



# Yoga and Endocrine Harmony



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Yoga is the Journey of the self  
Through the Self, To the Self ....  
-THE BHAGWAD GITA-

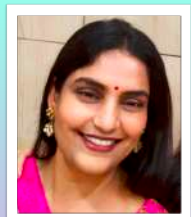
## Editor

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Yoga is a scientific way of living to achieve a complete physical and mental health and also emerging as a non-pharmacological endocrine therapy against many diseases

According to WHO the definition of health is :-

**'Health is a state of complete physical ,mental and social well-being and not merely the absence of disease or infirmity'.**



State of complete physical and mental well-being can be attained not only by pursuing healthy lifestyle, healthy eating habits, maintaining physical fitness but also taking care of spiritual and emotional health. Yoga is an ancient way of living to achieve optimum physical, mental and spiritual health. We have reviewed the literature to understand the benefits of Yoga and its influence on achieving healthy endocrine system of the body.

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## Our Endocrine System

Hormones are molecules that are produced by various endocrine glands of the body e.g. hypothalamus, pituitary gland, adrenal glands, thyroid gland, parathyroid glands, pancreas and gonads. The term "endocrine" refers to the process of specific stimuli causing the release of the hormones off the glands into the bloodstream.



## Regulation of the Hormonal System-

For the balanced hormonal function during changing environment, the various hormonal systems in body should function in a synchronous manner and regulate each other.

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The hypothalamus in brain secretes many releasing hormones which are transmitted via blood to the pituitary gland. These releasing hormones induce and control the secretion of pituitary hormones which in turn transported via blood to various target hormonal glands of the body. Constant feedback from the target glands to the hypothalamus and pituitary controls the further release and hormonal balance is maintained. These feedback effects may cause negative or positive hormones production

**HAPPY INTERNATIONAL YOGA DAY 21/06/21**

## Effects of Yoga on various Hormone systems

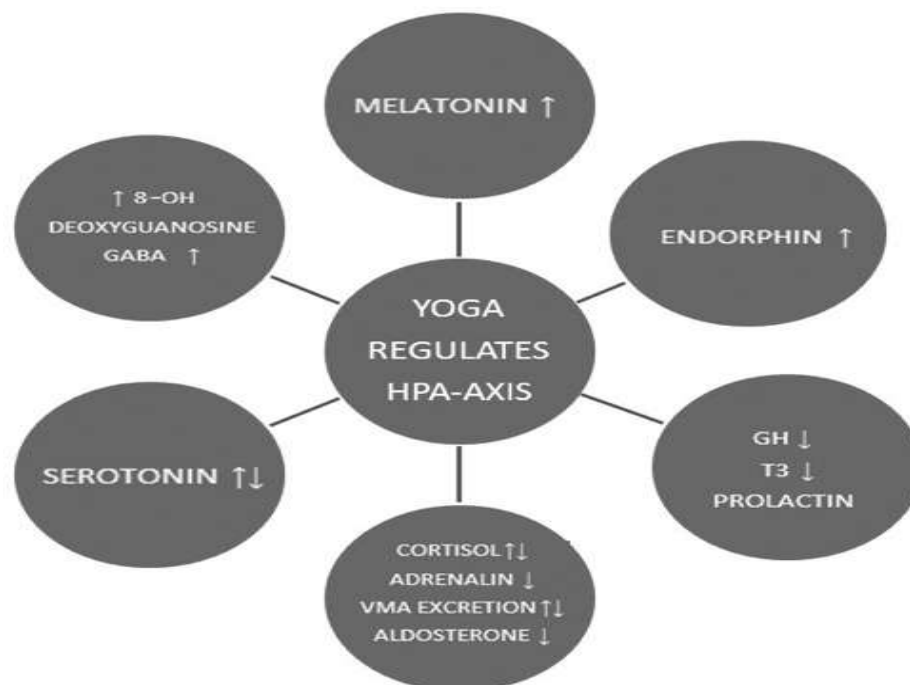
Yoga regulates various hormones responsible for the normal body's functions including

- Growth and development
- Metabolism
- Electrolyte balances
- Reproduction

## Effects of Yoga on neurotransmitters

Most studies evaluating the effect of yoga on hormone system found

- An alteration in hypothalamic and pituitary function following meditation.[2]
- Studies have shown a decline in adrenaline and cortisol levels following Amrita meditation.
- Lower level of cortisol were found in long-term transcendental meditation practitioners. [3]



**Figure 1:** Yoga regulates level of hormones and neurotransmitters that effect physiological functions. GH: Growth hormone, T3: Triiodothyronine, GABA: Gamma amino butyric acid, VMA: Vanillyl mandelic acid, HPA: Hypothalamopituitary adrenal axis [3]

## Effects of Yoga on central nervous system

- Various studies suggest that yogic practices result in increased tranquility of the mind, improved focus and attention and a decrease in anger and irritability.
- In an article on the neurobiology of spirituality, it is observed by various neuroimaging techniques ,that there is activation of the prefrontal and inhibitory thalamic reticular nucleus and a decrease in the parietal lobe activity with after meditation .
- Positron emission tomography studies on yognidra and Ujjayi breathing showed that meditation causes increased perfusion of the sensory system, hippocampus, association areas, and a decreased perfusion of the executive system namely the pons, striatum and the cerebellum.

## Effects of Yoga on metabolic profile

Yoga improves overall metabolic profile of the body-

### METABOLIC BENEFITS OF YOGA

- Decreases adiposity and dyslipidaemia
- Increasing the number of insulin receptor on the muscles
- Decreasing the blood sugar levels.
- Improved cardiovascular Profile
- Better Oxygenation of all organs and endocrine glands

## Effects of Yoga on Immunity

It is believed that stress triggers a neuroendocrine response which causes immune dysregulation and altered cytokine production, which could be one of the multifactorial cause of autoimmune diseases. Meditation is known to decrease the release of IL-6 and its levels are found to be less in yoga experts compared to novice yoga practitioners. Thus, yoga may help in immunomodulation [Figure 2].<sup>[4]</sup> Yoga is thus a scientific lifestyle with diverse effects to regulate the physiological functions.

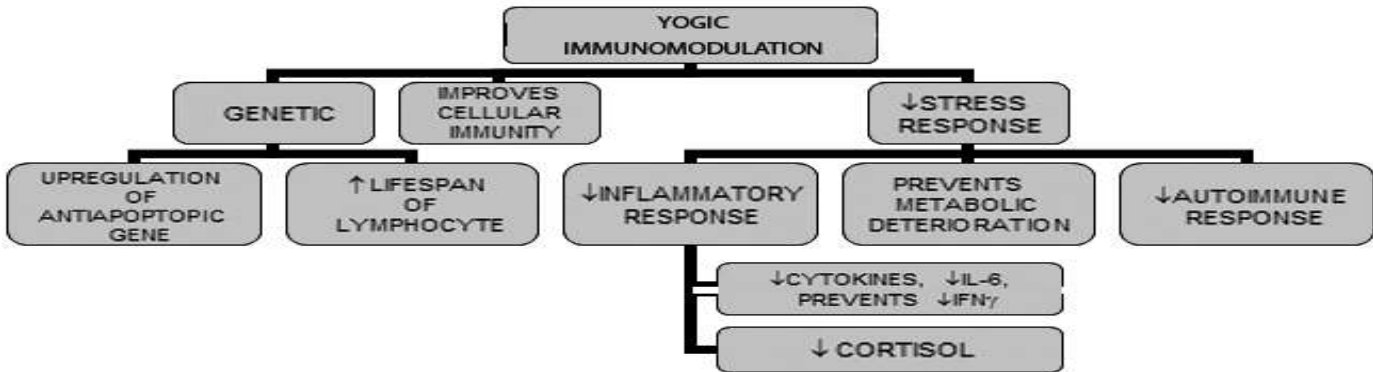


Figure 2: Yoga influences the immune response[4]

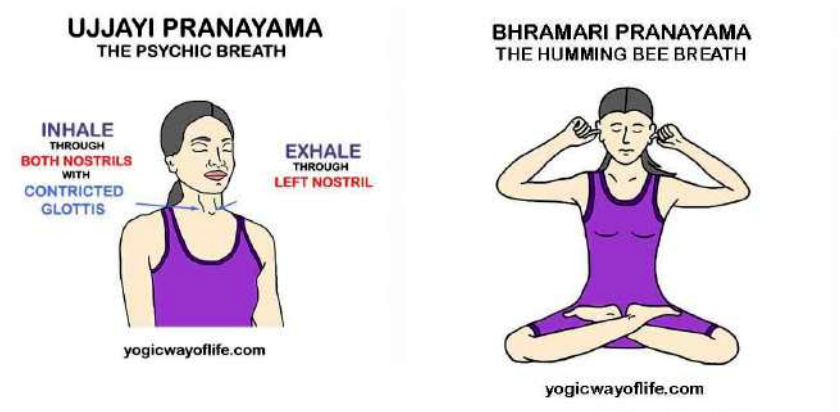
## Some YOGA practices and ASANAS for hormonal balance-

### What is ASANA ?

An *asana* is a body posture that is performed to benefit the health and mind. The term has been derived from a Sanskrit that means “posture” or “pose”.

### 1-Pranayama-

Pranayama is stretching, modifying and lengthening the breath. Pranayama has dual benefits in controlling body along with mind. The blood supply and the oxygen supply to the brain and hypothalamus increases, thereby, improving their functioning. Pranayama improves the relationship between hypothalamus–pituitary and the other glands and thus, the entire endocrine system is balanced.



**PRANAYAMA- BENEFITS**

- Pranayama improves the relationship between hypothalamus–pituitary and the other glands
- The entire endocrine system is balanced.

## 2-Easy Pose or Sukhasana



### SUKHASANA- BENEFITS

- Slow, deliberate breathing
- Corrects the hormonal signals to adrenal gland
- Reduce stress
- Alleviate post-partum depression

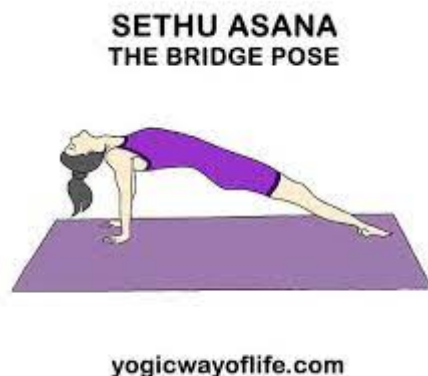
## 3. Bhujangasana or cobra pose



### BHUJANGASANA -BENEFITS

- Makes the spine flexible and correct the curvature of spine.
- Good for arthritis of the lower back and lower back pains.
- It relieves menstrual problems by stretching the uterus and ovaries.
- It releases stress through invigorating adrenal glands and kidneys.

## 4. Setubandhasana or bridge pose



### SETUBANDHASANA-BENEFITS

- Helps in strengthening lower back and abdominal muscles
- Reduces belly fat
- Good for hip joint

## 5. Malasana or garland Pose

**MALASANA**  
THE GARLAND POSE



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### MALASANA-BENEFITS

- Stretches the thighs, groin, hips, ankles, and torso.
- It tones the abdominal muscles
- Improves the function of the colon to help with elimination.
- Increases circulation and blood flow in the pelvis, which can help regulate sexual energy.
- Improves balance, concentration, and focus.

## 6. Ustrasana or camel pose

**USHTRASANA**  
THE CAMEL POSE



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### USHTRASANA-BENEFITS

- Stretches the entire front of the body, the ankles, thighs and groins,
- Abdomen and chest, and throat.
- Stretches the deep hip flexors (psoas)
- Strengthens back muscles.
- Improves posture.
- Stimulates the organs of the abdomen and neck.

## 7-Rabbit Pose or Sasangasana-

**SHASHANKASANA**  
THE HARE POSE



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### SHASHANKASANA- BENEFITS

- This pose stimulates the thyroid and parathyroid. It also helps with depression.
- Helpful in getting rid of constipation.
- Release the stress from spinal vertebrae.
- Leads to the well functioning of adrenal glands.
- Stretches the back muscles making them stronger.
- Enhances the health of both male and female reproductive organs.



## 8- Janursirasana or Standing Head to Knee

**JANUSIRSASANA**  
HEAD TO KNEE POSE



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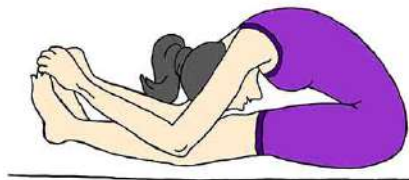
### JANUSIRSASANA-BENEFITS

Combined with Paschimottanasana (below), these two poses balance blood sugar and stimulate the thymus, thyroid, kidneys, and pancreas.

- Calms the brain and relieves mild depression.
- Stretches the spine, shoulders, hamstrings, and groins.
- Stimulates the liver and kidneys. Improves digestion.
- Relieves the symptoms of menopause ,anxiety,fatigue, headache,menstrual pain.

## 9-Seated Forward Bend or Paschimottanasana

**PASCHIMOTTANASANA**  
THE FORWARD BEND POSE



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### PASCHIMOTTASANA -BENEFITS

- Relieves stress and mild depression.
- Stretches the spine, shoulders, hamstrings.
- Stimulates the liver, kidneys, ovaries, and uterus.
- Improves digestion.
- Relieves the symptoms of menopause and menstrual discomfort.
- Relieves headache and anxiety and reduces fatigue.

## 10-Naukasana -The Boat Pose-

**NAUKASANA**  
BOAT POSE USING STRAPS

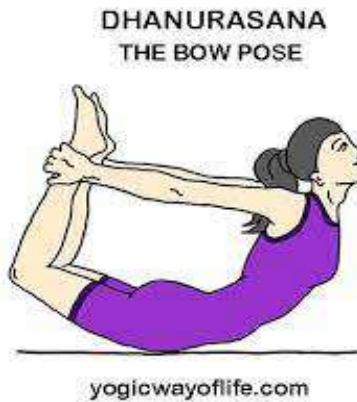


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### NAUKASANA-THE BOAT POSE BENEFITS

- Stretches the abdominal muscles
- It improves digestion
- Reduces the belly fat .
- Strengthens the abdominal muscles.

## 11-Dhanurasana or Bow Pose



### DHANURASANA - BENEFITS

- It stretches the entire body.
- Helps in weight loss.
- Improves digestion boosts digestion and blood circulation.
- It is effective in making the back flexible

## 12-Vakrasana -The twisted pose



### VAKRASANA - BENEFITS

- Vakrasana makes the body flexible
- Reduces Belly fat
- Improvs digestion by regulating digestive juices.

## 13-Bakasana ,The Crane Pose



### BAKASANA - BENEFITS

- Improves concentration
- Better physical balance
- Strengthens arm and wrist muscles
- Relieves stress



**HALASANA  
THE PLOUGH POSE**



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**HALASANA - BENEFITS**

- Strengthens the spinal system and spinal muscles
- The stretch releases the tension from the shoulders, arms and spine.
- Reduces the obesity
- Improves abdominal organ system and cures indigestion and constipation
- Treats neck arthritis and stiffness.

**15-Sarvangasana Or Shoulder Stand**

**SARVANGASANA  
THE SHOULDER STAND**



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**SARVANGASANA - BENEFITS**

- Revitalises the whole body
- Improves thyroid functions
- Stimulates metabolism, protein synthesis and blood circulation
- Strengthens the muscles of neck and shoulders
- Lowers the chances of kidney and bone diseases
- Reduces insomnia and Depression and mental anxiety.

**16-Shirsasana or Headstand**

**SIRSASANA  
THE YOGIC HEAD STAND**



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**SHIRSASANA- "The king of the asanas"- BENEFITS**

- Improves blood circulation
- Gives strength to the respiratory system, -Improves concentration and memory.
- The asana involves the brain, spine and entire nervous system
- Stimulates the pituitary and pineal glands.
- The upside-down pose helps to ease constipation
- Relieves nervous disorders and anxiety.

## 17-Gaumukhasana or the Cow Face Pose



### GAUMUKHASANA BENEFITS

- It is one of the basic asanas that opens up the hip joint.
- Stretches arms, thighs and back, it helps in muscle relaxation.

## CONCLUSION

The beneficial effects of yoga on various hormone levels have been studied and proved. Yoga improves overall circulation of different organs and endocrine glands of the body and thus helps in better hormonal milieu. Weight is controlled, metabolic profile improves and various other lifestyle diseases like hypertension, diabetes, stress disorders, depression and anxiety disorders are also improved and cured. Immunity increases and autoimmune disorders show improvement. Certain yoga practices and meditations are also believed to be causing genetic changes. Overall it is proven in various studies that Yoga is a scientific way of living which helps in balancing the endocrine system of the body.

***NOTE- Yoga should be performed under supervision of expert yoga teachers.***

### References

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