

PRE-SENIUM AS PREPARING PERIOD FOR SENIUM - BENEFITS OF SPA STAY IN THE PRIESSNITZ'S SPA, LTD. IN JESENİK FOR CLIENTS 50+

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Abstract

The authors present a research study realised in the experimental sample of 51 seniors aged 50+ with a focus on quality of life promotion in pre-senium and senium life periods. The research study graduated in the summer of 2017 in Priessnitz spa, Ltd. in Jeseník during the 4-week stay of seniors. On board and before the dim, they completed a battery of clinical and laboratory examinations, identical regimens, identical identical procedures, and physical activity training for the home daily life. The authors present the first part of the results, namely the kinesiological examination with the diagnostic part of the Computer Kinesiology expert information system. After staying at the spa, the total of 50+ groups improved the sum of all kinetic tests in 39%. In the figures are presented values in the area of total dysfunction with an improvement of 31%. There are also presented the findings in the myofascial / myofascial chain 7 with an improvement of 38%. The 7th string best describes the functional disorders of postural and dysfunction of the horizontal and vertical motion system control. The publication of the result has been supported by the Czech Science Foundation – project GAČR ID 17-25710S “basic research of balance changes in seniors”

Keywords

Seniors, balance development, health, Computer Kinesiology.

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INTRODUCTION

Aging is generally referred to as a life-long inevitable biological process at the end of which is old age (Ondrušová, 2011). Other authors contemplate aging in two aspects: as a general process, i.e. the aging of the entire human population, and at the same time as an individual process, when an individual ages. As the only objective factor for the designation of "senior", it is accepted the calendar age of the individual (Zavazalová, 2001). Opposite to this scheme, Haškovcová (2010, 2012) states in her publications that the “senior” represents both - a sign for the elderly

person as well as the oldest member (family, father, distinction of father and son with the same names and surnames) as well as a “Nestor” of a community or of certain interest groups (working team, sports associations, clubs, etc.). In the English-written literature, the term senior or gerontion did not live too much, but the term "older people" is used. As well as "Elderly". For this age group, the European Commission proposed the term "more experienced" (Haškovcová, 2010). Senior age brings different physical, psychological, socio-economic, and social changes (Ondrušová, 2011). In relation to the posture assessment and evaluation

(body posture, body weight, stability and balance), extent of movements and reflective changes in soft tissues, we must take into account limiting factors in the elderly, i.e. polymorbidity. Except the diseases of the cardiorespiratory system and disorders of the sensory organs, it belongs here different eating disorders, thermoregulation disorders, degenerative processes of the spine and joints, muscular weakness and all the associated unfavorable hypomobility (Laughton, Slavin, Katdare, et al. 2003; Ondrušová, 2011).

Early senium is defined from the age range of 60 to 65 years, most authors work with the senium after reaching the age of 65 and more (Haškovcová 2010, 2012). For this age group, the term "more experienced" was proposed by the European Commission (Haškovcová, 2012). According to the Czech Statistical Office (CSÚ, 2016) on December 31, 2016, the amount of persons aged 65+ in the Czech Republic reached 18.3%, so it is important also in our country to motivate seniors already in the pre-senium age as well as in senium age. The evaluation of the effect of spa treatment on the consolidation of health and improvement of the physical condition of a group of persons of 50 years and over did not occur accidentally. The basis of the effects and health benefits of staying in the spa is the inimitable and irreplaceable influence of natural healing resources that favorably affects the human organism in terms of the optimization (until normalization) of physiological processes through adaptation to a series of physical, physico-chemical stimuli (Capko, 1998; Janský et al, 2006; Kolářová, J., Kolářová, I., 2009). The positive influence of natural resources has

its irreplaceable place in the primary prevention system (wellness lifestyle) and in the medical-wellness prevention, which deals with the prevention of disorders of relapses of functional disorders, the formation of organic diseases, reduces the development of polymorbidity and reduces the number of complications in chronic diseases (Kolářová, J., Kolářová, I., 2009).

The authors present the findings from the research in the summer 2017, when in Priessnitz's spa, Ltd. in Jeseník a group of 99 selected seniors in pre-senium and senium age were monitored for a 4-week before and after comprehensive spa treatment rehabilitation care. The selected seniors signed informed consent to be included in the research sample. Exclusion criteria led to a reduction of the sample to 70 probands (e.g. the exclusion criterion was the long-term use of corticoids for associated diseases such as severe asthma bronchiale, etc.).

A relative condition of inclusion in the monitored sample was a post-climacteric state in female seniors. From the group of 70 people was created a sample of 51 probands aged 50 and over, which showed an interest about understanding of their existing musculoskeletal condition and about education according individual possibilities to movement activities for daily life physical activity in sense to preserve the condition in pre-senium and in senium.

OBJECTIVES AND HYPOTHESES

The main goal of the research study was to demonstrate through the Computer Kinesiology method that after completing a 4-week intervention program in Priessnitz spa, Ltd. in Jeseník in the sample

of monitored seniors in pre-senium as well as in senium will be analysed a significant improvement in the overall condition of the locomotory system.

HYPOTHESES

On the base of the main objective two hypotheses were declared:

H1: After completing of the 4-week intervention program, in the monitored sample of seniors 50+ will be analysed the significant improvement of the sum of all kinetic tests.

H2: String 7 is the most telling of functional disorders of postural and dysfunction of both horizontal and vertical motion system management.

METHODS

Material

The sample consisted of 46 female and 5 male seniors. The average age of females was 55 years and the average age of males was 54 years, ranging from 50 to 77 years of age (some of them were already in senium). The probands came as patients to the spa for various indications. In the probands were analysed followed diagnoses: thyroid disease and post thyroid gland for autoimmune disease - 3 females, chronic obstructive pulmonary disease of moderate degree (COPD) - 3 females, almost homogeneous group of people had a diagnosis of anxiety-depressive disorder: 40 females and 5 males, e.g. 51 persons in total.

Procedure

Every senior absolved a medical checkup in on the day of receipt or at latest 24 hours after arrival. For all probands, the

basic somatic data were monitored: body height, body weight, BMI, Blood Pressure, Heart Frequences, stand on 2 scales, usual screening of internal examination, examination by spa physician, blood sampling (hematological and biochemical examination batteries including endoscopy for Endocrinological Institute in Prague).

All clients underwent kinesiological examination by diagnostic part of the Computer Kinesiology (CK) expert information system (Jandová, 2009; Jandová, Morávek, 2009). They all filled out the Knobloch questionnaire of self-judging scale, which is not the subject of this communication, and will be published later in correlation with the battery of investigational substances in the Endocrinological Institute in Prague. The check-up was performed on the last day of the spa stay. Laboratory examinations of steroids, serotonin, homocysteine and other substances will be the subject of a separate message after the treatment of the samples. The authors follow previous positive research in the sample of women after strumectomy (Jandová, Morávek, 2011). The kinetic examination of the Computer Kinesiology quantifies the dysfunctions of the locomotor system in the three-point scale, the output is numerical data (tables and graphs) according Jandová (2009), Jandová, Morávek (2009).

Methods

Diagnosics

Diagnosics consists of 46 tests, 23 tests per body: 5 active tests, 8 passive movements, 10 trigger points, etc. The Computer Kinesiology system uses a three-step scale for numerical evaluation of the size of findings in the motion apparatuses (PA) and allows the numerical values to be

written, graphical outputs and statistical evaluations (Jandová, 2009; Jandová, Morávek, 2009).

Intervention 4 weeks

All probands absolved the 4 weeks intervention in spa. The probands were subjected to the Step-by-Step Diagnosis in the first 24 hours of their stay and divided into groups for Nordic Walking in the uneven terrain of the spa park, where some routes have an upward elevation of up to 80 m (Morávek, 2008).

To all probands rational diet was prescribed. To all probands through decades-long verified intervention program of physical activity was indicated (Jandová, Morávek, 2011, Morávek, 2008). Clients received almost identical prescription of exercise procedures: Nordic Walking daily, 5x weekly group therapeutic physical education (sLTV) with elements of breathing gymnastics, fitness and indoor exercises in the field, 2x weekly hydrokinesiotherapy in a rehabilitation pool controlled by a physiotherapist, 6 times a week Priessnitz (7 patients were prescribed once a week with individual psychotherapy), 5 probands were administered analgesic diadynamic currents for coxarthrosis and gonarthrosis (Capko, 1998). No changes in long-term medication have been made throughout the stay. The baseline values of all examinations were baseline. Subsequent changes in the state of health and the values of the monitored examinations are assumed to be the result of a comprehensive spa treatment rehabilitation care. One sample of the probands was a clinical control group on its own, another solution would lack ethics and would be legally unacceptable.

Statistics

Statistical analysis was provided based on the SPSS program, using Wilcoxon test, Kruscal-Wallis test, Pearson correlation coefficient and Mann-Whitney U-test, using the three-step scale for numerical evaluation of the size of findings in the motion apparatuses (PA) and allows the numerical values to be written, graphical outputs and statistical evaluations (Jandová, 2009; Jandová, Morávek, 2009).

RESULTS AND DISCUSSION

Results of the diagnostic part of Computer Kinesiology

In the first part of the research project the authors present the evaluation of the summary results of the diagnostic part of the Computer Kinesiology (CK) of the expert information system. As it was mentioned above diagnostics consists of 46 tests, 23 tests per body: 5 active tests, 8 passive movements, 10 trigger points, etc. in the coherent monitoring system of Computer Kinesiology.

In this paper the authors present the summary results of the entire set of probands in the following pointers:

- Table 1 with resulting numerical data sums of all motion finds of the entire set of 51 probands on the input and output, ie the change in the total sum of the findings of the file, expressed in%.
- Graphical presentation of the sum of all motion findings in individual patients (Figure 1).
- Graphical presentation of the total dysfunction (CD) of the locomotor apparatus (PA) at the input and output of individual patients. The CD value takes into account the

biomechanical effects on posture (Figure 2). The CD value reveals leg arterial defects, valgosity or varosity of the lower limb joints and the like (Jandová, 2009; Jandová, Morávek, 2009).

- Graphical presentation of the sum of the findings on the right and left side of the movement (myofascial) chain 7 for the whole file (Figure 3). Chain 7 most suggests dysfunction of the spine and posture, it also contains information about all spinal segments and their reflex connections to the internal

organs (horizontal dysfunction), while at the same time it exhibits posture management dysfunction (vertical dysfunction, CNS functional disorders, equilibrium control), see Jandová (2009), Jandová, Morávek (2009).

- Graphical representation of the sum of the findings of motion tests of active movements, passive movements and changes in soft tissues (Figure 4).

Table 1 The sum of all movement findings in the sample of probands in Pre, Post examination in sum of all Computer Kinesiology tests scoring (N=51; 46 females, 5 males)

Pre - examination	score	2 288 points
Post - examination	score	1 399 points
		▪ Improving 889 points, e.g. 39 %

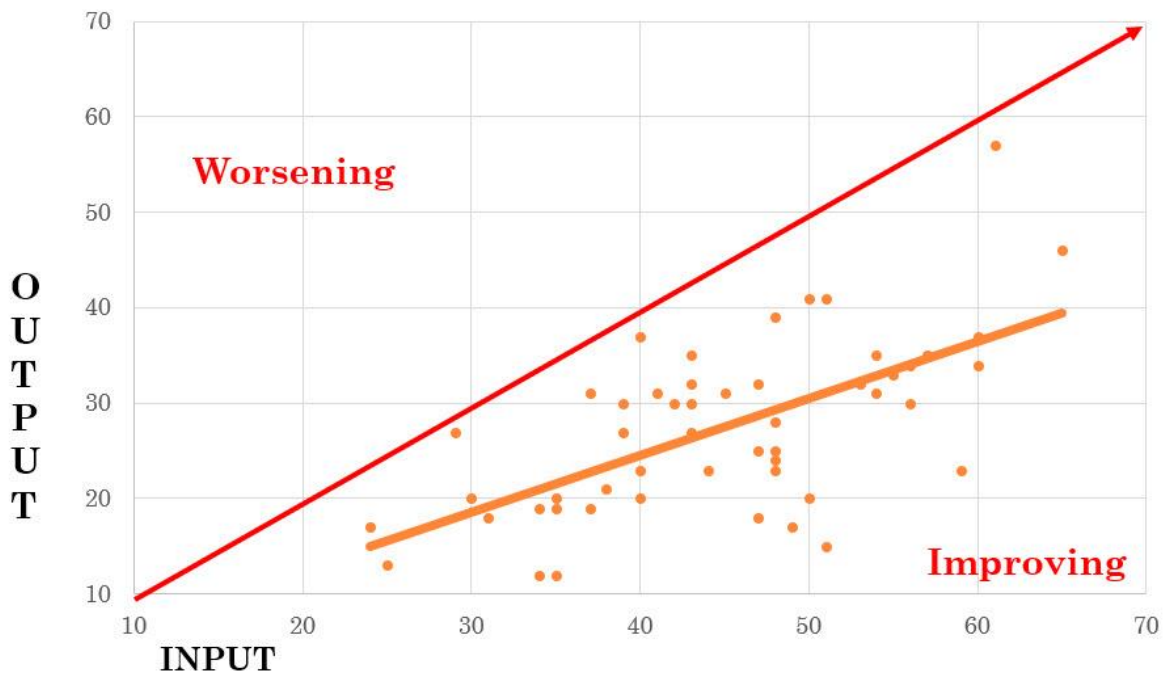


Figure 1 Graphical presentation of the sum of all motion findings in individual patients (N=51; 46 females, 5 males)

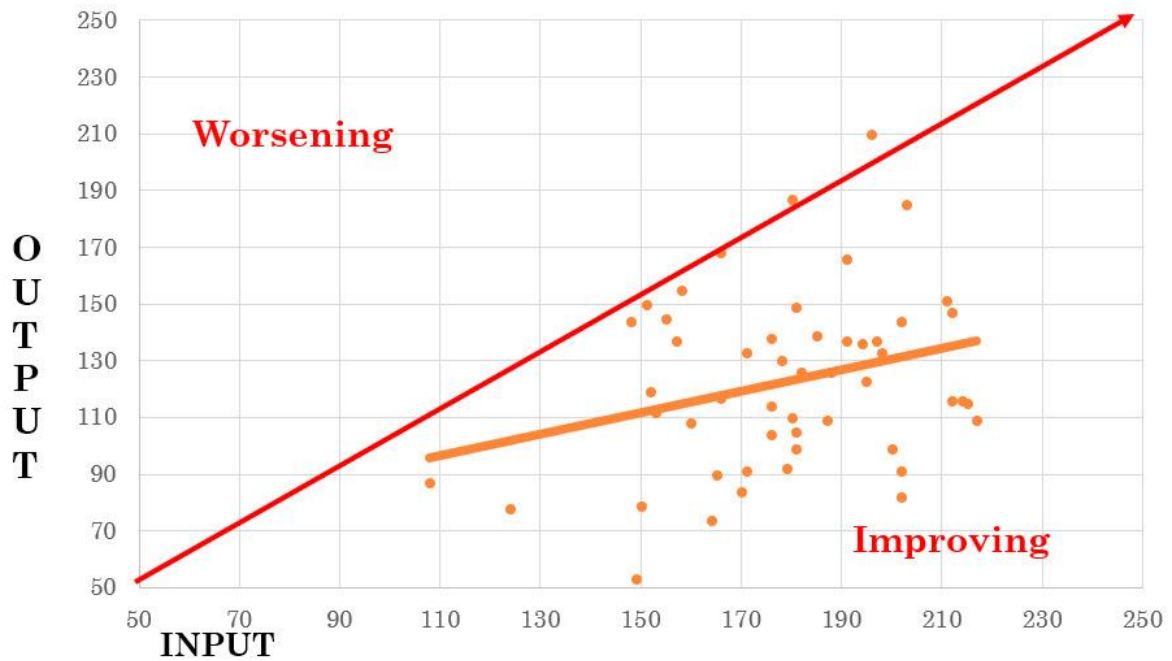


Figure2 Graphical presentation of the total dysfunction (CD) of the locomotor apparatus (PA) at the input and output of individual patients (N=51; 46 females, 5 males)

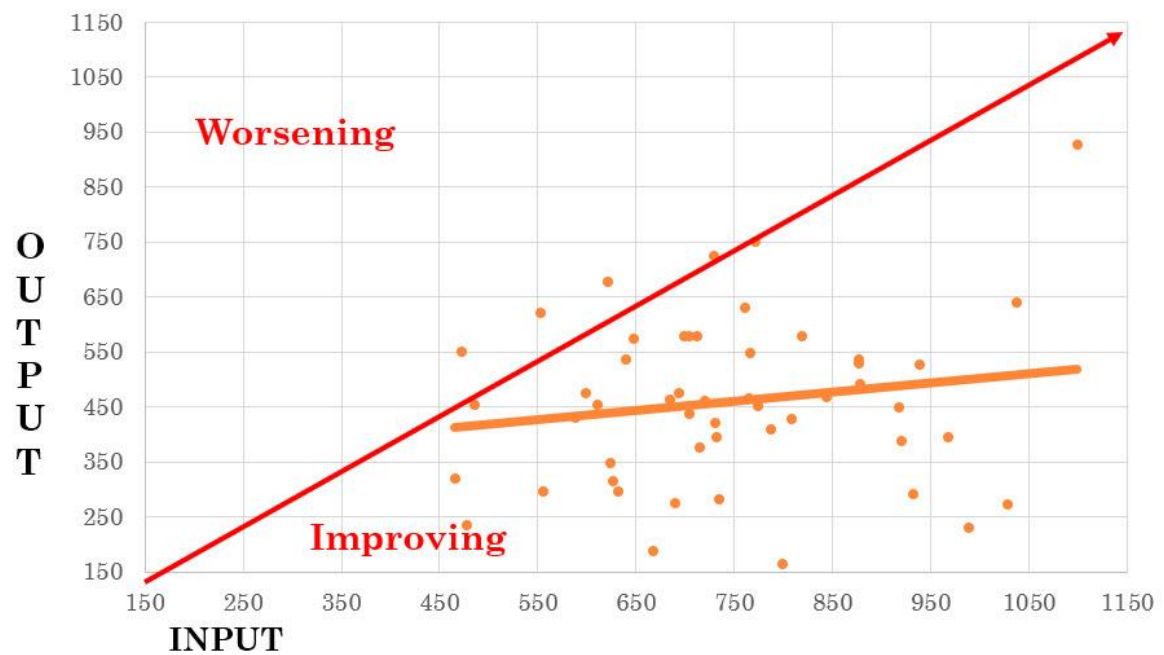


Figure 3 Graphical presentation of the total dysfunction (CD) of the locomotor apparatus (PA) at the input and output of individual patients. (N=51; 46 females, 5 males)

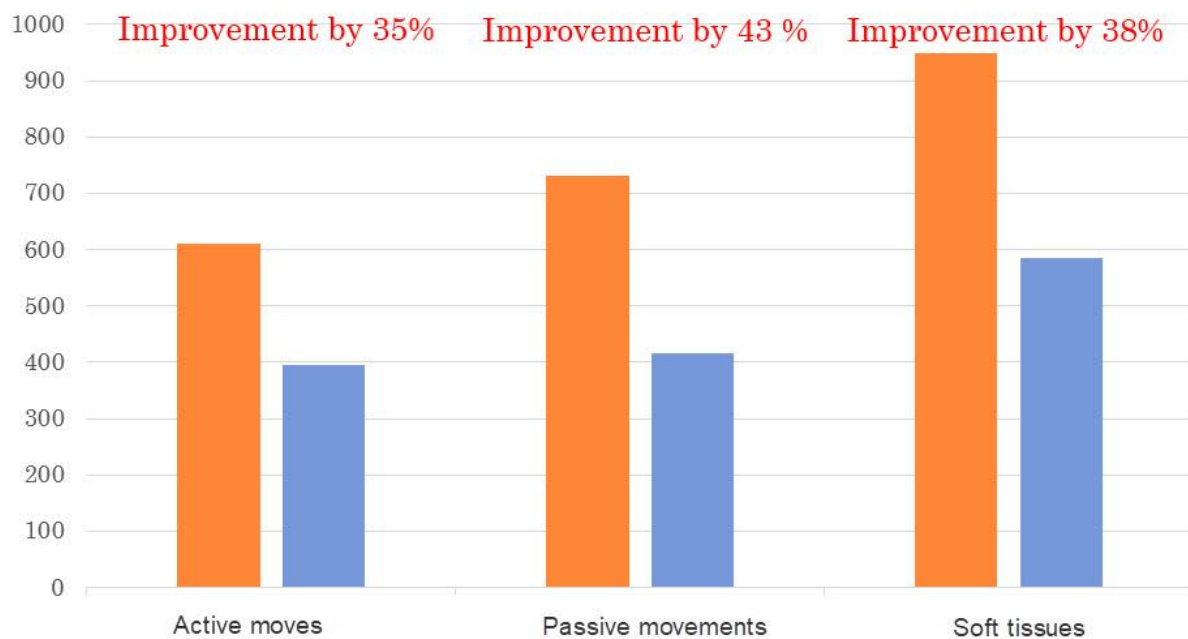


Figure 4 Graphical presentation of the sum of the findings of motion tests of active movements, passive movements and changes in soft tissues (N=51; 46 females, 5 males)

DISCUSSION

The selection of almost identical procedures for the health benefit of probands of the whole sample was made optimally on the basis of many years of empirical experience of the team of Priessnitz spa, Ltd. in Jeseník and researches carried out systematically by the computer information system Computer Kinesiology since 1998. From different adequate physical activities during applied climatotherapy was selected as most effective physical activity walking with sticks along the spa routes in the spa park area (Jandová, Morávek, 2011; Morávek 2008). As an integral part of the procedure, the monitored probands absolved daily the Priessnitz's bath of the upper limbs (sympathicotonic depletion, parasympathetic elevation) according Jandová, Morávek (2011) and Janský et al (2006). Earlier researches in Priessnitz spa, Ltd. in Jeseník confirmed the effect of the collective

providing of the corrective exercises (combination of intercourse, breathing exercises with fitness in outdoor as well as in indoor environment, and collective fitness training in hydrokinesiotherapy with stretching elements in the rehabilitation pool. Results of the Priessnitz spa, Ltd. in Jeseník are presented annually at the V. Priessnitz conferences (for example data from authors Jandová, Morávek: Effect of the Complex Spa Care in Adolescents with Asthma in the Priessnitz spa, Ltd. in Jeseník in the summer of 2003 - in 80 teenagers).

CONCLUSION

Results of examinations of probands sample after completing 4-week treatment in Priessnitz spa, Ltd. in Jeseník, as the diagnostic part of Computer Kinesiology show a significant improvement in the health condition and the overall condition improvement of the locomotor apparatus in

pre-senium period and in senium period as well. By staying in the spa, clients have gained a higher level of physical activity. Stretching of the truncated muscles, strengthening of the inhibited muscle groups, and straightening of the spine, simultaneously improved the balance and posture (Horák, 2006; Laughton, Slavin, Katdare, et al. 2003). The results show an improvement in the range of passive and active movements. Significant decreasing in the incidence of reflex neuromuscular changes of soft tissues represents the verification of the increase of nonspecific resistance on noxious external, internal and psychosomatic. A positive change in overall dysfunction and in the seventh tendomuscular strand was objectively reflected in positive numerical results. The correlation between the results of the CK and the Knobloch self-assessment questionnaire will be published in the next publication in correlation with the battery of neurosteroid and neurohormone tests. After the 4-week stay in Priessnitz spa, Ltd. in Jeseník, in clients was monitored the significant improving in the function of the locomotive apparatus, 35% in active movements, 43% in passive movements and 38% in the reduction of the reflex changes in soft tissues. Active probands will prosper in both primary and secondary prevention in pre-senium and in senium through increasing of their physical activity (Ondrušová, 2011; Tůmová, 2002). Repeated stay in the spa, especially in the context of adopting the wellness lifestyle, provides clients with education and motivation in individually adequate physical activities, where they can continue their homework according to their habits. Achieving a higher level of fitness while staying in a spa and maintaining

fitness in the home environment helps eliminate or minimize the dysfunctions of all body control systems in the complex concept of psycho-neuro-immuno-endocrine. Within the personalized approach, clients are motivated to exercise, which in turn leads to an improvement of Quality of Life and to maintaining optimal day-to-day activities (ADL), i.e. promotion of self-sufficiency and self-service until high ageing (compare with Zavazalová, 2001).

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