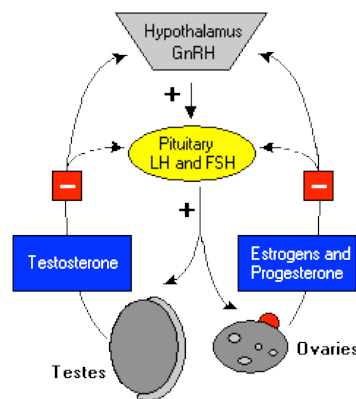


Yogasana and Reproductive Health

- Yogasana helps the body to maintain homeostasis and regulate endocrine system, balance reproductive hormones

The hypothalamus-pituitary-adrenal/gonadal axis (HPA/HPG)¹



The synthesis and secretion of **estrogens, which is responsible** for regulation of the menstrual cycle and maintenance of pregnancy, growth and development of the female body, is stimulated by follicle-stimulating hormone (FSH), which is, in turn, controlled by the hypothalamic gonadotropin releasing hormone (GnRH). **Progesterone, which is responsible** for the changes in the endometrium and prepare the lining of the uterus (endometrium) for implantation of a fertilized egg, production is stimulated by luteinizing hormone (LH), which is also stimulated by GnRH.² The Hypothalamus and Pituitary are the producers and directors of the whole endocrine system. The hypothalamus controls all hormonal release to regulate our reproductive cycle. After being triggered by the hypothalamus, the pituitary secretes the hormones that control the functioning of the ovaries and feed the involuntary muscles of the uterus.

The endocrine system is essential for a healthy reproductive system as I mentioned above. Therefore, Yogasana promotes healthy endocrine function, balances the hypothalamus – pituitary axis that supports the reproductive system. For example, inversions such as salamba sarvangasana (shoulder stand) encourage circulation to the hypothalamus, pineal gland, the pituitary gland and regulate hormone secretion through all reproductive system.

- Clear adhesions and blockages in the reproductive areas.

¹ <http://herkules oulu.fi/isbn951426844X/html/i232204.html>

² <http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/S/SexHormones.html>

- Release tension in the pelvic region and increase blood flow to the reproductive organs (improving egg and sperm quality) therefore "increased nutrients and oxygen to the uterus, ovaries and fallopian tubes"³
- Supports a healthy immune system and supports the body in detoxifying
- Creates a sense of peace and reduce stress by stimulating Parasympathetic nervous system, increase Prana and restoring calm to the entire body thereby relaxing the reproductive organs
- Strengthening the reproductive organs and muscles, this makes it quite beneficial for those women looking to become pregnant.
- Improve the spinal alignment, muscles of the stomach are relaxed which then guards against pelvic inflammation and disorders of the reproductive organs.⁴
- Massage the internal organs like overworked adrenals, lazy ovaries and this helps them to both balance and improve their ability to do their jobs correctly. It also establishes a healthy menstrual cycle
- The action of lifting and lengthening the spine prior to moving into forward bends also releases pelvic tension and may also relieve abdominal cramps. Increased blood flow caused by the forward bending action also increases blood flow to the breasts thereby alleviating tenderness/soreness.⁵
- Squeeze and soak the digestive organs and tonify the liver where all hormones pass through

5 asana that would benefit students with dysmenorrhoea

- ***Supta Virasana*** (Reclining Hero Pose) ; A bolster can be used. This pose opens and releases the abdomen, which causes a relief from menstrual pains.
- ***Upavistha Konasana*** (Wide angle seated forward bend) also a bolster if necessary
- ***Pada Hastasana*** (The hand to foot pose); reduce tension and solidity around the abdominal area
- ***Mandalasana*** (Garland pose) good for GIT affected by repro
- ***Setu bandha sarvangasana*** (Bridge Pose); Stretch pelvic and abdominal organs

3 Yoga practices that may help with infertility

Regular performance of these poses may facilitate circulation and oxygenation of the pelvis. They boost body restoration, promote hormone production, increase responsiveness of the body and promote blood circulation to reproductive organs.

Baddha konasana (Bound angle pose)

Padmasana (Lotus pose)

Paschimottanasana (Seated forward bend)

³ MOKAP012 P-11

⁴ Emma Palmer 2012

⁵ MOKAP012 P-12

Kurmasana (Tortoise pose)

Salamba Sarvangasana (Shoulder stand); excellent for HPA axis, regulate hormones.

5 ways that chronic stress impacts on the reproductive system and 3 practices that could reduce stress

- Stress inhibits reproductive hormones. Under stress, the sympathetic nervous system sends messages to muscles, organs and glands that help the body to react. Whenever a stressful event occurs, our bodies undergo a series of involuntary hormonal and biochemical changes. This automatic stress response puts our bodies in alarm mode mediated through over-secretion of certain neurotransmitters and neuro-modulators by stimulating sympathetic nervous system. “Scientists know that chronic stress boosts levels of stress hormones - glucocorticoids such as cortisol - that inhibit the body's main sex hormone, gonadotropin releasing hormone (GnRH), and subsequently suppresses sperm count, ovulation and sexual activity.”⁶“ Hypothalamic-releasing hormones, acting through the pituitary gland and stimulates the production of adrenocorticotropin releasing hormone, cause the adrenal cortex to increase its output of cortisol hormones; they also increase the output of growth hormone and thyroid hormone. Excess cortisol production has pronounced effects on glucose, protein and fat metabolism.
- There is a direct link between the brain and the reproductive tract. Nerve fibers connect the brain directly to both the fallopian tubes and the uterus. The autonomic nervous system influence the ovary's ability to produce healthy eggs and hormones. For example, when a woman is under stress, spasms occur in both the fallopian tubes and the uterus, which can interfere with movement and implantation of a fertilized egg.⁷
- The sympathetic system promotes responses that prepare the body for strenuous physical activity under stressful situations. All these responses server to increase the flow of blood that is rich in oxygen and nutrients to skeletal muscle in anticipation of strenuous physical activity. Some body systems are not essential in facing the threat and are therefore inhibited by the sympathetic system as part of the "figh or flight" response. These systems include the reproductive and urinary systems. Therefore, sustained stress can decrease the likelihood of ovulation, increase erectile dysfunction and reduce libido for both sexes. Impotence has become one of the biggest concerns of male society and hence it also indirectly affects the female society. Although impotence does not have any serious physical consequences, it can lead to mental complications as a person may become mentally distressed because of it. Impotence, a disorder where a

⁶ http://berkeley.edu/news/media/releases/2009/06/15_stress.shtml

⁷ MOKAP012 P-9

man's penis is unable to get erection during sexual intercourse, is mainly due to the inadequate blood supply to the male reproductive system. One has to understand that anything related to stress or anxiety contributes heavily to impotence as it interferes with relaxation that is absolutely necessary for erection. This is where yoga comes into play naturally. Yoga is all about relaxation and stress-busting. While stress leads to erectile dysfunction, yoga reduces stress and helps in the treatment of impotence.⁸

- Individuals in stressful situations commonly experience difficulty sleeping, and transient insomnia can occur in almost anyone in response to acute stressors, such as illness, personal conflict, work-related stress, environmental factors, and sudden schedule changes. In most cases of transient insomnia, the cause is obvious and sleep improves once the stressor is eliminated. Stress also appears to play a role in chronic insomnia, with severity and frequency of stressors as well as the individual's response to them contributing to the development of persistent difficulties with sleep.⁹ The resulting sleep deprivation and insomnia alter the daily rhythms of several hormones involved in reproduction and fertility. This in turn can contribute to infertility.¹⁰ Women who are unable to conceive often experience a loss of self-esteem, depression, anger, and anxiety over disappointing their partner. Men may begin to feel guilty, and start questioning their "manliness" resulting in relationship problems and reduced sexual activity. The focus changes to making a baby instead and this also exacerbates the existing stress and both partners. Tracking ovulation can take all the fun and spontaneity out of sex, and marital/relationship disruption is common. All of this reinforces the cycle of stress and infertility.¹¹
- Stress can put a spanner in the works as it disrupts the menstrual cycle and delays ovulation. The body fails to release important sex hormones that cause the ovaries to release an egg for fertilization and to create a nurturing environment for a fertilized egg to grow within the uterus. For men stress has a negative impact on the sperm count.

Yoga practice includes the use of postures or asanas, breathing techniques and meditation to make the body more powerful and immune to the outer environment. Each practice has specific purposes and all combine to help develop a focused awareness of what is happening to the practitioner physically, mentally, emotionally and energetically. Developing an awareness of bodily sensations and feelings, emotional states of being, and mental attitudes and beliefs is the first step to reducing stress and using Yoga therapeutically in healing. For instance, consistent meditation practice provides significantly decrease high levels of these stress hormones in the blood. Meditation training affects activity in stress-relevant brain areas such as anterior cingulate and amygdala and increase production of neurotransmitters, which are responsible for the all-encompassing sense of happiness such as endorphins and serotonin.

⁸ <http://www.medicinenet.com/impotence/symptoms.htm>

⁹ <http://www.behaviormanagementsystems.org/docs/The%20Impact%20of%20Stress%20on%20Insomnia.pdf>

¹⁰ MOKAP012 P-12

¹¹ MOKAP012 P-9

In addition, levels of the neurotransmitters GABA “(gamma aminobutyric acid) that is one of the major inhibitory neurotransmitters in the central nervous system”¹² and DHEA (dehydroepiandrosterone) that stabilize mood disorders are increased by practicing meditation.

The other example of coping with stress from yogic point of view is breathing techniques or pranayama has a powerful effect on the body and mind. “By focusing on breathing, the control of breathing shifts from brain stem / medulla oblongata to cerebral cortex. The thoughts and emotions are by passed and mind can experience focus, emotional stress, random thoughts are removed. The emotions also create tension in muscles, stiffness and blockages to flow of Prana.”¹³ Awareness of breath helps manage these emotional disturbances and makes the prana flowing.

Regular practice of Yoga asanas helps to create a healthy immune system and the proper environment for its functioning. They are extremely effective in producing the "relaxation response" and in counteracting the negative effects of the "stress response" on the immune system. For example, the pineal gland is responsible for secreting two extremely vital brain fluids related to our mental health. Those are, melatonin, which is the hormone that regulates sleep, and serotonin, which is the chemical that helps to maintain a happy, healthy balanced mental state of mind, among other functions. For this reason, asanas that stimulate the pineal gland regulate the hormones of this gland like Matsyasana (fish pose). In Matsyasana (fish) pose, the neck region is stretched backward, so that fresh blood from the heart can flow abundantly to the brain where the pineal gland is situated. As result of this pose, secretion of melatonin increase which helps prevent illness, retard premature ageing, induce more restful sleep, boost the immune system, and promote healing.

How could Yoga benefit male reproductive health holistically

The entire male reproductive system is dependent on hormones. The primary hormones, involved in the functioning of the MRS, are follicle-stimulating hormone (FSH), luteinizing hormone (LH), and testosterone. FSH is necessary for sperm production (spermatogenesis), and LH stimulates the production of testosterone, which is necessary to continue the process of spermatogenesis. Testosterone is also important in the development of male characteristics, such as muscle mass and strength, fat distribution, bone mass, and sex drive. Yoga promotes healthy endocrine function, balance the hypothalamus –pituitary axis that supports the reproductive system

Yoga removes mental tensions. By the practice of meditation mind becomes pacific and the mental composure as well as happiness becomes more attuned to understand the life partner for full co-operation in life. Regular practice of Yogasana, Pranayama and Meditation reduce stress level, which can increase the overall health of male reproductive organs.

¹² MOKTTP005 P-13

¹³ http://www.Yogapoint.com/articles/Breath_Yoga.htm

Yogasana pump the blood in the pelvic area and can help to increase the blood circulation to the scrotum impotence. This increased blood flow not only removes and remedies the biological or chemical imbalances but also increase the sperm count and quality.

Asanas tone the pelvic floor muscles to promote prostate health. The practice of asana, deep breathing, and meditation, has helped many patients with Benign Prostatic Hyperplasia (BPH) patients feel better. The asanas improve circulation of blood and lymph throughout the body and can stimulate the release of endorphins. The deep breathing and meditative aspects of yoga can reduce stress and tension, which will improve general health and well-being.¹⁴ Kapalabhati Pranayama – The Skull Lightning Breath is also good for prostate gland .¹⁵

It is an interesting article

[Exercise and the male reproductive system].¹⁶

Abstract

In contrast to the effect of exercise training on the menstrual cycle in female athletes, the effect of physical activity on the male reproductive system is described far less extensively in the scientific literature. The male reproductive system consists of the hypothalamic-pituitary unit and the testes. The testes are responsible for the production of sperm and androgens, mainly testosterone. Androgens are responsible for the development of secondary male characteristics, muscle and bone growth, production of red blood cells, sex drive and other behavioral aspects. The effect of physical activity on the male reproductive axis depends on the intensity and duration of the activity, the fitness level of the individual, and his nutritional status. A single bout of short and intensive aerobic and anaerobic exercise usually increases serum testosterone level. Prolonged moderate to **intense exercise (> 2 hours)** leads to an initial increase followed by a decline to or below the baseline levels. Exercise training frequently **results in a decrease of serum testosterone, and may rarely be associated with reduced libido, sperm production and fertility.** In addition, the reduced testosterone levels may attenuate the exercise-associated muscle hypertrophy, reduce the repair of muscle damage, reduce post exercise muscle rehabilitation and may play an important role in the development of over-training syndrome. Other consequences include decreased bone density and a possible effect on mood and behavior. **Surprisingly, even in the medically well-supervised elite athletes, changes in testosterone levels and their effects on performance and health are rarely evaluated.**

¹⁴ MOKAP012 P-14

¹⁵ <http://www.holistic-healing-therapies.net/pranayama.html>

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