomized into two groups. Group I (n=25) consisted of subjects who practiced Yoga for 35–40 minutes per day, six times per week for the duration of three menstrual cycles. Parameters like body weight, resting SBP (systolic blood pressure), DBP (diastolic blood pressure), sympathetic activity, scores of anger, depression, and anxiety, and the score of well-being in premenstrual phase were measured and compared preand post Yoga sessions. There was significantly higher percentage of decrease in the body weight, heart rate (HR), SBP, and DBP in the Yoga group as compared to the control group in both the phases from the initial menstrual cycle to the second cycle and onwards between the second and third cycles. There was a significant decrease in anger, depression, and anxiety scores, the increase in the well-being score was also significant in the Yoga group as compared to control group from the initial to second and third cycle in the premenstrual phase while the change was significant only in the depression score in the postmenstrual phase.[10]

9.3 Yoga for PCOS

Nidhi R, Padmalatha V, Nagarathna R, and Amritanshu R (2013), conducted a randomised controlled trial (RCT) to determine the effect of Yoga in polycystic ovarian syndrome (PCOS). For this study, 90 girls in the age group of 15–18, who had fulfilled the Rotterdam criteria, were recruited and randomised into two groups: the Yoga Group and the Physical Exercise Group. After a holistic Yoga programme for 12 weeks, the preand post data were analysed. The analysis shows significant difference in the levels of luteinizing hormone (LH) and follicle stimulating hormone (FSH) of members in the Yoga Group as compared to those in the Physical Exercise Group. This result indicates that Yoga acts effectively in reducing testosterone, and mFG (modified Ferriman-Gallwey) score for hirsutism, as well as in improving the menstrual cycle.[7]

A conceptual study by Karandikar A N (2017), tested Yogasanas for their adjuvant therapeutic value in treating PCOS. The study revealed that Yogasanas boosted overall metabolism, increased the blood circulation of organs and tissues, helped in weight loss, alleviated stress, and relaxed the mind and body as well. The selected Yogasanas had positive effects on the female reproductive organs and also on digestion and metabolism[8].

9.4 Yoga for Psychological Issues

Davis *K et al.* (2015) conducted an RCT on pregnant women with symptoms of depression and anxiety using Yoga as an intervention. 46 women were recruited and randomised into two groups: Yoga Group and Treatment-As-Usual (TAU) Group. Participants of both groups showed improvements in the reduction of depression symptoms, but the Yoga Group showed significantly greater reduction in the negative effect as compared to the TAU Group. The study establishes the efficacy, feasibility, and acceptability of prenatal Yoga in the management of depression and anxiety[9].

Schuver K J and Lewis B A (2016), conducted a pilot study to find out the efficacy of a 12-week Yoga intervention as against a walking group. The research findings suggest that mindfulness-based Yoga programmes may be used as a tool to manage ruminative thoughts among women with elevated depressive symptoms.[10]

Kanojia S *et al.* (2013), conducted an RCT to assess the effect of Yoga on autonomic function and psychological status in both phases of the menstrual cycle in healthy young females. Fifty subjects were randomised into two groups (25 Yoga + 25 Control). The Yoga Group practised Yoga for 35–40 minutes a day for six days in a week for the duration of three menstrual cycles. There was no change in the premenstrual phase as compared to the postmenstrual phase in both the groups in the initial cycle. However, the later stages showed significant decrease in the body weight, systolic and diastolic blood pressure, and heart rate in the Yoga group in comparision to the control group in both phases from initial to second and onwards between second and third menstrual cycle. The Yoga group also got significantly lower score in depression and anxiety, and increased the score of well-being in premenstrual phase as compared to the control group. This result indicates that Yoga significantly alters autonomic functions and psychological status in young healthy females. Also, regular practice of Yoga has beneficial effects on both phases of menstrual cycle by bringing parasympathetic dominance and psychological well-being probably by balancing neuro-endocrinal axis[11].

Kim S D (2017), did a systematic review on the psychological effect of *Yoga nidra* in women with menstrual disorders. The study states that Yoga *nidra* may give favourable effects in terms of reducing psychological problems in women with menstrual disorders. The study also suggests that mindfulness-based Yoga programme (consisting of *Yogasanas*, *Pranayama*, and *Meditation)* may be used as a tool to manage ruminative thoughts among women with elevated depressive symptoms[12].

9.5 Yoga for Musculoskeletal Disorders

Ülger Ö and Yağlı N V (2011), conducted a study to determine the effect of Yoga in gait and balance in women with musculoskeletal problems. In this study, 27 patients with osteoarthritis and low back pain were enrolled. Yoga programme comprising *Asanas*, *Pranayama*, and stretching exercises were given for a duration of 4 weeks, twice a week. Patient's static balance and gait were measured preand postyoga intervention. The results have shown significantly higher gait and balance value indicating that Yoga has a positive effect on balance and gait parameters of women with gait and balance disturbances that are caused by musculoskeletal problems[13].

9.6 Further Research Findings

Yoga is rooted in Indian philosophy and has been a part of traditional Indian spiritual, philosophical, and psychological practice for millennia. In a survey carried out in the US, a typical Yoga user has been

shown to be a female and of reproductive age[14]. Likewise, 85% of Australian Yoga users were reported to be females and 61% to be less than 45 years of age[15]. Of these Yoga users, 3% and 4% cited pregnancy as a motivation for initiating and continuing Yoga practice, respectively. Further, between 17% and 19% of Australian women practice Yoga during pregnancy[16]. While antenatal Yoga has been claimed to hold therapeutic benefits beyond other forms of practices, the number of clinical trials investigating the effects of Yoga in pregnant women remains limited, most data do, however, demonstrate a positive association between the practice of Yoga and pregnancy, labour, and birth outcomes[1].

A growing body of evidence indicates that Yoga benefits physical and mental health by down-regulating the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system[17]. Yoga has become an increasingly popular form of complementary and alternative medicine (CAM) among people with pain[18]. Even a simple home-based Yoga programme available on a DVD was shown to reduce menstrual pain and improve the overall health status. A study observed that *Anuloma-Viloma* and specific *Yogasanas* are effective in premenstrual syndrome[19]. In another research, it was found that Yogic practices reduced the severity and duration of primary dysmenorrhea. The findings suggest that Yoga poses are safe and simple treatment for primary dysmenorrheal[20].

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10 METHOD OF INSTRUCTION FOR YOGA PRACTICES IN DIFFERENT PHASES OF WOMANHOOD

10.1 Instructions to Yoga Teachers

1. Exaggerated claims about the benefits of yogic techniques have to be avoided.
2. Allow a beneficiary to perform practices only up to her limits. Do not force.
3. It is necessary to advise a 'tailor-made Yoga course' suitable for needs rather than a generalized 'ready-made Yoga'.
4. Try and develop confidence and positivity in the mind of the beneficiary.
5. Learn about the basic anatomy, physiology, psychology, and pathology.
6. There should be no hesitation to consult a doctor.
7. Treatment of 'diseased' rather than 'disease' with simplification of practices has to be the principle of treatment. Take care of 'disease-induced fear syndrome'. Make active efforts to remove the fear about the disease.
8. Keep the atmosphere at the Yoga centre conducive to healing. The general appearances of a Yoga teacher, his/her talk, and cleanliness at the centre, and self-discipline and silence have to be maintained.
9. A self-motivated and determined *Sadhaka* (practitioner) responds more to yogic therapy rather than a person who is forced into it.
10. Advice on 'diet' and 'counselling' have an extremely important role. The guidelines for them have been mentioned in this book elsewhere.
11. *Asana* practice in pregnant women should start after 14 weeks of pregnancy, as nausea and fatigue would have been decreased by this time. Those who are already practicing Yoga may slow down the practice or should practise at a moderate speed. If they feel light-headedness, instruct them to lie down and practise simple slow breathing.
12. Avoid full inversion, advanced back-bending *Asanas*, which create intra-abdominal pressure to prevent any complications in pregnancy.
13. Pregnant women should be instructed to practise balancing *Asanas* with support (e.g., wall support, chair) because pregnant women tend to lose balance.
14. Instruct and encourage leg movements during *Asana* practice as pregnant women with anemia or low blood pressure may get dizziness, nausea, etc. Prolonged standing leads to pooling of blood towards lower limb.

10.2 Instructions to Yoga Practitioners

1. The instructions to *Sadhakas* have to be absolutely clear as the practices are going to be different for every group.
2. An adolescent would be enthusiastic to practise *Asanas*; however, special precautions need to be taken while conducting practices for pregnant women. Certain rules and principles should be common for all.
3. Do not force any *Sadhana* on anyone.

4. Advise tailor-made Yoga that suits the need of an individual rather than a common protocol.
5. A self-motivated *Sadhaka* responds better to Yoga therapy. Refer to protocols discussed below, discuss with your Yoga teacher and then finalise the plan.
6. Practices should be performed daily for at least 45 minutes daily. Relaxation at the end is a must.
7. Religion, nation, dress, faith, tradition, wealth, poverty, gender, etc. should not come in the way of performing Yogic practices. Keep in mind only the following points.

Time: Dawn is the most appropriate time. If it does not suit you, do the practices in the evening. In case both these timings are not convenient, do the practices at any suitable time, but ensure that there is a gap of at least four hours after the midday meals. Allow a period of about two-and-a-half hours to elapse, after the breakfast, or a cup of tea/coffee, respectively. You are required to leave a margin of about half an hour after performing Yogic practices before you take any food.

Seat: Spread a mat, carpet or a blanket on the floor and cover it with a clean towel, which should be specifically used only for this purpose.

Place: It should be quiet, clean, and well-ventilated.

Clothes: Minimum, light, and loose clothes are advised. Do not disregard the seasonal needs and social customs.

Food: Take nutritious food in moderate quantity. Do not overeat.

Bath: Performing *Yoga Sadhana* after a bath is conducive to cleanliness of your body and mind.

1) A woman having normal health can perform any *Asana*. For any physical complaints and their removal, do only those practices as specifically advised and instructed.
2) Brief the Yoga teacher in advance if you have undergone any operation on any part of your body.
3) *Asanas* of a particular posture are advised to be avoided during the acute stage of any disease. However, as the disease subsides, the *Asanas* can be performed under the guidance of an expert.
4) In spite of taking all precautions, if you feel a little exhausted while performing any *Asana*, take rest in *Shavasana*.
5) Do not start in a state of excited mind. Prayers, chanting of 'OM', burning of incense sticks, purification of nasal passage, concentration on breath, all these would help to appease, calm, pacify, stabilise, and please your mind.
6) Do not perform the practices hurriedly, forcibly, with extra energy or with more pressure, stress or stretch.
7) Try to reach the final posture slowly and with ease. Act according to your capacity, wait for some time and then reach the starting position. According to the fundamental principle of *Asanas* as propounded by *Patanjali*, (PYS 2.46), in the final posture you should attain steadiness and pleasure (i.e. devoid of any pain).
8) Always breathe in and out through the nostrils, (except when you are advised to do by mouth, i.e. *Shitali* and *Seetkari Pranayama*). Do not try to stop your breath. If you find that your rate of breathing is accelerating at the end of an *Asana*, it is indicative of incorrect performance and posture on your part.

9) In the final position of an *Asana*, do *Pranadharana*, i.e., concentration on breathing. If this is done, greater harmony can be achieved. Do it as per your capacity. Avoid a competitive mindset.

10) You can certainly do any other exercises. However, maintain a minimum period of half an hour between these two different types of practices.

11) Women during the period of their menstrual cycle should avoid certain practices/*Asanas*. As such exclusions are dependent on the physical built-up of each lady, expert advice should be sought in this account.

12) While practicing *Pranayama*, be aware that we have to regulate our inhalation and exhalation slowly and effortlessly.

13) Do not attempt *Kumbhaka* (retention of breath) in the initial stages.

14) Increase the time of exhalation as compared to inhalation gradually (ideal proportion of time is exhalation should be twice that of inhalation).

15) Feeling exhausted, feeling heaviness in the head, and losing control over the breath are all signs of incorrect practices of *Pranayama*. Stop all further practices and seek the advice of an expert.

16) The correct practice of *Pranayama* would help to achieve ease, alertness, enthusiasm, together with mental peace, happiness, and tranquility.

17) Practise *Shavasana* or guided relaxation at least for some time.

18) It is advisable to learn practices from an expert to avoid mistakes.

10.3 Yoga Therapy for Pregnancy

Practicing Yoga during Pregnancy period supports and prepares the women forgiving active birth, physically, mentally and emotionally. Yoga really helps those who are pregnant for the first time (primigravida). Yoga helps in both prenatal (antenatal) and post-natal phases.

Yoga practices during Pregnancy need to be planned as per the various stages of pregnancy (three trimesters). Women who are already Yoga practitioners can continue their practice but they should be attentive to their body changes and movements. They should avoid or modify certain poses and practices during pregnancy (e.g. inverted poses, *Kaphalabhati*, and abdominal stretching *Asanas*).

Role of Yoga

Yoga practice during Pregnancy helps to improve the stamina and strength of women to carry the baby besides helping them to balance their physical and mental states. Regular practice helps in relieving tension in the lower back, hip, lower limbs, and upper limbs, as well as in increasing the blood circulation by elongating the muscles. Yoga practices improve the connection between the baby and the mother.

Yoga practices such as *Bhadrasana*, *Sukhasana*, and *Baddhakonasana* help to strengthen the pelvic muscles and helps during labour and also helps in faster recuperation and attaining the normal posture after the birth of the baby.

Practicing meditation and *Pranayamas* during pregnancy helps to reduce stress, anxiety, and pregnancy-induced hypertension. Yoga also helps to deal with mood swings and increases the sense of well-being.

10.4 Yoga Therapy for Gynecological Disorders

Specific Considerations

Regular practice of Yoga can negate several gynecological disorders. The only precaution to be taken here is that one should do only those sets of practices that can alleviate specific disorders.

Once we understand Yoga as a lifestyle, and a healthy and methodical effort towards self-perfection, a few simplified yogic practices can be prescribed as common for all problems.

Consistency and dedication in practices are mandatory. Inverted postures have to be avoided during menses.

Menstrual Disorders:

A. Premenstrual Syndrome(PMS)

PMS is best grouped with psycho-neuroendocrine disorders. Numerous theories have advanced on postulating the probable etiopathogenesis of PMS. This includes nutritional, neuroendocrine, metabolic changes, vitamin mineral deficiencies, etc.

PMS is a common health problem in women. The prevalence of PMS has been reported in 20%–32% of premenopausal[1] and 30%–40% of the reproductive female population[2].Symptoms of PMS consist of both psychological and physical factors. Quantification of symptoms is, however, difficult.

Diagonally opposite postulates have been put forward to explain etiology of PMS. One of the theories suggests diminished luteal phase levels of β endorphin in women with PMS[3,4]while some suggest an improvement in symptoms following the administration of endorphin inhibitor (naltraxone) [5].

Disturbed levels of prolactin, prostaglandins ovarian hormones are also suggested to be responsible for PMS.

Role of Yoga

Yoga helps to bring homeostasis in the levels of different hormones. Yogic practices help to reduce the sympathetic tone and help to relieve symptoms of anxiety associated with PMS.

Bhavasadhana can be of great help. Practicing *Asanas* such as *Balasana, Bhujangasana, Matsyasna, Sethubandhasan, Vajrasana,* and *Shavasana* are beneficial during PMS. *Pranayama* such as *Nadishodhana* and *Bhramari* helps to reduce stress and anxiety. Practices of *Mantra*, *Japa*, devotional songs, and *Naadayoga* can bring about a balance in levels of endorphins in the luteal phase elevating the mood.

B. Dysmenorrhea

Dysmenorrhea is painful menstruation. Pain is a subjective symptom and cannot be assessed accurately by an outsider. Perception of pain during menses is different in each woman and will vary with altered circumstances.

It is more common up to five years after menarche. In about 3%–10% of girls up to 19 years of age, dysmenorrhea causes disruption of daily routine with time off work or study.[6] Majority of women suffer from mild discomfort. Girls whose mothers have dysmenorrhea are most likely to suffer not because of heridity , but more because it becomes a psychological conditioning. Lifestyle, stress, and occupation play an important role in the perception of pain.

Precise cause of dysmenorrhea has to be ruled out by examination and investigations like ultrasonography.

Role of Yoga

Irrespective of etiology, yogic practices help to withstand the pain associated with menstruation. Practice of *Suryanamaskaras* and a few selected *Asanas* helps to relieve vascular congestion. Practice of topsy-turvy postures such as *Sarvangasan*, *Viparitakarani Mudra*, and *Shirshasana* is especially useful.

Practice of *Pranayama, Naadyoga*, and *Bhakti Yoga* releases a lot of endorphins, which help in taking care of pain. Regular yogic practices also help to cultivate more positive attitude towards acceptance of the problem.

Yoga has an important role in addressing various health-related problems of women in the reproductive age. Examples of such problems include hormonal imbalance, polycystic ovarian syndrome (PCOS), psychological disorders, metabolic disorders, and in the case of chronic pelvic girdle pain.

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11 YOGA PROTOCOL FOR WOMEN OF REPRODUCTIVE AGE

11.1 Yoga Protocol for Women-Age Group 12-35 years (45 minutes)

S. No	Yoga practices	Rounds	Duration
1.	**PRAYER**		**1 Minute**
2.	**Yogic SukshmaVyayama** (micro circulation practice)		**10 Minutes**
	a) Neck movements:		
	➢ Forward and backward bending	3 rounds	
	➢ Right and left bending	3 rounds	
	➢ Right and left twisting	3 rounds	
	➢ Neck rotation (Clock and anti-clock wise)	3 rounds	
	b) Shoulder movements	3 rounds	
	➢ Shoulder stretch	3 rounds	
	➢ Shoulder rotation (forward and back ward)	3 rounds	
	c) Trunk movement		
	➢ Trunk twisting (Kati shakti Vikasaka)	3 rounds	
	d) Knee Movement	3 rounds	
	e) Ankle movement	3 rounds	
	➢ Ankle stretch	3 rounds	
	➢ Ankle rotation	3 rounds	
3.	**SURYA NAMASKAR**		
4.	**YOGASANAS**		**20 Minutes****
	a. Standing Postures		
	➢ Tadasana		
	➢ UtkataKonasana		
	➢ UrdhvaHastottanasana		
	➢ Katichakrasana **		
	➢ Trikonasana		
	b. Sitting Postures		
	➢ Parvatasana		
	➢ Vakrasana/Ardha Matsyendrasana		
	➢ Ushtrasana		
	➢ Janu Shirasana / Pashchimottanasana		
	➢ Gomukhasana **		
	➢ Marjariasana		

	c. Prone Postures		
	➢ Bhujangasana		
	➢ Makarasana		
	➢ Shalabhasana **		
	➢ Dhanurasana **		
	d. Supine Postures		
	➢ Pavanamuktasana		
	➢ Matsyasana		
	➢ Sarvangasana/ Viparitakarani**		
	➢ Setubandhasana		
6.	**KAPALABHATI**– optional	(10-20strokes)	**1 Minute**
7.	**PRANAYAMA** (without Kumbhaka)		**7 Minutes****
	➢ Anuloma-Viloma/ Nadishodhana (Alternate Nostril Breathing)	2 rounds 3 rounds**	
	➢ Bhramari Pranayama	3 rounds 5 rounds**	
	➢ Ujjayi	3 rounds 5 rounds**	
8.	**DHYANA/DHARANA**		**2 Minutes**
9.	**YOGA NIDRA**		**3 Minutes**
10.	**SHANTI PATHA**		**1 Minute**
	TOTAL:		**45 Minutes**

***Note: The practice needs proper supervision and guidance in order to avoid any unwanted consequences.**
****Note: These asanas may be added /Modified for long duration Practice.**

11.2 Yoga Protocol for Women-Age Group 35-50 years (45 minutes)

S. NO.	YOGA PRACTICES	ROUNDS	DURATION
1.	**PRAYER**		**1 Minute**
2.	**YOGIC SUKSHMA VYAYAMA: (Micro Circulation Practices)**		
	Neck Movements:		
	➢ Forward and Backward bending	3 Rounds	
	➢ Right and Left bending	3 Rounds	
	➢ Right and Left Twisting	3 Rounds	
	➢ Neck Rotation (clockwise & anti clockwise)	3 Rounds	**10 Minutes**
	Shoulder Movements		
	➢ Shoulder Stretch	3 Rounds	
	➢ Shoulder Rotation (Forward & Backward)	3 Rounds	
	Trunk Movements		
	➢ Trunk Twisting (Kati Shakti Vikasak Kriya)		
	Knee Movement		
	Ankle movement	3 rounds	
	➢ Ankle stretch	3 rounds	
	➢ Ankle rotation	3 rounds	
3.	**YOGASANAS**		
	STANDING POSTURES		
	➢ Tadasana		
	➢ Vrikshasana		
	➢ Konasana		
	➢ Katichakrasana		
	➢ Veerbhadrasana		
	SITTNG POSTURES		
	➢ Dandasana		
	➢ Sukhasana		
	➢ Badhakonasana		**20 Minutes**
	➢ Shashankasana		
	➢ Marjariasana (with breathing)		
	➢ Malasana		
	➢ Parivrata Sukhasana		
	SUPINE POSTURES		
	➢ Viparitakarani with wall support		
	➢ Ekpada Pawanmuktasasna		
	PRONE POSTURES		
	➢ Saral Bhujangasana		
	➢ Saral Shalabhasana		

4.	**PRANAYAMA**		
	➢ Nadi Sodhana Pranayama	3 Rounds	**10 Minutes**
	➢ Bhramari Pranayama	3 Rounds	
	➢ Sheetali pranayama	3 Rounds	
5.	**YOGA NIDRA**		**3 Minutes**
6.	**SHANTI PATHA**		**1 Minute**
	TOTAL TIME	**45 Minutes**	

11.3 Yoga Protocol for Pregnant Women (45 minutes)

Yoga for Pregnant Women			
S. NO.	**YOGA PRACTICES**	**ROUNDS**	**DURATION**
1.	**PRAYER**		**1 Minute**
2.	**YOGIC SUKSHMA VYAYAMA: (Micro Circulation Practices)**		**8 Minutes**
	Neck Movements:		
	▪ Forward and Backward bending	3 Rounds	
	▪ Right and Left bending	3 Rounds	
	▪ Right and Left Twisting	3 Rounds	
	▪ Neck Rotation (clockwise & anti clockwise)	3 Rounds	
	Shoulder Movements		
	▪ Shoulder Stretch	3 Rounds	
	▪ Shoulder Rotation (Forward & Backward)	3 Rounds	
	Trunk Movements		
	▪ Trunk Twisting (Kati Shakti Vikasak Kriya)	3 Rounds	
	Knee Movement	3 Rounds	
3.	**YOGASANAS**		**20 Minutes**
	STANDING POSTURES		
	▪ Tadasana (Mountain Pose)		
	▪ Katichakrasana (Standing Spinal Twist Pose) (Avoid in 1st & 3rd trimester)		
	▪ Ardhachakrasana (Half wheel pose) (Avoid in 1st & 3rd trimester)		
	▪ Veerbhadrasana-I (Warrior pose) (Avoid in 1st trimester)		
	SITTNG POSTURES		
	▪ Dandasana (Staff Pose)		
	▪ Sukhasana (Easy Pose)		
	▪ Badhakonasana (Cobbler Pose) (Avoid in 1st trimester)		
	▪ Marjariasana (Cat pose) (Avoid in 1st trimester)		
	▪ Malasana (Garland pose) (Avoid in 1st trimester)		
	▪ Parivrata Sukhasana (Easy seated twist pose) (Avoid in 1st trimester)		
	▪ Gomukhasana (Cow face pose)		
	▪ Uttanamandukasana (Extended frog pose) (Avoid in 1st trimester)		
	▪ Utkatasana		
	▪ Sulabh chakrasana		
	SUPINE POSTURES		
	▪ Supta Badhakonasana (Reclining bound angle pose) (Avoid in 1st trimester)		
	▪ Eka Pada Uttanpadasana (One leg raised pose) (Avoid in 1st & 3rd trimester)		

	▪ ParsvaKonasana (Side angle pose) (Avoid in 3rd trimester)		
	▪ Jatharaparivartanasana (Belly twist pose) (Avoid in 1st trimester)		
	RELAXATIVE POSTURES		
	▪ Shavasana (Corpse pose)		
	▪ Balasana (Side lying posture)		
4.	**BREATHING PRACTICES** Sectional Breathing: Abdominal, thoracic and clavicular breathing	3 rounds each	**10 Minutes**
5.	**PRANAYAMA**		
	▪ Nadi Sodhana Pranayama	3 Rounds	
	▪ Bhramari Pranayama	3 Rounds	
	▪ Ujjayi Pranayama	3 Rounds	
	▪ Sheetali Pranayama/ Sitkari Pranayama	3 Rounds	
6.	**DHYANA - Om meditation or Breath Awareness Meditation Omkara chanting (Akara, Makara, Ukara)**		**5 Minutes**
7.	**SHANTI PATHA**		**1 Minute**
TOTAL TIME		**45 Minutes**	

11.4 Yoga Protocol for Lactating Mothers (45 minutes)

Yoga for Pregnant Women			
S. NO.	**YOGA PRACTICES**	**ROUNDS**	**DURATION**
1.	**PRAYER**		**1 Minute**
2.	**YOGIC SUKSHMA VYAYAMA: (Micro Circulation Practices)**		**8 Minutes**
	Neck Movements:		
	➢ Forward and Backward bending	3 Rounds	
	➢ Right and Left bending	3 Rounds	
	➢ Right and Left Twisting	3 Rounds	
	➢ Neck Rotation (clockwise & anti clockwise)	3 Rounds	
	Shoulder Movements		
	➢ Shoulder Stretch	3 Rounds	
	➢ Shoulder Rotation (Forward & Backward)	3 Rounds	
	Chest Movement	3 Rounds	
	Trunk Movement	3 Rounds	
	➢ Trunk Stretch (Kati Shakti Vikasak kriya)		
	Knee Movement	3 Rounds	
	Ankle Movement		
	➢ Ankle Stretch ➢ Ankle Rotation (Clock and Anti Clock Wise)	5 Rounds each	
3.	**YOGASANAS**		**20 Minutes**
	STANDING POSTURES		
	➢ Tadasana		
	➢ Ardha Chakrasana		
	➢ Padhastasana		
	➢ Trikonasana		
	SITTNG POSTURES		
	➢ Bhadarasana		
	➢ Marjariasana		
	➢ Parvatasana		
	➢ Ardha Ushtrasana		
	➢ Shashankasana		
	PRONE POSTURES		
	➢ Setubandhasana		
	➢ Saral Bhujangasana		
	➢ Ardha Shalabhasana		
	➢ Makrasana		
	SUPINE POSTURES		
	➢ Dwi Pad Pawanmuktasana		
	➢ Setu bandhasana		

	➢ Saral Matsyasana		
	➢ Uttanpadasana		
4.	**BREATHING PRACTICES** ➢ Sectional Breathing: Abdominal, thoracic and clavicular breathing	5 rounds	**10 Minutes**
5.	**PRANAYAMA**		
	➢ Nadi Sodhana Pranayama	5 Rounds	
	➢ Ujjai Pranayama	5 Rounds	
	➢ Bhramari Pranayama/ Bhastrika Pranayma	5 Rounds	
6.	**DHYANA/ DHARANA**		**5 Minutes**
7.	**SHANTI PATHA**		**1 Minute**
	TOTAL TIME	**45 Minutes**	

12 YOGA PRACTICES

"From now on, it is necessary for you to devote your time to *Sadhana*. Deepen your faith, be studious, be pure, be happy, meditate and realize. Restart practices with a new *vigour*" - Swami *Paramahansa Satyanand Sarawati* .

This chapter on yogic practices gives you guidelines on practice. But as *Swami Pramahansa Nirajananda Saraswati* says - It is important to have sincerity, seriousness and commitment to derive benefits of *Sadhana*.

1. PRAYER

Yogic Practice shall start with a prayer or prayerful mood to enhance the benefits of practice.

संगच्छध्वंसंवदध्वं
संवोमनांसिजानताम्
देवाभागंयथापूर्वे
सञ्जानानाउपासते॥ ऋ.वे.10.191.2

saṃ-gaccha-dhwaṃ saṃ-vada-dhwaṃ
saṃ vo manaṃsi janatam
deva bhagaṃ yatha purve
sañ-jana-na upasate ll R.V.10.191.2

Meaning: May our actions, words, and thoughts be beneficial to each other, as were our ancestors, so that there may be harmony in this universe.

2. YOGIC SUKSHMA VYAYAMA/LOOSENING PRACTICES

The *Chalan Kriya*/loosening practices/*Yogic Suksma Vyayamas* help to increase microcirculation. These practices can be done while standing or sitting.

I. NECK MOVEMENTS:

Sthiti: *Samasthiti* (Alert Posture)

Technique

Stage - i : (Forward and Backward Bending)

- Stand with the feet 2-3 inches apart.
- Keep the hands straight beside the body.
- This is *Samasthiti*. This is also called *Tadasana*.
- Keep your palms on the waist.
- While exhaling, move the head forward slowly and try to touch the chin to the chest.
- While inhaling, move the head up and bend back comfortably.
- This is one round, repeat two more rounds.

Stage - ii : (Right and Left bending/ Stretching)

- While exhaling, bend the head slowly to the right; bring the ear as close as possible to the shoulder without raising the shoulder.
- While inhaling, bring the head to the normal position.
- Similarly, while exhaling bend the head to the left side.
- Inhale and bring the head up to normal position.
- This is one round: repeat two more rounds.

Stage - iii : (Right and Left Twisting)

- Keep the head upright.
- While exhaling, gently turn the head to the right so that the chin is in line with the shoulder.
- While inhaling, bring the head to the normal position.
- Similarly, while exhaling, turn the head to the left.
- Inhale and bring the head to the normal position.
- This is one round, repeat two more rounds.

Stage iv: (Neck Rotation)

- Exhale; bend the head forward to touch the chin to the chest.
- Inhale; slowly rotate the head clockwise in a circular motion, exhale while coming down.
- Do a full rotation. Then rotate the head in an anti-clockwise direction.
- Inhale; go back and exhale, come down.
- This is one round, repeat two more rounds.
- Come back & relax.

Note:

Move the head as far as possible. Do not over strain. Keep the shoulders relaxed and steady. Feel the stretch around the neck and loosening up of the joints and muscles of the neck. This can be practiced sitting on a chair. People with neck pain can do the practice gently especially when taking the head back to the extent it is comfortable. Elderly people and persons with cervical spondylitis, high blood pressure may avoid these practices.

II. SHOULDER'S MOVEMENT

Sthiti: *Samasthiti* (Alert Posture)

Stage i: Shoulder's Stretch

Technique:

- Keep feet together, the body straight, and the arms by the sides.
- While inhaling, raise both arms sideways above your head with the palm outward.
- Exhale and bring it down in the same manner.
- Palms must be opened, with fingers together.
- This is one round, repeat two more rounds.



Stage ii: Skandha Cakra (shoulder Rotation)

- Stand erect. Place the fingers of left hand on the left shoulder and the fingers of right hand on the right shoulder.
- Try to touch the elbows in front of the chest on the forward movement and touch the ears while moving up.
- Stretch the arm back in the backward movement and touch the side of the trunk while coming down. Rotate both elbows in a circular manner. It is the clockwise rotation and repeat it for 5 times.
- Do the same anti-clockwise.


Benefits:

- Practice of this *kriya* makes the bones, muscles and nerves of the shoulder region healthy.
- These practices are helpful in cervical spondylitis and frozen shoulder.

III : CHEST MOVEMENT

Sthiti: *Samasthiti* (Alert Posture)

Technique:

- Stretch your arms in front at the level of your shoulder, while inhaling through the nose, bend backward from the waist as far as you can go.
- At the same time raise your arms behind you as high as you can.
- Maintaining this posture as long as you can exhale slowly while resuming your original position.
- Do this five times to begin with.

Benefits

- It gives vitality and strength to the chest and back.
- The arms are also strengthened.

IV: TRUNK TWISTING (KATI SHAKTI VIKASAKA)

Sthiti: *Samasthiti* (Alert Posture)

Technique

- Keep the legs about 2–3 feet apart.
- Raise both the arms up to chest level with palms facing each other and keep them parallel.
- While exhaling, twist the body towards the left side so that the right palm lies close to the left shoulder and right elbow at shoulder level and come back with inhalation.
- While exhaling, twist the body towards the right side so that the left palm lies close to the right shoulder, and left elbow is at the level of left shoulder then come back with inhalation.
- This is one round, repeat it two more times.
- Relax in *Samasthiti*.

Note:

- Do it slowly with normal breathing.
- Cardiac patients shall do with care.
- Avoid this practice in case of severe back pain, vertebral and disc disorders, after abdominal surgery and during menstruation.

V. KNEE MOVEMENT

Sthiti: *Samasthiti* (Alert Posture)

Technique

- Inhale, lift your arms up at the shoulder level, palms facing downwards.
- Exhale, bend the knees and bring down your body to the squatting position.
- In the final position, both the arms and thighs should be parallel to the ground.
- Inhale, and straighten the body.
- Exhale while bringing down the hands.
- Repeat two more times.

Note:

- It strengthens knees and hips joint.
- Avoid this *Asana* in case of acute conditions of arthritis.

VI. ANKLE MOVEMENT

Ankle Rotation (*Gulpha pada prstha pada tala sakti Vikasaka*)

Sthiti: *Samasthiti* (Alert Posture)

Technique

- With the feet together, stand erect.
- Stretching forward one leg and holding it about 9 inches off the ground, circle foot from right to left, then from left to right, from ankle. Repeat with the other foot.
- Repeat two more times.

Note:

- The exercise relieves rheumatism of the ankles and strengthens the toes and the feet.
- Avoid this *Asana* in case of acute conditions of arthritis.

3. SURYA NAMASKARA (SUN SALUTATION)

The Name :-

Surya (Sun) is the source of energy to all the living beings on this planet Earth. *Surya namaskara* is a set of 7 Yogic poses performed in 12 steps in the early morning to refresh and energise the body and mind for the day activity. It is being practiced as part of *Yoga sadhana* (practice) over the centuries for healthy living.

Namaskarasana

Technique: -

- **Starting Position:** Stand upright with feet together and arms by the side of the body; balance the body equally on both feet **(*Samasthiti*).**
- **Namaskarasana:** Inhale, bring the palms in front of chest and join them together as in ***namaskara mudra*** or prayer position; Exhale.

Hastottanasana

- **Hastottanasana**: Inhaling, raise both the arms up keeping the arms close to the ears; stretch the body as much as possible and bend the trunk backward without bending the knees.
- **Padahastana:** Breathing out, bend forward from the lower most part of the spine and base of the buttocks. Place hands on the floor by both sides of the feet. Try to touch the knees with the forehead without bending them.

Padahastana

- **Ashwasanchalanasana:** Breathing in, take the left leg backward as far as possible; bring the left knee to the floor. Bend the right leg at the knee; keep the right foot at the floor between the palms making 90-degree angle; arch the spine back and look up.

Ashwasanchalanasana

- **Parvatasana:** Breathing out, take the right leg back; lift the hip tail bone up and lower the head and chest downwards in an 'inverted V' posture. Keep the head between the arms and soles touching the ground. Breath normally.

Parvatasana

- **Ashtanga-namaskarasana:** Lower the knees, chest, and chin to the floor. In the final position, only the toes, knees, chest, hands, and chin touch the floor. The knees, chest, and chin should touch the floor simultaneously. If this is not possible, first lower the knees, then the chest in between the palms, and finally the chin. The buttocks, hips, and abdomen should be raised. The awareness may be kept on the abdominal region.

Ashtanga-namaskarasana

Bhujangasana

- **Bhujangasana:** Lower the hips. Inhale; Raise the head up and push the chest up. Raise the trunk up to the naval with spine arched back. Keep palms on the ground and bend backwards.

- **Parvatasana:** Breathing out, lift the hips up; and lower the head and chest downward in an 'inverted V' posture. Keep head between the arms and soles on the ground.

Parvatasana

Ashwasanchalanasana

- **Ashwasanchalanasana:** Breathing in, bend the left leg and bring it forward; and keep the left foot on the ground between the arms. Keep the right leg backward with right knee touching the ground. Arch the spine back and look up.

- **Pada-hastasana:** Breathing out, bring the right leg forward and place the right foot besides the left foot. Place both palms beside outer sides of the feet on the ground; and head touching the knees.

Pada-hastasana

- **Hastottanasana :** Breathing in, raise arms and torso. Take the arms straight above the head and bend the trunk backwards as much as possible.

Hastottanasana

- **Namaskarasana:** Breathing out, come to the straight position. Slowly bring the arms down; and join the palms in front of the chest as in ***Namaskara*** **mudra** or prayer position.

Namaskarasana

Benefits

- *Surya Namaskar* is a complete *Sadhana*, spiritual practice in itself for it includes *Asanas, Pranayama, Mantras,* and meditation techniques.
- *Surya Namaskar* makes the practitioner physically fit, mentally alert, and emotionally balanced by bringing fresh, oxygenated blood to the brain.
- It stimulates all the systems of the body, mainly endocrine, reproductive, circulatory, respiratory and digestive systems.
- Its influence on the endocrine glands helps to balance the transition period between childhood and adolescence in growing children.
- Makes the spine and waist more flexible, strengthens the muscles of the arms and waist.
- Improves digestion, helps in reducing the fat around the abdomen and thus reduces weight.
- Helps in management of PCOS.

Contra-indications

- People suffering from fever, high blood pressure, coronary artery disease, stroke, hernia, intestinal tuberculosis should not practise *Surya Namaskar*. Further, during the onset of menstruation, *Surya Namaskar* should not be practised.
- This practice is not recommended for pregnant women.

4. YOGASANAS

A. STANDING POSTURES

TADASANA (Palm Tree Posture)

Tada means palm tree or mountain. This *Asana* teaches one to attain stability and firmness and forms the base for all the standing *Asana*.

Technique

- Stand with feet 2 inches apart.
- Interlock the fingers, and turn the wrist outwards.
- Now inhale, raise the arms up bring them in line with the shoulders.
- Raise the heels off the floor and balance on the toes.
- Stay in this position for 10-15 seconds.
- Exhale, bring the heels down.
- Release the interlock of the fingers and bring the arms down parallel to the trunk, and come back to standing posture.

Benefits

- This *Asana* brings stability in the body, helps to clear up congestion of the spinal nerves, and corrects faulty posture.
- Helps to increase height up to a certain age.

Note:

Avoid lifting the toes in case of acute cardiac problems varicose veins and vertigo, ankle injury, excessive obesity.

ARDHA CHAKRASANA (The Half Wheel Posture)

Ardha means half. *Chakra* means wheel. In this posture, as the body takes the shape of a half wheel. Hence, it is called *Ardha Chakrasasna*.

Technique

- Support the back at the waist with all the fingers together pointing forward or downward.
- Drop the head backwards stretching the neck muscles.
- As you inhale, bend backwards from the lumbar region; exhale and relax.
- Stay here for 10-30 seconds with normal breathing.
- Inhale and slowly come up.

Benefits

- *Ardha Chakrasana* makes the spine flexible and tones the spinal nerves.
- Strengthens the neck muscles, and improves breathing capacity.
- Helps in cervical spondylosis, mild backache.

Note:

- Avoid this posture in case of vertigo or a tendency to giddiness.
- Hypertensive patients shall bend with care.

PADA-HASTASANA (The Hands to Feet Posture)

Pada means feet, *hasta* means hands. Therefore, *Pada Hastasana* means keeping the palms down towards the feet. This is also referred as *Uttanasana*.

Technique

- Stand straight with feet 2 inches apart.
- Inhale slowly and raise the arms up.
- Stretch up the body from the waist.
- Exhale and bend forward and try to touch the heels.
- Maintain this final posture for 10-30 seconds with normal breathing.
- Those who are suffering with stiff back should bend according to their capacity.
- Now inhale, come up slowly to the upright position and stretch the arms straight above the head.
- Exhale, slowly return to the starting position in the reverse order.
- Relax in *Samasthiti*.

Benefits

- Makes the spine flexible, improves digestion, prevents constipation and menstrual problems.

Note:

- Please avoid this practice in case of cardiac disorders, vertebral and disc disorders, abdominal inflammation, hernia and ulcers, glucoma, myopia, vertigo and during pregnancy.

TRIKONASANA (The Triangle Posture)

Trikona means triangle. *Tri* means three and kona is an angle. As the *Asana* resembles three arms triangles made by the trunk and the limbs, it has been named *Trikonasana*.

Technique

- Stand on your feet comfortably apart.
- Slowly raise both the arms sideways till they are horizontal.
- Turn right foot out at 90 degree.
- Exhale, slowly bend to the right side and place the right hand just behind the right foot.

- The left arm is straight up, in line with the right arm.
- Turn the left palm forward.
- Turn your head and gaze at the tip of the left middle finger.
- Remain in the posture for 10-30 seconds with normal breathing.
- As you inhale slowly come up.
- Repeat for the left side.

Benefits

- Prevents flat foot.
- Strengthens calf, thigh and waist muscles.
- Makes the spine flexible, improves lungs capacity.

Note:

- Avoid this posture in case of slipped disc, sciatica, and after undergoing abdominal surgery. Do not do beyond limits and over do the lateral stretch. If one cannot touch the feet, one can reach for the knees instead.

B. SITTING ASANA

BHADRASANA (The Firm/Auspicious Posture)

Bhadra means 'firm' or 'auspicious'.

Sthiti: Long sitting posture (*Visramasana*) Sit erect with both the legs stretched forward. Support the back with hands . Body should be relaxed totally.

This is *Visramasana*.

Technique

- Sit erect with the legs stretched out straight in the front.
- Keep the hands beside the hips and palms resting on the floor. This is *Dandasana*.
- Now while bending your knees put the soles of your feet together.
- Exhale and clasp your hands together over your toes.
- Inhale, pull your heels as close as possible up to perineum region. If your thighs are not touching or are not close to the floor, place a soft cushion underneath the knees for support. This is the final position.
- Stay in this position for sometime with normal breathing.

Benefits

- Helps to keep the body firm and stabilize the mind.
- Keep the knees and hip joints healthy. Beneficial for pregnant woman.

- Acts on the abdominal organs and releases any tension in the abdomen.
- Benefits women by relieving abdominal pain often experienced during menstruation.

Note:

- Avoid this practice in case of severe arthritis and sciatica.

MARJARIASANA

'*Marjari*' means 'Cat' and '*asana*' means 'pose' so it is called *Marjariasana* (cat pose).

Technique

- Sit in *Vajrasana*, stand on the knees.
- Lean forward and place the hands flat on the floor with palms down and fingers facing the forward direction.
- Keep the arms and thighs perpendicular to the floor.
- Inhale raise the head up and keep the spine in concave shape.
- While exhaling lower the head trying to touch your chest and make spine convex by contracting abdomen and pulling the buttocks.
- Relax and practice again.

Benefits

- This *Asana* strengthens the core muscles gently in pregnant women.
- In post pregnancy it helps to tone up reproductive organs.

ARDHA USHTRASANA (The Half Camel Posture)

Ushtra means camel. The final version of this *Asana* resembles the hump of a camel. In this version, only the first stage (half) of the *Asana* is being practiced.

Sthiti:

Vajrasana

Technique

- Sit in *Vajrasana*.
- Stand on your knees. Place the hands on the hips with fingers pointing downwards.

- Move your elbows towards each other to keep the elbows and shoulders parallel.
- Bend the head back and stretch the neck muscles, inhale and bend the trunk backwards as much as possible.
- Now exhale and relax. Push your hips forward to keep the thighs perpendicular to the ground. Remain in the posture for 10-30 seconds with normal breathing.
- Return with inhalation, relax in *Vajrasana*.

Benefits

- It helps to strengthen back and neck muscles.
- Relieves constipation and back pain.

Note:

- In case of hernia and abdominal injuries, arthritis and vertigo please avoid doing this *Asana*.

SHASHANKASANA (The Hare Posture)

Shashanka means hare , so it is called as *shashankasana*

Sthiti: *Vajrasana*

Technique

- Sit in *Vajrasana*.
- Spread both the knees wide apart, keep the big toes together.
- Keep the palms between the knees.
- Exhale slight your hand forward and slowly stretch them to full length.
- Bend forward and place the chin on the ground.
- Keep the arms parallel, look in front and maintain the posture.
- Inhale and come up.
- Exhale and come back to *Vajrasan*.
- Stretch your legs back to *Visramasan*

Benefits

- It helps to reduce stress, anger etc.
- It tones up reproductive organs, relieves constipation, improves digestion and relieves back pain.

Note:

- Please avoid this posture in case of acute backache.
- Patients with osteoarthritis of the knees should exercise with caution or avoid *Vajrasana*.
- High blood pressure patients should perform this practice carefully.

MAKARASANA (The Crocodile Posture)

- In Sanskrit, *Makara* means crocodile. In this *Asana*, the body resembles a crocodile.
- **Sthiti:** Prone relaxation posture

Technique

- Lie down on your stomach with the feet wide apart, feet pointing outward.
- Bend both the arms and place the right hand on the left hand.
- Place the forehead on your hands.
- Keep the eyes closed. This is *Makarasana*.
- This *Asana* is practiced for relaxation in all prone postures.

Benefits

- Promotes relaxation of the lower back.
- Indicated to counter stress and anxiety.

Note:

- Avoid this practice in case of low blood pressure, severe cardiac problems and pregnancy.

SARAL BHUJANGASANA (The Cobra Posture)

- *Bhujanga* means snake or cobra. In this *Asana*, the body is raised like the hood of a snake.
- **Stithi:** Prone posture or *Makarasana*

Technique

- Lie down on your stomach, rest you head
- on your hands and relax the body.
- Now join your legs and stretch your arms.
- Keep the forehead on the ground.
- Now place your hands just beside the body, keep palms and elbows on the ground.
- As you inhale slowly, lift the chin and chest come up to navel region.
- Stay there comfortably.
- This is called *Sarala Bhujangasana*.

Benefits

- This *Asana* is best for stress management.
- It reduces abdominal fat and alleviates constipation.
- It also helps to remove backache and bronchial problems.

Note:

- Keep the legs firm so that no load or strain is felt on the lumbar spine.
- Those who have undergone abdominal surgery should avoid this *Asana* for 2-3months.
- Those who suffer from hernia, ulcers should not practice this *Asana*.

ARDH SALABHASANA (The Locust Posture)

- *Salabha* means a locust.
- **Sthiti:** Prone posture *Makarasana*

Technique

- Lie down on your stomach in *Makarasana*.
- Rest the chin on the floor, keep both hands beside the body, palms facing upwards.
- Inhale, raise one legs off the floor as much as you can without bending the knees
- Exhale bring the leg down on the floor.
- Now, repeat the same practice with the other leg.
- Stay in this position for 10-20 seconds breathing normally.
- Rest for a few seconds in *Makarasana*.

Benefits

- Helps in sciatica and lower backache.
- Tones the hip muscles and reduces fat on the thighs and buttocks.

Note:

- Cardiac patients should avoid this posture. Please proceed cautiously in case of sever lower back pain.
- People with high blood pressure, peptic ulcers and hernia should also avoid this posture.

D. SUPINE POSTURES

SETUBANDHASANA (The Bridge Posture)

Setubandha means formation of bridge. In this posture, the body is positioned like a bridge, hence the name. This is also called as *Catuspadasana*.

Sthiti: Supine lying or *Shavasana*.

Technique

- Bend both the legs at the knees and bring the heels near the buttocks.
- While holding both the ankles firmly keep the knees and feet in one straight line.

- Inhale; slowly raise your buttocks and trunk up as much as you can to form bridge.
- Remain in this position for 10-30 seconds, with normal breathing.
- Exhale, slowly return to the original position and relax in *Shavasana*.

Benefits

- Relieves depression and anxiety and strengthens lower back muscles.
- Stretches abdominal organs, improves digestion and helps to relieve constipation.

Note

- In the final position, the shoulders and the head remain in contact with the floor.
- If required, in the final position, you can support your body at the waist with your hands.
- People suffering from ulcers and hernia, and women in advanced stages of pregnancy should not practice this *Asana*.

EK PAD PAVANAMUKTASANA (The Wind Releasing Posture)

Pavana means wind and *mukta* means to release or to make free. As the name suggests, this *Asana* is useful in removing wind or flatulence from the stomach and intestines.

Sthiti: *Shavasana*

Technique

- Lie down flat on the back.
- Bend one knees and bring the thighs to the chest and keeping other leg on the floor.
- Interlock the fingers and clasp the shin below knees.
- Exhale, raise the head till your chin touches the knees and relax.
- Now repeat the same practice with other leg.
- This is *Ek Pad Pavanamuktasana.*
- Bring the head back to the ground.
- While exhaling, lower the legs to the floor.
- Rest in *Shavasana.*

Benefits

- Removes constipation gives relief from flatulence, decreases the bloating sensation in the abdomen and aidsdigestion
- Offers deep internal pressure, massage and stretching of the highly complicated network of muscles, ligaments and tendons in the pelvis and waist region.

Note:

- Synchronise your breathing with the leg movement.
- While touching the knee with the nose/ forehead, you should be able to feel the lumbar region stretch; keep the eyes closed and focus your attention on the lumbar region.

- Please avoid this practice in case of abdominal injuries, hernia, sciatica or severe back pain and during pregnancy.

SHAVASANA (The Dead Body Posture)

Shava means dead body. The final position in this *Asana* resembles a dead body.

Sthiti: Supine Relaxation Posture

Technique

- Lie down on your back with arms and legs comfortably apart.
- Palms facing upward, eyes closed.
- Relax the whole body consciously.
- Become aware of natural breath and allow it to become rhythmic and slow.
- Remain in the position till you feel refresh and relax.

Benefits

- Helps to relieve all kinds of tensions and gives rest to both body and mind.
- Relaxes the whole psycho-physiological system.
- The mind, which is constantly attracted to the outer world, moves inwards, thus gradually gets absorbed, as the mind turns quiet and absorbed, the practitioner remains undisturbed by the external environment.
- It is found very beneficial in the management of stress and its consequences.

5. BREATHING PRACTICES

SECTIONAL BREATHING:

Clavicular breathing:

- Sit in a meditation posture orand relax the whole body.
- Perform thoracic breathing for a few minutes.
- Inhale fully, and expand the rib cage.
- When the ribs are fully expanded, inhale a little more until expansion is felt in the upper portion of the lungs around the base of the neck.
- The shoulders and collar bone should also move up slightly.
- This will take some effort. Exhale slowly, first releasing the lower neck and upper chest, then relax the rest of the rib cage back to its starting position, chant 'M' kar also while exhalation.
- Continue for a few more breaths, observing the effect of this type of breathing.

Thoracic breathing

- Sit in a meditation posture or lie in *Shavasana* and relax the whole body.
- Maintain unbroken awareness of the natural breath for some time, concentrating on the sides of the chest.
- Discontinue any further use of the diaphragm and begin to inhale by slowly expanding the rib cage.
- Feel the movement of the individual ribs outward and upward, and be aware of this expansion drawing air into the lungs.
- Expand the chest as much as possible.
- Exhale by relaxing the chest muscles, and chant '*U'kar* while exhaling.
- Feel the rib cage contracting and forcing the air out of the lungs.
- Breathe slowly and deeply through the chest with total awareness.
- Do not use the diaphragm.
- Continue thoracic breathing for a few minutes, pausing slightly after each inhalation and exhalation.

Abdominal (or diaphragmatic) breathing

- Lie in *shavasana* and relax the whole body.
- Observe the spontaneous breath without controlling it in any way.
- Let it be absolutely natural. Continue observing the natural breath for some time.
- Place the right hand on the abdomen just above the navel and the left hand over the centre of the chest.
- The right hand will move up with inhalation and down with exhalation, and also chant '*A'kar* while exhaling.
- The left hand should not move with the breath.
- There should be no tension in the abdomen.
- Do not try to force the movement in any way.
- Try not to expand the chest or move the shoulders.
- Feel the abdomen expanding and contracting.
- Continue breathing slowly and deeply.

6. PRANAYAMA

NADISODHANA or ANULOMA VILOMA PRANAYAMA (Alternate Nostril Breathing)

The main characteristic feature of this *Pranayama* is alternate breathing through the left and right nostrils without or with retention of breath (*Kumbhaka*).

Sthiti: Any meditative posture.

Technique

- Sit in any meditative posture.
- Keep the spine and head straight with eyes closed.
- Relax the body with few deep breaths.
- Keep the left palm on the left knee in *Jnana Mudra* and the right hand should be in *Nasagra Mudra*.
- Place the ring and small fingers on the left nostril and fold the middle and index finger.
- Place the right thumb on the right nostril.
- Breathe in from the left nostril, close the left nostril with the little and ring fingers and release the thumb from the right nostril, exhale through the right nostril.
- Next, inhale through the right nostril.
- At the end of inhalation, close the right nostril, open the left nostril and exhale through it.
- This complete process is one round of the *Nadisodhana* or *Anuloma Viloma Pranayama*.
- Repeat 5 rounds.

Ratio and timing

- For beginners, the duration of inhalation and exhalation should be equal.
- Gradually make 1:2; inhalation: exhalation

Breathing

- Breath should be slow, steady and controlled. It should not be forced or restricted in anyway.

Benefits

- The main purpose of this *Pranayama* is to purify the principle channels of energy called nadis.
- Induces tranquillity and helps to improve concentration.
- Increases vitality and lowers the level of stress and anxiety.

UJJAYI PRANAYAMA

Technique

- In this *Pranayama*, inhalation (*puraka*) is done with both the nostrils while for exhalation (*rechaka*) the left nostril is used. A mild sound is produced by a partial closure of the glottis during inhalation.
- This *Pranayama* may be practiced even while standing or walking without *Kumbhaka*.

Benefits

- *Ujjayi Pranayama* increases digestive fire.

- Regular practice of this *Pranayama* defends the practitioner from diseases of phlegm, degeneration, dyspepsia, dysentery.

Contraindications

- Persons with low blood pressure should not practice this *Pranayama*.
- Persons suffering from hypertension and cardiac disorders should not apply *Kumbhaka,* they should perform this without *Kumbhaka*.

BHRAMARI PRANAYAMA

Bhramari is derived from *Bhramara* which means black bee. During the practice of this *Pranayama*, the sound produced resembles the buzzing of a black bee.

Sthiti: Any meditative posture.

Techniques: Type- I

- Sit in any meditative posture with eyes closed.
- Inhale deeply through the nose.
- Exhale slowly in a controlled manner while making a deep, steady humming sound such as that of black bee. This is one round of *Bhramari*.
- Repeat 2 more rounds.

Type-II

- Sit in any meditative posture with eyes closed.
- Inhale deeply through the nose.
- Close the eyes with index fingers, mouth with ring and small fingers and ears from respective thumbs as shown in the figure. This is also called *Sanmukhi Mudra*.
- Exhale slowly in a controlled manner while making a deep, steady humming sound such as that of black bee. This is one round of *Bhramari*.
- Repeat 2 more rounds.

Benefits

- The practice of *Bhramari* relieves stress and helps in alleviating anxiety, anger and hyperactivity.
- The resonance effect of humming sound creates a soothing effect on the mind and nervous system. It is a great tranquiliser found good in the management of stress related disorders.
- It is a useful preparatory *Pranayama* for concentration and meditation.

Note

- Please avoid this practice in case of nose and ear infections.

7. DHYANA/DHARNA

Dhyana or meditation is an act of continuous contemplation.

Sthiti: Any meditative posture.

Technique

- Sit in any meditative posture.
- Keep your spine comfortably erect.
- Hold *Jnana Mudra* as follows:
- Touch the tip of the thumb to the tip of the index finger, forming a circle.
- The other three fingers are straight and relaxed joined together.
- Keep your palms facing upwards upon the thighs.
- Arms and shoulders should be loose and relaxed.
- Close your eyes and sit with a slightly upturned face.
- You need not concentrate. Just maintain a mild focus between the eyebrows and be conscious of your breath.
- Dissolve your thoughts and attain single and pure thought.

Benefits

- It helps the practitioner to eliminate negative emotions like fear, anger, depression, anxiety and to develop positive emotions.
- Keeps the mind calm and quiet.
- Increases concentration, memory, clarity of thought and will power.
- Rejuvenates the whole body and mind giving them proper rest.

Note

- For beginners, soothing music may be played in the background during meditation.
- Stay as long as you can.

8. ADDITIONAL PRACTICES

The following practices can also be done by the lactating woman progressively.

1. SHATKARMA

NETI (NASAL CLEANSING PROCESS)

- This practice involves cleaning nasal passages.
- Neti is a pre-requisite for cleaning up the respiratory passages for proper practice of *Pranayama*.

TECHNIQUE

- Sit in *Kagasana*. Make 2 feet distane between the feet and lean forward from the lower back
- Tilt the head to the opposite side of the side of the nostril whichever is more active at the moment.
- Insert the nozzle of the pot into the nostril which is active at that moment.
- Slightly open the mouth and breathe through it.
- Keep the body relaxed. Let the water flow in through one nostril and out through the other nostril.
- After finishing half of the water put down the pot and clear the nose.
- Repeat with other nostril.
- Clear the nose.

BENEFITS

- This exercise is excellent for cases chronic headache, insomnia and drowsiness.
- The fall of hair or premature graying is arrested.

TRATAKA (PURIFICATION OF EYES/CONCENTRATED GAZING)

The word *Trataka* originated from '*Tra*' which literally means to release. This *Kriya* is performed for cleansing and strengthening the eyes. In this *Kriya*, eyes are usually focused on a selected object which can be the flame of a lamp or a burning candle. The gazing on the selected object is done without blinking till the eyes start watering.

Preparations

- Place a burning candle or the lighted earthen lamp at eye level at a distance of 1.5 yards or 2.5 ft. from the eyes.

Technique

- Sit in any meditative pose (*Siddhasana* or *Padmasana*) in a dark room with head, neck and back erect.
- Close the eyes.
- Open the eyes and gaze at the flame (*Jyoti*) of a burning candle or a lighted earthen lamp with both eyes wide open till they get tired or tears come outside; now close the eyes and relax.
- Repeat this exercise 3 to 4 times till one is able to fix the gaze for 10 or 15 minutes without blinking. If the object is found surrounded by many minor lights, the gaze must not be deflected from the central spot. The practice is considered successful when nothing except the light at which eyes are fixed is seen.
- Close the eyes. Keep the closed eyes fixed at the image/impression of the flame in front of the eyes. Complete mastery will come only when it is felt that the glow of the light illuminates its own being.
- The *kriya* should be practised under the guidance of a qualified Yoga teacher.

Precautions

- The place selected for this *Kriya* should be a dark room, calm and quiet.
- Persons having Glaucoma or chronic eye disorders should seek medical advice before practicing it.

- The flame should be still and should not flicker at all.

Benefits

- It affects the *Ajna chakra* and begins to bring positive changes in the perception of all psychosomatic realms.
- It improves memory and concentration.

KAPALABHATI

Kapalabhati is a *kriya* (cleansing practice) for cleansing the frontal brain. '*Kapala*' means 'skull', and '*bhati*' means 'shine'.

Technique

- Sit in any meditative posture.
- Close the eyes and relax the whole body
- Inhale deeply through both nostrils, expand the chest.
- Expel the breath with forceful contractions of the abdominal muscles and relax.
- Do not strain.
- Continue active/forceful exhalation and passive inhalation.
- Complete 10-20 rapid breaths, then take a deep breath and exhale slowly.
- This is one round of *Kapalabhati*.
- Each round shall be followed by deep breathing. Repeat 2 more rounds.

Breathing:

- Forceful exhalation by contracting the abdominal muscles, without any undue movements in the chest and shoulder region. Inhalation should be passive throughout the practice.
- Number of rounds: Beginners can practice up to 3 rounds of 10 strokes each. The count and rounds can be increased gradually over a period of time.

Benefits

- *Kapalabhati* purifies the frontal air sinuses; helps to overcome cough disorders.
- It is useful in treating cold, rhinitis, sinusitis, asthma,and bronchial infections.
- It rejuvenates the whole body, and keeps the face young and vibrant.
- It balances and strengthens the nervous system and tones up the digestive system.

Precautions

- Please avoid this practice in case of cardiac conditions, giddiness, high blood pressure, vertigo, chronic bleeding in the nose, epilepsy, migraine, stroke, hernia and gastric ulcers.

2. BANDH

MULABANDHA (Anal Lock/ Perineal Contraction)

Mulabandha is applied by contracting the external and internal anal sphincter muscles and is retained as long as one feels comfortable. This lock can be simultaneously applied with abdominal lock. In this bandha, the region between the anus and the genitals is to be contracted and raised up towards navel.

Technique

- Sit comfortably in *Siddhasana*, *Padmasana* or *Sukhasana*
- Place both the hands (palms) on the knees firmly.
- Close eyes and relax the whole body.
- Keep spine erect.
- Concentrate on perineal/vaginal muscles for a few minutes first.
- Contract perineal/vaginal muscles for a few seconds and release gradually.
- Keep the breath normal.
- Contract and release up to 20 times.

Benefits

- It stimulates pelvic nerves and tones the uro-genital and excretory systems.
- It helps to relieve constipation and piles.
- By this bandha, the nervous system, blood circulation and brain functions are greatly benefited.

Precautions

This practice should only be performed under experienced guidance. It wrongly practised, it may raise the energy very fast and precipitate symptoms of hyperactivity.

3. YOGA NIDRA

Yoga Nidra means sleep with awareness. It is a state of mind between wakefulness and dream . It is state of complete rest with consciousness. In ordinary sleep, rest is taken in unconscious state, but in *Yoga Nidra*, sleep is taken while being in state of consciousness.

Yoga Nidra makes one feel more fresh, energetic and active. It makes mind free from tensions and makes it happy and peaceful.

Technique:

There can be many types of *Yoga nidra* depending upon the need. But the basic frame is same which is given below. The teacher will give the instructions and the practioners will follow as much as they can. Later on when one become expert after practicing few months then one can practice himself/herself.

Preaparation:

Please get ready for *Yoga Nidra* . Lie down in *Shavasana*. Make sure that the body is straight from head to toe, the legs slightly apart and the arms a little away from the body, position and clothes, until you are completely comfortable. During *Yoga Nidra* there should be no physical movement and eyes should be closed until you are told to open them (pause for few seconds). Take a deep breath. As you breath out feel the cares and worries of the day flow out of you (pause for few seconds).In the practice which follows you are going to develop a feeling of relaxation. It is not necessary to make movements or deliberately relax your muscles, simply develop the feeling of relaxation (pause for few seconds). It is like the feeling you have just before sleep. When relaxation becomes deep , sleep does come but you should try to keep

yourself completely awake, this is to follow the voice of the instructor without analyse the instructions (pause for few seconds). If thoughts come to disturb you from time to time, do not worry, just continue the practice. Allow yourself to become calm and steady (pause for few seconds).Become aware of the external sounds and keep on move your awareness from sound to sound (pause for few seconds). Try to hear the subtle sounds (pause for few seconds). Keep on increasing the area of hearing.

Resolve:

At this moment you should make your resolve(pause for few seconds). The resolve should be very simple. Try to discover one naturally. It should be a short , positive statement in simple language, can be related to any achievements in your life. Repeat it thrice with awareness, feeling and emphasis. The resolve you make during *Yoga Nidra* is bound to come true in your life.

Rotation of awareness:

Body Awareness: Now you will rotate your awareness to different parts of the body. As I name a particular part, mentally repeat the name and relax that part mentally.

Right hand thumb, second finger, third finger, fourth finger, fifth finger, palm of your hand. Become aware of your palm , back of the hand , the wrist, the lower arm, the elbow, the upper arm , the shoulder, the armpit, the right waist , the right hip, the right thigh, the kneecap, the calf muscles, the ankle, the heel, the sole of the right foot, the top of the foot , the big toe, second toe, third toe, fourth toe, fifth toe.

Become aware of the left hand thumb, second finger, third finger, fourth finger, fifth finger, palm of your hand. Become aware of your palm, back of the hand, the wrist, the lower arm, the elbow, the upper arm, the shoulder, the armpit, the left waist, the left hip, the left thigh, the kneecap, the calf muscles, the ankle, the heel, the sole of the right foot, the top of the foot, the big toe, second toe, third toe, fourth toe, fifth toe.

Now to the back. Become aware of the right shoulder blade, the left shoulder blade, the right buttock, the left buttock, the spine, the whole back together.

Now go to top of the head. The top of the head , the forehead , both sides of the head , the right eyebrow, the left eyebrow, the space between the eyebrows, the right eyelid, the left eyelid. The right eye, the left eye, the right ear, the left ear, the right cheek, the left cheek, the nose, the lips, the chin, the throat, the chest, the navel, the abdomen, top of the legs, and top of the arms.

The whole body together..the whole body together… Relax...relax..

Breath Awareness: Then shift your awareness to the natural and spontaneous breath. Feel the flow of your breath moving in and out of your nostrils (pause for few seconds). Your navel is rising and fallind slightly with every breath the abdomen expands and contracts. Concentrate on this movement in synchronization with your breath. Now start counting your breath backwards from 27 to 1 , like this: I am breathing in 27 , I am breathing out 27. I am breathing in 26, I am breathing out 26. In this manner coujnt your breath till you reach zero. Be sure that you don't make a mistake , if you do, you must go back to 27 and start again. Make sure that your total awareness is on counting the breath. Now stop weather you reach zero or not.

Image Visualisation : Now bring your awareness to the space in front of your closed eyes. A number of different things will be named and you should try to develop a vision of them on all levels feeling, awareness, emotion, imagination, as best you can. If you are able to find this vision your realaxation is complete for the time being and if you are not able to, then try to imagine those objects as much as you can like burning candle , endless desert, torrential rain, snow capped mountains, birds flyind across a sun , red clouds, cross above a church, blue louts, pink roused, stars at night , full moon, your won face, smiling Buddha, people performing namaz in a mosque , wind from the sea , waves breaking on a deserted beach, the restless sea, a beautiful temple, the setting sun.

Resolve:

Now this is the time to repeat your resolve. Repeat the same resolve that you made at the beginning of the practice, do not change it . Repeat the resolve thrice with full awareness and feeling. The resolve taken in your subconscious state is definitely going tro manifest in your life in course of time.

Finish :

Become aware of your breath. Become aware of your body. Place of practice and time of practice. Your body is lying totally relaxed on the floor. You are breathing quietly and slowly. Develop awareness of your body from the top of your head to the tips of the toes. Become aware of the floor and the position of your body lying on the floor. Gradually externalize yourself properly and then move your fingers. Move your toes, move your head from side to side. Please take your time, do not be in hurry. When you are sure that you are wide awake, sit up slowly and open your eyes. The practice of *Yoga Nidra* is now complete.

Benefits:

- It reduces pain and tension in the body and relaxes whole body and mind.
- It brings balance in various systems of body , and thereby help in management of stress related problems.
- It reduces anxiety, anger, high blood pressure.
- It calms the mind, and thus is a good means to attain pratyahara.
- It sooths the body and mind by awareness running through all body parts.

Contraindications:

Please avoid this practice in case of depressive disorders.

9. SHANTI PATHA

ॐ सर्वे भवन्तु सुखिनः
सर्वे सन्तु निरामयाः ।
सर्वे भद्राणि पश्यन्तु
मा कश्चिद्दुःखभाग्भवेत ।
ॐ शान्तिः शान्तिः शान्तिः ॥
omsarvebhavantusukhinaù sarvesantunirämayäù |
sarvebhadräëipaçyantumäkaçcitduùkhabhägbhavet ||
omçäntiù çäntiù çäntiù ||

May all be happy
May all be free from disease
May all see only things auspicious
May none suffer from misery

REFERENCES FOR YOGA PRACTICES:

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- **Yogic Sukshma Vyayama** (Micro Circulation Practice): Yogic Sukshma Vyayama of Swami Dheerendra Bhramhachari.
- **Surya Namaskara**: Asana Pranayma Mudra Bandha by Swami Satyananda Saraswati.
- **Tadasana**: Also called as Taalaasana, Yogarahasya of Nathamuni, Kiran Tika, a commentary on Yoga sutras, Shree Yoga Kaustubha-25, Sachitra Caurasi Asana-34, Yoga Asanas by Swami Shivananda.
- **Ardha Chakrasana**: Traditional Chakrasana has several varieties quite different from this which is practiced over the years.
- **Pada-hastasana**: Shree Yoga Kaustubha. Yogarahasya of Nathamuni **.**
- **Trikonasana**: Yogarahasya-ii. 20 of Nathamuni.
- **Bhadrasana:** Gheranda Samhita-ii.9-10, Hatha Yoga pradipika-i.53-54.
- **Marjariasana:** Saraswati, Swami Satyananda. (2006). Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga and Yoga Publication Trust.-118
- **Ardha Ushtrasana:** Easier version of Ushtrasna- Sri Yoga Kaustibha, NagojiBhatta Vritti on Yogasutra-ii.46, Gheranda Samhita-ii.41 describes Ushtrasana which is done lying in prone position.
- **Shashakasana**: Gheranda Samhita-ii.12 call it as Vajrasana, Hathayoga Samhita, Brhada Yoga Sopana, Sachitra Vyavaharika Yoga-16, Narada Purana-33-112, Brihannaradiya Purana, Yogamargapradipa, Yoga Bija-90, Yogasiksopanishad-I.111-112, Hatharatnavali-iii.9
- **Makarasana**: Jaipur Central Museum, with some variation in hands position.
- **Bhujangasana**: Gheranda Samhita. ii.42, with some variation, Kirana Tika-ii.46 on Yoga sutra, Hatha Yoga Samhita-49, Shree Yoga kaustubha-62, Yogamargapradipika-19, Yoga Rahasya of Nathamuni-ii.14, Jaipur Central Museum-7174.
- **Shalabhasana**: Gheranda Samhita-ii.16, Asana Pranayama Mudra Bandha by Swami Satyananda Saraswati-page no. 205
- **Pawanmuktasana:** Shree Yoga Kaustubha. It is done in sitting as per Yoga Asanas-3, Sachitra cauryasin Asane-5-7, Shree Yoga kaustubha-5, Kirana Tika-ii.46 on Yoga Sutra.
- **Setubandhasana**: Yogarahasya of Nathamuni
- **Shavasana:** Gheranda Shamita-ii.19, Hathapradipika-i.32, Hatharatnavali-iii.20,76, Kapala Kurantaka Hathabhasya Paddhati-11, Yuktabhavadeva-vi.21, Asanani-14, Yoga Siddhanta Chandrika-ii.46, Shreetatva Nidhi-70, Kirana Tika on Yogasutra-ii.46, Brhada Yoga Sopana-iii.24, Hathapradipika, Shree Yoga Kaustubha-17.
- **Sectional Breathing:** Also known as Natural breathing .Saraswati, Swami Satyananda. (2006). Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga and Yoga Publication Trust.-378
- **Ardha Ushtrasana:** Easier version of Ushtrasna- Sri Yoga Kaustibha, NagojiBhatta Vritti
- **Nadi Shodhana Pranyama**: Hathapradipika, it has visualization and internal retention breath. Additionally, Gheranda Samhita-v.38-45 has time units for inhalation, retention and exhalation.
- **Ujjayi Pranayama**: Hatha Yoga Pradipika by Swami Muktibodhananda-ii.51-53, Gheranda Samhita-v.69-72.
- **Bhramari Pranayama**: Hathapradipika, Hatharatnavalli-ii.26, Kumbhaka Paddhati-169.
- **Dhyana**: Yoga Sutra of Patanjali III.H
- **Shatkarma**: Gheranda Samhita i.50,i.53, i.54
- **Bandh:** Gheranda Samhita iii. 6-9
- **Yoga Nidra:** Saraswati, Swami Satyananda (2008) Yoga Nidra , 6th Edition. Munger, Yoga Publication trust.

13 CONCLUSION

("Let us revise chapter of our life thoroughly. Let us eliminate disturbing and horrible mistakes". It is never to late to re- write the history. Wake up, rise and realize the goal. Mental equilibrium is a process to *Sadhana*. "Abuse, adjust, accommodate, bear insult, bear injury, highest *sadhana*"- Swami *Paramahansa Satyanand Saraswati*. We are walking in jungle full of thorns. So, instead of removing thorns one by one later, wear proper shoes of *Sadhana* to protect us.

This chapter highlights importance of Yoga lifestyle in journey of life.)

Yoga helps in leading a holistic way of living. It combines both physical postures and breathing techniques to uplift the psychological and physiological aspects of health. It has been known to bring in mindfulness, self-awareness, and physical health benefits. The benefits include weight loss, fitness, stamina, emotional wellness, peaceful sleep, and acceptance of one's thoughts and emotions. Yoga, in general, is helpful to both men and women. Now the question arises as to what specific benefits does it bring to women?

Women are prone to physical, mental and psychological problems because of their reproductive cycle and related hormonal imbalances. From the onset of puberty to the menopause, a woman's body endures a lot of physical and mental strain. Yoga acts as a restorative process to preparing and bearing all that comes with life. The various *Asanas* are designed to bring calmness to the wandering minds of the teenagers while making the hormonal imbalances bearable. Yogic poses help manage the period cycles, promote a healthier body, remove toxins, and give peace of mind. Yoga poses combined with good breathing techniques and meditation help avoid emotional instability and develop the reproductive organs in a healthy way. Women in their 20s and 30s manage their career and household chores amidst period cycles, pregnancy, and tiresome schedules. Yoga brings balance into their lives by inculcating a habit that improves their hormonal balance, body strength, self-acceptance, and calmness. While the responsibilities of the world can be daunting, taking out 40 minutes for the practice of Yoga helps bring energy, sanity, and peace of mind.

Then comes menopause, when a woman's reproductive cycle comes to an end. The transition period is hard to handle specially with a whole lot of hormonal changes. One is known to undergo fatigue, pain, mood swings, hot flashes, and disturbed stomach during this period. Yoga activates the energy *chakras* and provides strength to women to deal with their physiological and psychological changes. It aids in optimising the performance of the body organs. It also balances the hormones and moods, while bringing in inner peace to attain a quality of life. Yoga is an ancient system developed over the centuries by the sages of India. Yoga is both a science and art of preparing and purifying the mind, body, and spirit. The main aim of Yoga is to maintain homeostasis of the mind and to ensure better coordination of body with mind so as to lead a healthy life. Present-day women play equal and more role as compared to men besides performing the traditional roles of a daughter, a housewife, and a mother. Now Today, their roles extend beyond the four walls of their houses, and play responsible roles in all dimensions such as in the socio-economic and political spheres.

In today's stressful life, practicing Yoga can help women lead a balanced, healthy, and happy lives, besides spreading positivity around them.

ANNEXURE 1

RECOMMENDED BOOKS FOR FURTHER READING

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ANNEXURE 2

COMMON YOGA PROTOCOL (CYP)

The United Nations designated June 21 as the International Day of Yoga (IDY) in 2014, to be observed annually. Since then, June 21 has been celebrated across the globe through a variety of events and programs, making IDY the largest public health movement in the world. The Ministry of Ayush, Government of India, being the Nodal Ministry for Yoga activities, developed the Common Yoga Protocol (CYP), which is a series of forty-five-minute-long Yoga practices that can be practiced by anyone, regardless of their age, gender, or fitness level.

The Common Yoga Protocol was prepared with the purpose to provide a concise yet informative introduction to Yoga and its practices to orient one towards achieving holistic health and to promote overall well-being of society at large. Moreover, it aims to raise awareness about the benefits of Yoga and its potential to bring about harmony and peace.

The CYP was prepared with an amalgamation of the ancient traditions of Yoga and the latest scientific insights on varied Yoga practices by a team of experts from the Ministry of Ayush, the Morarji Desai National Institute of Yoga (MDNIY), and other esteemed Yoga institutions. The team consisted of 20 Yoga experts who worked on developing the Yoga protocol over a period of several months.

The CYP was then reviewed and approved by a committee of over 50 Yoga experts, leading Yoga masters and researchers from various fields, including Yoga Philosophy, Anatomy, Physiology, Modern medicine and Yoga therapy. It was finally edited by Dr. Ishwar V. Basavaraddi, Director, Morarji Desai National Institute of Yoga (MDNIY), Ministry of Ayush, Government of India. The final version of the CYP was launched on the first-ever celebration of the International Day of Yoga i.e. June 21, 2015.

The CYP has been published in several languages to make it accessible to a wider audience worldwide. As per the Ministry of Ayush, Government of India, the Common Yoga Protocol is available in sixteen languages including English, Hindi, Sanskrit, Manipuri, Kannada, Marathi, Malayalam, Bengali, Kashmiri, Tamil, Urdu, Telugu, Assamese, Punjabi, Oriya and Gujarati. (https://yoga.ayush.gov.in/common-yogaprotocol).

S. No.	Practices	S.No.	Name of the Practice
I.	**Invocation**	1	Starting Prayer
II.	**Loosening Practices**	2	Neck Movements
		3	Shoulder's Movement
		4	Trunk Movement
		5	Knee Movement
III.	**Standing Asana**	6	Tadasana
		7	Vrikshasana
		8	Pada-hastasana
		9	Ardha Chakrasana
		10	Trikonasana
	Sitting Asana	11	Bhadrasana
		12	Vajrasana
		13	Ardha Ushtrasana

		14	Ushtrasana
		15	Shashakasana
		16	Uttana Mandukasana
		17	Vakrasana
	Prone Lying Asana	18	Makarasana
		19	Bhujangasana
		20	Shalabhasana
	Supine Lying Asana	21	Setubandhasana
		22	Uttanapadasana
		23	Ardha Halasana
		24	Pawana Muktasana
		25	Shavasana
IV.	**Kriya**	26	Kaphalabhati
V	**Pranayama**	27	Nadi Shodhana Pranayama
		28	Sheetali Pranayama
		29	Bhramari Pranayama
VI.	**Dhyana**		
VII.	**Sankalpa**		
VIII.	**Shantih Patha**		
Total Duration=45 minutes			

Committee of Yoga Experts:

1. **Dr. H. R. Nagendra**, Chancellor, Swami Vivekananda Yoga Anusandhana Samsthana University, Bangalore, **Chairman.**
2. **Sh. Anil Kumar Ganeriwala**, Joint Secretary, Ministry of Ayush.
3. **Sh. O.P. Tiwari**, Chairman, S.M.Y.M Samiti, Kaivalyadhama, Lonavla .
4. **Smt. Hansaji Jayadeva Yogendra**, Director, The Yoga Institute, Santacruz, Mumbai.
5. **Dr. Jaideep Arya**, Chief Central Coordinator, Patanjala Yoga Peeth, Haridwar.
6. **Sri Sridharan**, Krishnamacharya Yoga Mandiram, Chennai.
7. **Swami Bharat Bhushan**, President, Mokshayatan Yogashram, Saharanpur, U.P.
8. **Swami Shant Atmanand**, President, Ramakrishna Mission, New Delhi.
9. **Sh. Gaurav Verma**, Art of Living Foundation, New Delhi.
10. **Swami Ullasa**, Isha Yoga Foundation, Coimbatore.
11. **Dr. Rajvi Mehta**, Chief Scientist, Ramamani Iyengar Yoga Institute, Iyengar Yogashraya, Mumbai.
12. **Dr. Prashant Shetty**, Principal, SDM College of Naturopathy & Yogic Sciences, Shantivan Trust, Ujire.
13. **Dr. Chandrasinh Jhala**, Vice- Chancellor, Lakulish Yoga University, Ahmedabad, Gujarat.
14. **Swami Dharmanand Ji**, Director, Adhyatma Sadhana Kendra, New Delhi.
15. **Shri Kalicharan**, Dev Sanskriti Vishwavidayalaya, Shantikunj, Haridwar.
16. **Sister Asha**, Director, Om Shanti Retreat centre, Brahma Kumaris, New Delhi.
17. **Dr. Ananda Balayogi Bhavanani**, Chairman, ICYER, Puduchery.
18. **Sh. Ramanand Meena**, Deputy Secretary, Ministry of Ayush.
19. **Dr. I.N. Acharya**, Programme Officer (Yoga Therapy), MDNIY, New Delhi.
20. **Dr. Ishwar V. Basavaraddi**, Director, MDNIY, New Delhi, **Member Secretary.**

ANNEXURE 3

Y Break "Yoga break at workplace" – Mobile App

Y Break "Yoga break at workplace" program was conceptualized by Ministry of Ayush, Government of India with an aim to get De-stressed, Refreshed and Re-Focused to increase the productivity of individuals at the work place by practicing selected Yoga practices of 5 minutes (twice a day) time frame to accrue the benefits as projected from Yoga practice for a longer duration.

The Yoga protocol in the Y-Break application comprises of a few simple Yogic practices consisting of *Asana, Pranayama* and *Dhyana*, which is as follows:

- *Tadasana- Urdhva-Hastottanasana*
- *Skandha Chakra- Uttanamandukasana*
- *Ardha Chakrasana, Prasarita Padottanasana*
- *Kati Chakrasana*
- *Deep Breathing, Nadishodhana Pranayama*
- *Bhramari Pranayama- Dhyana*

Y Break – Mobile app is freely available on Google play, IOS app store. This is very cost effective and user friendly. This app has already been downloaded 50 thousand times by the users and still there are registered participants.

Android version Download Link:
https://play.google.com/store/apps/details?id=ayush.gov.in.ybreak&hl=en_IN&gl=US

IOS versions Download Link: https://apps.apple.com/in/app/y-break/id1555002781

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