

*Post-Congress Satellite Meeting
of the European Congress
on Obesity -
ECO2007*



**THE PLACE OF BALNEOTHERAPY
IN OBESITY MANAGEMENT
FROM PREVENTION TO COMPLEX TREATMENT**

26-27 APRIL, 2007

HOTEL KAROS SPA, ZALAKAROS – HUNGARY




Final Program

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**THE PLACE OF BALNEOTHERAPY AND
HYDROTHERAPY IN OBESITY MANAGEMENT**

Post-Congress Satellite Meeting
of the 15th European Congress on Obesity

25th-27st April, 2007.

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A négytestő

Hunyadi János gyógyvíz,
Ferenc József gyógyvíz – a belek testőrei
hashajtásra

Mira glaubersós gyógyvíz – az epe és máj testőre
gyomorpanaszokra, másnaposságra

Parádi kénés gyógyvíz – a gyomor testőre
gyomorpanaszokra, másnaposságra



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THE PLACE OF BALNEOTHERAPY AND HYDROTHERAPY IN OBESITY MANAGEMENT

Post Congress Satellite Meeting
of the 15th European Congress on Obesity

19-20 October 2006

Palace of Culture

Budapest, Hungary

10-11 October 2006

Palace of Culture

Budapest, Hungary

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Final Program

25. 04. 2007. 20.30	Presidential Opening Ceremony <i>Prof. Tamás Bender</i>
20.45	Welcome reception
26. 04. 2007. 10.00 – 11.30	<i>I. Section</i> Chairs: Prof. Tamás Bender, Prof. Christopher Gutenbrunner
10.00 -10.10	<i>Prof. László Halmy</i> Let's use the balneo and hydrotherapy in the treatment of obesity
10.10 – 10.30	<i>Prof. Zeki Karagülle</i> Preventive effects of balneotherapy on risk factors of obesity
10.30 - 10.50	<i>Prof. Pedro Cantista</i> The obesity program of "Termas de S. Jorge"
10.50 - 11.10	<i>Prof. Christopher Gutenbrunner</i> Body weight normalisation by spa treatment
11.10 – 11.30	Discussion
11.30 – 11.50	Coffee break
11.50 – 13.00	<i>II. Section</i> Chairs: Prof. Zeki Karagülle, Ferenc Kovács MD
11.50 - 12.15	<i>Prof. Tamás Bender</i> Balneology and medical hydrology – Basic mechanisms
12.15 - 12.30	<i>Prof. Svetoslav Handjijev</i> Thalasso therapy in obesity
12.30 – 12.45	<i>Prof. Pál Géher</i> Social insurance consequences of rheumatologic co-morbidities of obesity
12.45 – 13.00	Discussion
13.00 - 14.00	Lunch

14.00 – 15.10	<i>III. Section</i> Chairs: Prof. Svetoslav Handjijev, Prof. Pedro Cantista
14.00 – 14.15	<i>Géza Bálint MD FRCP DSc</i> Knee joint osteoarthritis, obesity, water treatment
14.15 - 14.25	<i>Prof. László Halmy</i> The role of drinking cure in obesity management
14.25– 14.40	<i>Andrea Ficzero MD</i> Rehabilitation of obese patients with aquabike
14.40 -14.50	<i>Eszter Halmy MSc, Ferenc Kovács MD, Prof. László Halmy</i> Underwater exercise as a base of complex treatment of obese
14.50 - 15.05	Discussion
15.05 – 15.30	Coffee break
15.30 – 17.45	<i>IV. Section</i> Chairs: Prof. Antal Czinner, Alan Jensen MD
15.30 - 16.30	<i>Alan Jensen MD</i> Exercise is medicine! AquaDios-Med. A 21st Century Immersion Environment for Advanced Fitness & Accelerated Healing" Mind Body Medicine and Sustained Physical Exercise.
16.30- 16.40	<i>Linda Czinner MD, Prof. Antal Czinner</i> The role of the swimming and water-polo in the treatment of childhood obesity. The benefit of the Archimedes' rule
16.40 - 17.00	<i>Péter Pribélyi and György Lángfi MD</i> Aquafitness and body weight reduction
17.00 – 17.15	Discussion
17.15 - 18.00	Aqua fitness - Playing with participants
20.00	Banquet dinner and wine tasting
27. 04. 2007. 9.00 – 12.00	<i>V. Section</i> Chairs: Prof. Pál Géher, Dr. Géza Bálint
9.00-9.15	<i>Ferenc Kovács MD</i> Obesity and rheumatologic diseases

9.15-9.30 *Judit Ortutay, Mónika Lukáts, Márta Trócsányi, András Tripolszky, Katalin Réti*
Obesity-related comorbidities in patients of a rheumatologic rehabilitation unit

9.30 – 9.45 *Michel F. Duprat, MD, MPH*
Overweight and thermal care in France

9.45 – 10.00 *Gyula Gyetvai MD*
Mofetta treatment in lower limb diseases of obese

10.00 – 10.15 **Discussion**

10.15 – 10.35 Coffee break

10.35-12.05

Poster section

Chair: Prof. Tamás Bender

Alessandro Zanasi¹, Antonella Fioravanti², Emanuele Paolini³, Corrado Ceccarelli², Rosalba Mattei³
1. S.Orsola Malpighi Hospital, Bologna, Italy; 2. Institute of Rheumatology, University of Siena; 3. Nutrition Unit, University of Siena

Presentation of the first Italian national mineral water water museum Carlo Brazzorotto

M. Boz¹ F. Erdenen¹ M.Z. Karagülle² C. Müderrisoğlu¹ E. Altunoğlu¹ Ş. Türkeş¹ H. Aral³

¹ Istanbul Training and Research Hospital of Health Ministry, Dep. of Internal Medicine, ²Istanbul Medical Faculty, Dep. of Medical Ecology and Hydroclimatology, ³Istanbul Training and Research Hospital of Health Ministry, Dep of Biochemistry, Turkey

Duration of obesity and insulin resistance

Fioravanti A¹, Leo G¹, Bacarelli MR¹, Bellisai B¹, Cantarini L¹, Ceccatelli L², de Lalla A², Bardi P²

¹Rheumatology Unit, Department of Clinical Medicine and Immunological Science, University of Siena, Siena, Italy; ²Center of Clinical Pharmacology, University of Siena, Siena, Italy.

Leptin and Adiponectin plasma levels in patients with knee osteoarthritis treated with mud pack therapy

12.05 *Closing Ceremony*

13.00 Lunch

15.00 Couch to Budapest

ABSTRACTS OF LECTURES AND POSTERS

LET'S USE THE BALNEO AND HYDROTHERAPY IN THE TREATMENT OF OBESITY

László Halmy

IRM Central Hospital, Budapest

Long-term results of the treatment of obesity are effective only in 5-10%. It seems to be necessary to prepare new methods to diminish the prevalence and consequences of obesity. The combination of balneology and obesitology could give us new possibilities.

The treatment of obesity needs good circumstances and focusing on the aim. Starting the slimming cure in pleasant conditions can give better results and its first short period has to be followed by a long term body weight management. For this aim the cure resorts and sanatoriums could be ideal where the low calorie diet and physical activity is available. The physical activity is frequently blocked by rheumatologic diseases. For example the prevalence of osteoarthritis of the knee is 30% in obesity. These places provide the possibility to treat the rheumatologic diseases together with obesity. As it is well known, according to the law of Archimedes, the human body becomes lighter in water. 100 kg body weight means 7 kg in water. Therefore the physical activity in water is very easy for the obese persons.

The strict control of the patients at the cure resorts is easier than at home. The good atmosphere of sanatoriums facilitates resistance against bigger food intake.

3 years ago we elaborated a new type of complex method for the treatment of obesity. It contains underwater exercise, gymnastics, low calorie diet and brisk walking. It was suitable to reduce body weight and correct metabolic processes. The method and results will be shown in another lecture (E. Halmy).

Complementary drinking cure could treat the gastrointestinal disturbances and change the obesity related metabolic processes. It is generally accepted that slimming cures promote gall stone formation. Drinking cures diminish the possibilities of this disease.

The high prevalence of childhood obesity and the growing trend needs wide medical and social activity. Rigid therapy in childhood is impossible because the drop out is very high from the mental character of the child. We can get the best results when we teach the children to play. This is right when we start to change the lifestyle too. The obese child is handicapped in sports when he tries to run or jump. Our earlier study showed their affinity to ball and water. In this symposium we will see some good results of this idea.

It is high time to start well circumscribed evidence based studies in Hungary on the effect of hydrotherapy in obese children and balneotherapy of obese adult persons, examining body weight loss and metabolic parameters and finally health related quality of life.

PREVENTIVE EFFECTS OF BALNEOTHERAPY ON RISK FACTORS OF OBESITY

Prof. Dr. M. Zeki Karagülle

Istanbul Medical Faculty, Dep. of Medical Ecology and Hydroclimatology²

Obesity was a sign of wealth and wellbeing in the past and still is in some parts of the world. There has been a dramatic increase in the prevalence of obesity not only in more-developed countries but also in less-developed ones during the past years. The challenge of prevention as well as managing the millions already affected is overwhelming. The medical profession is only now waking up to the political and industrial challenges as well as the medical challenge. The challenge to think in novel ways in developing strategies to deal with the burden of obesity epidemic was also emphasised by the new WHO global agreement. It is timely to ask the question; can balneotherapy and spa therapy also be considered as a preventive tool to tackle the obesity problem, besides their popular therapeutic and rehabilitative use in wide range of conditions particularly musculoskeletal pathologies?

Balneotherapy simply means the immersion of the whole or parts of the body in thermal mineral waters, but in a broader sense it is the use of mineral waters not only for bathing, but also drinking and inhaling. Spa therapy essentially means that the patient is receiving balneotherapy combined with exercise, massage, mud therapy, hydrotherapy or possibly even diet, patient education and complementary therapies. Balneotherapy alone is the main and central therapeutic modality of a total spa treatment package. Balneotherapy and spa therapy are old medical treatments, as old as mankind, but recently enjoying a growing popularity among the patients and health professionals as the evidence for their therapeutic effectiveness is multiplying.

Our new scientific understanding of obesity is helping to validate new approaches and to develop reliable strategies to prevent the health problems resulting from this contemporary medical disorder. The negative effects of obesity on heart function are well described in recent years and are mostly due to a combination of factors including hypertension, dyslipidaemia, diabetes mellitus and increased fat mass. For an example, the risk of hypertension is up to five times higher among obese people than among those of normal weight. Hyperuricaemia and gout are well recognised features of both weight gain and the metabolic syndrome. Further more, obesity induces several cytokines and inflammatory markers that might contribute to the cardiovascular outcome in overweight and obese people. Considering all these increased risks associated with obesity, another question is to be raised; do spa and balneotherapy have any preventive effects on those factors that forms further health risks among obese individuals?

Search in the common data bases for the studies evaluating the preventive effectiveness of spa therapy and balneotherapy revealed that there are limited number of articles reporting favourable effects in reducing the major risk factors associated with overweight and obesity, such as hyperlipidemia, hypertension and hyperglycaemia. The encouraging evidence from reviewed articles suggests that complex spa therapy course consisted of balneotherapy (hot mineral water baths and/or mineral water drinking cures) combined with other interventions like exercise, diet and massage may prevent the development of classical risk factors (dyslipidaemia, hypertension and glucose dysmetabolism) in obese people. There is an urgent need to find reliable and clear answers if balneotherapy and spa therapy might be an effective preventative tool to tackle the obesity problem. More research is to be done on this topic, namely by conducting sound randomised controlled trials.

TERMAS DE S. JORGE PROGRAMMES TO WEIGHT EXCESS AND OBESITY

Pedro Cantista

Clinic Director of Termas de S Jorge

President of the Portuguese Society of Medical Hydrology

Obesity is a major concern in modern societies.

Epidemiologic data show the urgent need to establish an efficient strategy to fight the growing incidence and prevalence of this condition.

Among many others, Health Resort Medicine Programs could be an interesting option for a comprehensive approach to weight excess and obesity.

We present our experience in Termas de S. Jorge, a Portuguese thermal spa with more than 200 years of existence in which we establish a specific program that includes diet, exercise, baths, massage and thermal complementary techniques. In our presentation we show our evaluation methodology, the treatment modalities and the results we got.

We think that above all in thermal spas you can adopt much more easily a correct health behaviour facilitating the efficacy of these programs.

BODY WEIGHT NORMALISATION BY SPA TREATMENT

Christopher Gutenbrunner

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The reduction of body weight in obese patients is of major relevance for the prevention and treatment for many diseases. In the literature of the last 50 years many reports on the influence of complex spa treatment on body weight are given, most of them showing a body weight reduction in patients with overweight. However, in patients with lower body weight increases have been observed too. A formal evaluation of the body weight changes in 649 patients undergoing complex spa treatment shows that the changes are influenced by two factors. The one is the prescribed diet with reduced calorie intake. The second is the initial body weight. This formally fulfils the criteria of an adaptive normalisation, showing the regulatory influences are of some importance. Such influences improving regulatory functions have been shown for other functions, too. Adaptation therefore is the core mechanism for long-term effects of balneotherapy.

In order to evaluate the effects of complex spa treatment on body weight and metabolic parameters we performed a prospective controlled study (Lower Saxony Cardiovascular Prevention Study). Among others body weight (BMI), metabolic risk factors (blood lipids, glucose and insulin, fibrinogen) and blood pressure were measured one week before, one week after, and one year after inpatient rehabilitation measures of three to four weeks. The treatment consisted in balneotherapy, physiotherapy and patient education. The control group received no special rehabilitative treatment and remained in medical care of their family doctors. Out of 199 patients with an elevated risk-factor profile (150 men and 49 women) who entered the study, 176 (82 in the intervention group and 94 controls) completed the follow-up. The results of a multivariate statistical evaluation showed significant reductions of risk factors in the intervention group compared to the controls ($p < 0,001$ after the treatment and $p < 0,05$ one year later). The strongest effects were seen in the parameters body weight, total cholesterol, LDL-HDL-ratio, fasting glucose and blood pressure, whereas apolipoproteins and fibrinogene values showed no relevant differences between intervention and control group. Looking at the mean changes of the single risk factors it could be seen that the changes caused by the rehabilitative measures are clinically relevant, especially in patients with elevated levels of the respective risk factors. The results show that in-patient rehabilitative measures of three to four weeks are effective in reducing cardio-vascular risk factors, however, within one year these effects decreased but still were significant. Therefore additional measures with low frequency probably would make sense to further stabilise these effects.

Balneotherapy - Basic Mechanism

Tamás Bender

Hospitaller Brothers of St. John of God, Budapest, Hungary

Balneotherapy is a medical specialty utilizing the effects of medicinal waters. This treatment modality has evolved primarily in countries rich in thermal water such as France, Hungary, Italy, Germany, Japan, Israel, and New Zealand. The use of water for treatment is probably as old as mankind. Hydrotherapy consists of the use of ordinary water. Balneotherapy on the other hand employs natural thermal mineral water, whether at a spa or not. Immersion in water induce diureses, natiruresis and increase in the cardiac index. Increase diuresis has been shown to reduce the circumference of proximal interphalangeal joints. The mechanical effects (hydrostatic pressure, buoyancy and temperature) occur in thermal and non mineral water as well. It was presumed that most mineral ingredients would be absorbed through the skin which an active immune organ and may play an important role in the mechanism, but to date this has not been confirmed. Spa therapy is a complex treatment modality using mineral or tap water as treatment under specific circumstances; its effects are supplemented by those of additional methods of physical therapy – as well as by the influence of environmental and climatic changes.

THALASSOTHERAPY IN OBESITY

Svetoslav Handjiev

National Multiprofile Transport Hospital, Sofia

The review demonstrates the Bulgarian 40-year experience of thalassotherapy in the prevention and treatment of obesity. Since 1967, several sanatoriums at the Black sea coast (Nessebar, Kiten, Balchik and Albena) have been functioned for treatment of obesity. The thalassotherapy is combined with a hypocaloric diet (mean 1400 kkal/daily) and an increased physical activity.

The thalassotherapeutic procedures stimulate and intensify the metabolic processes in the body. Thus, they lead to significant reduction of body weight and the cardiovascular risks, common in obesity.

The thalassotherapy is particularly suitable for obesity, complicated with diabetes or arterial hypertension.

The data from national study in 45 000 subjects with obesity and related disorders show the beneficial effect of thalassotherapy, combined with diet and physical regiment on the prevention and treatment of obesity.

SOCIAL CONSEQUENCES OF RHEUMATOLOGICAL CO-MORBIDITIES OF OBESITY

Pál Géher

Hospitaller Brothers of St. John of God, Budapest, Hungary

In the past 20 years, the rates of obesity have tripled in developing countries. The human and financial costs of obesity are mounting. Overweight is associated with four diseases (osteoarthritis, diabetes, gout, hypertension). In this review we describe the financial consequences and social burden of obesity in connection with selected musculoskeletal diseases.

Osteoarthritis is a frequent disease among people over 55 years. Among others obesity is a risk factor for knee osteoarthritis. Obesity accounts for 20 % of disabling knee osteoarthritis. There are a lot of study on the financial burden of osteoarthritis of the knees. The Italian Group for Study of the Costs of Arthritis found that the direct costs of knee osteoarthritis was 934 EUR per patient per year. Indirect costs were much higher: 1236 EUR per patient per year.

Gout affects more than 1% of the adults in the Western World. The increase in the prevalence of gout is attributable to recent changes in diet and lifestyle, and increased longevity. Among others obesity is one of the modifiable risk factors for gout. Obesity increases serum urate, therefore predisposes to gout attack. Gout is associated with significantly decreased productivity, and high economic burden. The direct cost of acute gout among men in the United States is estimated at \$27.4 million annually.

In both diseases obesity is a modifiable factor, therefore effective prevention can be achieved by reducing overweight or preventing the development of obesity.

KNEE JOINT OSTEOARTHRITIS, OBESITY, WATER TREATMENTS

Géza Bálint, MD, FRCP(Glasgow) DSc

National Institute of Rheumatology and Physiology

Budapest, Hungary

Overweight and obesity are an important risk factor of knee joint osteoarthritis (OA) and also OA of the hip and hand. Five kilogram weight loss reduces the risk of developing OA of the hand by 50%. Overweight is not only a mechanical factor, but several molecules of adipose tissue; leptins, adipokins, Il-1 etc also plays an important role in the development of OA. It has been proven, that weight reduction, running, jogging, and exercise improve even the symptoms of established OA of the knee. Hydro-, balneotherapy and underwater exercises have been shown effective at improving the symptoms, especially pain of OA of the knee. Water treatments may support weight loss, aerobic exercises and locomotor's functions.

Controlled trials for evaluating water treatments of overweight and obese patients with OA of the knee are already required. Health clubs for these kinds of patients at spas should be encouraged.

THE ROLE OF DRINKING CURE IN OBESITY MANAGEMENT

Prof. László Halmy

IRM Central Hospital, Budapest, Hungary

An up-to-date approach to reducing body weight is not the slimming cure, but the change of life-style. There may be a role for drinking cure too, in the establishment of the new life-style and may help in the formation of regular activity and walking habits.

Obesity has been declared a chronic recurrent disease by WHO in 1998, therefore diagnosis and treatment indication must be made by a physician. A drinking cure may be used as an adjuvant therapy for weight reduction and for the treatment of co-morbidities. At start consultation with a physician is necessary.

For the treatment of obesity and related metabolic disorders Ferenc József, Hunyadi János, Mira and Parádi waters can be proposed. The effect of magnesium-sulphate and sodium-sulphate containing waters on lipid, carbohydrate and uric acid metabolism has long been acknowledged, and actual medical practice is also positive, but studies with up-to-date examination methods and fulfilling evidence based medicine criteria are lacking.

Sulphate-containing medical waters may be effective in the prevention or treatment of obesity or weight reduction related problems, like liver steatosis, bile congestion, constipation and gall stone formation. In case of iodine insufficiency, iodine-containing medical waters (Jódaqua) may have beneficial effects on obesity and the co-morbidities. 80% of the territory of Hungary is regarded to be insufficient in iodine, which may contribute to the high prevalence of obesity and related lipid and carbohydrate metabolic disorders. Hungarian bottled medical waters are summarised in table.

Hungarian bottled medical waters (mg/l)

	Parádi	Ferenc József	Hunyadi János	Mira	Salvus	Jód-aqua
Mg ⁺⁺	50	2300	2900	496	31,9	62
SO ₄ ^{- -}	144	15310	21200	8060	315	0
S ^{- -}	6,2	0	0	0	0	0
Na ⁺	470	2900	4700	4800	5800	6700
HCO ₃ ⁻	1180	1220	1210	1226	12810	348
I ⁻	0,018	0,07	0,004	0,62	2,8	98

Following our previous clinical studies, further studies on our medical waters seem to be necessary with up-to-date methods.

REHABILITATION OF OBESE PATIENTS WITH AQUABIKE

Andrea Ficzer MD

Introduction:

Several patients, who need rehabilitation, have increased body weight. E.g. in majority of the patients, who suffered stroke or myocardial infarction we can detect increased body weight, which is a severe problem not just in the treatment of the – frequently associated – hypertension or diabetes, but in the rehabilitation period as well. Most of the patients who underwent lumbar discectomy, or were operated because of hip fracture are obese as well.

Patients and method:

We have investigated 100 patients (33 male, 67 female), age $56,3 \pm 1,4$ (mean \pm SD) suffering one of the above mentioned diseases. The patients underwent physical and neurologic investigation. We have measured the height, body weight, blood pressure, heart rate and performed an ECG.

89 patients performed underwater gymnastics, whereas 11 patients have done aquabike treatment for 15 days. Duration of the exercise was 25 minutes each day.

Results:

We could not detect any significant changes in BP and heart rate. The body weight decreased 1.47 ± 0.03 (kg, mean \pm SD) in the underwater gymnastics group and 0.87 ± 0.02 (kg, mean \pm SD) in the aquabike group.

General condition of the patients has improved. Motor power of the paretic limbs – in stroke patients - increased, coordination became better. Patients, who suffered myocardial infarction, or underwent surgery (lumbar or cervical discectomy, bone fracture, etc.), told us, that they became more powerful, could bear more strain.

Discussion:

Underwater gymnastics is a very good and effective method for training or rehabilitating obese people. Their balance is much better in water; movements can be performed more easily, more precisely. Because of the upthrust, the joints and the vertebral column are loaded just minimally, injuries can be avoided. These facts back of the suggestion as well, that obese people should begin their slimming cure with the use of this method.

COMPLEX WEIGHT REDUCTION PROGRAMME FOR OBESE WITH LOCOMOTOR DISORDERS

Lászlóné (E) Halmy MSc, Ferenc Kovács MD, Prof. László Halmy MD. PhD. DMSci
Hungarian Association for Overweight and Obese, Budapest
Central Hospital of the Ministry of Interior, Budapest

KEYWORDS: underwater exercise, gymnastics, brisk walking, obesity, diet

More and more frequent occurrence of obese and locomotor disorders is urging the necessity of their mutual treatment.

A well-compiled exercising programme is substantial in treatment of obesity, while the mainly degenerative locomotor disorders arising in obesity form principal hindrance of any exercising programme.

Accordingly it seemed to be reasonable to set up a complex weight reduction programme, which may serve mutual improvement of both obesity and locomotor organs and which leads to valuable weight loss.

The programme Lies on Four Pillars:

1. Underwater exercise
2. Gymnastics in gym hall
3. Brisk walking program
4. Low calory diet

Personal Conditions of the Complex Programme:

1. Medical examination to specify the extent of obesity, to exclude contra-indications and to control weight loss
2. Rheumatology examination to specify the locomotor disorders and to record changes to the status
3. Physio-therapist to control underwater exercises and gymnastics in the gym hall
4. Administrator to record the result of examinations and tests and the daily data of the treatment (e.g. to record the quantity of steps done, kilometres, etc.)
5. Dietetic therapist to define the diet preceding the treatment and in the course thereof, and to define the subsequent diet to follow

Assets Required for the Complex Programme:

1. A pool of suitable depth and sidewall filled with 32-34 °C water
2. Gym hall
3. Step-counters to check the brisk walking programme
4. Dietetic software, if available, (e.g. Nutricomp) to analyse nutrition prior to the treatment and the subsequent nutrition
5. Scales of sufficient accuracy
6. Height meter
7. Measuring tape to measure the waist circumference
8. Step-counter (e.g. Omron HJ-113 E, step-counter of lower technical level is not recommended)

9. Bio-impedance to measure fat content of the body and the percentage of it (multi-phase, five-cylinder, e.g. InBody 720, or any mono-phase meters)
10. Area suitable for brisk walking
11. Instruments required to make the medical tests (12-channel ECG, blood pressure gauge with wide band, maybe ABPM)
12. Instruments required for making the rheumatology exams (X-ray, ultrasonic device, questionnaires, etc.)

Tasks of the treatment days in time sequence:

1. Underwater exercise
2. Gymnastics in the gym hall
3. Brisk walking with step-counter, after a short rest
4. Lunch
5. Afternoon walk

Control:

1. Exercise therapist at each and every underwater and gym hall exercise
2. Dietetic therapist in every fortnight
3. In case of hospital stay the administrator records the distance done daily, while on ambulant patients he checks the records of the meter
4. Medical control in every fortnight to define the status of the internal organs and the rate of weight loss, and to provide psychical control for the patient
5. Rheumatology control subject in every 2-6 weeks

Pillars of the Complex Weight Reduction Programme:

1. The Programme of the Underwater Exercise:

Stand *facing* to the barrier:

1. Rise to your tiptoe then stand on your heels.
2. Pull your right leg to your abdomen, put your leg down than do this with your left leg in turns
3. Pull your right leg to your abdomen, take it out to the side bent in then back to the middle, put it down. Do the same with your left leg.
4. Bend your elbows, lean to the wall, than stretch out your elbows and drop your pelvis backwards
5. Pull your right leg to your abdomen and stretch it out backwards continuously. Do the same with your left leg.
6. Put your right leg on the wall than change with a jump.
7. Put your right leg stretched against the wall, bend your right knee, the elbows, keep your other leg down stretched out, do the exercise continuously. Do the same with your left leg.
8. Put both legs on the bottom of the pool, raise your right arm above your shoulder bend to the side, move back to the middle, grasp the barrier. Raise your left arm, bend it then put it back.
9. Put both legs on the bottom of the pool, stretch backwards with your right arm, follow your arm with your eyes, move them back to the middle.
10. Raise your right leg to the side all stretched out, put it back, then do the same with your left leg, in turns.

11. Jump against the wall with both legs at a time, and back.
12. Both legs stretched out against the wall, bend your elbows and knees then stretch them out.
13. Bend both of your knees and elbows, stretch out to the right side upwards, to the middle and to the left, make continuous circles in the pool in one direction, then also to the other direction.
14. Put down both of your legs on the bottom of the pool, lean against the wall, stretch upwards with your right arm, raise your left leg backwards, then put down your leg and arm and let your pelvis drop backwards. Do the same with your left arm and right leg.
15. Running at location while raising your knees high.
16. Stretch out your right leg to the front, keep your left leg backwards, change with a jump.
17. Jump into straddle stand with both legs, close your legs.
18. Jump into straddle stand with both legs, cross your legs in the front, jump to straddle stand, cross your legs in the back.
19. Pull both of your knees to your abdomen and put down in straddle stand.
20. Both legs on the wall (stretched out) in straddle stand, bend your right elbow and knee, and put your weight on your left leg.
21. Both legs stretched out in straddle stand, stretch out backwards with your right arm and put it back, do the same with your left arm.
22. Both legs stretched out in straddle stand, stretch out backwards with your right arm and put it back, bend forward while keeping your back straight and stretch out your elbows and knees.
23. With both legs on the wall in straddle stand, make a big circle with your right arm, starting it from down, then hold on to the wall. Do the same with your left arm also.
24. Both legs on the bottom, bend both of your elbows, lean towards the barrier, then stretch out your elbow and drop your pelvis backwards to right. Lean against the wall then bend to the middle and backwards to the left. Then circularise the pool starting from the right side. Do this also in the other direction.
25. Walk to straddle stand raising your knees high, then back to the middle.
26. Raise your right leg well backwards, out it back, raise your left leg and back.

Turn to the side (right). Work with your left leg, always with the one being outside. Grasp the barrier with your right arm and put your left hand on your hip.

1. Pull your left knee to your abdomen, stretch out to the front with your heel then pull it back to the abdomen and lean it out backwards tiptoeing.
2. a) Pull your left knee to your abdomen, take it to the left side, stretch out, take it backwards always stretched out, pull it back to the abdomen, do this continuously.
b) Take your left leg backwards while it is bent in, stretch it out to the side, take it to the front stretched out, then backwards while it is bent again, do the exercise continuously.
3. Raise your left leg to the side, cross your legs in the front, then to the side again and cross in the back.

4. Raise your left arm, bend above your right shoulder then back to the middle, continuously.
5. Pull your left knee to your abdomen, hold it in your left hand, bend onto it, then stretch forward with your arm and backwards with your leg.
6. Make circles continuously with your leg stretched out.

Turn to the other side, grasp the barrier with your left hand, put your right hand on your hip and work with your right leg.

Stand with your back against the wall:

1. Pull both of your knees to your abdomen and put them down (hold your waist tight).
2. Pull both of your knees to your abdomen, stretch them out to the right, back to the abdomen then into straddle stand turned outwards.
3. Pull your knees to your abdomen, stretch them out into straddle stand, turning your waist inwards to the abdomen then turning it outwards into straddle stand.
4. Put both legs on the bottom of the pool, raise your right legs forward all stretched out, pull your heel back, raise it tight and put it back down tight. Make the exercise in turns with both legs.
5. Raise your right leg stretched out, take to the side, push the water away, then push it back in the height of your waist crossing, continuously. Do the same with the left leg as well.
6. Act as if riding a bicycle.
7. Ride the "bicycle" to the right then to the left continuously.
8. Raise both legs in straddle stand then close them to each other.

Stand facing the wall (lie on the water):

1. Lie on the water, do kralls up and down.
2. Take down your right leg stretched out then back, take down your left leg and put it back.
3. Pull both of your knees to your abdomen, stretch them out in straddle stand, close them together and pull them to your abdomen.
4. Two legs stretched upwards, making straddle stand and close them together.

Put your legs down, do not touch the wall, dive into the water:

1. Put both of your arms to the side and contact them in the front.
 2. Put your right arm upwards, left arm backwards then change, do the exercise tightly.
 3. Make circle with your arms, first bending them then stretched them out.
1. Walk to the other side raising your knees high, then return.
 2. Walk to the other side with your legs stretched out then walk backwards with your legs stretched out.
 3. Put your stretched out leg to the side and walk to the opposite side of the pool this way.

2. Programme of the Gym Hall Exercise:

Lie on your back:

Both legs stretched out, both hands next to your body, pull your foot back, let them back then make cycles with your ankles first to one direction then to the other.

1. Right arm stretched out next to your ears, the left stretched out along your body, stretch yourself out than change arms and repeat.
2. Both legs on the floor with full sole, hold your hip tight to floor then release it, then hold both of your shoulders tight to the floor and release them.
3. Stretch out the right leg and change with the left one.
4. Pull your right knee to your abdomen, change it with the left one simultaneously (press your waist tight to the floor)
5. Pull both of your knees to your abdomen and put them down. Pull both knees to your abdomen and keep it pulling continuously.
6. Put both legs on the ground with full soles, bend both knees to the right and back.
7. Put your hands on your thighs, slip them forward until you rise to your knees and back again.
8. Make narrow straddle stand with your legs, raise your pelvis and put it down.
9. With right hand rise to your left knee (keeping your leg on the floor) and back again, with left arm rise to your right knee and back again.
10. Feet on the floor with full sole, raise your pelvis and put it down.
11. Pull your right knee to your abdomen, grasp it with both hands, raise your head to it then back; then pull your left knee.
12. Right leg on the floor with full sole, left leg stretched out, press your waist tight to the floor, raise your left leg and put it down continuously. Keep your left leg in the air, stretch it out to the side and back to the middle continuously; then change legs.
13. a) Stretch out both legs and both arms to the side, cross your arms and put them back to the side.
b) Arms crossed in the front all stretched out and change arms in turns continuously.
c) Both arms stretched out in the height of beasts, stretch your body towards the ceiling with your arms in turns.
14. Right arm stretched out next to your ear, left arm next to your body, bend to the side then back to the middle.
15. Put both hands on the sides, both palms upwards with your right arm stretch to the left and back to the side; do the same with your left arm.
16. Put both arms along the body, stretch out high next to your ear and back down.
17. Put both legs on the floor with full sole, both hands under your nape. Approach your right elbows to your left knee and put it down again then raise your left elbow to your right knee.
18. Put both hands along the body, your leg on the floor with full sole, raise your pelvis, while stretching out your right knee and put your pelvis down, then raise it and stretch your left knee out.
19. Pull your right knee to your abdomen, grasp it with both hands, stretch your left leg out and keep raising it then change to your other leg.
20. Pull your right knee to your abdomen, keep your other leg on the floor with full sole, your hands next to your body, raise your pelvis, change legs and raise the pelvis.

21. Stretch your legs out and stretch your arms next to your ears; try to stretch more out with your legs and arms.
22. Raise both arms and make cycles first in one direction than in the other.
23. Put your right leg on the floor with full sole, stretch the left leg out, hold your waist tight to the floor and make cycles with your left leg. Change legs and make cycles with the right one.
24. Put both legs on the floor with full sole, pull both knees to your abdomen, "ride a bicycle".
25. Put your soles in straddle stand on the floor, approach your right knee to your left angle, put it back, then approach your knee to your right angle.

Lie on your side (right):

1. Put your right hand under your head, bend in your right knee, pull your left knee to your abdomen, contact it to your left elbow and stretch the arm upwards and the leg downwards.
2. Turn out backwards to the left with your left arm, stretch your left leg forwards and change, arm forwards, leg backwards.
3. Bend in both knees, raise your upside leg all bent in and put it back.
4. Stretch your upside leg forwards to your heel then raise it high and put it down backwards on tiptoe.
5. Put your leg backwards on tiptoe, raise it all stretched out and put it down.
6. Raise your upside leg and make cycles first in one direction then in the other.
7. a) Put your arm above your head, stretch your upside leg out, stretch with your upside arm and leg then release them.
b) Stretch out, contact you upside arm and leg then put them down.

Lie on your belly:

1. Put your hands next to your body, close your shoulder-blades and put them down.
2. Put your right arm stretched out next to your ear, your left arm next to your body, raise both arms, close the shoulder-blades and put them down, raise and put down continuously; change arms and do the exercise again.
3. Put both arms next to your body raise them up along your sides to your ears and put them back.
4. Put both arms to the side, raise them, close your shoulder-blades and put them down.

Put your head on your hands:

5. Keep bending your knees in turns while pressing your pelvis to the floor.
6. Bend in both knees, press down your pelvis, raise your right knee, put it down; do the exercise with the left knee as well.
7. Stretch your legs out, put your arms as a baby (upper arm and lower arm closing a 90 degrees), raise both arms and put them down.
8. Stretch both of your arms forward, stretch out your legs and stretch with both legs and release.
9. Raise your right arm and left leg stretched out, put them down, raise your left arm and right leg the same way.
10. Put your hands on your nape, raise both elbows and your head, put them down.

Stand on all fours:

1. Sit on your heels. Raise, stretch forward with your arms (thigh and leg closing 90 degrees) and slide back to your heels.
2. Slide forward with your arms, make steps to the right, back to the middle then to the left.
3. Hold your arms forwards, raise your right arm, turn outwards, put it down and raise your left arm.
4. Stand on all fours, stretch forward with your right arm, your left leg backward, put them down, stretch out with your left arm and right leg then put them down.
5. Pull your right knee to your abdomen and stretch it backward continuously, do the exercise with your left leg as well.
6. Keep raise your right knee to the side, put it back, keep raising your left knee.
7. Turn your hands to each other, bend both elbows and stretch them out.
8. Sit on your heels, stand on your knees, stretch out with both arms and back.

3. Execution of the Brisk Walking Programme

Presentation is necessary of the use of the step-counter to the person to be treated. Assistant is measuring the length of the patients step.

On presenting the intensity of walking it is necessary to underline that walking can be done only upon pleasant general feeling. Forced walking, accompanied with bad general feeling is to be avoided. Walking should be stopped for the given part of the day even in case of a light tiredness.

Suitable shoes and clothes allowing the skin to vent are required to be worn. Walking cannot begin directly after any meal.

Every day blood pressure control is required.

In case of any cardiac problem medical controls are required.

After their hospital stay the patients should take a 30-60-minute intensive walk daily. The quantity of the intake of energy-poor drinks should cover the increased daily demand.

4. Dietetic Treatment

A diet of daily 800-1500 kcal energy content is prescribed in the complex weight loss programme. The recommended distribution of the nutrients in the diet broke down to energy a percentage is as follows: 15 % of energy from protein, 25 % from grease and 60 % from carbon-hydrate Table 1). Intake of non-saturated and omega-3 fatty-acids is to be considered. In carbo-hydrate consumption vegetables, fruits are substantial. It is a priority to give dietetic education to the patients; since this will gain importance in their further standards of life.

Members of the Project Team:

Prof. László Halmy MD PhD DM Sci. – head physician

Eszter Halmy MSc – program manager

Ferenc Kovács MD – rheumatologist

Csilla Marosfalvi – exercise-therapist

Róbert Szabó – human-kinesiologist

Jánosné Károly – dietetic therapist

Gertrúd Kovács – dietetic therapist

Istvánné Bencze Bócs – assistant

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SUMMARY

Physical activity of obese having locomotor problems is often prevented due to their impairment. However, in excess of the energy-poor diet weight reduction substantially requires enhanced physical activity. To reduce weight of obese having locomotor problems the mutual application of underwater exercise, gym hall exercise, brisk walking and low calorie diet is recommended. Brisk walking programme can easily be controlled by the step-counter. Efficiency of the method is shown by our 3-year practice.

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Table 1 – Distribution of the elements of the hypo-calorific diet allowable in the complex weight loss programme, broke down to percentages

800 kcal			
	Protein	Grease	Carbo-hydrate
Energy %	15	25	60
g	29,3	21,5	117,1
kcal	120	200	480
Energy %	15	20	65
g	29,3	17,2	126,8
kcal	120	160	520

1200 kcal			
	Protein	Grease	Carbo-hydrate
Energy %	15	25	60
g	43,9	32,3	175,6
kcal	180	300	720
Energy %	15	20	65
g	43,9	25,8	190,2
kcal	180	240	780

1500 kcal			
	Protein	Grease	Carbon-hydrate
Energy %	15	25	60
g	54,9	40,3	219,5
kcal	225	375	900
Energy %	15	20	65
g	54,9	32,3	237,8
kcal	225	300	975

1 g protein = 4,1 kcal
 1 g grease = 9,3 kcal
 1g carbo-hydrate = 4,1 kcal

Philosophy: EXERCISE IS MEDICINE!

Dr. Alan Jensen, Founder • CEO • Creator, AquaDios-Med™

AquaDios-Med™ is a 21st Century Immersion Environment for Advanced Fitness & Accelerated Healing. AquaDios-Med™ is loosely translated as “medical water god” to illustrate the power of the human mind to heal disease process through mind body medicine practices combined with deep-water immersion and physical exercise.

Today modern medicine makes it clear cancer survival is above 80% when treatment combines common medical practices of chemotherapy and radiation together with mind body medicine, but there has been no emphasis on the aspect of physical exercise. This is a huge mistake because we humans literally stew in our own genetic and environmental juices of stress. However, modern alternative medicine has shown genetic predisposition can be altered with mind body medicine, exercise and diet.

The toxins of stress, including fear, anger, love and rage become released into our bodies by our own memory, through television or movie stories, fantasy and reality events. This self-concocted genetic stew can be lethal and is the basis for most symptoms of disease seen in modern medical practices and hospitals throughout the world. These dangerous deadly self-induced stress toxins are absorbed into the entire system and can be released only by urination, defecation and perspiration. Thus, physical exercise is the medicine of modern mankind but has become confused by the over use - abuse of pharmacology. Television and mass advertising informs us we can medicate ourselves with over-the-counter medicine like Advil and Aspirin or we can see our doctor for the correct pharmacology drugs, which have more serious side effects than the presenting symptom that may have been managed by the medicine of exercise.

AquaDios-Med™ is a 21st century process based on ancient hot and cold immersion united with mind body medicine and strenuous physical exercise while immersed to the neck to produce rapid healing, rejuvenation, enhanced quality of life and to extend longevity. See <http://www.aquadios.com/>

Research shows Cold immersion increases hemoglobin production and oxygen extraction to accelerate cell structure. Investigation also demonstrates Hot immersion advances blood flow. AquaDios-Med™ incorporates the hot and cold immersions with Powerful massage of proprietary designed underwater jets, together with physical exertion to prevent characteristic blood engorgement at the injury site. This AquaDios-Med™ process allows complete body absorption and facilitates toxin discharge into, and through the human physiological system. It is the only exercise choice for obesity and arthritis patients. Rehabilitation pain is an expected outcome of AquaDios-Med™; it accelerates rapid healing and physical fitness, which in turn reduces medical expenses, pharmacological dependence and enhances wellness and longevity.

AquaDios-Med™ incorporates psychoneuroimmunological mediation and physiological attributes to support pain management and rapid rehabilitation.

Implement AquaDios-Med™ nationwide - globally) will reduce health costs and increase wellness.

MATERIAL AND METHODS:

The AquaDios-Med™ process is practiced within four separate proprietary immersion chambers. These chambers [demonstrated by DVD] utilize AquaDios-Med™ proprietary non-skid surfaces (Non-Slip Pebble Tek), proprietary Prototype Plenums, proprietary Safety Handles, and ergonomic designs, Swim Gym, a proprietary Flat-Stepped Bottom and more. Experiential activities included for all participants. See <http://www.aquadios.com/>

RESULTS:

Annual health care cost in the USA is about \$2 Trillion. The AquaDios-Med™ process and technology can eliminate \$900 billion of that cost while producing a healthier, less drug-dependent nation. AquaDios-Med™ can help move national healthcare from in-patient hospital models to outpatient health-center models.

CONCLUSION:

With AquaDios-Med™, every country in the world can decrease medical expenses and suffering while increasing physical fitness, longevity, quality of life and general wellness.

Keywords: Mind Body Medicine, physiological pain management, rehabilitation pain, rapid healing, hemoglobin extraction, Spiegel Hypnotic Induction Profile, proprietary safety handles, multiple flat, non-skid surfaces, prototype plenums, power massage, Yoga

"The driving force to create both the AquaDios-Med™ process and the AquaDios™ prototype is a common world wide belief that, at some level, we all want to be the best and get the best that life has to offer. To achieve this goal we must first feel abundant energy together with an unflinching sense of peace and well being before the stream of growth can flow into all areas of life. A successful outcome requires being in charge of your life and unlocking or letting go of whatever bothers you, regardless of your circumstances."

Most exclusive spas have what can be referenced as a "splash for cash" while being pampered. This approach does little for the client – consumer other than relief of stress – anxiety from the pampering and individual attention. But, alas there is little to no lasting benefit. Whereas AquaDios-Med is a process, a program to establish physical fitness for all walks of life including the disabled and infirmed as well as the those people who are physically fit or powerful athletes.

Lecture will be combined with audio visual and experiential interaction.

Areas covered will be the value of Psychoneuroimmunological Mediation and Mind Body Medicine in the treatment of disease, rehabilitation pain management and practical physical fitness.

Methods used to determine patient receptiveness include those by the Spiegel Eye-Roll.

THE IMPAIRED BECOME REPAIRED!

YOU DON'T STOP EXERCISING BECAUSE YOU GROW OLD;

YOU GROW OLD BECAUSE YOU STOP EXERCISING!

AquaDiosMed is not a panacea; it's a reality waiting to be implemented for the human race.

THE ROLE OF THE SWIMMING AND WATER-POLO IN THE TREATMENT OF CHILDHOOD OBESITY. THE BENEFIT OF THE ARCHIMEDES' RULE

Linda Czinner MD, prof. Antal Czinner MD, PhD
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The basic of the treatment of obesity are: the physical activity, the diet and the behaviour therapy. So we wanted to examine the old Greek Archimedes' rule in the treatment of obesity. The swimming and the moving under the water is much more easier than the running or the gymnastic on the ground.

Methods: We examined the physical activity (measured by accelerometer-Actical) in 2 groups during a 6 month period. At the same time we measured the body-composition by bioimpedance method (inBody 3)

In the first group (n:12) that means:

- 2x45 min gymnastic in school
- 2x45 min gymnastic in our hospital
- 2x60 min swimming and/or water-polo per week

In the second control group (n:20): the program was the same but without swimming. The age of the children was 6-14 years, 15 male, 17 female.

The diet was a low calorie (1000-1200cal/day) a high protein (2g/kg/day) diet. The fiber content was 10g/day and saturated-unsaturated fatty acid ratio was near 1:1.

Results:

During the 6 month period all results were better in the swimming group. The decrease of the body weight at the end point was 8kg+/-1,18) and the decrease of the body fat percent was also higher (6% versus 4,9%) in the first group. The lean body-mass percent increased in the first swimming group (3,15kg+/-2,84 versus 2,95kg+/-2,05). The number of the patients in both groups was low, so the results are not significant.

Summarising our observation we want to stress on that the swimming is a useful method of the physical activity.

AQUAFITNESS AND REDUCTIONS OF BODY WEIGHT

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sportfizioterapeuta¹, trainer of aquafitness²

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As a harmful effects in the modern industrial society must be admitted that the incidence rate of obesity of their members increases.

Up to now the results of measures taken against him seems to be inadequate to the anticipation. The „Energy Medicine” got the idea of perception: excess of bodyweight can be in relationship – as the chronic fatigue too - with decrease of resting energy level of the organism leading to organ's *dis*-function. ☞ Intention

Seldom appear similar problems in ratesports. The idea was given: using the training methods of top athletes can increase the resting energy level of the body, eliminate the *dis*-function of organ systems and decrease eventual the excess of bodyweight. In accordance with the articles *Over-compensation is coming after regeneration of stress*, so repetitive stimuli can increase the resting energy level *in-directly*. Their effectively can increase *direct* method of Energy Medicine: Ionic Cyclotronic Electron Magneto Resonance Stimulation („iCeMeReS”). We searched after methods which can not lead to overuse injuries in the movement system but stimulate the oxidative metabolism helping the utilisation of fat-like substances. ☞ Material and methods

The participants of training make their exercises 1./ aquafitness – in deep water - (n=37)

2./ aqua-step – in shoal. Their mean age 44. 5 year (SD 22. 5). Length of trainings is 1 hour, twice or three times a week in a three month period.

Both exercises improve: development of endurance, strengthening of muscles and restoration of posture. Efficiency analysis of training at the participant were used the improvement of trained state: Body Mass Index (BMI) and General Feeling Test („GFT”) with Visual Analog Scale („VAS”) - questionnaire, changes of the pulsefrequency (Polar watch). ☞ Results

Decided difference was found of Body Mass Index (BMI). Their decrease from 29,6 to 27.12 is significant ($p < 0,05$, SD 4,91). General Feeling Test („GFT”) - our creation - with Visual Analog Scale („VAS” „0” = bad, „10” = excellent quality) was on the upswing from the beginning 5,17 value to 9. The measurement of Polar-watch the pulse rate resulted no significant changes. ☞ Conclusion: Subaquatic is possible to move our body lighten in all direction, but the strength of water decreases the velocity of motion. In the same time this braking effect can help in dosing the exercise, tender treatment for joints, prevent injury, comfortable for the participants, can lead all of them to humor and to be at rest in a secret position.

Physiological effect of the aquafitness / step training improvement of refined coordination, synergy of organ systems, oxygen uptake, overuse of the lipid depot, increase of physical performance, efficiency in sport and all day live too. Sport medicine is helping to the evidence the Obesitology by recognizing the positive relationship between Obesity – Resting Energy Level of the organism – organ *dis*-function of metabolism. The method is Very Important Organiser for Organ's Regeneration, as acronym: „VIOFOR Therapy”.

COMPLEX TREATMENT OF OVERWEIGHT RHEUMATOLOGIC PATIENTS

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The most frequent complaint of rheumatologic patients is pain, what can be of either mechanical or inflammatory origin. In the case of overweight patients – from the rheumatologic diseases – the occurrence of osteoarthritis of the knee, L-S discopathia or osteoarthritis of the hip is expectable to occur. As regards to the symptoms occurring as part of the metabolic syndrome (e.g. in the case of diabetes patients) periartthritis humeroscapularis, carpal tunnel and exostosis calcanei are expected to appear the most frequently.

For silencing pains of such origin primarily non-pharmaceutical methods can be chosen, such as:

- Information and guidance (e.g. position of the chair or the monitor, selection of the right type of shoes, air-conditioning)
- Resting – Moving (walking, cycling, swimming)
- Packing, icing
- Therapeutic physical exercise, manual therapy
- Diet (arthritis)
- Autogenic training, relaxation, acupuncture
- Accessories (stick, walk-frame, joint protector)
- Physiotherapy (mechano-, hydro-, balneotherapy, etc.)

If these treatments prove to be ineffective – upon the continuation thereof – also pharmaceutical pain silencing can be applied:

- Simple pain killer (salicyl, paracetamol)
- Non-steroids (21 kinds of NSAID products are available in Hungary, many of them even without prescription)

Should we chose COX-1 or COX-2 products? Which should be given and when? Several aspects must be considered (e.g. additional diseases), but attention must always be paid to that

- the possible smallest yet effective dosage shall be given for the possible shortest period;
- the patient shall not take several NSAID products parallel
- protection of the stomach, control of blood pressure and function of the kidneys are required.

While during the traditional COX-1 treatment gastrointestinal complication occurred in approx. 1-4 % (however, these are very serious ones), upon the application of COX-2 products – instead of the rather rare gastrointestinal complications – cardiovascular side-effects can be expected to become more frequent.

- Steroids
- Application of opiates

The application of chondro-protective drugs is useful for the purpose of prevention.

Silencing of locomotor pains is a detachable element of the daily tasks for a rheumatologist. However, treatment cannot be done “by routine”, since each and every patient is different. Accordingly detailed information is required about the patient (anamnesis, previous attempted therapies, general internal condition, pharmaceutical interactions), since each and every patient have to get *individual* treatment.

OBESITY-RELATED COMORBIDITIES IN PATIENTS OF A RHEUMATOLOGIC REHABILITATION UNIT

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A survey was made among the inpatients of a rheumatologic rehabilitation unit. The aim of the study was to evaluate the presence of obesity-related comorbidities (ORCM), and their correlation to the BMI and WC. Methods: the body weight, height, and waist circumference (WC) was measured, the body mass index (BMI) was calculated of 60 patients: male: n=14 mean age: 49,28 (50-90) years, female: n=46, mean age: 61,89 (45-87) years. The presence of hypertension, dyslipidemia, cardiovascular disease, diabetes, osteoarthritis (OA) of the spine, hip and knee was registered. Results: the mean BMI of male patients was 29,85 (37,4 -21,6) kg/m², that of female patients was 27,0 (18,4-49,7) kg/m². The mean WC in men was 109,14 (87-128) cm, in women 96,33 (74-123) cm. The incidence of hypertension was: men 10/14, women 33/46, that of dyslipidemia: men 6/14, women 12/46, that of cardiovascular disease: men 5/14, women 13/46, that of known diabetes type I. men 3/14, women 1/46, type II. men 3/14, women 9/46. The incidence of osteoarthritis of the spine was: men 7/14, women 32/46, that of the hip: men 3/14, women 11/46, that of the knee: men 3/14, women 18/46. The patients were divided into 3 groups: 1.: BMI < 25; 2.: BMI = 25-30, 3.: BMI > 30. In males the highest incidence of hypertension was found in the middle range, that of dyslipidaemia in the 2nd, cardiovascular disease almost the same number in 2nd and 3rd group, diabetes in the 3rd group. In comparison, almost all of the patients had the value of WC over 102 cm, and the highest incidence of ORCM could be observed among them. In females the incidence of hypertension in 1st and 2nd group was the same, in the 3rd was the highest, just as cardiovascular disease. The incidence of diabetes elevated parallel the number of the groups, and dyslipidemia seemed to be independent. WC below 80 cm no ORCM was registered, between 80-88 half of the incidence of above 88, except dyslipidemia, which was again independent. The highest incidence of OA in males was found in the 2nd and 3rd group, mostly in the spine and knee. In women the highest incidence of knee OA was found in the 2nd and 3rd group, OA of the spine was equally high in all groups. Values of WC correlated with the presence of spine and knee OA both in men and women. Authors conclude, that overweight and obesity is very common among patients treated with OA, and the incidence of other ORCMs is high too. WC seems to be a more important marker of ORCMs.

OVERWEIGHT AND THERMAL CARE IN FRANCE

Dr Michel F. Duprat MD MPH

This presentation discusses the role of balneotherapy over weight management and its evaluation.

Obesity concerns 6 millions French of all ages, all regions, all social classes. It is becoming an important public health issue. Balneotherapy is seldom proposed whereas medical or non medical treatments abound.

Weight management programs are implemented in 10 thermal spots in France. They include less than 30 000 curists/year out of a total frequentation of 540 000. Treatments coordinated by medical doctors may differ according to spas, water types, pathologies. They tend to offer similar services: a protective environment, a 3 weeks cure, a holistic approach.

A scientific assessment of all the indications of balneotherapy is on going. It aims to measure its "outcome". Requested by the National Social Security, it is coordinated by university scientists and financed by the thermal industry. It will shape the reimbursement of thermal care in the coming years.

The impact of balneotherapy over weight management will be assessed through a multicentric, randomized, open and comparative survey.

Its principal objective is to compare the evolution of 2 groups of 200 people's weight (curists versus non curists) over 14 months. Secondary objectives include measurement of quality of life, dietary intake.

Overweight adult patients, without prior balneotherapy history selected through volunteered investigators are included. Patients refusing thermal care or presenting contra-indication are excluded.

Patient's follow-up will be systematized and as comparable as possible.

The survey performed by independent researchers calls for the collaboration between spa professionals & other specialists.

The first inclusions have been made; 1st results are expected by the end of 2008:

Conclusion

BalneoT plays a marginal role in obesity management.

Anecdotal evidence indicates that it contributes to alleviate the problem and its consequences

A rigorous survey assessing the efficacy of balneoT on overweight has begun.

MOFETTA TREATMENT IN LOWER LIMB DISEASES OF OBESE

Gyula Gyetvai MD

Dry Carbon-Dioxide Bath in Mátradereske

Balneotherapeutic application of carbon-dioxide has more thousands years of history. The significance of carbon-dioxide effects on civilized diseases. In medical treatments dry carbon-dioxide has the same significance as well as a physiotherapeutic factor. The natural carbon-dioxide dry bath has been applied for hundreds of years in Europe (Romania, Poland, Italy and Austria).

In Hungary the only volcanic gas discharge can be found in Mátradereske.

The components of the gas: Oxygen: 1,61 vol %, Nitrogen: 7,13 vol %, Methane: 5,11 vol %, and carbon-dioxid: 86,16 vol %. The radon content of the healing gas is quite high as its radioactivity is: / 222 Rn / 125 kBq/m³. However; this gas is does not contain sulphur.

The medical gas is suitable to cure heart and periferical artery diseases, high blood-pressure, vascular complication of diabetics, arthrosis, osteoporosis and to recover after vascular operation.

We show the results of forty-five patients suffering from diabetic obliterative circulatory disease in the presentation. Before and after the treatments the BMI, the longitude of the abdomen, bloodsugar-level, the changes of the distance of walking and subjective symptoms have been examined. (One cure takes 15 days, daily treatment takes 25 minutes). The natural carbon-dioxid cure has influenced the measurable and subjective parameters favourably.

PRESENTATION OF THE FIRST ITALIAN NATIONAL MINERAL WATER MUSEUM CARLO BRAZZOROTTO

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Background/Aims:

The Mineral Water Museum of Crodo (Piemonte, Italy) is not only a memory warehouse but it is also a place full of knowledge, an actual instrument of communication and one of its' major aims is cultural promotion. A Scientific Committee, composed of a team of experts in different fields was established in order to better discover the thousands aspects of such a complex element as mineral water.

Methods:

Among the many activities which were organized, there are seminars on water and the "2007 First Semester Programme" includes:

- from February 8th to 11th: Alimentation Exhibition, Rimini, Italy, Water Tasting Course
- April 30th: Domodossola, Italy "Why a Mineral Water Museum?"
- May 13th: Gualdo Tadino (Perugia, Italy), Mineral Water Health Properties
- May 27th: Rome, The World of Mineral Water
- June 2nd: Siena, Italy, Water as an aliment
- June 29th: Bologna, Water in Medicine and Balneotherapy

Results:

Guided tours of the Museum have been organized for schools on every level. Moreover, in order to explain what is behind every bottle of mineral water, the Museum organizes expositions with the most interesting pieces of its' historical collection. The next dates are:

- from April 14th to May 1st, Viterbo, Italy: "Acqua è" (Water is...)
- from June 14th to June 17th, Bologna: "Oro bianco" (White Gold)

A multimedia center and a library are being built and also a new Museum on Thermal Establishments and Centers is being made ready in Emilia Romagna, Italy.

Conclusion:

The aim of this poster is to promote similar activities on a European level and to propose a model for the creation of other National Mineral Water Museums in European countries.

DURATION OF OBESITY AND INSULIN RESISTANCE

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AIMS: Obesity is the principal origin of diabetes mellitus. After the concept of pre-diabetes, it was shown that many morbidly obese people with insulin resistance became diabetic either by natural progression of obesity or insulin resistance. We examined and compared 43 patients (39 women, 4 men, overt diabetics were excluded) according to duration of obesity.

METHODS: Patients were investigated according to their age, duration of obesity, BMI, waist circumference WHR (Waist/hip ratio). Serum fasting glucose, triglyceride, total cholesterol, acid uric concentrations were determined by enzymatic methods and HDL-C by immunoinhibition method on an Olympus AU 2700 autoanalyzer. LDL-C levels were estimated by using Friedewald formula. Serum CRP levels were measured by nephelometric method, (Beckman Coulter Inc, USA). Serum insulin, C-peptid, TSH were determined by using electrochemiluminescence sandwich immunoassay (ECLIA, Roche Diagnostics, Mannheim, Germany) on Elecsys 170.

RESULTS: The characteristics of patients are as follows: (mean±SD)
Age (years): 42.0±12.3, duration of obesity (years):11.1±9.9, BMI (kg/m²): 37.9±6.2, waist circumference (cm):116.4±15.3, WHR: 0.88±0.09, blood pressure (mm Hg): systolic 123.1±12.4, diastolic 79.5±10.1, CRP (mg/dl): 3.96±14.26, fasting blood glucose (mg/dl): 100.9±13.8, C-peptide (ng/ml): 3.77±1.57, plasma insulin level (μU/ml): 16.1±11.5, uric acid (mg/dl): 4.76±1.1, total cholesterol (mg/dl):185±33.93, triglycerid (mg/dl):142.4±103.6, LDL (mg/dl):110.1±29.9, HDL (mg/dl): 49.7, TSH (μU/ml): 2.64±2.02. The groups were divided according to the duration of obesity (1st group: <10 years and 2nd group: ≥10 years). The levels of C-peptide (4.25±1.97 vs 3.25±0.75, p<0.06) and insulin (19.5±15.42 vs 12.95±4.17 p<0.03) in the first group are higher than the second group. Abdominal obesity is observed more frequently (134.1±13.2 vs 119±18.4, p<0.003) in the first group in contrast with BMI (36.7±4.93 vs 39.2±7.2, p<0.1).

CONCLUSION:

1. Insulin resistance seems to be more important at the beginning of obesity.
2. Insulin reserve decreases as duration of obesity increases.
3. Abdominal fat is a good marker of insulin resistance.

LEPTIN AND ADIPONECTIN PLASMA LEVELS IN PATIENTS WITH KNEE OSTEOARTHRITIS TREATED WITH MUD PACK THERAPY

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BACKGROUND/ AIMS:

The potential role of Leptin in osteoarthritis (OA) is supported by the relationship between high BMI and increased risk of OA. This positive association is observed not only for knee joints, but also for non weight bearing joints, such as hands, suggesting that OA may be initiated by metabolic disorders.

Adiponectin is a recently discovered protein secreted by adipose tissue and involved in the control of energy homeostasis. Adiponectin presents metabolic, anti-inflammatory and anti-atherogenic activities.

OBJECTIVE:

To assess serum levels of Leptin and Adiponectin in patients with knee OA, before and after spa therapy.

METHODS:

Twenty outpatients with primary OA of knee and fulfilling the ACR criteria of both sexes, aged between 50-85 were included in the study. Radiological staging was carried out using the Kellgren method.

Group I (ten patients) was treated with a cycle of local mud packs and balneotherapy at Rapolano Terme "Antica Querciolaia" (Italy) for 15 days and Group II (ten patients) (control group) continued regular routine ambulatory care. Blood samples (6 ml) were withdrawn from an antecubital vein, in the morning after an overnight fast, before and after treatment. The study was approved by the Ethics Committee of the University Hospital of Siena, Italy.

Plasma leptin levels were determined by enzyme-linked immunosorbent assay method using ready kits of Quantikine® human Leptin Immunoassay (R&D Systems). Plasma adiponectin levels were detected by enzyme-linked immunosorbent assay method using ready kits of Quantikine® human Adiponectin Immunoassay (R&D Systems).

RESULTS:

We found a slight, but not statistically significant, increase in plasma leptin levels before (14.3 ± 6.5 ng/ml) and after spa therapy (17.6 ± 11.9 ng/ml), while adiponectin levels were stable. Plasma leptin values significantly (p<0.05) decreased after conventional therapy. No significant difference was found between plasma adiponectin levels before and after conventional therapy.

CONCLUSION:

These results may suggest that spa therapy increases chondrocyte's metabolic activity.