

BREATHING AND RELAXATION EXERCISES AS REGENERATION TECHNIQUES IN PERSONS WITH OVERWEIGHT AFTER COVID-19

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Abstract

Yoga techniques are applied successfully as a part of the "exercise wellness". It may be a useful form of adequate movement regime for persons with overweight or obesity who underwent Covid-19. Traditional yoga is a holistic concept of a healthy life without addictions. Yoga practicing produces changes on a physical level that bring changes in the psyche or in interpersonal relations. The aim of the presented study is focused on content and descriptive analysis of the yoga breathing and relaxation exercises as potential regeneration techniques in overweight persons after Covid-19. The holistic principle was respected in the study methodology and composition, i.e. that the properties of the parts are given by the organizational relations of the whole. Methods of content and descriptive analysis were used as the base. Special yoga breath exercises (pranayama) support metabolism and help to use breath capacity completely. The breath exercises have revitalization effects and calm psychic states. Respiratory mechanisms, largely dependent on mental balance. Holistic yoga concept, with its large scope of methods, can be practiced by anyone. These effects may be successfully used for preventive, therapeutic and supportive practice in people with overweight and obesity after the Covid-19.

Keywords

Breathing; overweight, people after Covid-19; regeneration; relaxation; wellness and yoga.

1 INTRODUCTION

For persons with overweight and especially for obese people who underwent Covid-19, it is very important to keep adequate movement regime. In human movement is a big latent power of healing process and would be a big pity not to use it. Thus focused is the area of "exercise wellness", which promotes the need to keep individuals in shape through movement and exercise elements that increase their adaptive capacity and at the same time correspond to the principles of posture and movement determined by human phylogeny (Hošek, Krejčí, Kajzar, Jandová, Hill, 2020). Another area represents medical wellness in balneology and dietetics. Furthermore, the "environmental wellness", also referred as the "nature wellness" (Jandová, 2016), is very important, what is an area determined by the positive effects of the environment in the bio-psycho-climatological sense. Due to the

denaturing trends of civilization, it is necessary to address the issues of the "environmental wellness", because a stay in nature is desirable to integrate more intensively into the lifestyle of everybody, who underwent Covid-19.

In the area of "exercise wellness", it is possible to enjoy movements full of harmony, adventure and delight. The question is not about to depose performance or not. The performance can be too, but performance with element of spontaneity and joy. Adequate movement regime includes availability, adjustability, spontaneity and possibility to be applied any time according personal specifics and characteristics. It is valid for children, adults or seniors as well. It is very interesting, that adequate movement can be even seeming non movement, for example in the form of relaxation, flow, balance. Therefore just yoga techniques can be used very successfully as a part of the "exercise wellness" and a form of

adequate movement regime. In adequate movement regime one feels saturation, wishes to return again and again and just this moment is crucial for persons with overweight and especially with obesity after Covid-19. Especially the yoga exercises without contraindications, so called "Sarvahitta Asanas" to develop breathing, balance, flexibility and strength capacity, from the system "Yoga in Daily Life" (Maheshwarananda, 2000) are very recommended (Bednár, Kňazovická, Melichová, 2020; Krejčí, Psotta, Hill, Kajzar, Jandová, Hošek, 2020; Krejčí, Kornatovská, 2017).

Sharma and Sharma (2008) declared a comprehensive understanding of yoga and the numerous benefits, the practice has to offer. They define that holistic yoga intervention program offers a gentle relaxing form of yoga that doesn't require the participants to be overly flexible. This style generates a rejuvenating effect that leaves practitioner feeling invigorated and in a deeply relaxed state. The aim is to applicate yoga in a traditional form. This understanding helps to facilitate a deeper and more comprehensive insight into "yoga". Inducing harmony and balance within the body, but also externally, ensures the survival of the individual in a constantly changing environment. The central nervous system and cardiovascular system play a priority role in maintaining balance. The theory of homeostasis can be considered synonymous with yoga. Classical yoga includes a number of techniques and various aspects of a healthy lifestyle that correspond to the latest knowledge about oxidative stress and acid-base balance. The word "yoga" comes from the Sanskrit root of the word "yuj", which means "unite", "harmonize". Yoga techniques make it possible to penetrate deeper and deeper into the structures of personality, theoretically to the experience of a complete "wellness" state, which is no longer essential, in yoga called "purnam", i.e. into a state of "stability", true wisdom.

Traditional yoga is a holistic concept of a healthy life without addictions. It includes the connection of moral and ethical aspects of human life, physical exercises, breathing techniques, the ability to relax, concentrate and meditate, resulting in self-analysis and insight into the principles of humanity and freedom. Holistic yoga provides clear instruction in a step by step approach following all the practitioners to integrate the techniques of yoga investing it in their souls to transform their life into a positive, more fulfilling and happier experience. People would like to try yoga if it is presented in a way that is rational, scientific and most importantly in a style that can relate to which embraces our life style in the 21st century.

Yoga practicing produces changes on a physical level that bring changes in the psyche or in interpersonal relations, e.g., relief of unnecessary physical tension and social adaptation, and also changes in Self-Concept, Self-Esteem and Self-Control. Negative thoughts and worries are the main cause of the unstableness of the neural system. Clear mind, mental well-being, positive thinking and inner satisfaction that overcome negative attributes and thoughts, all this is the objective of practicing yoga. An important means is the special kind of technique of gradual self-searching meditation. Such self-search of one's self is connected to the sub-consciousness where the persons with overweight or obesity after Covid-19 hide and keep wishes, fears, complexes and stereotypes in their thoughts and behaviour. The success in these exercises lies in the fact that they physiologically influence body and mental functions. Provided one exercises consciously and coordinates breathing with relaxation, the harmony of body and mind is developed, health is strengthened and one has a better feeling of well-being and this leads to the successful performance. Holistic yoga concept, with its large scope of methods, can be practiced by anyone.

Yoga intends methods and techniques which effectively can compensate physical and psychological tensions as reason of the lack of movement and the modern life style load on nervous system. Negative consequences of physical and psychological stress and tensions are nervous lability, sleeplessness, body changes and overweight. Overweight and obesity people try to reduce tensions with help of nicotine, alcohol or other drugs but contra productively to the health. Yoga system integrates physical exercises, breath exercises, relaxation and Self-Inquiry meditation i.e. in fact a self-analyses.

The yoga exercises can be statically or dynamically provided and have harmonized benefits on whole nervous system, motoric system and glands. They can be very effective in prevention of disorders. When muscles are tense and contracted, circulation of blood, lymphatic circulation and energy efferent and afferent impulses cannot move freely and this has corresponding effect on the balance of mind, because mind and bio-energy are closely interrelated (Gupta, 2000). Similarly aerobic exercises involving rapid movements, release pockets of tension deposited in the body here and there and lead to better flow of blood and lymph and energy and better functioning of the mind.

Special yoga breath exercises (pranayama) support metabolism and help to use breath capacity completely. The breath exercises have revitalization effects and calm psychic states. Mind and breath have a very close interrelationship. When mind is disturbed, breath also becomes irregular, un-rhythmic, noisy, shallow and limited to upper chest only. When mind is calm, breath is slow, deep, rhythmic and abdominal involving movement of diaphragm. This relationship is possible to use in such way that by changing our breathing so as to match it with relaxed state of mind, we can calm our mind. The breathing technique "Nadi shodhan" (breathing in turns in left and

right nostrils) is special effective for the balance of mind and nervous system. "Bhastrika pranayama" (quick changes of inhaling and exhaling in each nostrils and both nostrils) has activated effect on metabolic processes and is very useful in overweight and obesity management (Maheshwarananda, 2000).

Breathing is a process that can be modified and controlled by the will. Thus, mere mechanical breathing exercises, without inner concentration, are not effective enough. The decisive factor is the attention and experience with which the breathing exercises are performed. Yoshida (2007) states that only few people breathe properly. Re-education of breathing patterns is necessary for practically every person. The condition is full, slow and rhythmic breathing through the nose with a relaxed diaphragm. The author also points out that little attention is paid to the culture of breathing. Few people breathe fully and deeply, slowly and rhythmically, as it should correspond to the structure of the human body and the demands of a healthy lifestyle. Respiratory mechanisms, largely dependent on mental balance. This is the cause of rapid, superficial or irregular breathing.

Breathing is truly unique in its effect on the body. This is pointed out by the psychology of respiration and at the same time draws attention to the inseparability of human physiology and human behaviour, where respiration plays a key role in maintaining homeostasis and in self-regulation.

According to yoga, the breathing cycle consists of four breathing sequences:

1. Breath in (puraka),
2. Breath holding after inhalation (antar kumbhak),
3. Breath out (rechaka),
4. Breath holding after exhalation (bahir kumbhak).

Their mutual ratio, number of repetitions, rhythm, lengths of retention, etc. lead to

activating or inhibiting effects. By breathing through the nose, breathing sequences can be gradually lengthened and slowed down.

Breathing exercises in yoga may be performed lying down or in combination with a movement components (for example in kneeling exercise, so-called "cat"), in sitting, with upright and relaxed body position. Breath regulation deepens the effect of physical exercises and enhance health benefits in the cardiovascular system, in the development of vital capacity of the lungs and respiratory rate at rest and during exercise, and have a balancing effect on the autonomic nervous system in children with mental, auditory or visual disabilities (Kornatovská, Rehor, 2021).

Most of the stressful situations of an overweight person after Covid-19 are not associated with physical performance, but with mental strain. This tension, exhaustion can lead to weakened immunity, which is very risky. Many such people relax only passively - exhausted, for example, sit in front of the TV. At the same time, it relaxes only seemingly - rather it diverts attention from tension. With the help of yoga techniques, we can achieve perfect relaxation without any side effects. Relaxation exercises consist of a well-thought-out combination of physical, breathing and relaxation exercises. Relaxation does not mean being passive, but purposefully acting on one's own consciousness. It deepens self-awareness, gains experience in controlling one's own thoughts and emotions, it is a deep mental relaxation and regeneration of mental powers, improving the moral realm (Maheshwarananda, 2000).

Relaxation represents a perfect inner calming, when we no longer have to concentrate. A state appears that can be described as an extension of human consciousness. There is a feeling of harmony, unification, a feeling of freedom and unity of all being. A state of meditation can then appear, which opens up space

for one to intuitive knowledge and many hitherto hidden problems. It may be meditation that frees them from these difficulties, as it will make it possible to know the truth and accept it. Meditation thus represents a perfect mental purification, accompanied by feelings of relief and calm. It is a spontaneous process that cannot be forced (similar to sleep), but can occur gradually.

2 AIM

The aim of the presented study is focused on content and descriptive analysis of breathing and relaxation exercises as potential regeneration techniques in overweight persons after Covid-19.

3 METHODS

The study is based on the three-stage research process:

- Observation, description of established terms used, sometimes currently created and defined, followed by documentary description.
- Grouping observations into categories with determined attributes and summarized into a theoretical concept explaining how a certain set of attributes in a subsystem leads to certain resulting phenomena.
- The final resultant to the prediction of phenomena that may occur in different situations.

In the interest of the correctness of the conclusions of the author's team's scientific work, the holistic principle is respected in all chapters when examining the whole and its composition, i.e. that the properties of the parts are given by the organizational relations of the whole. Furthermore, hysteresis is taken into account, i.e. taking into account the facts that the phenomenon of wellness is influenced by the environment and its history. Methods of content and descriptive analysis were used as the base.

4 RESULTS, DISCUSSION

4.1 Positive influence of the controlled breathing and relaxation on psychosomatic state

Russo, Santarelli, & O'Rourke (2017) review the physiological methods for measuring the effect of sympathetic nervous system activity on the cardio respiratory system and explores the influence of factors such as slow, controlled breathing and other relaxation techniques that affect autonomic cardio respiratory modulation in healthy people. The quality of deep, slow, and smooth breathing promotes muscle relaxation during restorative poses (for example shavasana). The diaphragm and intercostal muscles (interior and exterior) are the principle respiratory muscles utilized to expand the chest during this breathing pattern. The diaphragm, however, is the principle muscle utilized to establish the pattern of the breath. An erect spine and open chest position, therefore, will improve breathing. The importance of breathing pattern on one of the basic functions of the cardio respiratory system to provide continuous gas exchange

between inspired air and the blood in the pulmonary circulation is obvious.

Kulmatycki and Burzynski (2007) tested positive influence of the classic yoga technique of deep relaxation called "yoga-nidra" (yogic sleep) and the Benson's meditative relaxation on anxiety level, anger and depression emotions. The essence of deep relaxing relies on ability to remaining with yourself with calm and passive observation. The purpose of the research was to answer the question in result of relaxation training in reducing negative emotions (anxiety, anger and depression) in the two groups run by different two techniques, Benson's "meditative relaxation" and "yoga-nidra". As the control group was "passive relaxation". In the final result of all relaxation sessions, yoga-nidra technique was the most effective in reducing anxiety level and in smallest degree of anger and depression. Yoga-nidra relaxation is the most complex relaxation technique and one of technique of fifth degree of classic exercise of yoga related with ability to switching off sensory perception (Figure 1).

Physiology Changes during Stress and Relaxation		
Stress	Changes	Relaxation
↑	Muscle tension Breath acceleration Pulse acceleration Blood pressure Material Exchange Some Hormones Electrostatic induction EEG	↓

Figure 1 Positive physiology changes during relaxation (Nešpor, 2013)

Guszkowska (2007) presented an interested research study which aim was to establish the influence of single session of exercise (so-called acute effect) on anxiety and mood level and its differentiation according to the type of exercise (yoga, step, TBC). Three groups of women aged from 30 to 45 (n=25 in each group) were investigated. Profile of Mood States (POMS) and State-Trait Anxiety Inventory

(STAI) and personality questionnaire NEO-FFI were used. A considerable improvement of wellbeing was noted in all groups. The positive changes were most pronounced in subjects practicing yoga: all negative mood states and anxiety level decreased. The emotional benefits were the least in step group, significant decreases of confusion and tension level were observed.

Matić, Platiša, Kalauzi, Bojić (2020) explored the physiological background of the non-linear operating mode of cardiorespiratory oscillators as the fundamental question of cardiorespiratory homeodynamics and as a prerequisite for the understanding of neuro-cardiovascular diseases. They found out that specific and comprehensive cardiorespiratory regulation in standing with 0.1 Hz breathing suggests this state as the potentially most beneficial manoeuvre for cardiorespiratory conditioning.

4.2 Importance of self-control and self-esteem development in overweight management

The base of all positive and purposeful aims is self-esteem. Only that one, who respects "Self" is content and capable to

do something for health. And not only for the personal health, but also for the health of others wherewith health care gets a wide ecological and really social context. According to the current WHO definition of the health are presented three areas of the human health, which are interconnected, i.e. an area of physical health, mental health and social health. According to the yoga conception of the human health there is an „spiritual health" area (see Figure 2), in which individuals attains to real knowledge of the "Self". To be „spiritually well" it means to be free of preconceptions and complex (races, religion etc.), to be free of bad habits, fear and disturbing moments.

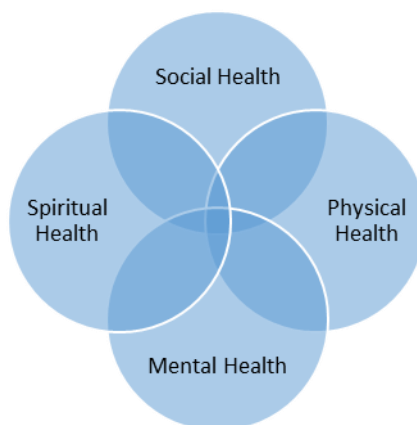


Figure 2 Areas of the human health according holistic yoga concept

In the research motivation strategies in the area of regeneration of people after Covid-19, self-control and self-esteem development through an interventional yoga program in different age groups of adult population would be analysed. Especially in senior age can be the obesity or overweight a serious chronic disorder, which can be reason of the disability like type 2 diabetes, coronary heart disease, hypertension, disorders or psychic diseases (Hill, Třískala, Honců, Krejčí, Kajzar, Bičková, et al. 2020).

Nagendra (2020) declares, that yoga

is welcomed world over for its health promoting and wellness creating aspects. Research over three decades both at this university and elsewhere has shown the efficacy of yoga practices including meditation in establishing homeostasis in non-communicable diseases by reducing stress levels and promoting healthy life style. Interconnectedness of the mind and body and correcting the imbalances have been intensively investigated to provide a holistic framework for the health of individuals. Thus, the outcome of this infection could be either a welcome result

of an effective immune response that combats Covid-19 as observed in recovering patients with mild symptoms or a state of immune suppression that debilitates the system leading to progression to severe damage. Extensive work, both at this university and elsewhere, has shown that systematic special tailor-made asana practices, dedicated pranayamas, meditation, and mantras could provide a broad-spectrum immune build up in the body so that viral infection could be averted and/or its virulence reduced. We published the efficacy of integrated yoga (IY) that included asanas, relaxation techniques, breathing practices, and meditation in achieving earlier ($P < 0.05$) sputum negativity in the yoga group as compared to control group as an add-on to antituberculosis treatment in sputum-positive cases of pulmonary tuberculosis in a sanatorium in Bangalore (Visweswaraiah, Telles, 2004). One month of IY in patients suffering from HIV-1 infection has reported a significant reduction in their viral load with an increase in the number of CD4 immune cells and improvement in their psychological states (Naoroibam, Metri, Bhargav, Nagaratna, Nagendra (2016). A study on healthy individuals doing transcendental meditation showed higher ($p < 0.01$) blood levels of B-lymphocyte series as well as natural killer (NK) cells, as compared to non-meditators Xiang, Yang, Li, Zhang, Zhang, Cheung, et al. (2020). Kamei, Toriumi, Kimura, H., Kimura, K. (2001) reported a significant correlation between alpha brain wave activation in the frontal lobe as seen in electroencephalogram (indicating restful awareness) and an increase in NK activity during yoga practices pointing to the relationship between a calm mind and better cellular immunity.

Krejčí, Bendikova, Hill, Kajzar, Jandova, Hošek (2020) declared the changes in self-confidence in elderly women after a yoga intervention. Women reported a significant progress of self-efficacy and self-esteem. Especially lower

body fat with increased muscle mass after the yoga intervention promoted the self-esteem of monitored females. Our earlier study (Krejčí, 2005) conducted to evaluate the effect of yoga techniques on self-esteem and self-efficacy efficiency had resulted in an improvement in an increasing of body mass and a reduction in thickness after yogic practices, when 400 volunteers (175 males' and 225 females) were selected in the three age groups (adolescents, middle age adults, seniors) and started the procedure of project to evaluate the impact of yoga techniques on overweight control and positive effect on fat reducing. Yoga intervention program was taught for 4 months. Significant reduction of overweight was observed in ES at the end of program in all age groups. A significant differences were found in reduce of under skin fat. The decomposition of inner fat through ultrasonic detection of abdomen organs was seen in the ES at the end of program too. The significant results indicate that yoga techniques in form of daily training is helpful in clients with overweight, esp. with obesity syndrome disorders such as coronary artery disease, diabetes mellitus and dyslipidemia etc.

Gordon, Fraser (2008) state that yoga has been shown as a simple and economical therapeutic modality that may be considered as a beneficial adjuvant for type 2 diabetes mellitus. This study investigated the impact of Hatha yoga and conventional physical training (PT) exercise regimens on biochemical, oxidative stress indicators and oxidant status in patients with type 2 diabetes. Methods: This prospective randomized study consisted of 77 type 2 diabetic patients in the Hatha yoga exercise group that were matched with a similar number of type 2 diabetic patients in the conventional PT exercise and control groups. Biochemical parameters such as fasting blood glucose (FBG), serum total cholesterol (TC), triglycerides, low-density lipoprotein (LDL), very low-density lipoproteins (VLDL) and

high-density lipoprotein (HDL) were determined at baseline and at two consecutive three monthly intervals. The oxidative stress indicators (malondialdehyde - MDA, protein oxidation - POX, phospholipase A2 - PLA2 activity) and oxidative status [superoxide dismutase (SOD) and catalase activities] were measured. Results: The concentrations of FBG in the Hatha yoga and conventional PT exercise groups after six months decreased by 29.48% and 27.43% respectively ($P < 0.0001$) and there was a significant reduction in serum TC in both groups ($P < 0.0001$). The concentrations of VLDL in the managed groups after six months differed significantly from baseline values ($P = 0.036$). Lipid peroxidation as indicated by MDA significantly decreased by 19.9% and 18.1% in the Hatha yoga and conventional PT exercise groups respectively ($P < 0.0001$); whilst the activity of SOD significantly increased by 24.08% and 20.18% respectively ($P = 0.031$). There was no significant difference in the baseline and 6 months activities of PLA2 and catalase after six months although the latter increased by 13.68% and 13.19% in the Hatha yoga and conventional PT exercise groups respectively ($P = 0.144$). Conclusion: The study demonstrate the efficacy of Hatha yoga exercise on fasting blood glucose, lipid profile, oxidative stress markers and antioxidant status in patients with type 2 diabetes and suggest that Hatha yoga exercise and conventional PT exercise may have therapeutic preventative and protective effects on diabetes mellitus by decreasing oxidative stress and improving antioxidant status.

Basic yoga techniques, which can be used in overweight and obesity management (usually as a special part of training, it means psycho-training) are:

- Asanas (yoga positions and

exercises) There are basic conditions of quality movement: Muscle balance and right movement stereotypes.

- Pranayama (breathing exercises). Main is mastering in the full yoga breath and after that full breath control. Effects of breathing exercises are improvement of muscle relaxation, muscle tiredness removing, and hypoxia adaptability of tissues, venous recovery improvement, establishment of correct breath rhythm, stress and tension management, and massage of abdomen organs.
- Effects of relaxation, harmonization of body and mind, decreasing of tension and stress, improvement of Self-confidence, development of concentration.
- Relaxation or short post-isometric or special relaxation yoga technique (yoga nidra)
- Hatha yoga - techniques of purification, promoting metabolic functions.
- Bandhas and mudras – activating of blood and lymphatic circulation.
- Concentration
- Meditation

We can recommend a very special yoga method, which is calling Shat Sampati (Six jewels). This method may be perfect as every day mental hygiene instrument for the people, which are just in overweight or obesity management process. We applied it by overweight and obese people and found out that is very useful and effective in this problematic.

Shortly we describe this yoga method according Maheshwarananda (2000):

1. *Inner silence and inner peace (shama)*
We reach it through relaxation mastering. For every day it was recommended to provide a relaxation for several minutes. A helpful

technique is “mauna” – silence. Both techniques have refresh effect on human senses and reactions and give a lot of energy.

2. *Senses and emotions control (dama)*

This part stimulates control of the senses and the mind. Negative actions and thoughts would be restrained. Negative thoughts not only disturb one’s mind they also create stress or alarm response in the body because of which certain biological changes occur in the body system due to arousal of the sympathetic nervous system, if this happens frequently or constantly due to one’s habit of indulging in negative thoughts, continues imbalance is created in autonomous nervous system which leads to metabolic diseases. Senses and emotions control (dama) follows the previous technique. Calm senses can help by introspection and Self- Analyze. It leads to self-control and anticipation.

3. *Self – Confidence, faith (shraddha)*

Many obese people loosed the Self-Confidence, Self-Esteem and faith. It is possible to analyze situation, to change it, to learn from it, to change behavior and habits. To be sure with self. It gives possibilities to feel safeness and love.

4. *Discipline, (titiksha)*

This part leads to endure through and overcome all difficulties. Everything needs a time. With the time we can change our life style, manage the weight etc. Hence use all trials and tests of life as opportunities to learn something instead of cursing and blaming self or others and never lose balance of mind in whatever miserable situations you are. Observe all problems like a spectator and solve them with detached and unbiased mind.

5. *Independence, freedom (uparati)*

This part leads to stand above things, to be independent. To cut the

dependency on some kind of food, conflicts etc. It means also to enjoy every day of the life. By having positive thinking it is possible to attract physical conditions and circumstances towards according to the thoughts.

6. *Purpose, aim (samadhana)*

This part leads to have determination and purpose. Whatever may come, our aspiration should be directed solely to our goal. Very important is to be concentrated on goal and be patience and calm. It should be ensured at various intervals that thinking is planned and systematic, and not haphazard and random. Unplanned random thinking and day dreaming are a sign of weak mind and indicate that instead of controlling the mind, one is being controlled by it.

Diet and environmental conditions play also great role in overweight management. By eating fresh food and enough water drinking, blood and lymphatic circulation normalized and mind remains quiet, positive and under control. Examples of such foods are fruits, vegetables, milk, honey, lemon, yoghurt, dry fruits (nuts), whole cereals, etc.

Effects of relaxation are defined as the physical and mental relaxation, harmonization of body and mind, decreasing of tension and stress, improvement of self-confidence, development of concentration. Bhavanani, Madanmohan, Udupa (2003) reported that yoga training improves human performance including central neural processing. Earlier studies from authors have shown that yoga training produces a significant decrease in visual reaction time (VRT) and auditory reaction time (ART). The present work was planned to determine if bhastrika (a yogic technique in which breath is actively blasted out in 'whooshes' following a deep inspiration) has any effect on central neural processing by studying its effect on RT. Bhastrika

produced a significant ($p < 0.01$) decrease in VRT as well as ART. A decrease in RT indicates an improved sensory-motor performance and enhanced processing ability of central nervous system.

5 CONCLUSIONS

Changes in breathing pattern, however, can have significant consequences for persons with overweight or obesity after Covid-19. It could thus be concluded that regular practice of slow breathing exercise for a minimum of three months improves autonomic functions. The practice of fast breathing exercise for the same duration does not affect the autonomic functions.

For the adequate training program we recommend simple yoga exercises without any contraindications – “Sarvahitaasanas” from the “Yoga in Daily Life – The System”, breath exercising and relaxation techniques. Specificity of yoga is the active correction of movement stereotypes, positive influence on muscle and mental tensions and synchronizing of breath and movement, which results in harmony state of mind. These effects may be successfully used for preventive, therapeutic and supportive practice in people with overweight and obesity after the Covid-19.

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