



Effect of *Ushtasana* in Hypothyroidism – A Review

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ABSTRACT:

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word Yoga means 'to unite'. Decreased secretion of thyroid hormones is called hypothyroidism. Hypothyroidism leads to myxedema in adults and cretinism in children. Women are affected approximately six times more frequently than men^[1]. Yoga poses pressurize and stretch the glands, affecting secretion of hormones, making the glands stronger, and balancing the hormones which in turn affect every other organ and metabolism. As in case of hypothyroidism *Ushtasana* when practiced regularly and in a proper way is beneficial for most thyroid gland problems. The main reason being the blood circulation is increased towards the thyroid gland and the brain.

KEY WORDS: Siddha, Yoga, Hypothyroidism, Asana, Ushtasana.

INTRODUCTION:

Siddha system of medicine is one of the traditional systems of medicine which treats not only the body also the mind. In Siddha System of Medicine, Yoga forms an important part. Many *Siddhars* have dealt with Yoga.

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word Yoga means 'to unite'. As per Yogic scriptures the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, Man & Nature^[2].

Hypothyroidism is a common condition with various causes, but autoimmune disease (Hashimoto's thyroiditis) and thyroid failure following surgical treatment of thyrotoxicosis account for over 90% of cases, except in areas where iodine deficiency is endemic. Women are affected approximately six times more frequently than men^[1].

Yoga has a wholesome effect on both body and mind. *Asanas* or physical postures of the body act at various anatomical levels and help prevent or minimize the risk of various metabolic disorders^[3]. Yoga poses pressurize and stretch the glands, affecting secretion of hormones, making the glands stronger, and balancing the hormones which in turn affect every other organ and metabolism^[4]. As in case of hypothyroidism *Ushtasana* when practiced regularly and in a proper way is beneficial for most thyroid gland problems. The main reason being the blood circulation is mainly centered towards the thyroid gland and the brain^[3].

HYPOTHYROIDISM^[5]:

Hypothyroidism is a hypometabolic clinical state resulting from inadequate production of thyroid hormones for prolonged periods, or rarely, from resistance of the peripheral tissues to the effects of thyroid hormones. The clinical manifestations of hypothyroidism, depending upon the age at onset of disorder, are divided into 2 forms:

1. Cretinism or congenital hypothyroidism is the development of severe hypothyroidism during infancy and childhood.
2. Myxedema is the adulthood hypothyroidism.

CRETINISM^[5]:

A cretin is a child with severe hypothyroidism present at birth or developing within first two years of postnatal life. This is the period when brain development is taking place; in the absence of treatment the child is both physically and mentally retarded.

Etiopathogenesis:

The causes of congenital hypothyroidism are as follows:

1. Developmental anomalies e.g. thyroid agenesis and ectopic thyroid.

2. Genetic defect in thyroid hormone synthesis e.g. defect in iodine trapping, oxidation, iodination, coupling and thyroglobulin synthesis.
3. Foetal exposure to iodides and antithyroid drugs.
4. Endemic cretinism in regions with endemic goitre due to dietary lack of iodine (sporadic cretinism, on the other hand, is due to developmental anomalies and genetic defects in thyroid hormone synthesis described above).

MYXOEDEMA ^[5]:

The adult-onset severe hypothyroidism causes myxedema. The term myxedema connotes non-pitting edema due to accumulation of hydrophilic mucopolysaccharides in the ground substance of dermis and other tissues.

Etiopathogenesis:

There are several causes of myxedema listed below but the first two are the most common causes:

1. Ablation of the thyroid by surgery or radiation.
2. Autoimmune (lymphocytic) thyroiditis (termed primary idiopathic myxedema).
3. Endemic or sporadic goiter.
4. Hypothalamic-pituitary lesions.
5. Thyroid cancer.
6. Prolonged administration of antithyroid drugs.
7. Mild developmental anomalies and dysmorphogenesis.

SYMPTOMS ^[6]:

- Tiredness, weakness
- Dry skin
- Feeling cold
- Hair loss
- Difficulty concentrating and poor memory
- Constipation
- Weight gain with poor appetite
- Dyspnea
- Hoarse voice
- Menorrhagia (later oligomenorrhea or amenorrhea)
- Paresthesia
- Impaired hearing

SIGNS ^[6]:

- Dry coarse skin
- Cool peripheral extremities
- Puffy face, hands, and feet (myxedema)
- Diffuse alopecia
- Bradycardia
- Peripheral edema
- Delayed tendon reflex relaxation
- Carpal tunnel syndrome
- Serous cavity effusions.

MATERIALS & METHODS:

USHTASANA (CAMEL POSE):

Classification:

Symmetrical kneeling backward-bending pose

Steps^[7]:

- i. Sit in *vajrasana*.
Stand on the knees with the arms at the sides.
- ii. The knees and feet should be together, but may be separated if this is more comfortable.
- iii. Lean backward, slowly reaching for the right heel with the right hand and then the left heel with the left hand. Do not strain.
- iv. Push the hips forward, keeping the thighs vertical, and bend the head and spine backward as far as is comfortable.
- v. Relax the whole body, especially the back muscles, into the stretch.
- vi. The weight of the body should be evenly supported by the legs and arms.
- vii. The arms should anchor the shoulders to maintain the arch of the back.
- viii. Remain in the final position for as long as is comfortable.
- ix. Return to the starting position by slowly releasing the hands from the heels one at a time.

Breathing^[7]:

Normal breathing. Do not try to breathe deeply because the chest is already stretched.

Duration^[7]:

Practice up to 3 times as a dynamic asana. Hold the final position up to 3 minutes as a static pose.

Awareness^[7]:

- Physical - on the abdomen, throat, spine or natural breathing.
- Spiritual - on *swadhisthana* or *vishuddhi* chakra.

Sequence^[7]:

It is important that this asana is followed by a forward bending asana, such as *paschimothasana*, to release any tension in the back. The most convenient counter pose is *shashankasana* since it may be performed immediately from *vajrasana* without unnecessary body movement.

Contra-indications^[7]:

People with severe back ailments such as lumbago should not attempt this asana without the guidance of a competent teacher.

Benefits:

This asana is beneficial for the digestive and reproductive systems. It stretches the stomach and intestines, alleviating constipation. The backward bend loosens up the vertebrae and stimulates the spinal nerves, relieving backache, rounded back and drooping shoulders. The posture is improved. The front of the neck is fully stretched, toning the organs in this region and regulating the thyroid gland. It is helpful for people suffering from asthma^[7]. People with drooping shoulder and hunched back will benefit by this *Asana*^[8].

DISCUSSION

Thyroid is an endocrine gland situated at the root of the neck on either side of the trachea. Thyroid gland secretes three hormones:

1. Tetraiodothyronine or T4 (thyroxine)
2. Tri-iodothyronine or T3
3. Calcitonin.

T4 is otherwise known as thyroxine and it forms about 90% of the total secretion, whereas T3 is only 9% to 10%. Iodine and tyrosine are essential for the formation of thyroid hormones. Thyroxine increases the metabolic activities in most of the body tissues. It increases BMR by increasing the oxygen consumption of the tissues. In hypothyroidism, BMR falls by 20% to 40% below the normal level. Thyroxine is essential for the metabolism of

carbohydrates, proteins and fat. Thyroxine is more important to promote growth and development of brain during fetal life and first few years of postnatal life. Deficiency of thyroid hormones during this period leads to mental retardation^[9]. *Ushtasana* is more beneficial to stimulate thyroid gland and regulates thyroxine hormone. When we do *Ushtasana*, a subtle, controlled extension occurs in the cervical region. The cervical extensors engage to extend the neck, while the cervical flexors stabilize, preventing the head from being thrown back, and creating an even, controlled curve. By this Asana the neck muscles like upper trapezius, splenius muscles, longus muscles and the sternocleidomastoid are activated^[10]. In the cervical spine, the anterior neck muscles are eccentrically active and there is extension of the head and neck^[11]. By these actions of *Ushtasana*, the blood flow to the thyroid gland increases. Thus, it has beneficial effects on thyroid and parathyroid glands.

CONCLUSION:

The thyroid and parathyroid glands have important functions in respiration, blood circulation, digestion, excretion, and nervous system. When these glands function properly, the other above-mentioned systems function normally. When we perform *Ushtasana*, a subtle, controlled extension occurs in the cervical region. And the neck muscles are activated. By these actions of *Ushtasana*, the blood flow to the thyroid gland increases. Thus the thyroid gland is strengthened and the thyroid hormones secretions are regulated. Hence, *Ushtasana* has the beneficial effects in preventing and treating Hypothyroidism.

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