



EFFICACY OF YOGA IN PREGNANCY AND POSTPARTUM PHASE

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ABSTRACT

Prenatal development is the process in which an embryo and later foetus develops during gestation. Prenatal development starts with fertilization. The first stage in embryogenesis which continues in foetal development until birth. Different terms are used to describe prenatal development meaning development before birth. Postpartum or Puerperal period begins immediately after the birth of a child as the mother's body, including hormone levels and uterus size returns to a non-pregnant state. *Yoga* is a group of Physical, Mental & Spiritual practices or disciplines which originated in ancient India. *Yoga* uses breathing techniques, exercise and meditation. It helps to improve health & happiness and help balance body and soul. In this paper classified the *Yoga* postures according to trimester of Pregnancy and postpartum phase.

Keywords: Prenatal, Postpartum, Pregnancy, *Yoga*.

INTRODUCTION

Yoga is a group of Physical, Mental & Spiritual practices or disciplines which originated in ancient India.

Yoga uses breathing techniques, exercise and meditation. It helps to improve health & happiness and help

balance body and soul. *Yoga* is an ancient mind-body practice that originated in India and is becoming increasingly recognized and used in developed nations as a health practice for a variety of immunological, neuromuscular, psychological, and pain conditions^{1,2}. Most recognized for its potential to create balance along emotional, mental, physical, and spiritual dimensions, *yoga* is a comprehensive system that uses physical postures (*Asana*), breathing exercises (*Pranayama*), concentration and meditation (*Dharna* and *Dhyana*), and contemplative practice. Although there are a plethora of lineages and schools of *yoga* that are offered in modern society, practices typically include at least the physical postures and breathing exercises. *Yoga* is thought to alter nervous system regulation and physiological system functioning (e.g., immune, endocrine, neurotransmitter, and cardiovascular) and improve psychological well-being (e.g., frequency of positive mood states and optimism) and physical fitness (e.g., strength, flexibility, and endurance)².

Aim & Objectives: *Yoga* is used for a variety of immunological, neuromuscular, psychological, and pain conditions. Recent studies indicate that it may be effective in improving pregnancy, labour, and birth outcomes. The purpose of this paper is to evaluate the existing literature on *yoga* for pregnancy. During pregnancy your body goes through many changes, which creates stress on you mentally and physically. A way to maintain a healthy mind and body is prenatal *yoga*. Prenatal *yoga* focuses on poses for pregnant women, in order to increase strength and flexibility. Findings from the RCT (randomized controlled trials) studies indicate that *yoga* may produce improvements in stress levels, quality of life, aspects of interpersonal relating, autonomic nervous system functioning, and labour parameters such as comfort, pain, and duration. The findings suggest that *yoga* is well indicated for pregnant women and leads to improvements on a variety of pregnancy, labour, birth outcomes and postpartum phase.

Pregnancy: Pregnancy is a condition in which women undergo distinct physiological changes and stress and is accompanied by unique physical and psychological

demands. There is a need to manage the various physical, emotional, mental, and pain states that arise throughout the stages of pregnancy and labour. The well-being and quality of life of the mother is critical for optimal pregnancy outcomes; self-soothing techniques, psycho-education, and relaxation are particularly important in this transitional and meaningful time³. Maternal stress and anxiety during pregnancy is associated with a host of negative consequences for the foetus and subsequent development. For instance, foetal exposure to maternal stress and stress-related peptides is a risk factor for adverse outcomes on the programming of the nervous system and brain morphology of foetuses, infants, and children. Early gestational stress exposure is associated with negative outcomes at different developmental stages, slowed maturation and behavioural response patterns in foetuses, alterations in neonatal stress regulation and behavioural reactions to stress, blunted cognitive functions and emotional and behavioural problems in infants and toddlers, and reduced brain volume in areas associated with cognitive function in children⁴. It is hypothesized that maternal stress may affect the intrauterine environment and alter foetal development during critical periods, through either activation of the placental stress system, causing the release and circulation of corticotropin releasing hormone, or through diminished blood flow and oxygen to the uterus⁵. Physical exercise can be helpful in the management of stress and other associated conditions or symptoms accompanying pregnancy, such as oedema, gestational hypertension or diabetes, mood instability, musculoskeletal discomfort, aches, and weight gain⁶. Engaging in physical exercise during pregnancy was once regarded as a risky behaviour, although it is increasingly recognized as safe and is encouraged in routine prenatal care⁶. Other related practices, including biofeedback, meditation, and imagery, have been found to reduce anxiety and endocrine measures, such as cortisol, in women during labour^{7,8}. Labour pain is a subjective and multidimensional experience that varies according to each woman's individual perceptions of and reactions to nociceptive information during labour and is influenced by psychosocial, cognitive,

and physiological factors^[9]. Confidence, self-efficacy, and coping ability are considered important for a positive labour experience, and maternal prenatal anxiety is negatively associated with pre-labour self-efficacy for child-birth and labour pain^[10]. Other psychological factors, such as pain catastrophism, have been associated with greater lumbo-pelvic pain during pregnancy and with decreased postpartum physical ability^[11] and can also predict the request for pain relief during labour^[12]. Relaxation therapies for pain management in labour have also become popular as women are seeking alternatives to traditional treatment approaches, including analgesics and anaesthesia, which can be invasive and are sometimes associated with negative side effects for both the mother and infant. *Yoga* may be effective in the reduction of negative symptoms associated with pregnancy and birth. It is important to evaluate its effects on the maternal experience of stress, anxiety, pain, discomfort, and other variables as well as on labour and birth outcomes^[13]. The primary purpose of the present paper is to systematically evaluate the evidence for the use of yoga during pregnancy and labour and to make recommendations for the direction of future research. The state of carrying a developing embryo or fetus within the female body. This condition can be indicated by positive results on an over-the-counter urine test, and confirmed through a blood test, ultrasound, detection of fetal heartbeat, or an X-ray. Pregnancy lasts for about nine months, measured from the date of the woman's last menstrual period (LMP).

Nine months of pregnancy – divided into 3 monthly trimesters, each with own changes and adjustments

First Trimester- 0-13 weeks – Rapid cell formation and the period of greatest physical changes and adjustment. At week 12, at about 3 inches long, weighs almost an ounce or 28 gms.

Second Trimester – 14-26 weeks – Continued rapid growth and maturation of body systems. At week 24, at about 12 inches long, the baby weighs almost one and a half pounds or 450 to 700 gms.

Third Trimester – 27-40/42 weeks - Final stage of fetal intrauterine growth, fat accumulates under the

fetus' skin, and moves into position for birth. The third trimester ends with the birth itself. By the end of 37 weeks, the baby is considered full term and the baby's organs are ready to function on their own. Closer to the due date, baby may turn into the optimal fetal position of head down/back to mom's navel. At birth, the baby may weigh between 6 pounds 2 ounces or 2.5 kg and 9 pounds 2 ounces or 4 kg.

Due Date: The estimated calendar date when a baby will be born. Approximately 280 days after date of last menstrual period.

Anatomy & Physiology & Emotional Aspects of Prenatal

Many changes occur to the women's body during the childbearing months. These changes include cardiovascular, respiratory, structural, metabolic, and hormonal.

Uterus: The (womb) in pre-pregnancy is a hollow, pear-shaped organ located in a woman's lower abdomen between the bladder and the rectum. The narrow, lower portion of the uterus is the cervix; the broader, upper part is the corpus. The corpus is made up of two layers of tissue. During pregnancy, the uterus expands above the pelvis to accommodate the growing baby. Uterine ligaments support and hold the uterus in the abdomen. As the pregnancy progresses, the ligaments become longer and thinner and may spasm and/or cause pain.

Braxton Hicks contractions: Irregular contractions of the womb (the uterus) occurring towards the middle of pregnancy in the first pregnancy and, earlier and more intensely in subsequent pregnancies. The uterus tightens for 30 to 60 seconds beginning at the top of the uterus; and the contraction gradually spreads downward before relaxing. Although said to be painless, Braxton Hicks contractions can be uncomfortable and sometimes difficult to distinguish from the contractions of true labor.

Ovary: The female gonad, the ovary is one of a pair of reproductive glands in women. They are located in the pelvis, one on each side of the uterus. Each ovary is about the size and shape of an almond. The ovaries produce eggs (ova) and female hormones. During each monthly menstrual cycle, an egg is released from

one ovary. The egg travels from the ovary through a fallopian tube to the uterus. The ovaries are the main source of female hormones, which control the development of female body characteristics, such as the breasts, body shape, and body hair, and regulate the menstrual cycle and pregnancy.

Cervix: the lower, narrow part of the uterus (womb). The cervix forms a canal that opens into the vagina, which leads to the outside of the body. During pregnancy, a mucus plug forms in the cervix to protect the growing baby. This mucus plug is released prior to or during labor.

Vagina: The muscular canal extending from the cervix to the outside of the body. It is usually six to seven inches in length, and its walls are lined with mucus membranes. Squatting during the pushing stage of labor decreases the length of the vagina and creates a shorter path for birthing.

Pelvic Floor: The pelvic area includes the muscles, ligaments, and pelvis. At the bottom of the pelvis, several layers of muscle stretch between your legs that serve to support the organs of the abdomen/torso cavity. The muscles attach to the front, back, and sides of the pelvic bone and comprise the pelvic floor. The pelvic floor also includes the **Perineum:** The area between the anus and the vulva (the labial opening to the vagina) in the female. An episiotomy is a surgical procedure to widen the outlet of the birth canal to facilitate delivery of the baby and avoid a jagged rip of the perineum.

Placenta: A temporary organ rich in blood vessels; is only in the female body during pregnancy and joins the mother and fetus. The Placenta transfers oxygen and nutrients from the mother to the fetus and permits

the release of carbon dioxide and waste products from the fetus. It is roughly disk-shaped, and at full term measures about seven inches in diameter and a bit less than two inches thick. The upper surface of the placenta is smooth, while the under surface is rough. The placenta is expelled at the end of the birth process (the afterbirth).

Amniotic Fluids: The nourishing “water” fluids bathing the fetus contained in the amniotic sac in the uterus (womb). The fluids serve as a shock absorber, give easier fetal movement, promote development, and regulate the temperature. These “waters” may break prior to or during labor.

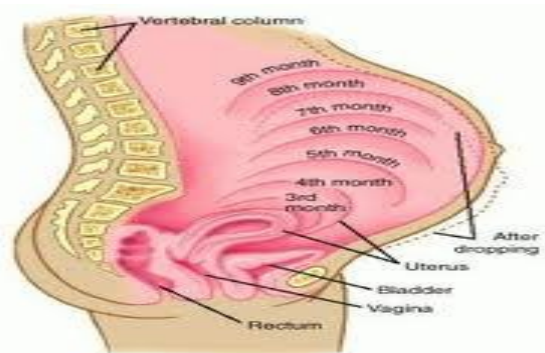
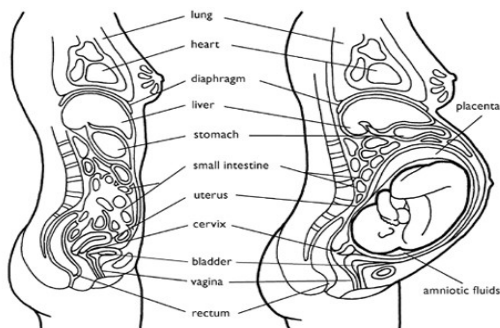
Hormones: after conception there is an increase in progesterone and estrogen – produced by the corpus luteum (gland on the ovary) until the 13th week when the placenta takes over.

Progesterone: A female hormone is the principal progestational hormone. Progestational hormones prepare the uterus (the womb) to receive and sustain the fertilized egg.

Estrogen: is a female hormone produced by the ovaries.

Relaxin: A hormone produced during pregnancy that facilitates the birth process by causing a softening and lengthening of the cervix, a softening of connective tissue and ligaments, and the pubic symphysis (the place where the pubic bones come together in the front of the pelvis). Relaxin also inhibits contractions of the uterus and may play a role in timing of delivery.

Oxytocin: A hormone made in the brain that plays a role in childbirth and lactation by causing muscles to contract in the uterus (womb) and the mammary glands in the breast.



Yoga was defined as a mind-body practice that included traditional physical postures and may incorporate other components, such as breathing exercises and meditation. Only studies that used yoga postures explicitly as an intervention were included; interventions that employed other aspects of yoga, such as yogic breath, yogic philosophy, Ayurvedic herbs, or mindfulness as the primary intervention, were not included,

as the effects of Asana or integrated yoga programs were of primary interest^[14]. The various components of a yoga practice that were included in the reviewed trials included postures (Asana), breathing practices (Dranayama), concentration/meditation (Dhara-na/Dhyana), deep relaxation or yoga sleep (Yoga nidra).

Yoga Posture for Pregnancy and Postpartum Phase

Title	1 st Trimester	2 nd Trimester	3 rd Trimester	Postpartum Phase
Prarthana (Prayer)	Samgacchadhvam...	Samgacchadhvam...	Samgacchadhvam...	Samgacchadhvam...
Sukshma Vyayam (Warm Up Exercise)	<ol style="list-style-type: none"> Hand fingers open and close Wrist joint rotation Albow movement Shoulder rotation Neck rotation Back twisting Rt & Lt Hip joint movement Knee joint movement Ankel rotation Foot fingers forward & back. 	<ol style="list-style-type: none"> Hand fingers open and close Wrist joint rotation Albow movement Shoulder rotation Neck rotation Back twisting Rt & Lt Hip joint movement Knee joint movement Ankel rotation Foot fingers forward & back. 	<ol style="list-style-type: none"> Hand fingers open and close Wrist joint rotation Albow movement Shoulder rotation Neck rotation Back twisting Rt & Lt Hip joint movement Knee joint movement Ankel rotation Foot fingers forward & back. 	<ol style="list-style-type: none"> Hand fingers open and close Wrist joint rotation Albow movement Shoulder rotation Neck rotation Back twisting Rt & Lt Hip joint movement Knee joint movement Ankel rotation Foot fingers forward & back.
Asan (Pose)	<ol style="list-style-type: none"> Pranamasana Tadasana Kati Chakrasana Dandasana Vajrasana Siddhasana Padmasana Savasana 	<ol style="list-style-type: none"> Pranamasana Tadasana Kati Chakrasana Trikonasana Vajrasana Siddhasana Padmasana Bhdrasana Matsyasana Bitilasana Ustrasana Setubandasana Viparita Karanisana Savasana 	<ol style="list-style-type: none"> Pranamasana Tadasana Kati Chakrasana Trikonasana Vajrasana Siddhasana Padmasana Bhdrasana Matsyasana Bitilasana Ustrasana Setubandasana Viparita Karanisana Savasana 	<ol style="list-style-type: none"> Tadasana Trikonasana Padhastasana Vajrasana Padmasana ArdhaMatsyendrasana Ustrasana Singhasana Shashankasana Setubandasana Pawanmuktasana Bhujangasana Shalabhasana Savasana
Pranayma (Breath Control)	<ol style="list-style-type: none"> Nadi shodhan Shitali Shitkari 	<ol style="list-style-type: none"> Nadi shodhan Shitali Shitkari 	<ol style="list-style-type: none"> Nadi shodhan Shitali Shitkari 	<ol style="list-style-type: none"> Nadi shodhan Shitali Shitkari

	4.Bhramari	4.Bhramari	4.Bhramari	4.Bhramari
Kriyas (Purification Technique)	Trataka	Trataka	Trataka	1.Trakata 2.Kapalabhati 3.Agnisara
Dhyan (Meditation)	Dhyan with close eyes...	Dhyan with close eyes...	Dhyan with close eyes...	Dhyan with close eyes...
Aum Chanting (Ending Prayer)	Sarve Bhavantu Sukhinah...	Sarve Bhavantu Sukhinah...	Sarve Bhavantu Sukhinah...	Sarve Bhavantu Sukhinah...

Prarthana - Samgachhadhvam Samvadadhvam, Sam Vo Manamsi Jantam, Deva Bhagam Yatha Purve Sanjanana Upasate ||

Aum Chanting (Ending Prayer)- Sarve Bhavantu Sukhinah, Sarve Santu Niramayah, Sarve Bhadrani Pasyantu, Ma Kaschid Duhkha Bhagbhavet ||

Important Note - Postpartum Yoga Will Be Start After 45 Days

DISCUSSION

The purpose of the present paper was to evaluate evidence from controlled trials regarding the effects of *yoga* on the maternal experience during pregnancy and in labour as well as on birth outcomes. Overall, that *yoga* is well indicated for pregnant women at a time in their lives when their hormonal, muscular, and psychological functioning undergo rapid change. Despite the general recommendations for physical exercise during pregnancy, there are still possible negative consequences, such as uterine contractions, maternal-foetal transfer of catecholamines, decrease of oxygen, premature labour, and nutrient flow or attenuation/decrease of foetal heart rate. Although the studies reviewed in the present paper contribute valuable information about the potential effects of *yoga* on pregnancy outcomes. The present paper evaluated the components of the various *yoga* interventions (postures, breathing exercises, meditation, deep relaxation, anatomy, lectures, and chanting), which provides useful information on the quality, depth, and scope of each *Kriyas*. Mindfulness An active ingredient in a *yoga* program may be mindfulness, which has been effective in symptom reduction and general health improvement in a variety of conditions that are relevant to pregnancy, such as anxiety, depression, back

pain, and stress^[15]. Stress reduction program found improvements in measures of anxiety, depression, and positive affect in women participating in their third trimester of pregnancy^[16]. *Yoga* has also been shown to reduce inflammatory markers, decrease heart rate, and produce improvements in physical fitness variables, all of which may work in concert with behavioural change and psychosocial functioning to improve reactivity to stress and pain. prenatal *yoga* program affects maternal adjustment to demands in the postnatal period, such as breast feeding, physical healing and recovery from birth, and sleep deprivation, amongst others.

CONCLUSION

In conclusion, the present paper suggests that a prenatal *yoga* program results in benefits during pregnancy as well as throughout labour and on birth outcomes. Promote, Protect & maintain the health of the mother during Pregnancy. Reduces risk of gestational diabetes in obese women. Helps weight management and enhances psychologic well-being. Remove anxiety and dread associated with delivery. Prepares you for easy labour, better breath work, increased circulation and calm your nervous system. Reduce maternal and infant mortality and morbidity rate. Eases tightness, tension, aches and niggles in the post natal body. Help build up strength and stamina in the body too. Strengthens abdominal and back muscles for core strength. Maintain flexibility in your body. Renews energy level. Creates positivity around your postnatal body. Overall, this study indicate that *yoga* may produce improvements in stress levels, quality of life, aspects of interpersonal relating, autonomic nervous system functioning, and labour parameters such as

comfort, pain, and duration. This evidence that suggested yoga is well suited to pregnancy and postpartum phase.

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