

Part I: Concept of Brahmacharya and its Relevance for Modern Youth
Part II: Energy Expenditure during Sarvangasana – a Yogic Inverted Posture

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ABSTRACT

Part I: Concept of Brahmacharya and its Relevance for Modern Youth

Brahmacarya means studentship in an earnest and devoted manner, self-restraint, chastity and continence that has to be further sharpened with the help of right learning and the use of balanced intellect for judicious discrimination.

Vérya saàvardhana is a derivative practice of celibacy or Brahmacharya that suggests that youth should not waste precious semen that contains the procreating gamete cells (sperms) in millions. According to this concept given in the ancient texts, it is only by conserving on semen (by not letting it out for merely satisfying on petty pleasures and desires) the practitioner benefits with the conservation of his own dynamism, heroism, prowess, valor, potency, virility, strength, energy, firmness, courage, power, efficacy, semen, splendor, luster and dignity. The alchemy of prääa, tejas and ojas is dealt. The energy in the semen sublimates and transforms itself into formerly said form of ojas which, transforms itself further to tejas and prääa. The study also deals with the practices that are advocated to increase the ojas in the body thereby enhancing the sublimation and transformation of grosser semen to life sustaining subtler energies and forces.

Mostly ignorance persists about the origin of the happiness that it is in the external objects. The source of happiness is within and it is always with. Leading life on yogic principles enables a person to practice brahmacharya thereby enabling him to get rid of all the miseries and remain happy and blissful at all times which, is the sole aim of all beings in this universe. Youth often get tempted by sexual indulgence and stray from the desirable path of progress and discipline. The obscured values of Brahmacharya are

specially for youth so that they utilize the concept for their betterment in life.

SUMMARY AND CONCLUSIONS

The concept of Brahmacharya and its relevance to the modern youth (especially in respect to semen conservation) is of great significance. Without practising Brahmacharya one cannot succeed in life because to obtain the higher goals lower and more insignificant goals have to be sacrificed. Sex is one such temptation, indulging in which, the youth can ruin their lives as it hampers their progress in a universal wide spectrum of different skills and teachings. The root cause of why people go for sex is their craving for happiness that is an inherent characteristic of every living being. Happiness is after all a state of silence where a person transcending his body consciousness dives deeper within his personality and becomes more affable with the source of all happiness within.

Having studied about what the scriptures have to say about the topic and the embedded concept, with a sharp razor like intellectual zeal it starts cutting the pseudo notions about the happiness. It's permanence within and its independent existence without the aid of the external objects. The study deals with the happiness analysis to explain how a person can experience greater happiness inspite of not indulging in sex. The know-how of the bio-energy spent during the activities of enjoying the sensual pleasures. Over the years this knowledge of our true nature and ever-progressive life of self-restraint, chastity and semen conserver (brahmachäré) has been present and propagated only in the pages of the scriptures but with growing interest in the knowledge given to us by the seers and sages of yore, our proper understanding of the true phenomenal and nominal existences have started opening up as new avenues in the understanding of not only the conservation of precious bio-energy's resources conforming mankind but also in our mundane and spiritual elevation.

However there is till a long way to go before this application of brahmacharya can be made use in our daily life to reach a perfect state of harmony and progress with our true self. The last statement serves as the ultimate goal of brahmacharya.

Part II: Energy Expenditure during Sarvangasana – a Yogic Inverted Posture

Background: As yoga gets popular, precise measurement of metabolic changes in different yoga postures is being taken up by researchers. Energy expenditure during different types of āsanās is available in literature. Studies on energy expenditure during the practice of inverted postures are sparse.

Aim: The aim of this study was to examine the metabolic changes during Sarvāṅgāsana (SVG) (half shoulder stand) as compared to supine rest (SR).

Methods: The Subjects were 51 healthy (25 males and 26 females) volunteers between 18-35 years of age with more than three months experience in the practice of these āsanās. Breath by breath recording of oxygen consumption (VO₂), carbon dioxide elimination (VCO₂), energy expenditure (EE), minute ventilation (VE), respiratory exchange ratio (RER), respiratory rate (RR) and heart rate (HR) were carried out using computerized Oxycon Pro system for the entire period of 18 minutes. The sessions were divided into 4 phases (i) Pre (5 min), (ii) During (3min), (iii) Recovery (5min) and (iv) Post Recovery (5 min). The two sessions (SVG, SR) were one day apart. SVG is an inverted supine posture in which the trunk is maintained at an angle of 90 degrees to the ground by supporting the buttocks with both hands. During the control session (SR) the subject lies down in a supine position throughout the practice.

Results: During the practice of SVG, the group mean values of VO₂ and EE significantly increased (146%, 148.16% respectively) compared to pre values and this change was greater in females compared to male (129.36%, 131.31% - males; 168.89, 171.12% -females). And there was significant reduction in the group mean values of VO₂ and EE after the practice of SVG (11.63%, 12.14% respectively). This change was lesser in females when compared to males (13.78%, 14.55% - males; 8.66%, 8.84% - females). The group mean values of RR and HR significantly increased during the practice of SVG (7 c/min., 25 b/min) and showed significant reduction as a group following SVG (3 c/min., 4 b/min), also significant reduction in RR and HR was noted in both genders after the practice of SVG (males -4 c/min., 6 b/min.; females-2.53 c/min., 2.32 b/min.). In the SR session the group mean values of VO₂ and EE significantly reduced continuously in all phases (VO₂: ph2 -4.6%, ph3 – 9.45%, ph4 – 8.02%; EE: ph2 – 5.18%, ph3- 10.14%, ph4-8.7%).

SUMMARY & CONCLUSIONS

During the practice of SVG the VO₂ and EE increased by 145.97%, 148.16% followed by 11.63%, 12.14% reduction in post phase respectively. The control session of supine rest showed continuous reduction. RR & HR increased significantly during SVG & not in SR. Changes were more prominent in males than females. It can be concluded that Sarvāṅgāsana practiced with relaxation, can be used as mild or moderate exercise. In this study we measured metabolic and respiratory changes during and after the practise of Sarvāṅgāsana , the group mean values of VO₂ and EE significantly increased (146%, 148.16% respectively) compared to pre values and this change was greater in females compared to males (129.36%, 131.31% - males; 168.89, 171.12% -females). And there was significant reduction in VO₂ and EE after the practice of SVG (11.63%, 12.14% respectively). This change was lesser in females when compared to males (13.78%, 14.55% - males; 8.66%, 8.84% - females). The group mean values of RR and HR significantly increased during the practice of SVG (7 c/min., 25 b/min) and showed significant reduction as a group following SVG (3 c/min., 4 b/min), also significant reduction in RR and HR was noted in both genders after the practice of SVG (males -4 c/min., 6 b/min.; females-2.53 c/min., 2.32 b/min.). In the SR session the group mean values of VO₂ and EE significantly reduced continuously in all phases (VO₂: ph2 -4.6%, ph3 – 9.45%, ph4 – 8.02%; EE: ph2 – 5.18%, ph3- 10.14%, ph4-8.7%).

Conclusions: During the practice of SVG the VO₂ and EE increased by 145.97%, 148.16% followed by 11.63%, 12.14% reduction in post phase respectively. The control session of supine rest showed continuous reduction. RR & HR increased significantly during SVG & not in SR. Changes were more prominent in males than females. It can be concluded that yogāsana though practiced with relaxation increases Energy Expenditure (EE) and hence this yogic posture can be used as an aerobic exercise.

. The conclusions are:

- During the Sarvāṅgāsanasession oxygen consumption increased by 146%
- During the Sarvāṅgāsanasession energy expenditure increased by 148%.
- During the Sarvāṅgāsanasession heart rate increased by 25 beats/min.
- During the Sarvāṅgāsanasession carbon dioxide output increased by 137.7%.
- During the Sarvāṅgāsana session respiratory rate increased by 7.3

cycles/min/

- In post recovery phase oxygen consumption decreased by 11.63%.
- In post recovery phase energy expenditure decreased by 12.14%.
- In post recovery phase there was a continuous reduction in heart rate and respiratory exchange ratio.
- Respiratory rate and heart rate increased significantly during Sarvāṅgāsana and not in supine rest.
- There were no significant changes between females and males

These findings suggest that Sarvāṅgāsana is a moderate degree exercise and leads to deeper relaxation after its practice.

Key Words: inverted yoga posture, oxygen consumption, heart rate, energy expenditure.