

## BREATHING AND RELAXATION EXERCISES AS PART OF A WELLNESS ROUTINE FOR MEN IN EXECUTIVE POSITIONS

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### Abstract

**Introduction:** *The health state of male executives who are exposed to high levels of stress has yet to be thoroughly studied. Breathing and relaxation exercises could serve as an appropriate wellness routine to help them manage stressful conditions in the workplace as well as to prevent health problems related to an unhealthy lifestyle.*

**Aim:** *Our study comprises several phases and the objectives of each phase were chosen accordingly. In the first phase of our pilot study, we aimed to determine how effective a six-week exercise intervention program would be in promoting the mental and physical health of a selected group of men in executive positions. In the subsequent stages, we investigated how the programme served to educate these men and whether the participants continued an exercise routine over the next two years.*

**Methodology:** *Our research was based on a case-by-case evaluation of 10 men aged 35-55 years who work in executive top management positions. The men were asked to take part in several research surveys (8 in total) in a period of two years. After an initial assessment which included: an anamnestic examination and medical history, an assessment of posture and anthropometric indicators, questionnaires, the men's so-called weak points were defined. On the basis of these weaknesses, a simple routine consisting of breathing and relaxation exercises was developed. The participants were instructed to perform this routine once a day for 15 minutes. The assessment methods included: czech questionnaire about manifestation of burnout syndrome "Inventář Projevů Syndromu Vyhoření" (IPSV), the Q8+1 self-esteem questionnaire ("Self-awareness"), an aspectual examination of body posture and anthropometric measurements (chest elasticity, wais/hip ratio index), the visual examination and anthropometric indicators measurements (chest elasticity, waist-hip ratio).*

*These assessment were repeated several time the baseline assessment, during therapeutic programme; after the intervention; eight weeks after the intervention; and the followed up assessment two years after initiation of the study.*

**Results:** *This pilot study indicate that after of the therapeutic program, there was an improvement in all assessed outcomes. Our research revealed that it is possible to attain improvements in psychological wellbeing as well as in some anthropometric parameters (chest elasticity) through targeted exercise intervention. However, almost all outcomes that showed improvement after completion of the program reverted to their original values after two years. None of the men involved in the study persisted with regular exercise, even though all of them acknowledged the positive impact the program had on their well-being.*

### Keywords

*breathing, exercise, health of men in executive positions, stress, wellness*

### INTRODUCTION

The aim of our study was to investigate the phenomenon of men exposed to high

psychological stress load in the work area. The topic our study concerns a specific group of men focused on high performance, work efficiency and high level of knowledge.

These are professionals in the field of top management. Men who give peak performance in this can be compared to top athletes, only the performance they give is in a different setting. So the question is whether they have a team around them that cares about their fitness, as is the case with top athletes. These managers are decision makers in the management of businesses, institutions, individual companies, and in the management of government policy at the local or top level. They are the people who have the power to influence events that affect the whole of society. They are the personalities who manage the educational, legal, economic and social spheres and thus influence the present and future generations. In their publication, Veber et al. estimate the proportion of managers in the traditional industrial sector in Germany to be about 5 %, i.e. about 1.5 million people, while in modern sectors the number can reach up to 25 % (Veber, 2017). We do not have information about the proportion of managers in the Czech Republic, in general we can say that there is still a limited amount of research, information and resources about the health of male top management.

Top managers are men with both enormous potential to influence society but with some individual risk factors, especially in the area of health. Based on our experience and expert consultations with physicians, we have compiled a set of these weak (critical) points.

These health „weaknesses“ we defined as:

- Lack of adequate physical activity, hypokinesia in general.
- High levels of psychological stress and its insufficient compensation.
- Increased tension of postural muscles of the neck and upper torso, muscle imbalances as a functional disorder
- Defective posture resulting from a sedentary lifestyle.
- Psychosomatic difficulties.

- Psychological disorders related to high stress loads
- The incidence of civilisation diseases already in the population around the age of 40, especially the clinical incidence of: pre-diabetes melitus II, cardiovascular disorders, high blood pressure, high cholesterol, deficiency of vitamin D, overweight or even obesity and digestive problems.
- The worsening of an already treated condition (e.g. asthma) or the transition of acute health problems to chronicity.
- Overall lack of ability to relax physically and mentally on an individual level.

In the case of a top manager, this is mainly a mental burden, while in the normal working day of a manager there are many psychosocial stressors that affect both mental health and physical condition.

The stress response differs between the sexes: women have greater cortical and limbic activation (assessing a greater sense of threat, feeling more emotion), but at the same time women are better able to cope with existential stress by using better anti-stress strategies (findings supporting the biological role of women). In both sexes, exposure to stress results in reduced reproductive function and lower levels of sex hormones. The function of the reproductive system is also significantly negatively affected by psychosocial stress, with greater sensitivity to psychosocial stress prevailing in men's reproductive system, and feelings of frustration and inferiority are strong stressors for men (Bartůňková, 2010).

#### **Positive effect of breathing exercise**

In our study, we exploited the potential of breathing exercises in an attempt to influence at least some of the aforementioned „weaknesses“. Breathing movements stimulate the nervous system

and at the same time stabilize posture (Kolář, 2007). The correct way of breathing has a positive effect on the function of internal organs. Breathing movements (inhalation, exhalation) act as a massage, which improves the function of internal organs; with the help of conscious breathing it is possible to interfere with the autonomic nervous system, to influence the state of mind and thus affect the health of the whole organism. For these reasons, breathing exercises are used as a therapeutic method to treat postural disorders and to influence the mind (Véle, 2012). By relaxing and breathing properly, we can reduce physical tension in the chest, shoulders and neck, areas where tension accumulates due to stress. Mental relaxation is accompanied by physical relaxation, and the effects are thus manifested not only in a decrease in muscle tension but also in a decrease in breathing and heart rate, a decrease in blood pressure, changes in metabolism, and a decrease in the secretion of certain adrenal and thyroid hormones (Stackeová, 2014). Krejčí states that relaxation and concentration techniques reduce stress and mental tension, and help to develop self-esteem and satisfaction (Krejčí, 2011).

## STUDY AIM

This pilot study had several phases and the objectives of each phase were chosen accordingly. In the first phase, the aim of our pilot study was to determine how effective a six-week exercise intervention programme would be in promoting mental and physical health in a group of senior managers. In the next stages of the study, we investigated the impact of the intervention programme on education level (about psychological health) and whether the probands continued to exercise over the next two years.

Our main aim therefore was to evaluate whether the therapeutic programme

called „Vital Management“ will influence psychological wellbeing and changes in body posture. The secondary aims include evaluate if any changes after completing programme will persist, and if the participants will continue in breathing exercise routine.

## METHODOLOGY

Our sample consisted of a group of 10 men in top management positions aged 35-55 years. They have worked in various areas of senior management, including business, politics, the judiciary and education. Participating managers were of Czech or other European nationality, and the entry criterion for the study was the place of work in the Czech Republic, most often in Prague and its surroundings. Positions held included: CEO of a multinational business company (CEO, CFO, VP for the area), owner or CEO of a law company, senior politician, director of a state organisation, university teacher in a management position. The characteristic feature of the study participants was a person exposed to high stress in the work domain, a person with high executive potential and at the same time with weaknesses (risk factors) in the health domain.

A necessary condition for participation in the study was the participants' motivation for the project and their interest in their own health. Originally twelve persons were enrolled to this pilot study. Unfortunately two probands, did not complete the project due to health complications or personal reasons. They were therefore excluded from the study.

### Examination within the study

The pilot study (including follow up assessment) lasting for 2 years (from 04/2021 to 06/2023). During the study there were 8 individual meeting of participant with study assistant (first meeting was only explaining the study

purpose and study protocol). Participant were assessed before exercise program, after completing program (next week after completing) and with 2 follow-ups (8 weeks after program and 2 years after program completing).

### Individual medical and stress history

Both guided and unguided interviews were conducted at the beginning of the study. The researcher prepared a set of interview questions that included all types of research questions (closed, semi-closed, open-ended) to fully assess their health status and stress level.

### Questionnaire used

The Czech questionnaire about manifestation of burnout syndrome "Inventář Projevů Syndromu Vyhoření" (IPSV), questionnaire Inventory of Manifestations of Burnout Syndrome with 24 questions (Tošnerová & Tošner 2002. [online] based on Hennig and Keller 1996) The results of the questionnaire were converted into percentages.

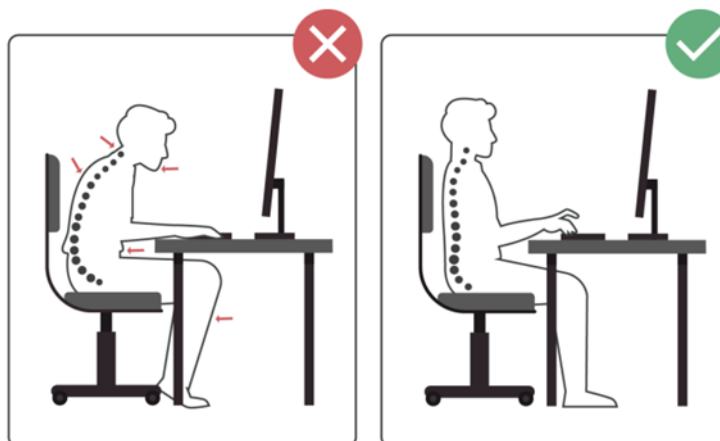
### Postural assessment

Furthermore, we used the aspection to evaluate the sitting posture and the musculoskeletal system in this working position of each individual subject.

To assess the current postural status, 4 critical postural points were identified (Figure 1), or points whose weakening or overuse results in muscular imbalance and incorrect posture:

- head forward displacement and associated hyperlordosis in the cervical spine, increased tension in the neck and neck muscles,
- increased thoracic kyphosis, loosening of the interscapular muscles,
- tight chest, pressure on abdominal organs, loose abdominal musculature, unconsolidated muscular centre of the body,
- poor positioning of the lower limbs and feet (feet not supported by the ground, knees or toes are rotated inwards or crossed).

Figure 1 - Postural assessment with critical points



### Anthropometric examination

Two anthropometric indices were selected for this study:

- Waist-Hip Ratio (WHR) index,  
Waist circumference was measured at the level of the umbilicus in the horizontal plane, and hip circumference was measured at the level of the greater

trochanters. According to WHO recommendations the normal values for men are considered 0,9 and less.

- chest elasticity  
The chest elasticity (flexibility in maximal respiratory movements) was measured during maximal effortful

inspiration and expiration. The chest circumference was measured at the level of the mesosternal point (4th intercostal space) and posteriorly under the inferior angles of the shoulder blades. Measurements were taken 3 times during maximal inspiration and immediately after maximal expiration. The difference between the circuits in inspiration and expiration determined the elasticity of the chest. We measured in centimeters with rounding to the nearest 0.5 cm (Haladová & Nechvátalová 2010).

### Intervention breathing programme

An intervention 6-week program called "Vital Management" was designed for the study, consisting of breathing and relaxation exercises. The intervention program was developed based on the experience of a physiotherapist who is also a certified Pilates instructor, as well as the knowledge of the stress response

consulted by a professor of endocrinology. The participants were instructed to perform the exercise once a day, for at least 15 minutes. Due to the time demands of the participants' work programme, only minimal time was chosen. Exercise compliance was considered to be 100 % with 6-7 units exercised per week. The program included instruction on correct posture and practice of individual breathing and relaxation exercises. Each participant could then perform the exercises on his/her own or use the video recording as a guide. The video recording created by the researcher (practitioner) was available on the YouTube platform. All videos are uploaded in Czech and English versions. The programme uses the Theraband exercise equipment. Before each stage of the program, each participant was individually shown the exercises. The exercises have been slightly modified as the stages have progressed. More details about program in Table 1.

Table 1 Vital Management program

	Phase I (Week 1 and 2)	Phase II (Week 3 and 4)	Phase III (Week 5 and 6)
<b>Introduction</b>	Calming, quieting, being here and now		
<b>Posture adjustment</b>	Adjustment of foot support, position of knees, buttocks, correction of posture, trunk, shoulders and head		
<b>Focusing on own body and breathing</b>	Awareness of your own breath, its rhythm and depth. Taking a deep breath into the abdominal area.	Awareness of your own breath, its rhythm and depth. Deep breathing into the abdomen and then into the chest, expanding the chest in all directions.	Awareness of your own breath, its rhythm and depth. Deep breathing into the abdomen and then into the chest, expanding the chest in all directions.
<b>Compensatory exercise</b>	<ul style="list-style-type: none"> <li>a) rolling the spine into a forward bend</li> <li>b) shoulder circling</li> <li>c) breathing into the lower ribs using a theraband</li> </ul>	<ul style="list-style-type: none"> <li>a) rolling the spine into a forward bend</li> <li>b) shoulder circles combined with chest movements, emphasis on stretching</li> <li>c) breathing into the lower ribs using a theraband</li> <li>d) straightening arms into a V</li> </ul>	<ul style="list-style-type: none"> <li>a) rolling the spine into a forward bend</li> <li>b) shoulder circles combined with chest movements, emphasis on stretching</li> <li>c) extended arm leads the chest into rotation using theraband</li> <li>d) straightening of the arms and subsequent sideways bending</li> </ul>
<b>Final part</b>	Final relaxation, calming the breath, relaxation of shoulders, arms, hands. Return to normal activities.		

## RESULTS

The demographic characteristic of participants is displayed in Table 2. All probands experienced a reduction in subjective perceived stress levels immediately after exercise program. From this questionnaire „Inventář projevů syndromu vyhoření“, the mean baseline

value of stress 33.3 %. The most highlighted areas were marked: emotional, physical and social. The values obtained from the questionnaire immediately the intervention showed a reduction in the overall stress level by an average of 6 %. They perceived reducing stress in physical area. More details are described in Table 3.

Table 2 – Demographic characteristic of participants

Participant	Age (years)	Weight (kg)	Height (cm)	Subjective perceive work load (%)	Subjective level of stress (%)	Physical activity (PA)	Experience with some breathing exercise
1	45	77	175	120	80	Runners for long distances	no
2	46	110	185	130	80	Low level of PA	no
3	55	89	187	100	100	Only on weekend-cycling	no
4	46	82	183	100	90	Only during summer time swimming	In childhood breathing exercise for astma
5	37	84,5	170	80	85	3 times weekly exercise in fitness centre	In childhood breathing exercise for astma
6	48	120	179	80	60	Low level of PA	no
7	45	98	198	90	70	Low level of PA	no
8	50	102	186	90	70	2-3 times weekly aerobic exercise	Few years ago during power yoga lessons
9	44	103	173	100	80	Low level of PA	no
10	44	105	183	150	90	Low level of PA	no

Table 3 – Assessed outcomes

Parameter	Baseline assessment	After program	8-weeks follow up	2-years follow up
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Perceived stress level (risk of burnout syndrome) (in %)	33,8 (14,3)	27,9 (15,5)	-	31,4 (18,6)
Corrected sitting posture (in %)	35 (30)	95 (15)	75 (23,5)	58,3 (28,8)
Wais-hip ratio	0,99 (0,07)	1,04 (0,16)	0,99 (0,07)	0,98 (0,08)
Thorax respiratory excursion (cm)	2,7 (1,5)	5,3 (2,7)	4,5 (2,1)	3,7 (1,9)

At the baseline assessment, we found poor sitting posture in all participants. After

the exercise intervention, all participants were able to improve their sitting posture.

Correct posture was achieved in 90 % of participants. Unfortunately, 2 years after the intervention, none of the probands (0 probands out of 10) were able to maintain 100% of the principles of correct sitting posture.

After completing a 6-week breathing exercise program, chest mobility improved in all participants. No major changes in the waist/hip ratio were observed. More details in Table 4.

The use of the video recording proved beneficial, with 80 % of participants using the video recording for regular exercise. The recording acted as both a guide to the exercise and according to 70 % of the probands the voice of the guide acted as a tool for relaxation and calming. The total exercise adherence during program was 92 %. However, none of the participants continued to exercise after the study. Although in personal interviews most of them reported that they occasionally remembered and performed some of the breathing exercises, none of them practiced the entire recommended exercise routine.

## DISCUSSION

In our study looking at the effect of breathing exercise, we evaluated several parameters:

a) Thorax respiratory movement excursions: Research shows that men engage the abdominal area more during maximal breathing (called diaphragmatic breathing). According to other authors, chest respiratory excursions tends to be 20 % greater in men than in women. (Debouche et al., 2016) In healthy individuals, chest respiratory movements are within the normal range of 4-7 cm (Debouche et al., 2016; Reddy et al., 2019). Respiratory amplitude below 2.5 cm is considered pathological and indicates reduced chest development in that area (Neumannová & Kolek, 2018).

This simple evaluated parameter of chest respiratory became a motivator for exercisers during our study. Participants immediately saw the manifestations of exercise and his efforts from the measurement results. This parameter showed visible result, and for the managers, whose work is for the most part focused on immediate results, was able to immediately evaluate his effort and the effects of the exercise. At the same time, the indicator very accurately reflected the proband's current state - if the proband was experiencing a busy work week or exercising less, the chest development measure made this very apparent. Interestingly, despite this fact and the almost immediate positive effect of breathing exercise on chest elasticity, none of the exercise probands persisted in practicing exercise routine two years after the first intervention.

b) The second anthropometric parameter that we evaluated was the WHR index - the central obesity index provides an easy way to determine the level of risk in relation to cardiovascular disease and metabolic complications of the body. The reference values of the WHR index according to the WHO are norm: 0.9 or less for men; 0.85 or less for women, risk: 1.0 or higher for both men and women, increasing the risk of heart disease and other problems associated with overweight, obesity. (WHO, 2008) The WHR value in our probands was in the risk level in 60 %, and in the norm in 40 %. The percentage distribution of WHR remained the same after two years.

c) Sitting posture and ability to maintain corrected upright posture. All participants were able to change in improve their sitting posture after completing the breathing program. Our pilot study has confirmed that, as Vele states, changing posture and relearning existing patterns is a complex

process that requires attention to correct breathing and regular exercise (Véle, 2012). We found that during consistent exercise and with focus on breathing and posture, positive results could be achieved in as little as 6 weeks; however, once our participants lost this focus and did not intentionally work on it, they reverted back to previous pathological patterns.

d) Psychological outcome

Despite the fact that all probands reported improvements in the psychological area, which was confirmed both by their own subjective assessment and was documented by the questionnaire survey (Czech version of risk of burnout syndrome questionnaire) - decrease in stress susceptibility by mean of 6 %), we have assumed that the element of correct breathing and calming was observed to be difficult to implement at least in the first third of the intervention. In particular, the calming element. The majority of probands described that they considered the program as the next task on their list, albeit meant as a task to "work on themselves, for themselves". A performance-oriented manager needs time and practice to achieve a state of relaxation. This finding is entirely consistent with authors who states that relaxation needs to be taught. (Stackeová, 2011). Relaxation has a close relationship with self-knowledge. Calming, quieting and adjusting oneself from a position of performance to a position of relaxation is an extended learning, practicing and training process for the "untrained" individual.

The absence of a control group and the lack of instrumental measurements can be considered a limitation of this pilot study. Due to the enormous workload of the participants (and thus their low willingness and ability to attend the examination anywhere. However, even all examinations

took place in their office to minimize time loss and the need to go anywhere) this would not have been possible. In addition, this pilot study took place during a period of pandemic restrictions.

## CONCLUSION

Our pilot study showed that with targeted breathing intervention, improvements were observed in some areas. Subjective perceived physical improvements were reported by participants almost immediately after exercise. To perceive some psychological relief the participants have to repeat the breathing exercise programme for several weeks. At the same time, the psychological relief was perceived by some participants for only a short period of time immediately after the exercise. However, regular exercise is needed to maintain the condition. It has also been confirmed that fixing the correct posture is a long-term process, requiring continuous focused work together with conscious breathing techniques.

Furthermore, we can assume that all the outcomes that were improved after the intervention programme returned to their baseline values after two years. None of the managers who participated were able to maintain regular practice of the entire routine, even though all felt the positive impact of the program on their body. However, most of the participants did practice some elements of breathing exercise occasionally.

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