



EFFECT OF SARVANGASANA ON RELATED MUSCLES.

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ABSTRACT Stable and comfortable posture of body is called as *Asana*¹¹. *Asana* includes different yogic postures which helps to attain further steps of *yoga*. It brings control over physical body later leads to control over mind which enhance all over development of being. *Sarvangasana* is one of the *asana* where *sarva* means all and *anga* means parts i.e. all the body parts are exercised by this posture. In this article we are studying the effect of *Sarvangasana* on related muscles in detail and in scientific way. This positive effect on muscles is helpful to maintain physical and mental health which prevent and cure us from many diseases.

KEYWORDS : *Asana, Sarvangasana, related muscles.*

INTRODUCTION-

Asana is third part of *Ashtang yoga* according to *Patanjal Yogdarshan*¹². According to *Hathiyoga* it is the first step of *yoga* which produces lightness of the body and enhances strength and health¹³. *Asana* help to increase flexibility of body muscles and prepare the body for easy and smooth joint functions.

The muscular system is composed of specialized cells called muscle fibres. Main function of muscular system is contractibility. Muscles attached to bones, internal organs and blood vessels are responsible for movement. Muscles allow a person to move, speak and chew. Muscles control heartbeat, breathing, digestion. Other functions of body like temperature regulation and vision are also rely on the muscular system. The muscular system contains more than 600 muscles that work together to enable the full functioning of the body. Skeletal muscles are the only muscles that can be consciously controlled. They are attached to bones and contracting these muscles causes movement of related bones and joints. Any action that a person consciously undertakes involves the use of skeletal muscles. Examples of such activities include running, chewing, writing etc.

In this scientific world there is need to the proper study of muscles involved in *Sarvangasana*.

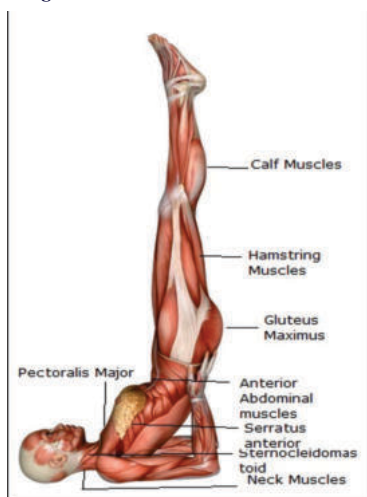
Method of *Sarvangasana*¹⁴

Photo 1: *Sarvangasana* posture

- 1] For *Sarvangasana* lie flat in supine position keeping the legs stretched
- 2] Exhale, bend the knees and move the legs towards the abdomen till the thighs touch it.
- 3] Lift the hips from the floor with exhalation and rest the hands on them by bending the elbows.
- 4] Exhale and lift the trunk up perpendicular to the ground and straighten the knee joints.
- 5] Only back of the head, neck and shoulders and back of the arms should rest on the ground.
- 6] Stay in this posture for some time and gradually slide down, release the hands and lie flat and relax.

DISCUSSION

Table No.1: Muscles involved in *Sarvangasana*^{15,6,71}

Sr. No.	NAME OF MUSCLE	ORIGIN	INSERTION	NERVE SUPPLY	ACTION	EFFECT WITHIN POSE
1.	Neck Muscles- Splenius cervicis & Splenius capitis	Ligamentum nuchae & Upper six thoracic vertebrae	Posterior tubercles of C1-C4 & Mastoid process	Dorsal ramus of lower Cervical spinal nerves	Mainly postural & Extends the head	Contraction of muscles causes flexion of neck.
2.	Sternocleidomastoid	*Sternum manubrium sternum *Clavicle-medial 1/3rd	Mastoid process	*Spinal accessory nerve *Ventral rami of C2	*Acting one side-tilt head on same side, *Acting Both side together-flex the neck	Contraction of both side muscle causes flexion of neck.
3.	Trapezius	*Superior nuchal line *Ext. occipital protuberance *ligamentum	*Clavicle (lat. end -post border) * Spine of scapula *Acromion	Spinal accessory nerve	*Stabilize and elevate scapula *Shrugging of scapula	Stretching of this muscle, Stabilize shoulder & lift the thoracic cage against gravity.

4	Pectoralis Major	*clavicle-medial/3 *sternum up to 6th costal cartilage *2nd to 6th costal cartilages *Aponur osis of Ext. Oblique muscle	Humerus, bicipital groove-lateral	Medial and Lat pectoral nerves	*Adduction, medial rotation of shoulder *Flexion of arm	Controlled contraction of this muscle lift up the thoracic cage upwards and stabilizes head of humerus.	13	Rhomboid Minor	*Spines of C7-T1	Root of spinous process	Dorsal scapular nerve	Retraction of Scapula	
5	Pectoralis Minor	*3,4 & 5th rib	Coracoid process	Medial and lat. pectoral nerve	*Draws scapula forward *Depress shoulder	Contraction of this muscle stabilizes scapula	14	Erector spinae *Ileocostalis *longissimus *Spinalis	Back of sacrum Ileac crest & related ligaments	*Angles of ribs Post tubercles of cervical vertebrae, Thoracic vertebrae, C2-C6, *Mastoid process *Lumbar & cervical spines	Posterior rami of spinal nerves	*Back extension *Lateral back flexion	*Holds the spine against gravity *Lengthen the muscle
6	Triceps	Scapula and humerus	Ulna (ulnar tuberosity)	Radial nerve	Extension of elbow joint	Controlled stretching of this muscle causes controlled flexion and stabilization of elbow joint to support the back against the gravity	15	Diaphragm	Xiphoid process Of Sternum & Costal & Lumbar	Lumbar Vertebrae	Phrenic nerve	Helps in breathing	Controlled contraction of diaphragm muscles & hold the breath.
7	Serratus Anterior (Boxer/swimmer muscle)	1-8 ribs	Medial border of scapula-costal surface	Nerve to serratus anterior	*Pulls scapula forwards *Rotation of scapula.	Contraction of this muscle lift chest upwards	16	Abdominal muscles- *External oblique-	Lower 8 ribs	Xiphoid process, linea alba & pubic Symphysis	Lower Six Thoracic nerves	*Supports the organs & maintains the posture where no bony support *Movements of trunk	Along with erector spinae create a tube and lift the ribcage upward against gravity & shorten the muscle
8	Serratus Posterior superior	Nuchal ligament Spinous process of C7	2nd to 5th ribs	2nd to 5th intercostal nerves	Elevate ribs 2nd - 5th	Contraction of this muscle lift up chest upwards		*Internal oblique-	Inguinal ligament, ileac crest, Thoracolumbar fascia	Lower 4 ribs 7th, 8th & 9th costal cartilages Linea alba Xiphoid process	*Lower Six Thoracic nerves *First lumbar nerve		
9	Latissimus dorsi	*Ileac crest *inferior angle of scapula *T7-T12 spines	Humerus (floor of bicipital groove)	Thoraco dorsal nerve	Adduction, extension & medial rotation of shoulder joint	Lengthening of muscle lift the trunk against gravity.		*Transversus abdominis	*Inguinal ligament *Ileac crest *Thoracolumbar fascia	*Xiphoid process *Linea alba *Pubic crest	*Lower Six Thoracic nerves *First lumbar nerve		
10	Supraspinatus	Scapula supraspinatus fossa	Greater tubercle of humerus	Suprascapular nerve	*stabilizes humerus *Abduction 0-150 at shoulder joint.	Contraction of muscle stabilizes scapula and shoulder joint.		Rectus Abdominis	Pubic crest	Xiphoid process	*Lower Six Thoracic nerves		
11	Infraspinatus	Scapula-infraspinatus fossa	Greater tubercle of Humerus	Suprascapular nerve	Lateral rotator of arm	Contraction of muscles stabilize scapula and shoulder joint.	17	Psoas Major	Transverse process of all Lumbar vertebrae & intervertebral discs	Femur-lesser trochanter	Branches from roots of spinal nerves L2, L3 & L4	Stabilizes lumbar spine, Powerful flexor of hip joint. Maintain erect posture.	Controlled contraction stabilize the hip joint & hold back in erect posture
12	Rhomboid Major	*Spines of T2-T5	Medial border of the scapula	Dorsal scapular nerve	Retraction & rotation of scapula	Stretching of this muscle stabilize the shoulder and back	18	Psoas Minor	*Sides of bodies of T12 & L1 *Disc between it.	*Pecten pubis *Ileopubic eminence	Branches from Spinal nerve L1	Weak flexor of the trunk.	

19	Gluteal Muscles	Gluteal region of ileum bone	Gluteal tuberosity & Greater trochanter of femur	Superior & Inferior Gluteal nerves	Extend the flexed thigh & bring it into the line with the trunk	Extend the hips in controlled manner against gravity.
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As shown in above Table, due to *Sarvangasana* various muscles causes contraction and stretching so regular practice of *Sarvangasana* gives following benefits^[8].

1] Beneficial in several endocrine gland anomalies as it helps thyroid and parathyroid glands to bathe in blood thereby absorb nutrients from blood so good for these glands and their functions.

2) In this asana body is inverted and venous blood flow to the heart without any strain by force of gravity so good for the proper functioning of heart and also prevents palpitation.

3) This pose shows soothing effect on the nerves which is good for those who are suffering from hypertension, breathlessness, irritation, shortness of temper and nervous breakdown.

2] Enhances blood circulation and nutrient absorption.

4] It relaxes the nerves and supply of blood to head is regulated so beneficial in chronic headaches and migraine.

5] Due to inverted position blood flow to ENT region is increased which facilitates nutrients supply in this region so beneficial in insomnia, common cold, asthma, bronchitis and throat infections.

6] As it strengthen the muscles it is beneficial in urinary disorders, uterine problem, piles and hernia.

7] Increases flexibility of vertebral column and relieves backache.

8] It helps to improve vision as blood flow to the eyesight is increased.

9) It regulates free movement of bowel which prevents from constipation or relieves constipation.

10) It reduces blood pressure to the blood vessels of legs which relieves varicose veins.

11) For women it improves ovarian insufficiency and regulates menstrual period.

12) It strengthens shoulders, neck, back, spine, thighs by strengthening of muscles.

CONCLUSION:

Involvement of these muscles in *Sarvangasana* causes their Contraction and stretching which help to strengthen the muscles to maintain their proper tone causing proper posture of the body. This *asana* increases flexibility and elasticity of muscles which help to smooth and soft movements at the joint level for proper physical functioning of body. Strengthening of muscles supports visceral organs which causes proper physiological functions of different systems. In this way regular practice of *Sarvangasana* prevents us and cures us from many diseases.

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