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THE 69° GENERAL ASSEMBLY
AND
INTERNATIONAL SCIENTIFIC CONGRESS
OF THE WORLD FEDERATION
OF HYDROTHERAPY AND CLIMATOTHERAPY
(FEMTEC)

**“ENVIRONMENT, HEALTH
RESORTS, TOURISM.
*Drivers for a good quality of life
and local development*”**



YEREVAN – JERMUK Thermal Center
(ARMENIA)

2nd - 8th October 2016

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PREFACE

The recent conference on climate change in Paris highlighted the possible significant increase in the incidence of diseases due to environmental changes, which may affect a variety of systems (respiratory, locomotor, and gastrointestinal) and millions of people, sometimes leading with fatal consequences (climate-@lists.iisd.ca).

Moreover, the World Health Organization (www.who.int) implemented several workshops, whose outcome was a set of important scientific documents with annexed guidelines (http://www.who.int/healthinfo/sage/SAGE_Meeting_Dec2012_Sto neA.pdf) concerning the evaluation of objective/ subjective wellbeing as related to the socioeconomic environment. Alongside these issues, a variety of forms of tourism aimed at health, experience, and awareness are being developed.

The Thermae and the relevant regions are, therefore, important players in this challenge, which can be considered as a major one for modern civilization, namely environmental, human, and personal development and sustainability.

Thermal medicine, an old therapy that is currently applied in advanced countries according to strict scientific criteria, is now involved in this process to its full right and offers its potential for prevention, care, and rehabilitation to millions of patients all around the world. A stay at a thermal station, if well managed and organized, allows to “review” and “adjust” one’s lifestyles, which are responsible for most active diseases.

The cultural and structural wealth of “thermal regions”, sometimes a true legacy of the past experienced through a modern approach, is a natural “soul medicine” complement, according to a modern interpretation of complex body systems and mind/body relations.

All the above involves multiple components and also represents an important factor for the socioeconomic development of thermal regions.

Environment, health resorts, and tourism are the pillars of a complex structure that may affect the quality of life both in health and economic terms. However, their harmonious development calls for analyses, evaluations, and practical proposals.

This is the purpose of the 69th Congress of FEMTEC, which gathers experts from all over the world to disclose new integrated development models to specialists and to the National Government Institutions in charge of health and territorial planning.

The Congress takes place in the Republic of Armenia (<https://it.wikipedia.org/wiki/Armeni>) and, more specifically, in its capital Yerevan and in the old thermal resort of Jermuk (www.jermukarmenia.com). Armenia is a land that boasts a very old history and culture, where modernity goes hand in hand with a sound and well-established tradition of appropriate lifestyles that also provide for the use of thermal resources in full respect of regional specificities. Armenia gets deep into your soul with its “people-friendly” pace and all its values, and will offer a starting point for proactive thinking on the development of thermal medicine.

Pr. Umberto Solimene
FEMTEC President

SCIENTIFIC COMMITTEE

Belaitar M. (Algeria), **Bonsignori F.** (Italy), **Bulekbaeva S.** (Kazakhstan), **Cantista P.** (Portugal), **Cho K. D.** (Korea), **D'Alessandro G.** (Italy), **Dubois T.** (France), **Ferruzzi A.** (Italy), **Fluck I.** (Hungary), **Gurnari G.** (San Marino), **Ledesma RosaR.** (Cuba), **MaraverEyzaguirriF.** (Spain), **Menendez F.** (Cuba), **Oueslati R.** (Tunisia), **Oyama M.** (Japan), **Ponikowska I.** (Poland), **Razumov A.**(Russia), **Roques Ch.** (France), **Santuari A.** (Italy), **Solimene U.** (Italy), **Surdu O.** (Romania), **Trofimov E.** (Russia), **Veicsteinas A.** (Italy), **Vitale M.** (Italy), **Zaremba B.** (Slovenia), **Zhang Y.** (China), **Zorin I.** (Russia)

ORGANIZING COMMITTEE

Hovhannisyan V. (President of Organizing Committee: Mayor of Jermuk City, Co-Chairman of FEMTEC Armenia),
Sargsyan V. (Chief Doctor of Jermuk Armenia Resort and Spa Hotel),
Hakobyan H. (Chief Doctor of Sanatorium “ARARAT” for mothers and children),
Voskanyan V. (Balneologist),
Tovmasyan N. (Armenia - JUST TRAVEL LLC)

SECRETARIAT

Busato S. (Italy), **Chaurskaya N.** (Russia)

SPONSORS



MINISTRY OF ECONOMY
OF THE REPUBLIC OF ARMENIA



JERMUK CITY



CONGRESS PROGRAM

04th October Tuesday

16.30-17.30 Check-in in "JermukArmenia" hotel

20.00-22.00Dinner with the Mayor of Jermuk city

Overnight in Jermuk

05th October Wednesday

Conference Room HYATT PLACE JERMUK

08.30-09.30Congress registration

09.15-10.30

- Grand opening Ceremony of the 69thInternational Scientific Congress of FEMTEC
- Welcome addresses by Representatives of Authorities and International Delegations Heads
- Speech of the President of Organizing Committee: Mayor of Jermuk City, Co-Chairman of FEMTEC Armenia
- Speech of the President Umberto Solimene

10.15-10.30Group photo

10.30-11.00Coffee break

11.00-13.30 *ScientificSession (General):*

Chairs:T.Dubois,N.Razumov,O.Surdu, R. Oueslati

1. P. Cantista (Portugal)

The AQUANET project

2. T. Dubois (France)

Assessing the economic impact of balneotherapy

3. N.Razumov(Russian Federation)

Medical and social significance of health resortsin preservation and recovery of public health

4. F. Maraver, C. Morer (Spain)

Thermal centers as an important drivers of local development. The case of Spain.

5. **Y. Zhang, M. Zhao (China)**
Hot springs tourism industry in China
6. **J. Naumann (Germany)**
Natural environments, especially forests and their importance for health and spa resorts
7. **S. Bulekbaeva (Kazakstan)**
The role of resorts in the health system
8. **V. S. Sevryukova, N. F. Denisenko, N. V. Zhuravleva (Russian Federation)**
Therapeutic tourism at the resort town of Anapa

13.30-14.30Lunch in Armenia Hotel

14.30-17.00*Scientific Session (General):*

Chairs:P. Cantista, G. Gurnari, F. Menendez

1. **F. Menendez, M. Leyva (Cuba)**
Rehabilitation and quality of life. Local and integral development of health tourism in Cuba
2. **O. Sorokina, A. Boikov (Russian Federation)**
The environment as one of the significant factors influencing the recovery of the patients
3. **R. Oueslati (Tunisia)**
Tunisian development programs and investments on health tourism resorts
4. **V.A. Khokhlov (Russian Federation)**
The role of geocological researches of offshore salt lakes in the conception of strategic development of health- resort territories of the western Crimea
5. **J. Naumann (Germany)**
Medical spa treatment in Baden-Württemberg, Germany: A survey of spa physicians 2016
6. **K. Nghargbu (Nigeria)**
Balneo-economics: a proposed topic for training of health resort practitioners

7. G. Gurnari (San Marino)

Qualitative hinges on modern thermalism offer

8. S. Osanova (Kazakstan)

Evaluation of the quality of medical services

9. U. Solimene, A. Santuari (Italy)

The EAPTC (European Association of Patients and Users of Thermal Centers): activity and program

19.00-20.00 Dinner in Armenia Hotel

20.00-22.00 Overnight in Jermuk

06th October Thursday

Conference Room HYATT PLACE JERMUK

09.00-11.45 *Scientific Session (Medical)*:

Chairs: I. Ponikowska, S. Bulekbaeva, V. Sargsyan, S. Masiero

1. Ponikowska (Poland)

Very old international classification of healing mineral water requires modifications

2. O. Surdu (Romania)

Romanian pathway of balneotherapy within the context of holistic and integrative allopathic medicine

3. S. Masiero (Italy)

Rehabilitation of musculoskeletal disability in thermal environment in Italy

4. J. Chojnowski (Poland)

Thermal treatment in patients with metabolic diseases - pharmacoeconomic aspects

5. S. Dermigian (Romania)

Wellness: history and description

6. R. F. Mullabaev (Russian Federation)

Rehabilitation of the patients with essential hypertension in sanatorium "Vasilyevsky"

- 7. R. M. Snadina, R. R. Zinnatullina (Republic of Tatarstan, Russian Federation)**

Complex treatment of the idiopathic hypertension in Sanatorium of Izhminvody

- 8. R. G. Yangirov (Republic of Tatarstan, Russian Federation)**

Experience of treatment by dry carbonic bathtubs in sanatorium

- 9. R. N. Galiev (Republic of Tatarstan, Russian Federation)**

Mineral water "Berezhnaya" in complex treatment of patients with diseases of gastric-intestinal tract, including patients undergone an operation in digestive organs

- 10. F. A. Galimullin (Republic of Tatarstan, Russian Federation)**

Medical rehabilitation of the patients with chronic ocular pathology

- 11. E. V. Dobryakov, E. A. Ivanova (Russian Federation)**

Efficacy evaluation of the most rational spa therapy complex in patients with vibration white finger

11.45-12.00 *Coffee break*

12.00-13.30 Scientific Session (Medical):

Chairs: J. Naumann, H. Hakobyan, L. Tubin, C. Gregotti

- 1. Trapeznikov (Russian Federation)**

Medical rehabilitation for the patients who underwent endoprosthesis replacement of major joints practiced in the health Resort "Dunes"

- 2. N. Kornilov (Russian Federation)**

Comparative evaluation of the effectiveness of Eurasian Natural balneological hydromineral resources according to the biochemical studies of blood

- 3. V. Marin (Romania)**

Ageing process and modulation of thermic parameters in balneal application at elderly

- 4. L. Tubin (Russian Federation)**

Low-intensive mud therapy: materials and methods

5. N. Veryho (Poland - Belarus)

Comprehensive assessment of ultra structural organization and functional state of the liver in rats with experimental hepatitis after drinking mineral water containing humus acids

6. N. P. Lavrik(Russian Federation)

Pediatric sanatorium “Solnechnoe”: pediatric cancer patients rehabilitation opportunities

13.30-14.30Lunch in Armenia Hotel

Conference Room *HYATT PLACE JERMUK*

14.30-16.30 Meeting of FEMTEC Executive and Board Committee

16.30-17.30General Assembly and awarding of participants

17.30-18.30Armenian herbal teas tasting with traditional Armenian sweets and desserts

20.00-22.00Dinner in Armenia Hotel

Overnight in Jermuk

07th October Friday

10.00-12.30 Tour to the Sanatoriums of Jermuk

12.30-13.30 Lunch in Armenia hotel

SPEAKERS

ABZALETDINOVA S.M., Medical-prophylactic institution of trade unions sanatorium “Zhemchuzhina” (“The Pearl”), NaberezhnyeChelny, Republic of Tatarstan, Russian Federation

BARAZZUOL M., State University of Padova and General Hospital, Italy

BOIKOVN., Medical Chief, Spa Center “White Nights”, St. Peterburg, Russian Federation

BULEKBAEVA S.,Director Rep. Children’s Center, Astana, Kazakhstan

CANTISTA P.,President ISMH;University of Porto, Portugal

CHAURSKAYA N., Chief Int. Relations Dept. FEMTEC, Russian Federation

CHOJNOWSKI J., President of Polish Association of Balneology and Physical Medicine, Poland

DENISENKO N. F., JSC "DiLUCH" - Sanatorium-Resort Complex, the Resort Town of Anapa, Russian Federation

DERMIGIAN S., Balneal and Rehabilitation Sanatorium of Techirghiol, Romania

DMITRIEVA O. M., Pediatric sanatorium "Solnechnoe", Solnechnoe settlement, Saint-Petersburg, Russian Federation

DOBRYAKOV E. V., JSC "DiLUCH" - Sanatorium-Resort Complex, the Resort Town of Anapa, Russian Federation

DUBOIS T., CNETH(Cons.Nat.Etab.Thermaux), Paris, France

FERNANDEZ-TORAN M.A., Medical Hydrology School, Univ. Complutense, Madrid, Spain

GALIEV R. N., Medical-prophylactic institution of trade unions sanatorium "Zhemchuzhina" ("The Pearl"), NaberezhnyeChelny, Republic of Tatarstan, Russian Federation

GALIMULLIN F. A., Sanatorium Livadia Prevention and Treatment Facility of Trade Unions of the city of Kazan, Kazan State Medical Academy State Budgetary Educational Institution of Supplementary Professional Education of the Ministry of Health of Republic of Tatarstan, Russian Federation

GURNARI G., Pres. Technical Commission FEMTEC, CeoBenaqaum Group, Republic of San Marino

IBRAGIMOV M., Chief physician of the Medical Institutions of Trade Unions "Sanatorium Bakirovo", Republic of Tatarstan, Russian Federation

ISTOMINA I., MEDSI Clinic, Moscow, Russian Federation

IVANOVA E. A., JSC "DiLUCH" - Sanatorium-Resort Complex, the Resort Town of Anapa, Russian Federation

KHOKHLOV V. A., Crimean hydrogeological regime-operating station of the Ministry of resorts and tourism of the Republic of Crimea, Russian Federation

KORNILOV N., Stavropol State Agrarian University, Stavropol, Russian Federation

KORNILOVA E., Stavropol State Agrarian University, Stavropol, Russian Federation

LATOUR T., Nicolaus Copernicus University in Torun, Collegium Medicum in Bydgoszcz (Poland), Department of Balneology and Physical Medicine (Ciechocinek)

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LEYVA M., Director of Rehabilitation National Centre, Health Ministry, Cuba

MARAVER F., Director of Medical Hydrology School, Univ. Complutense, Madrid, Spain

MARIN V., Balneal and Rehabilitation Sanatorium of Techirghiol, Romania

MASIERO S., Director of Medical School of Rehabilitation, State University of Padova and General Hospital, Italy

MENENDEZ F., V. President of FEMTEC, la HAVANA, Cuba

MORER C., Medical Hydrology School, Univ. Complutense, Madrid, Spain

MULLABAEV R. F., Sanatorium "Vasilyevsky", Kazan state medical academy, Russian Federation

MUSUMECI A., State University of Padova and General Hospital, Italy

NAUMANN J., University Medical Center, Freiburg, Germany

NGHARGBU K., Department of Geology & Mining, Nasarawa State University, Keffi, Nigeria

NGHARGBU O., Department of Economics, Usmanu Danfodiyo University, Sokoto, Nigeria

ONOSE G., University of Medicine and Pharmacy "Carol Davila" Bucharest

OSPAKOVA S., Rep. Children's Center, Astana, Kazakhstan

OUESLATI R., Director of Office of Thermalism, Ministry of Health, Tunisia

PIGNATARO A., State University of Padova and General Hospital, Italy

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PONIKOWSKA I., Chief Dep. Physical Therapy, Copernicus Univ., Poland

PRANOVI G., State University of Padova and General Hospital, Italy

PROFIR D., Balneal and Rehabilitation Sanatorium of Techirghiol, Romania

PUNANOV YU. A., Pediatric sanatorium “Solnechnoe”, Solnechnoe settlement, Saint-Petersburg, Russian Federation

RAZUMOV A., Member of the Russian Academy of Science, Full Professor, President of National Spa Association, Russian Federation

SABITOVA D.YU., Sanatorium Livadia Prevention and Treatment Facility of Trade Unions of the city of Kazan, Kazan State Medical Academy State Budgetary Educational Institution of Supplementary Professional Education of the Ministry of Health of Republic of Tatarstan, Russian Federation

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SAFONOVA S. A., Pediatric sanatorium “Solnechnoe”, Solnechnoe settlement, Saint-Petersburg, Russian Federation

SANTUARI A., Pr. of International Health and Law, University of Bologna

SEVRYUKOVA V., Medical Chief of the Sanatorium “DiLUCH”, Anapa, Russian Federation

SHAKIROV A. K., Sanatorium “Vasilyevsky”, Kazan state medical academy, Russian Federation

SNADINA R. M., Sanatorium of Izhminvody, Republic of Tatarstan, Russian Federation

STANCIU L. E., Balneal and Rehabilitation Sanatorium of Techirghiol, Romania

SOLIMENE U., President FEMTEC, University of Milan, Italy
SOROKINA O., Dep. Medical Chief, Spa Center "White Nights", St. Peterburg, Russian Federation
STRELKOVA T. V., Pediatric sanatorium "Solnechnoe", Solnechnoe settlement, Saint-Petersburg, Russian Federation
SURDU O., Baneal and Rehabilitation Sanatorium of Techirghiol, Ovidius University of Constanța, Medicine Faculty
TRAPEZNIKOV A., Health resort "Dunes", LLC "Gittin", Russian Federation
TUBIN L., GITTIN Production Company, Saint-Petersburg, Russian Federation
VERYHO N., Nicolaus Copernicus University in Torun, Collegium Medicum in Bydgoszcz (Poland), Department of Balneology and Physical Medicine (Ciechocinek)
VOROBYOVA L. A., Pediatric sanatorium "Solnechnoe", Solnechnoe settlement, Saint-Petersburg, Russian Federation
YANGIROV R. G., Sanatorium of Izhevsk, Republic of Tatarstan, Russian Federation
YUNUSOVA L.R., Medical-prophylactic institution of trade unions sanatorium "Zhemchuzhina" ("The Pearl"), Naberezhnye Chelny, Republic of Tatarstan, Russian Federation
YUSKIN A., Health resort "Dunes", LLC "Gittin", Russian Federation
ZHANG Y., Secretary General, Chinese Hot Spring Tourism Association (CHTA), Beijing, China
ZHAO Y., Vice Secretary General Chinese Hot Spring Tourism Association (CHTA), Beijing, China
ZHURAVLEVA N. V., JSC "DiLUCH" - Sanatorium-Resort Complex, the Resort Town of Anapa, Russian Federation
ZINNATULLINA R. R., Sanatorium of Izhevsk, Republic of Tatarstan, Russian Federation

ABSTRACTS

THE ROLE OF RESORTS IN THE HEALTH SYSTEM

BULEKBAEVA S.

National Center for Children's Rehabilitation, Astana, Kazakhstan

Sanatorium network covers almost all regions of Kazakhstan. However, according to the distribution of natural healing factors, it covers our country extremely uneven. For example, sanatorium network is not developed in the west part of Kazakhstan. Basically most resorts are located and developed in the south and Schuchinsk-Borovoe resort zone where the climate conditions are characterized comfortable and supplied with mineral water and therapeutic mud.

Besides ordinary sanatorium-resorts, there are clinical sanatorium-resorts which are used for rehabilitation after serious diseases: Alatau, Saryagash and sanatorium of the medical center based on President's Office Affairs which are different not only by having a good medical facilities but with high comfort level. After getting independence, sanatorium functioning changed significantly. Most of them were privatized or was not able to get budget funding. But in spite of this situation, the analysis as a whole sanatorium organizations engaged in medical and recreational activities with the use of natural healing factors showed an increase in their number from 140 in 2007 to 170 in 2015. Sanatorium networks are developing dynamically. From 1990 till 2013 the number of sanatoriums and resorts increased to 120, only in 1999 the number decreased to 80. The sanatorium treatment and recreation for children are functioning in 9 sanatorium where 12 000 people can have a treatment and recovery services. There are 3 types of resorts in Kazakhstan:

- climatic (the main treating factor is climate which allows to use arotherapy, talassotherapy and other factors): *Alatau, Borovoe resorts, Koktem, Kamenskplateu*

- balneological (mineral water): *Alma-aran, Kapal-Arasan, RakhmanovskiyeKlyuchi, SosnoviyBor, Merke, Saryagash*
- therapeutic mud (different types of mud): *Muyaldy, Zhana-Kurgan, Atyrau, Schuchinsk*
- assorted: different natural healing factors are used (balneological, climatic, therapeutic mud).

Given the fact that the population which had a sanatorium treatment was reduced through privatization. Our country began developing a wide network of rehabilitation centers . In 2007, a unique modern Republican Children's Rehabilitation Center with 300 beds for children from 1 to 18 with psycho-neurological pathologies was put into operation. The rehabilitation consists of 3 aspects:

- medical (*kinesotherapy, ergotherapy, physiotherapy, medical, biological feedback therapy, posturographic*)
- psychological and pedagogical correction (*speech therapy, psychological support, Montessori therapy, music therapy, game therapy*)
- social adaptation (*adaptive sport and participation in contests, lessons at driver's school*), and professional orientation (*sewing shop, woodwork-shop, hairdressing salon, orthotics*)

In 2013, New Rehabilitation Center with 50 beds was opened in Kyzylorda.

THE “AQUANET” PROJECT

PEDRO CANTISTA

President of International Society of Medical Hydrology (ISMH)

In these days we are facing a huge volume of information related to water.

This seems absolutely logical taking in consideration its major importance in all our lives. We all know that since the very beginning of mankind water is the most important issue of all our biology, nutrition, health, economy and even peace. Its multiple uses and roles are each time more requested. As a consequence of this water consumption is increasing more and more turning this reality into one of the most serious problems of our times.

So it is mandatory a kind of global pedagogic plan with the goal of reaching an ideal way to use the water and saving our major life natural resource.

Education is always the first and main step.

In an era of easy circulation and spread of information, namely by internet, we need to deal with the enormous amount of data, try to separate correct ideas from trash and manage to establish trustable channels of communication within the global topic of water.

With this thought in our mind we launch the idea of a new project that we called AQUANET. We intend to build a true cooperation between all the institutions that are concerned about water in its multiple aspects through a well-organized and efficient network gathering people dedicated to the mission of defending the water in our planet. At the same time this term AQUANET aims to be related to an internet platform of good information as a fundamental communication tool.

AQUANET intends to increase collaboration in water knowledge, education, research and social intervention in order to promote water in every stage of its cycle or location. From the oceans to the clouds, from the rain to the deep of the rocks, from the fountains

and sources to the rivers and lakes. We want to influence all the responsible for the water management in our world to improve water supply to all populations avoiding unacceptable loss of lives due to lack of water.

We also must defend the mineral waters as precious therapeutic agents contributing to Balneology and thermalism development and Balneotherapy use.

AQUANET doesn't intend by no means to substitute historical and prestigious organizations that during many years are doing a tremendous job in this field.

We all know the excellency of their work and are grateful to them. Our aim is to help their communication, establish more links between them and increase their efficiency.

AQUANET is not another scientific society or corporation but only what its name says: a net where information and activity within water issues may find a good and correct approach, knowledge, communication and cooperation.

THERMAL TREATMENT IN PATIENTS WITH METABOLIC DISEASES - PHARMACOECONOMIC ASPECTS

CHOJNOWSKI J.

Nicolaus Copernicus University, LudwikRydygier Collegium Medicum in Bydgoszcz, Faculty of Health Sciences, Department of Balneology and Physical Medicine

Diabetes, hypertension, obesity, lipid disorders are components of the metabolic syndrome. These are chronic diseases which are known to be treatable in thermal station. It has been shown that the results of this kind of treatment persist for about one year. Our aim was to assess whether the thermal treatment of patients with metabolic syndrome has the effect of reducing the cost of this treatment.

Treatment of metabolic diseases in the thermal resort was evaluated based on the available literature and our own researches of the thermal treatment. The effect of thermal treatment in patients with diabetes type 2, obesity included massive obesity, hypertension and lipid disorders was estimated before therapy, directly after therapy and six months later. We evaluated amount of visits in outpatient clinic, hospitalization and days of absence from work which was decreased after thermal treatment. The amount of pills was decreased too. We estimated costs incurred by the patient and the state covering included the cost of drugs, diagnostic tests and rehabilitation equipment by one year. We converted the amount of medicine by the current market price and it was calculated as a reduction in direct costs of treatment.

We are estimated cost /effect ratio of thermal treatment. For this purpose we assessed the cost of the typical thermal treatment. Then we compared calculated reduction of costs per one year (effect) with costs of typical 3-weeks treatment in thermal resort (cost). It has shown that a therapy in thermal resort in patients with metabolic diseases is very beneficial to reduce the cost of therapy.

WELLNESS – HISTORY AND DESCRIPTION

**DEMIRGIAN S.², SURDUM.^{1,3}, MARINV.², SURDUO.^{2,3},
SURDUT. V.³**

¹Constanta County Hospital

²Balneal and Rehabilitation Sanatorium of Techirghiol

³“Ovidius” University Constanta

Wellness is a very hot contemporary trend worldwide.

Everywhere you look you will see the evidence: wellness centers are rapidly springing up in hospitals, clinics, and fitness centers; medical and wellness spas are becoming more numerous, wellness coaching is a hot new field; wellness and body-mind-spirit health is omnipresent in women’s magazines; “wellness” is now a common name for a thousands of health products, from vitamins to pet foods.

How Did This All Come About? Why now? To get to the root of the matter, we need speak about over 3,000 years in the ancient civilizations of Asia and Greece that will help create a context for understanding the developing wellness trend in the twenty-first century. These ancient cultures had systems of medicine that owned a sophisticated understanding of the principles necessary to promote and maintain human health and wellbeing. All focused on the whole person – understanding that good health includes a balance in body, mind and spirit. These were the original systems of holistic medicine on the planet.

They also placed a great emphasis on lifestyle to maintain this balance throughout one’s life: diet, exercise, proper sleep, moderation in all things, ethical behavior, promotion of positive thoughts and emotions, and the importance of one’s spiritual nature, through prayer and meditation.

Hippocrates was the most important figure in Greek medicine. Some of his basic principles of healthy living still resonate with us, today, 2,500 years later. Here are some of his best known

statements: “Let your food be your medicine, and your medicine be your food.”; “It is more important to know what sort of person has a disease than to know what sort of disease a person has. “

Our modern use of the word “wellness” dates to the 1950’s and from an innovative work by physician Halbert L. Dunn, called High-Level Wellness (published 1961). Although Dunn’s work received little attention initially, his ideas were later embraced in the 1970’s by an informal network of individuals in the U.S., including Dr. John Travis, Don Ardell, Dr. Bill Hettler, and others. These “fathers of the wellness movement” created their own comprehensive models of wellness, developed new wellness assessment tools, and wrote and spoke actively about the concept.

Travis, Ardell, Hettler and their associates were responsible for creating the world’s first wellness center, developing the first university campus wellness center, and establishing the National Wellness Institute and National Wellness Conference in the U.S.

EFFICACY EVALUATION OF THE MOST RATIONAL SPA THERAPY COMPLEX IN PATIENTS WITH VIBRATION WHITE FINGER

DOBRYAKOV E.V., IVANOVA E.A.

JSC "DiLUCH" - Sanatorium-Resort Complex, the Resort Town of Anapa

The aim of the study was to assess the effectiveness of the spa therapy complex, based on the study of health indicators of persons with pneumatic vibration white finger (VWF). The study was conducted in the sanatorium complex "DILUCH" Anapa from February to September 2016 among those with the PHD (n = 59), median age $53,4 \pm 5,6$ years. Common clinical examination, the quality of life (SF-36), Martine-test with 30 squats, Stange's test, dynamometry, cold test, mental capacity, lipid profile, blood count, electrocardiography are evaluated before and after treatment. Taking into account health characteristics of the patients there are three treatment complexes to be assigned. The first group (n = 24) was treated with dry carbon dioxide baths (DCDB), the second group (n = 18) - dry radon baths (DRB), the third group (n = 17) – hydromassage baths (HMB). All patients received a massage, speleo-chamber, sinusoidal modulated current (SMC), mud applications (or galvanic). The mathematical processing of the data was performed using MS Excel capabilities. As follows from the study result after treatment all patients had statistically less aches ($\chi^2 = 4,487$, $p = 0.034$), cramps in the hands ($\chi^2 = 3,721$, $p = 0.054$), better night's sleep ($\chi^2 = 3,796$, $p = 0.051$). After a course of treatment after cold test among the first group of people the skin temperature was significantly higher ($24,1 \pm 1,6$ 0 C). Cyanosis of hands and skin marbling before and after treatment significantly decreased in patients treated with DCDB ($\chi^2 = 4,582$, $p = 0,032$) and with DRB ($\chi^2 = 3,893$, $p = 0.048$). Dynamometry indices improved in all groups, the most significant improvement (from 23 kg to 29 kg) was observed in the first group. When conducting Martine-test, was noted that the recovery of the systolic and diastolic blood pressure, heart rate in the first group after exercises occurred significantly

faster. During the study of quality of life was showed the improvement of physical characteristics in all the study groups. In the analysis of lipid profile among those treated with DRB was indicated that the mean HDL value increased from 1.14 ± 0.4 mmol / l to 1.44 ± 0.3 mg / dL, and LDL decreased from 3.09 ± 0.4 mmol / l to $2,62 \pm 0,4$ mmol / l. The evaluation of ECG after treatment in the second group showed improvement AV-conduction.

Conclusions: 1. DCDB, DRB, HMB combined with mud therapy, massage, SMC, speleotherapy have a marked positive effect on the health of individuals with the VWF. 2. The most effective baths for those with the VWF are DCDB 3. Persons with lipid disorders and cardiovascular disease combined with the VWF shows DRB. Conclusion: Spa treatment has a significant positive impact on the health of individuals with the VWF.

ASSESSING THE ECONOMIC IMPACT OF BALNEOTHERAPY

DUBOIS T.

CNETH (Conseil National des EtablissementsThermaux)

As a health activity, balneotherapy should be evaluated on the medical ground and on the basis of its actual medical benefit. There is no other rationale for justifying public financing through national health funds, whatever the level. On the other hand, one cannot deny that balneotherapy is also an industry and services sector creating jobs and wealth with a great many people and communes depending on it for their livelihood and prosperity. Thus, it is legitimate to try to assess the economic impact of balneotherapy as long as the outcomes are not used as the exclusive or even main arguments to advocate public subsidizing from health budgets. With that in mind, the question of how to do it, is a challenge for our best perceptive economists. Central to the debate is the proper appreciation of the economic perimeter of balneotherapy.

Obviously, it is not restricted to the delivery of cares and should rather encompass linked activities such as accommodation, catering and leisure in relation with the stay in the spa resort. In the light of the French example, the communication will expose two complementary methods to address the question. One is a micro-economic analysis that goes bottom-up starting with a local evaluation at the spa resort and then extrapolating to the national level. The second method embraces a macro-economic view hinging on the concept of the “thermal growth domestic product”. Focusing on this concept, it is therefore possible to estimate the net social cost of balneotherapy by subtracting public resources allocated to it through the financing of cares and sectoral subsidies. As a last step of this analysis, it is most interesting and somewhat reassuring to relate this net cost to the actual medical benefit to the population.

MINERAL WATER "BEREZHNYAYA" IN COMPLEX TREATMENT OF PATIENTS WITH DISEASES OF GASTRIC-INTESTINAL TRACT, INCLUDING PATIENTS UNDERGONE AN OPERATION IN DIGESTIVE ORGANS

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Among the methods of rehabilitation therapy of digestive organs treatment with internal use of mineral waters is one of the leading places. By the researches of clinicians of Russia, neighboring and far-abroad countries is set the beneficial effect of mineral waters in correcting the identified violations, which helps the patient quickly deal with the consequences of the disease and surgical trauma, to adapt to the new conditions of digestion. Therefore, the attention of clinicians attracts more non-pharmacological treatment of patients after operation of digestive organs, using natural and perforated factors.

The purpose of the study - to assess the effectiveness of treatment of patients after operations on the digestive system, drinking mineral water "Berezhnaya".

Materials and methods. In the sanatorium «Zhemchuzhina» ("Pearl") developed a comprehensive approach to postoperative rehabilitation treatment of patients in the early period after surgery with the aim of early rehabilitation of patients undergoing operative treatment on the digestive organs, the therapy of the drinking mineral water "Berezhnaya" from the first day of admission to a sanatorium. Based on the clinical composition of mineral water "Berezhnaya", it helps optimize metabolism, has a laxative and choleric effect, reduces the activity of gastric secretion, and improves pancreatic secretion. Resorption in the large intestine of sulfate ions and their transition into the blood increases the

diuresis, improves the excretion of urea, uric acid and sodium. The calcium ion reduces auxiliary activity. Method of appointment: after holetsistoektomii for 40-60 minutes before meals, the temperature is 38-40° to 100-150 ml per reception 3 times a day; after surgery for peptic ulcer disease of stomach and duodenum, 30-40 minutes before meals, the temperature of +38°, starting from 100 ml up to 150-170 ml, 3 times a day. The duration of treatment is 21 days. Also, patients receive nutritional therapy, individual physiotherapy, physiotherapy and balneological treatments.

Results. As a result of drinking therapy, patients experienced improved appetite, disappearance of discomfort in the area of postoperative wound, belching, heartburn, heaviness in the right hypochondrium. Decreased manifestations of asthenia syndrome (weakness, irritability, tearfulness, sleep improved). Patients showed improvement in laboratory parameters, a slight decrease of erythrocyte sedimentation rate, white blood cell count, increased hemoglobin.

Conclusion. Thus, the course application of mineral water "Berezhnaya" has a pronounced therapeutic effect in the early rehabilitation treatment of patients after operations on the digestive system, which allows to recommend it as a component of a complex of Spa treatments.

MEDICAL REHABILITATION OF THE PATIENTS WITH CHRONIC OCULAR PATHOLOGY

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XXI century is marked by ageing of population, which leads to the increasing number of patients with chronic ocular pathology. It should be noted that in addition to age, different diseases act as risk factors for the development of ophthalmological disease (atherosclerosis, hypertension, diabetes). Today, the inpatient care is not provided for this category of patients in the Republic of Tatarstan.

In this regard, the Sanatorium Livadia Prevention and Treatment Facility of Trade Unions obtained a license for ophthalmic sanatorium-resort treatment in 2011. Indications for sanatorium-resort treatment are:

- partial atrophy of the optic disk
- age-related macular degeneration (dry form)
- glaucoma
- retinal degeneration.

All the patients had comorbidities and they were consulted by experts, which appointed general treatment, i.e. this category of patients received comprehensive treatment.

The goal is to evaluate the effectiveness of medical rehabilitation of the patients with chronic ocular pathology on the premises of the Sanatorium Livadia Prevention and Treatment Facility of Trade Unions.

Materials and methods. For the period of 2013 - 2015 164 people were rehabilitated, 31 of whom were with primary open angle glaucoma, 29 with partial optic nerve atrophy, age-related macular degeneration (dry form), 24 with myopia. The patients underwent

standard ophthalmic examination. The rehabilitation included ophthalmic treatments, various medical technologies: hirudotherapy, acupuncture, ozone therapy, different methods of treatment.

Results. After carrying out medical rehabilitation there was an increase in visual acuity in 32 (31.3%) patients, expansion of the field of view in 22 (21.5%) patients, decrease in intraocular pressure in 39 (38.2%) patients.

Conclusions. The sanatorium-resort treatment is a promising method for the rehabilitation of the patients with chronic ocular pathology.

QUALITATIVE HINGES ON MODERN THERMALISM OFFER

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The thermalism offer is experiencing a period of growth, that's unthinkable even a few years ago.

Facilities using mineral and thermal water for therapeutic purposes, health prevention or wellness and recreation practice are everywhere and represent a reference for many territories on every continent.

For a long time the WHO has been taking care of the health of waters distributed in those areas by providing specific guidance on this point. But which are the conditions of quality in areas where these waters are proposed for different uses?

The matter is complicated also because wherever it is recognized that the thermal and mineral natural waters cannot be chemically manipulated - although for sanitary purpose - not to degrade the therapeutic characteristics and the efficacy recognized to these natural resources since forever.

However there are some focal points that are well clear in reference to the qualitative characteristics that the thermal facilities should offer, regardless of their characteristics and allocation. In summary:

1. The thermalism offer must take place in health environments that are suitable for this purpose.
2. In therapy - as in the well-being, but also in the recreation practice - the figure of the specialist in thermal medicine is synonymous with quality in the wake of the tradition; in therapeutic practice it is an indispensable figure.
3. The facilities, both outdoor and indoor, must guarantee the best health and hygienic conditions.
4. The requirement for the use of water and environment in ideal conditions is always - and in any case - based on advanced technology, proper selection of components and

materials compatible with the quality of the available water resources.

5. The architectural shapes must meet durability requirements, easy maintenance and hygienic compatibility in addition to saving energy and protecting natural resources.
6. The management and maintenance protocols must be set according rigorous scientific references and updated periodically.
7. All the involved staff must pursue courses of vocational training periodically.
8. The products used for cleansing, sanitation and disinfection must be carefully chosen in relation to the application and periodically tested.
9. All the facility environments must be considered as a single body and managed with the same characteristics - documented and documentable - in a measurable sustainable way.
10. In a Thermalism Center the customer (in need of care, healthy or eager to well-being and relax) is the focus of attention, but the boundary elements (physical, chemical and environmental factors) make the difference between success or failure.

Today the improved knowledge, a wide range of biomedical, engineering and technological offer and an experience gained in decades of field controls allow to make strategic decisions to give that dignity to the sector that many times has been compromised in the name of the business to all costs, at the expenses of attention to people and things.

Today it is possible to think of a different thermalism which can provide appropriate responses in time for all needs, with clear advantages, even economic - demonstrable - on the sector and the territory.

THE ROLE OF GEOECOLOGICAL RESEARCHES OF OFFSHORE SALT LAKES IN THE CONCEPTION OF STRATEGIC DEVELOPMENT OF HEALTH- RESORT TERRITORIES OF THE WESTERN CRIMEA

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An important component of the complex scientifically grounded approach to strategy of development of coastal resort-recreational territories of the Crimean peninsula is an estimation of resource potential of numerous coastal salty reservoirs with determination of balneological prospect of their use in medical and health-improving practice.

The ecological inspection of the territories included an estimation of the existing technogenous-and-recreational load on the coastal ecosystem by making an inventory of the objects of resort-recreational purpose (assignment) and settlements at a distance of 2 kilometres from a cut of the Black Sea.

The special attention was given to the areas of sea sandy and sandy-and-pebbly embankments, separating sea water areas from salty lakes being the area of waters filtration and transit, forming water-salt conditions of such lakes.

The complex of chemical and biological researches of containing silt sediments, of integumentary and subsoil waters according to the criteria of an estimation of hydro mineral medicinal resources for their conformity with balneological standards and sanitary norms was carried out in the Central Test Laboratory of Crimean HGROS.

The results of geoecological researches of hydro mineral resources of salty lakes and beach territories have served as a substantiation for the recommendations for their use for the purposes of brine therapy, talassotherapy, sea balneotherapy and heliotherapy on a part of the Kalamitsky Bay coast, with extent of about 26 kilometres in the borders of Saki and Yevpatoria resort district.

The received data became the basis of an information database at creation of innovational-investment model of strategic steady development of a regional administrative and territorial unit - Saki district of the Republic of the Crimea, and also they have served as geoecological substantiation for creation of resort territories of local significance.

The summary. The geoecological researches of the natural medicinal factors are necessary elements when developing the strategy of regional development of resort territories.

COMPARATIVE EVALUATION OF THE EFFECTIVENESS OF EURASIAN NATURAL BALNEOLOGICAL HYDROMINERAL RESOURCES ACCORDING TO THE BIOCHEMICAL STUDIES OF BLOOD

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Aim of study: To establish quantitative relationships linking composition and properties of human venous blood with a water-salt composition of the Eurasian hydro-mineral resources (mineral waters and therapeutic mud)

Materials and Methods: To identify the composition and properties of human venous blood and of natural mineral waters and therapeutic mud we introduced the concept of "characteristic indicator" of water-salt solutions, Φ , connecting a total mineralization, ion composition and physiological parameters of human blood. Mathematical model, allowing to perform the comparative assessment of the effects of hydro-mineral resources on the physiological state of the human body, was implemented as a universal computer program for calculation of analytical dependencies of the characteristic indicator composition of blood φ , as a function: $\varphi_i = \alpha \cdot B_i^\delta$, where: φ_i - characteristic indicator of blood calculated at i -th blood biochemistry index; B_i - laboratory biochemical indicator of a certain i -th sample of blood; α and δ - constants.

Results: 1. Characteristic indicators of composition and properties of hydromineral resources (Φ) and venous human blood (φ) allow a high degree of accuracy to assess the effectiveness of the impact of mineral water and mud on the human body according to the biochemical blood test; 2. Characteristic indicators allow the assessment of the physiological condition of the body and can be used for the organization of national and European monitoring

systems of social health; 3. Analytical dependence function

$$\ln \varphi(Hb) = -7,0462 \ln \left(\frac{pCO_2}{pO_2} \right) - 627,22$$

allow a quantitative assessment of laboratory data on the content of hemoglobin, carbon dioxide and oxygen in the blood before taking treatments.

Conclusions: According to the results of chemical studies can draw the following conclusions:

1. The chemical composition of a patient's blood prior to the adoption of procedures of mud treatment is identical to the composition of mineral waters.
2. Influence of therapeutic impact of the hydromineral resources on the person is accompanied by a decrease in the content of ions HCO_3^- and increased content ion Cl^- .
3. The change in the ionic composition of venous blood as a result of balneological procedures increases the solubility of oxygen, increase of hemoglobin and decrease of glucose.

PEDIATRIC SANATORIUM “SOLNECHNOE”: PEDIATRIC CANCER PATIENTS REHABILITATION OPPORTUNITIES

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Location. Multi-purpose pediatric sanatorium “Solnechnoe” is located in a unique resort area near Saint-Petersburg, where it is open on all-year-round basis since June 1963. The coastal area of the Gulf of Finland is overgrown by pine forest, which forms its unique conditions. The ice coverage of the gulf is formed in December and persists until April. The peak air temperature with an average of 33 degrees centigrade is usually registered in the end of June and beginning of July. The minimal temperature of -32 degrees occurs in the end of January and beginning of February.

The combination of seaside climate, pine forest and sandy beaches forms a unique environment for negative air ionization. Pure air rich in oxygen, ozone and conifer phytoncides form an environment ideal for resort. A moderate climate allows a safe and effective use of different climate therapy procedures, e.g. insolation and air bathes. In summer time the procedures could be performed on the beach. The summer period is also characterized by a 50-days long daylight period of about 19 hours. Immune-modulating effect of different tree species is mediated via antioxidant and neuroendocrine effects. Terrainkur (promenades) is one of the forms of physical therapy leading to muscles workout, deeper respiration, aerobic cardiac exercise and metabolic processes stimulation.

Stay in rehabilitation department. In 1998 the pediatric oncology and hematology patients rehabilitation department was open. It accepts patients from 2 to 18 years and their family members (one adult per patient, patient’s siblings). The family stays in a separate

hotel-type room. A regular term of stay last for 30 days, although it may be changed in each individual case. The rehabilitation facility can accept a maximum of 24 families. All patients from 1st till 11th grade have access to all-year-round school.

Specialization. There are three main fields of work in pediatric cancer patients rehabilitation:

- organ function recovery after antitumor therapy (chemotherapy, irradiation, surgery);
- restoring proper physical activity level, rehabilitation after organ-sparing or radical surgery;
- psychological rehabilitation of patients and their family members.

The sanatorium staff encompasses the expertise of doctors working in many different areas - cardiologist, nephrologist, gastroenterologist, neurologist, orthopaedist, pulmonologist, endocrinologist, E.N.T. Specialist, and physical therapy specialist. Much attention in pediatric cancer survivors rehabilitation is given to massage therapy. The sanatorium has a swimming pool and a salt cave therapy facility. Phototherapy and paraffin ozokeritotherapy are used. The SPA equipment includes shower-baths, gas bubble and hydromassage baths. Each patient is treated according to individual rehabilitation plan. Highly qualified psychologists use most modern methods for individual and group therapy, including art therapy.

Therefore, the ample facilities of multidisciplinary pediatric sanatorium are used for effective and complex rehabilitation of pediatric cancer patients allowing to raise the quality of life for cancer survivors and their caregivers. Each year the rehabilitation department accepts about 200 patients.

THERMAL CENTERS AS AN IMPORTANT DRIVER OF LOCAL DEVELOPMENT. THE CASE OF SPAIN

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A Thermal Center is a **health industry** that exploits a **mineral resource (NMW)** and gives development of tourism industries around.

In Spain, they are legally **health centres type C3** according ROYAL DECREE 1277/2003, October 10th, laying down general rules on the authorization of centres, services and health facilities (BOE 2003; 254: 37898).

They have to be registered at the **Sanitary Offer U58. Hydrology: a health care unit where a specialist spa doctor is responsible for the use of natural mineral waters and thermal waters with therapeutic and preventive health purposes.**

The natural mineral water and medicinal hot spring fountain declaration involves its **mandatory exploitation** as a thermal center or bottling plant and limits the development of other incompatible industries in the area covered by its scope of protection.

The existence of NMW affects local economy:

1. **Positively:** creating industries linked to a non-relocatable endogenous resource. Whenever there is a entrepreneur (public or private) interested in developing the business plan. The thermal center is a driver industry.
2. **Negatively.** It conditions the impossibility of creating companies that may have risk of affecting quantitative or qualitatively the mineral resource (NMW).

There are also currently working 119 Thermal Stations, which have 19,154 hotel rooms, with 4,047,000 overnight stays. They employ 5,310 workers and 904,000 customers enjoy, although not all of them are go in sanitary programs. Total revenue of thermal stations is 255 million euros.

AGEING PROCESS AND MODULATION OF THERMIC PARAMETERS IN BALNEAL APPLICATION AT ELDERLY

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Demographic aging is an undeniable fact which, globally speaking, has economic, social, occupational, cultural consequences and, last but not least, medical pressures that cannot be ignored. The last two decades we can also talk about a “demographic aging of the elderly” – a phenomenon that refers to an increase percentage of population over 75 years. This fact led to the concept of 4-th age, targeting a segment of population extremely fragile, among which 20-30% of people are dependent on someone.

From the biological point of view, fundamental for aging process is a decrease of adaptability of both functions of various systems and cellular level, so that adaptive mechanisms that lead to maintenance of internal environment balance - homeostasis - are slowing down and sometimes are ineffective in elderly.

The disturbance of the major homeostatic functions: immune, neurological, endocrine, thermoregulatory, together with alteration of self-control mechanisms, they all generate the transformation of the normal stress within a relationship into a pathogenic stress.

The main targeted tissue structures for physiological aging – whose senescence influences the global rhythm of aging – are the blood vessels and the neurons. The complex aging changes to these structures have as general results atherosclerosis and neurodegeneration.

Structural and functional alterations of apparatus and systems generates functional insecurity that generates vulnerabilities for elder people:

- the cardiovascular function vulnerability
- the motor activity vulnerability
- the sensitive-sensory function vulnerability
- the psycho-affective vulnerability

The decrease of muscular trophicity disturbs motor activity of the muscles.

The prevention/recovery of these states are very important, because with all these deficiencies, elder must remain independent in the family environment and/or social. One might say that parameter modulation of kinetics and hydrokinetotherapy clinically motivated prescriptions, may allow 3-rd age and even 4-th age patients to do efficient balneal and physical treatments, not only with the purpose of training/stimulating the organism's adaptability but also for improvement the life quality.

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REHABILITATION OF MUSCULOSKELETAL DISABILITY IN THERMAL ENVIRONMENT IN ITALY

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We believe that the thermal environment is a suitable place for providing rehabilitative and preventive treatment both in association with traditional Spa therapy or as the sole means of treatment. In Italy, we have some experience in this field.

Modern Spa centres are suitable settings for rehabilitation, by virtue of a better provision of care and technical-therapeutic services and equipment. Actually, these health facilities put together synergies and therapeutic associations, in a way that would not be easily viable in some other place. For instance, Spa centres can provide numerous rehabilitation procedures, such as massotherapy, physical therapy modalities (electrical, laser, magnetic, ultrasound, etc.) and different types of exercises (passive and active mobilization, hydrotherapy, balneotherapy, respiratory kinesitherapy, functional re-education, etc.), which play a prominent role in rehabilitation. In particular, hydrokinesitherapy is an integrated intervention with a synergistic action, which combines the therapeutic and physical effects of the Spa water (buoyancy, heat, pressure, etc.) with those produced by the minerals present in water (also known as pharmacological effects). Lastly, it is worth emphasising that all preventive and re-educational interventions are particularly suited to the thermal setting and are very well received in the comfort of a Spa centre. Educational activities include teaching rudimentary concepts of physiopathology of many pathological diseases and how it progresses, providing information on risk factors, methods of avoiding or preventing pain relapses or worsening of joint deformity, exercises that can be done alone, and dietary tips for weight monitoring; in fact obesity is a

negative factor which is frequently associated to musculoskeletal disability.

In summary, Spas adequately equipped with rehabilitative services appear to be the ideal environment to carry out effective global rehabilitation and preventive interventions of neuro-musculoskeletal diseases.

People who benefit from rehabilitation in thermal environment are those with disabling osteoarticular or inflammatory disease (e.g., spondyloarthritis, extra-articular rheumatism, tendonitis, capsulitis, fibromyalgia), post-surgical conditions, such as total hip or knee replacement, osteosynthesis or bone fixation.

In conclusion, we hope there will be a greater development of rehabilitation in the thermal environment for the treatment of patients with musculoskeletal disability disabilities.

REHABILITATION AND QUALITY OF LIFE. LOCAL AND INTEGRAL DEVELOPMENT OF HEALTH TOURISM IN CUBA

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We are developing an innovative project that aims to enable a synergy between the National Health System and the Thermal and Spa sectors

"Rehabilitation, Hydrotherapy and Quality of life" , coordinated by councilors of health and a specific scientific technical committee.

The project involves the Thermal resorts and spas in the network of rehabilitative health care. This is a Strategic choice, which will report to the health and national thermal System. This could lead to the obvious benefits in terms of attendances , qualification , important preventive, management economies of the rehabilitation sector, which will enhance and renewing treatment facilities, upgrading the Thermal sector with innovation, training and research.

The importance of thermal and mineral water factories in Cuba is such as to justify an effort to strengthen this sector, which can be both vital for tourism development and useful to health care support.

Looking ahead we look at the increasingly popular niche of health tourism which means at these programs are confined to a central position, covering a wider variety of health tourisms, with favorable impact on the quality of life .

REHABILITATION OF THE PATIENTS WITH ESSENTIAL HYPERTENSION IN SANATORIUM «VASILYEVSKY»

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International Classification of Functioning, Disability and Health (ICF) as the formalized tool of complex quality and quantitative standard, gives universal opportunities for determination of level of functions and health of the individual in society, trackings of their dynamics in the course of aftertreatment, calculations of rehabilitational potential of the patient or uniform group of patients, assessment of quality of medico-social aftertreatment, comparison of its technologies and complexes both in separate medical and recreational establishment, and in their group. Ranging of domains of health and vital activity of patients with the idiopathic hypertension (IH) is carried out to sanatoria Vasilyevsky on ICF scales on dynamics of indicators as a result of aftertreatment. From 1046 sick GB treated in sanatorium Vasilyevsky in 2015 100 people, equally men and women aged from 42 up to 65 years with an idiopathic hypertension of the II degree are investigated. All patients it is long received medicamental therapy. In sanatorium within 21 days according to indications they received: a diet, mineral bathtubs from Vasilyevsky iodine-bromine chloride and sodium water, dry carbonic bathtubs, one of classical douches according to indications, massage of a cervical and collar zone, the general magnetotherapy or magnetostimulation, a group psychotherapy, terrainkur, swimming in the pool. For assessment on ICF of dynamics of a condition of the functions investigated at the beginning and the extremity of a course of therapy their testing on a number of questions from the ICF set was held. At the end as the most informative were chosen the indicators which gave statistically significant differences of the beginning and the extremity of a

course of treatment: function of a dream b134, function of emotions b152, equilibrium and position of a body b235, a ring in ears, b240 nausea, feeling of pain of b280, disturbance at heart diseases: a rhythm, tachycardia, bradycardia, b410 extrasystoles, function of arterial pressure b420, function of a tolerance to an exercise stress of b455, feeling of interruptions in heart, heartbeat and difficulty of respiration, a dyspnea, a lump in b460 throat. These indicators were recommended for a further research of quality of aftertreatment in sanatorium on ICF for group of patients from an idiopathic hypertension of the II degree.

MEDICAL SPA TREATMENT IN BADEN-WÜRTTEMBERG, GERMANY: A SURVEY OF SPA PHYSICIANS 2016

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Here, we present the preliminary results of a still ongoing survey and showing the decline in spa medicine in Germany, where ambulatory spa cures have declined from 800.000 per year in the late eighties to about 60.000 in 2015.

Therefore, for spa physicians the relationship between effort and economic outcome has changed dramatically, rendering spa medicine less attractive as a specialty in Germany.

It is a big problem for health resorts to further provide the infrastructure necessary for ambulatory cures, and to find physicians wishing to specialize in spa medicine.

The latter is a problem of some urgency since spa physicians are on average older than 61 years.

In recent years, patients seeking treatment in a health spa resort usually present with multiple and often unspecific indications, mainly encompassing musculoskeletal problems. Consequently, the local natural remedies and specialty treatments offered by resorts for specific indications are often no longer the central focus of therapy.

Furthermore, the limited number of patients does not warrant developing general concepts, special programs or group therapies. Although faced with deteriorating conditions and fewer patients, spa physicians nevertheless report very good results, with 90% of patients showing relevant improvement.

In Baden-Württemberg, spa physicians, who generally boast more than 15 years of experience in medical spa therapy, affirm that spa treatments can contribute relevantly to resolving major health

problems such as chronic pain or problems associated with overweight and that it is necessary to demonstrate the benefits to insurance companies other, physicians and patients.

NATURAL ENVIRONMENTS, ESP. FORESTS AND THEIR IMPORTANCE FOR HEALTH AND SPA RESORTS

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Natural environments (NE) have a positive influence on the health and well-being of people living in close proximity to them. They also have a positive effect on health and well-being if these places are visited for even a short time. Artificial substitutes for NE also show positive effects.

The main causes for these effects are stress reduction as seen in the positive effects on saliva cortisol levels, heart rate variability and answers given in stress and mood questionnaires Furthermore, the effect on the immune system (natural killer cells), the attention restoration effect of nature, and the effects of natural terpenes or other healthy compounds in the air, a positive climate, etc.,

Health or spa resorts are usually set in natural environments with a healthy climate and/or may be surrounded by open green spaces or spa gardens, which proves beneficial to the health of patients or guests and may also be used as a place for physical activity or relaxation.

The scientific literature regarding the effects of natural environments is still limited.

This presentation shows the scientific base for use of natural environments and the possibilities on how to use them in programs in health resorts.

“Healing forests” or “cure forests” are presented as examples.

BALNEO-ECONOMICS: A PROPOSED TOPIC FOR TRAINING OF HEALTH RESORT PRACTITIONERS

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Introduction

Balneological research has progressed more rapidly in the 21st century with deepened scientific approach to the understanding and application of balneological materials and procedures in the health care and pharmaceutical industries. Based on the increased emergence of balnear centers across the globe, as well as the increased training of balneotherapists, the need to deepen the health systems management proficiency of the scientists for better service delivery and cost effectiveness of health care compels contemporary researchers in this field to develop streamlined topics in health economics for the purposes of training and administration in health resort medicine. The objective of this paper is to develop a field termed Balneo-economics which can be used to train health resort practitioners in health systems management.

Materials and methods

Books, modules, handouts, lecture notes, audio-visuals, questionnaires/interviews will form part of the materials for training of the health practitioners. Methods will include; semester/contact hours teaching, workshops, seminars, symposiums and short courses.

Results

Suggested areas of Balneo-Economics course content will include; balnear health systems management, cost effectiveness and efficiency of health resort medicine, and measurement of satisfaction levels of patients who have undergone balneotherapy. Other topics will include; profitability of balneological related

industries, demand/supply and market size of balneological products, quantification of the contribution of balneological industries to Gross Domestic Product(GDP), health impacts, as well as the mineral/mining economics of geomedical resources and other related fields. These all will be put together in a proposed new area of research titled *Balneo-Economics*.

Conclusions

The proposed subject for training in health resort medicine is important because it provides deeper requisite knowledge of the direct economic impact of SPA medicine and Balneological resources on humans and the national economies. Teaching such a subject to economic, medical and health professionals will not only broaden the knowledge horizon of such practitioners, but also widen their job scope upon graduation and sharpen their skills in the management of health resorts.

Keywords: Balneo-Economics, cost effectiveness, training, economic tools, health resort medicine.

EVALUATION OF THE QUALITY OF MEDICAL SERVICES

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Accreditation is an external evaluation of the medical organization for compliance with approved standards. It is a key mechanism of quality management system that provides assessment and uninterrupted improvement of medical care quality. The quality is reached by factors identification that affects defects emergence in medical care provision technological processes and recommendations elaboration to eliminate the revealed defects.

Control of Quality Management

Processes	Methods
Effective management	<ol style="list-style-type: none">1. Continuous provision of the organization with goods and services;2. Creation of a supportive (non-punitive) environment;3. Funding of quality processes;4. Motivation of employees
Process management	<ol style="list-style-type: none">1. Standardization of operating procedures;2. Development and approval of the diagnostic and treatment protocols;

	<ol style="list-style-type: none"> 3. Monitoring of quality indicators; 4. Monitoring of operating activities KPI
Risks management	<ol style="list-style-type: none"> 1. Openness and transparency in reporting of incidents (incident reports); 2. The root cause investigation and analysis of incidents; 3. Projects to improve the processes; 4. Questionnaires and interviews with patients, managerial decision-making; 5. Analysis of complaints; 6. Questionnaires and interviewing of employees
Management of personnel	<ol style="list-style-type: none"> 1. Continuous training of personnel; 2. Evaluation of efficiency of the staff at all levels
Prevention of risks	<ol style="list-style-type: none"> 1. Commission checks 2. Prevention efforts of possible hidden risks

VERY OLD INTERNATIONAL CLASSIFICATION OF HEALING MINERAL WATER REQUIRES MODIFICATIONS

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Nicolaus Copernicus University in Torun. Dep. Balneology and Physical Medicine of Collegium Medicum in Bydgoszcz, Poland

In Balneology healing mineral waters are treated like pharmacological drugs, hence they should be safe and good quality, and contain optimal concentration of specific mineral components. These dates there are in international classification of mineral water. This classification was established in 1911 and 1934 years. The progress in medicine and new chemical and clinical research studies have shown that some of components of mineral water are toxic, but they are still considered like a healing components in international classification. Other components which are considered as a healing are not absorbed through the skin and not develop therapeutic effects. So they should not be considered like specific healing components of water. The next problem is the limit concentration of the therapeutic components. Application of water with very low concentration of active pharmaco-dynamics compounds don't allow to receive appropriate medical effects. We propose to make changes within the range of the value of the qualitative and quantitative specific therapeutic components in the international classification of healing mineral water. FEMTEC is appropriate scientific organization which should make those changes and recommend for general use in all over the world.

MEDICAL AND SOCIAL SIGNIFICANCE OF HEALTH RESORTS IN PRESERVATION AND RECOVERY OF PUBLIC HEALTH

RAZUMOV A.N.

National SPA Association; Russian Academy of Sciences

Main improvement areas of health resort treatment system:

1. Medical & social area
2. Psychological area
3. Aesthetic area
4. Ethical area

1. Areas of medical and social regulation in health resort business are defined by:

- creation of favorable conditions for investments to health resort business;
- establishing cost-effective regulations on entry, exit and stay in the Russian Federation for foreign citizens who command the services of Russian health resort network;
- transport tariffs reduction and granting exemptions to citizens who have social vouchers to health resort treatment;
- development and implementation of government and federal dedicated programs on health resort business in the country.
- assistance in maximum delivery of health resort medical and other services both on local and global markets;
- protection of rights and interests of citizens during their health resort treatment and stay at a resort, their safety provision;
- arrangement and carrying out of health resort treatment for benefit-entitled citizens;

- accreditation of health resort institutions and non-resort medical and preventive organizations, licensing of medical and other kinds of health resort activities.
2. **Psychological area** begins with fundamental change of stimuli not only for certain disease areas, but first of all for patient's personality. Orientation response is activated by visual appearance of environment and surroundings, as well as by high level of service. The patient's first revitalizing response is amazement caused by newness of cultural socio-natural habitat. Consolidating revitalizing response appears from steady buildup of amazement and delight caused by diversified therapeutic modalities, as well as previously unknown drug-free rehabilitation means. In a spa, a weakened, disabled person with chronic ailments rises to a new level of self-sufficiency: he or she can be joyful, active and attractive again, like everyone else. All this is formed by the atmosphere inherent in this very health resort.
 3. **Aesthetic area** gives powerful support to healthy living. Aesthetic component of therapeutic process awakens religious consciousness exactly in terms of belief in virtuousness, in this particular case - in virtuousness of both not-made-by-hands and man-made outside world during the period of health resort treatment.
 4. **Ethical area** in health resort treatment system directly brings sense by addressing a super problem of social rehabilitation of all sections of population. Effective use of health resort treatment as a rehabilitation stage in the general system of this important area. The highest value of health resort treatment stage consists in rehabilitation of patients with myocardial infarction, patients after cardiac vascular and valvular surgery, renal and peripheral artery reconstructive surgery; after vascular cerebral crisis, minor and major strokes, neurosurgeries

for benign tumors, central and peripheral nervous system injuries; patients after peptic ulcer disease surgery, bile ducts surgery, patients after acute pneumonia and active chronic obstruction lung diseases, etc.

Health resorts and spas are the most important areas of medical care in the struggle for reduction of the morbidity rate and prevention of disability, so they must be developed in the closest connection with the whole health care system. But unfortunately at present, in the face of increase in the morbidity rate both of adults and children, as well as increase of disability rate, there is steady reduction of the total number of health resorts in the Russian Federation and of their bedspace.

Development of health resort business in Russia has been formed on a scientific ground enabling high rates of its growth and efficiency in public health care.

Resort Medicine is an undoubted achievement of our national medical science.

Results of scientific research carried out in dedicated institutes and laboratories have served as a basis for wider application of health resort treatment in therapy of widely differing diseases.

Effective application of newly developed therapeutic interventions has confirmed correctness of scientific research lines.

And yet, achievements of the national resort medicine don't reduce relevance of the further scientific research in this area of medicine.

This is driven by the following main circumstances:

- new level of diagnosing technology has changed some of our beliefs about diseases' aetiopathogenesis, as well as about efficacy of therapeutic interventions;
- intensive pharmacological intervention typical of our times, unfavorable ecological conditions, occupational hazards, etc. considerably change body responsiveness both of healthy and ill people, including responsiveness to health resort factors;

- new economic conditions present us with the need to reduce treatment period. The aim of scientific research is to define reasonable (without any significant harm for treatment efficacy) periods of stay for each nosology at particular resorts or spas;
- it's necessary to determine effects of health resort treatment on long-term prognosis of diseases according to global criteria: survivability, pathologic behavior, and quality of life. This task is one of the hardest ones, addressing it will require many years of corporate research;
- it's a long overdue need to carry out analysis of applied methods of health resort treatment and the latest scientific progress in order to create integral methodological recommendations on application of resort factors. This would allow us to accumulate scientific data and focus activity of medical professionals on more effective recovery and rehabilitation treatment programs.

In addition to gaps in addressing practical arrangements, it's necessary to mention lack of information support to health resort business. This causes dissociation in the work of health resort institutions of various patterns of ownership and subordination, in some cases preventing to choose optimal health resorts activity options, to increase their effectiveness, to implement modern methods of organizing medical care, to increase quality of medical aid rendered to health resorts patients.

The main international forum, which unites professionals of health resort area and allows them to exchange their skills and expertise, information about their achievements and problems in health resort and rehabilitation treatment, is annual All-Russian forum "Zdravnitsa", which was organized over 12 years ago by order of Government of the Russian Federation, as well as congresses carried out as part of FEMTEC sessions. Great assistance in information support is also rendered by "Kurortniyevedomosti" (Resort journal) magazine.

Health resort business is inextricably intertwined with the whole health care system and is its integral part; and this fact predetermines common procedure of its budgeting. At the moment, a certain part of executive authorities and, to a lesser extent, legislative authorities pushes for excluding health resort treatment from a list of guaranteed social services. This opinion is unsound and in case of its implementation would lead to significant deterioration of public health, especially health of children and teenagers. Fortunately so far, we have been able to keep the basis for health resort treatment of children unlike the facilities for adults.

Legislative and executive authority shall develop differential system of rendering medical aid including medical aid on health resort treatment level; they shall grant a possibility of preventive health care to a “healthy person”, especially to the rising generation.

Spa aid to youngsters is an especially important aspect of resort medicine; it's necessary to create organizational and structural guarantees of successful treatment and health promotion of teenagers and army conscripts in specialized health resort institutions.

Spa therapy must be an integral part of preventive, treatment, and rehabilitation medical programs.

Spa treatment must be socially guaranteed (Compulsory Health Insurance, social insurance, other types) to those categories of patients or people with risk factors of occupational diseases, who will, in the context of modern knowledge, mostly benefit from it and get the higher possibility of sustained remission as compared to other treatment options.

Health resort treatment must be carried out under the optimized, evidence based programs for each nosology; and these programs must be guaranteed by the cost of the health resort voucher.

The need of reduction of period of patient's stay at the resort, which is dictated by new economic conditions, shall not be identified with the necessary treatment period. We require development of differential approaches to calculation of duration of

health resort treatment for each certain category of patients without loss of efficacy.

Achievements of the national resort medicine don't reduce relevance of the further scientific research on improvement of medical use of health resort resources, investigation of new natural therapeutic factors, and their implementation into the practice of medical and preventive treatment institutions and arranging home treatment.

THERAPEUTIC TOURISM AT THE RESORT TOWN OF ANAPA

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JSC "DiLUCH" - Sanatorium-Resort Complex, the Resort Town of Anapa

According to expert's opinion in the field of contemporary world tourism, the most attractive are such tours, which allow health recovering when traveling. Resort is a perfect place for therapeutic tourism. We should stimulate its development in every possible way. Even a stay of Tourists in the medical environment can be considered as a healing factor.

The aim of the publication is to inform the scientific community about the possibilities of the Russian Resort Town of Anapa in the field of therapeutic tourism.

Tourism resources of Anapa are unique. It is the only children's and family foothills seaside Resort in Russia and Europe. The combination of the natural healing factors (the Mediterranean type of climate, warm sea and shallow sandy beaches, 12 kinds of mineral water, curative mud) provides a powerful healing effect combined with viniculture products (Ampelotherapy, enotherapy). Tourists can visit historical and the most beautiful places of Anapa, Novorossiysk, Taman, Gelendzhik and other districts of the Krasnodar Region, explore dosed walking routes. Well-developed resort medicine at the prestigious Resort of Anapa afford to undergo simultaneously complex of the express diagnostics, physiotherapy, balneo-and mud therapy and diet with high effect and in the short term. The climate and infrastructure make the resort city attractive for therapeutic tourism all year round.

A fertile ground for health restoration and preservation of working efficiency are created by following factors: a) no ecologically polluted air influence, b) no stress during the holidays, compared with the living or working places, c) leaving the urbanized cities with its rapid pace of life, or simply changing of the environment.

The organization and development of medical tourism in Anapa belongs primary to sanatorium complex "DiLUCh". Many years we are practicing wellness, entertainment and targeted tours programs for family recreation and therapeutic tourism with children of all ages for 14-18-21-24 days e and even for 5-10 days. Every year in programs of therapeutic tourism in the "DiLUCh" take part about thousand people. Along here we are closely working with dozens of travel companies.

Conclusion: Our experience in wellness tours organization, as well as favorable Tourist's reports indicate a need for further development of therapeutic tourism in Anapa and a search for the best variants, ways and methods of relaxation and recuperation.

COMPLEX TREATMENT OF THE IDIOPATHIC HYPERTENSIA IN SANATORIUM OF IZHMINVODY

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In Russia about 30 million people (every fourth Russian) have the increased digits of arterial pressure. The hypertonia is fraught with such terrible complications as atherosclerotic changes in vessels and strokes.

Research objective was study of the efficiency of use of ozonotherapy in complex treatment of patients with an idiopathic hypertension.

Materials and methods.

We investigated 80 patients with an idiopathic hypertension of I and II stages, from them 55 women and 25 men, aged from 40 up to 75 years, with prescription of a disease from 5 to 25 years. Patients were distributed on 2 groups comparable on age and a gender, clinical implications, all patients accepted basic medicamental therapy.

The main (40 patients) group of patients received complex therapy: dietetics, Shifaly-su mineral water, iodine-bromine bathtubs, aromatherapy, phytotherapy, healing fitness and ozonotherapy.

The control group was made also of 30 patients who received complex therapy without ozonotherapy. As a result of ozonotherapy in the main group there was reliable lowering of arterial pressure for 20-25%. Patients noted improvement of health, decrease of headaches, giddiness, normalization of a dream. At the end of a course depression of arterial pressure from initial was by 25-30%. Headaches, giddiness, sleeplessness at 22 patients disappeared, 18 – lowered doses of medicines. In control group the lowering of arterial pressure was for 10-15%.

Results of the conducted research show that ozonotherapy in combination with natural factors of sanatorium of Izhminvody (yodo-bromic bathtubs, Shifaly-su — Izhminvody mineral water) is an effective method of treatment of patients with an idiopathic hypertension of I and II stages and allows to reduce number of cardiovascular complications, to lower a dose of the accepted medicines, to increase duration and quality of life of patients.

THE EAPTC (EUROPEAN ASSOCIATION OF PATIENTS AND USERS OF THERMAL CENTERS): ACTIVITY AND PROGRAMS

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²International Health and Law, University of Bologna

The Association:

1. The original idea

- the legal reference: directive 2011/24/eu
- the organizational background: FEMTEC

2. Presentation at the European Parliament

1 December 2015, Brussels: meeting of the MPs intergroup on European patients' rights and cross-border healthcare

3. The by-laws: the aims

- to disseminate information and data regarding the prevention of EU citizens' diseases and the social promotion also by means of natural treatments especially thermal water and sea water (thalassotherapy);
- to protect European consumers who are willing to access thermal and thalassotherapy treatments so as to make them able to benefit from the right to health care services according to the principles set out in the European Charter of Fundamental Rights and by the WHO in the field of health and environment;
- to foster healthy life styles also through information activities concerning primary and secondary prevention of persons;
- to act as to remove those bureaucratic and legal barriers that are still preventing EU citizens to access health care services

- to assist European citizens with the processing of their applications forms to start and access a thermal and thalassotherapy treatment provided for by their national health systems;
- to train new health and wellness professionals also by using innovative methods connected to the use of thermal and sea water;
- to support the establishing of a European excellence network of authorized thermal SPAs and thalassotherapy centres, which is aimed at:
 - a) managing the exchange of information and best practices concerning prevention and treatments;
 - b) sharing the confirmed experiences as well as the outcomes of the scientific research carried out with reference to therapeutic activities
- to support the start-up of new thermal and health SPAs centres;
- to organize training courses, seminars, conferences also in partnership with universities and research centres across Europe

4. The Board of Directors:

- President: Natalia Tchaourskaia (Russia)
- Vice President: Fausto Bonsignori (Italy)
- Member: Francesco Padrini (Italy)

5. The Scientific Committee

Dr. Luigi Bertinato, *Local Health Authority, Verona (Italy)*

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Pr. Olga Sordu, *University Ovidius, Constanta, Romania*

Pr. Marco Vitale, *University of Parma, Italy/ Scientific Coordinator of FORST (Italian Foundation for Thermal Medicine)*

Co-ordinator:

Pr. Umberto Solimene, *President of FEMTEC (World Federation of Hydrotherapy and Climatotherapy, University of Milan, Italy)*

6. The activities:

- contacts with other patients' organisations in the EU
- signing up of a partnership agreement with active citizenship network
- research project on the profiling of patients and users of health spa centres
- definition of the health spa centres' regulation and standards

7. The future

- to become the reference network for patients and users of thermal centres in Europe
- to support the scientific validation of thermal treatments
- to act as an effective lobby to ensure citizens the right to health
- to promote health spa treatments as preventative medicine
- to enhance specific training programs

8. What role for patients and users?

As to the single person:

- to be active in the service and accordingly to use is in a proper manner
- to activate resources as to:
 - a) protect his/her health and life styles
 - b) to promote his/her own wellbeing

As to the health system:

- to take part in the decision making process
- to bring in improvements
- training programs on proper use of services to create partnerships

THE ENVIRONMENT AS ONE OF THE SIGNIFICANT FACTORS INFLUENCING THE RECOVERY OF THE PATIENTS

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Research objectives:

1. To stimulate sensory perception through patients' interaction with the nature in the park zone, to evoke positive emotions, activate psycho-emotional and neurophysiological components of the psychosomatic system, improve adaptation to aggressive environmental factors, develop stress resistance.
2. To assess the park landscape influence on the patients

Methods used:

1. A number of modules for walks in the park (Module of self-contemplation, module of park zone sports, module of educational leisure time).
2. Monitoring of main health parameters and assessing changes in psychological perception, used for park landscape influence assessment.

Results and conclusions:

The survey we conducted assessed wellbeing, activity, mood, functional state, emotional responsiveness, state and trait anxiety (Spielberger-Hanin introspective psychological inventory).

Having conducted the survey, we came to the following conclusions: the environment forms the knowledge database aimed to maintain a healthy lifestyle and improve one's health; it gives a positive dynamics to the functional state of the body; contributes to revivification of the sense fields; helps to learn to interact with nature.

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ROMANIAN PATWAY OF BALNEOTHERAPY WITHIN THE CONTEXT OF HOLISTIC AND INTEGRATIV ALLOPATE MEDICINE

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Introduction. Romania is one of the richest European countries in natural therapeutic resources known and effectively used in medicine, ever since ancient times, having balneal tradition and scientific knowledge. The Romanian balneal medicine can be characterized by continuity and a scientific concept of practical applications. There is a single medical specialty: physical and rehabilitation medicine and balneoclimatology and an adequate system of high education for medical doctors and therapist.

Materials and Methods.

- databases of the Museum of National History and Archaeology of Constanta;
- national and international databases for information relating to the current situation/status and perspectives for balneology/PRM development;
- journals, books and monographs.

Results. According to the persistent unified vision over specialty, this was between allopathic specialties, and tried to overpass difficulties. Scientific research has been aimed at the highest possible standards.

Conclusions. We consider with both historical and practical facts, as well as with a series of debates and contemporary conceptual guidelines, that the balneo-climatology activity in a unified, holistic and integrative manner, and in conjunction with physical and rehabilitation medicine represents an appropriate/beneficial Romanian initiative that we present to you as: “Romanian Way Ahead of Balneology”.

Keywords: Romania, balneo-climatology, rehabilitation, holistic medicine, integrative medicine

MEDICAL REHABILITATION FOR THE PATIENTS WHO UNDERWENT ENDOPROSTHESIS REPLACEMENT OF MAJOR JOINTS PRACTICED IN THE HEALTH RESORT “DUNES”

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Health resort «Dunes», LLC «Gittin»

Mainstreaming of high-tech and minimally invasive surgery techniques in traumatology and orthopedics predetermined early patient recovery and his return to productive usual and professional activities. It is medical rehabilitation that plays a key role in the process of restoration principally determining success of the treatment.

The rehabilitation system for the patients who underwent endoprosthesis replacement was organized in the health resort “Dunes”. A patient is admitted to the rehabilitation center of the health resort before the expected operation for 5-7 days for general examination, oral cavity sanitation, psychotherapeutic activities, including clinical interview, getting full information concerning future surgery, comprehensive endoprostheses, the rules of conduct and physical activities in the early and late postoperative period, training of walking with additional supporting devices (“patient’s school”). The patient has an opportunity to communicate with those who had already undergone similar surgery and watch their rehabilitation.

Upon completing the preparation, the patient is transferred to the surgical unit to undergo the operation. 2-3 weeks after the surgery the patient returns to the health resort to undergo early rehabilitation. Following this course the patient is transferred to the out-patient department of the health resort which is located within the city boundaries with convenient transport accessibility. The final stage of rehabilitation (sanatorium-resort stage) is administered within the period of 6 months – one year.

Postoperative rehabilitation was provided for 1624 patients during the last five years. 116 individuals were rehabilitated following the above pattern.

As a result of monitoring it was established that the pattern described allows to achieve excellent and good anatomic-functional treatment outcomes in 97.27% of patients (90.02% in a whole group).

Thus, the structuring of timely and complete rehabilitation allows to improve final anatomic-functional treatment outcomes and expedite patients' return to usual and professional activities.

LOW-INTENSIVE MUD THERAPY: MATERIALS AND METHODS

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It is considered that mud therapeutic action is the combination of thermal, chemical and mechanical factors. There are two main traditional mud therapy procedures: application of relatively thick (1,5÷3 cm) layer of mud preheated to 39÷42°C and immersion in a mud-bath at the same temperature. Intensity of such procedures is very high, as a result this effective has the wide range of contraindications. In practice it means that traditional mud therapy is not used for rehabilitation of the considerable part of working-age patients and almost all elderly people.

The goal of the present work was searching the materials and methods for decreasing intensity of mud therapy without having a significant loss of treatment effectiveness.

The following series of procedures were held for assessment of a contribution of each factor to effectiveness and intensity of treatment: mud applications 0,3÷1 cm thick at 39÷42°C (decrease in influence of a mechanical factor), thin layer (0,1÷0,3 cm) applications at 39÷42°C and 32÷36°C (almost complete elimination of mechanical factor and decrease in influence of thermal factor), mud-bath with low-concentrated mud (1 gram of mud per litre of water; significant decrease in influence of all three factors), thin layer applications with the modified peloids at ambient temperature (almost complete elimination of mechanical and thermal factors, modification of a chemical factor). Low-intensive procedures were appointed to the patients having contraindications to traditional

mud treatment. Modified peloids were appointed to the patients after orthopedic surgery.

In all cases it was used the therapeutic mud of the Sestroretsk deposit located in Saint-Petersburg region (so called gittium-type clay). Mud for applications was preliminary oxidized and purified from sand and other particles larger than 0,1 mm. Mud for bathtubs was afterwards dried at 45°C and micronized to 5÷10 µm. Modification of mud included addition of menthol and (or) camphor with the subsequent homogenization.

Low-intensive mud procedures in all cases demonstrated good tolerance even by elderly patients with lot of contraindications for traditional pelotherapy. Effectiveness of low-intensive procedures in comparison with traditional ones was practically the same. Low-intensive treatment with modified peloids of the patients after orthopedic surgery was even more effective in comparison with results of control group.

The main positive feature of low-intensive mud treatment is significant decreasing of contraindications. It is also not so expensive than traditional one, could be used without specific equipment and also in combination with other physical factors.

COMPREHENSIVE ASSESSMENT OF ULTRA STRUCTURAL ORGANIZATION AND FUNCTIONAL STATE OF THE LIVER IN RATS WITH EXPERIMENTAL HEPATITIS AFTER DRINKING MINERAL WATER CONTAINING HUMUS ACIDS

VERYHO N.

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We undertook the comprehensive assessment of ultra structural organization and functional state of the liver taken from 265 male rats with experimental hepatitis. The animals were divided into 2 groups: 1 group - the control animals at the 14th, 21th and 35th day of experimental hepatitis which was induced by the administration of paracetamol at a dose of 1000 mg per 1 kg body weight for 2 consecutive days. 2 group - experimental animals with hepatitis which received drinking mineral water by gavage in volume of 4 ml within 21 days. For the ultra structural analysis ultra-thin slices of liver were photographed and viewed under an electronic microscope JEM 100 CX (Japan) at a magnification of x 5800 -72000. The study of protein synthetic function of liver (the levels of total protein and albumin) in the experimental and control animals was performed with help of biochemical analyzer «Biosystems A-25" (Spain). For the study of the state of antitoxic liver function was used assessment of duration of anesthesia in animals - the sleep duration after intravenous injection of sodium thiopental in experimentally selected dose of 40 mg/kg of body weight which was shown to induce sleep in 100% of animals. This drug has been selected for estimating of metabolism intensity implemented by the cytochrome P-450-dependent monooxygenase system of hepatocyte endoplasmic reticulum.

The use of mineral water with humus acids contributed to the improvement of the architectonics of hepatocytes ultra structure, for reducing the depth of damage observed in liver cells of rats with

experimental hepatitis: swelling of mitochondria, vacuolization tanks granular and agranular endoplasmic reticulum, the appearance of the lipid droplets. We were observed the increase in the membranes of granular endoplasmic reticulum, in the ribosomes number, in numerous elektron-dense rosettes of glycogen granules, reduction of swelling of mitochondria and increase in number of large oval and elongated shapes mitochondria with short sharp cristae and electron-dense matrix. These changes were as an indication of activation of intracellular energy generatrix function, and restoring protein synthesis, which was confirmed by a significant increase in total protein and albumin levels. As a evidense of improving of antitoxic function implemented by restoring agranular endoplasmic reticulum in hepatocytes was observed that course intake of mineral water with humus acids significantly reduces the duration of narcotic sleep during in all periods of observation. We suppose that therapeutic action of mineral water was realized due to the presence of biologically active humus acids.

EXPERIENCE OF TREATMENT BY DRY CARBONIC BATHTUBS IN SANATORIUM OF IZHMINVODY

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One of the methods of complex treatment of patients in sanatorium of Izhminvody is treatment by dry carbonic bathtubs.

In an organism a hemoglobin works "on barter": gives to tissues oxygen only if in exchange receives a carbon dioxide. If there is not enough carbon dioxide, then oxygen doesn't pass to tissues. There is a hypoxia (deficiency of oxygen) of tissues and internals. That is here such paradox: a little carbon dioxide, and as a result the organism suffers from shortage of oxygen. So in an organism there are spastic strictures leading to development of a hypertonia, coronary heart disease, obesity, a diabetes mellitus and other diseases. Carbonic bathtubs naturally restore the normal quantity of a carbon dioxide in an arterial blood: dilate capillaries, improving a circulation of all organs, normalize pressure. The purpose of our research was studying the influence of dry carbonic bathtubs on cardiovascular system of patients in the conditions of sanatorium.

Materials and methods. Under our observation in sanatorium of Izhminvody there were 126 patients. From them 40 with an idiopathic hypertension, with coronary heart disease – 10, with an atherosclerosis of vessels of the lower extremities – 12, with a diabetes mellitus – 20, with a climacterium and disturbance of a menstrual cycle – 18, 26 patients – with a psoriasis. The course of treatment consisted on average of 7 procedures, daily or every other day. Along with treatment by dry carbonic bathtubs, patients received other types of sanatorium treatment, including a balneotherapy, physical therapy, physiotherapy exercises, phytoteas, reception of mineral water. After treatment the positive effect was established at 38 (95%) patients with an idiopathic

hypertension, at 8 (80%) patients with an ischemic heart disease, an atherosclerosis of the lower extremities – 10 (83,3%), a diabetes mellitus – 18 (90%), a climaterium with disturbance of a menstrual cycle – 15 (83,3%), a psoriasis – 20 (76,9%).

Conclusion.

The received results allow to draw a conclusion on high efficiency of dry carbonic bathtubs in complex treatment of a sufficient wide range of a disease. Its use is available in the conditions of sanatorium, it is safe, doesn't cause complications and collateral reactions.

CHINA'S NEW POLICY AND THE OPPORTUNITY AND CHALLENGE OF HOT SPRING INDUSTRY

LI PENG, ZHAO MINGLE

China Hot Spring Tourism Association

Chinese society has entered a new stage since the Third Plenary Session of the Eighteenth Central Committee. Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening the Reform was adopted in 2013, in which the Chinese government comprehensively summarizes the great course of China since the reform and opening up policy, points out that "Reform and opening up is a new, great-revolution, in which the Communist Party of China (CPC) leads people of all ethnic groups to carry out in the new era. It is the most distinctive characteristics of contemporary China", and emphasizes that "Facts have proved that reform and opening up is a critical choice that has determined the destiny of contemporary China, and also an important instrument for the undertakings of the CPC and the Chinese people to catch up with the times in great strides." The major discussion marks a new wave of social change period of China. These reform measures will profoundly affect the future development of the hot spring industry in China.

China's New Policy

The Chinese government has been clear that the trend of deepened reform is irreversible. Based on the review of over the past three decades of reform and opening up, the Chinese government defines that reform and opening up is the most distinctive characteristics of contemporary China, the most distinctively epochal flag of China, and the most confident and proud achievements of the Chinese people. In the new historical starting point, further deepened reform is in line with the call of the socio-economic development,

and also in line with the expectations of the people. In the new historical starting point, further deepen the reform in line with the requirement of the further socio-economic development, and also in line with the expectations of the people. The Chinese government and society fully recognize that reform is requirements of the times, emphasize shattering fetters of outdated ideological concepts with greater determination, overcome the barriers of solidified interests, and unswervingly propel the reform forward, which will set in motion a new wave of reforms and open up broader prospects for socialism with the Chinese characteristics.

Building a moderately prosperous society in all respects is the goal of reform and opening up. To build a moderately prosperous society in all respects, China's socio-economic development on the basis of original ones will achieve a new comprehensive promotion, further develop the economy, improve democracy, advance science and education, enrich culture, foster social harmony and upgrade the texture of life for the people. Comprehensive promotion involves adjustment of the relations of production and superstructures, involves adjustment of economic restructuring and change of development mode, involves the innovation of the income distribution system and social security systems, involves perfection of the pattern of urban and rural regional development, involves the construction of new pattern of modernization construction of human and nature harmonious development, and involves reform of the party's construction, which must rely on deepening reform to complete.

To solve a series of major problems China faces in its development is the difficult aspect of the reform. There are many difficulties and problems in China's economic and social development. For example, unbalanced, uncoordinated and unsustainable development remains a prominent problem, the capacity of technology innovation is weak, the industrial structure is unbalanced, resources and environmental constrains have become more serious, the development gap between urban and rural areas and between regions is large, and so are income disparities between individuals,

social contradictions are prone to be frequent, and some fields are full of moral degradation and lack of integrity. The Chinese government and people will push forward reform of the important areas with greater political courage and wisdom, break down the barriers of old notions and the confinement of interest groups, conquer the long-existing ills and problems of Institutional mechanisms, further emancipate the mind, increase the vitality of the society, emancipate and develop social productive force. With these strong driving force and efforts, we will insist in and develop socialism with Chinese characteristics and realize the Chinese Dream of the great rejuvenation of the Chinese nation.

The Opportunities of Hot Spring Industry in Reform Context

Hot spring tourism continues to flourish. Tourism is becoming a strategic pillar of the national economy and modern service industry for which people's demands are increasing. China's tourism industry has achieved rapid development and succeeded in transforming itself from shortage of tourism into a well-off tourist preliminary country, to a world tourism power since reform and opening up. The scale of tourism continues to expand and tourism system turns into multi-directional, multi-dimensional and multidimensional integration and collectivization, which further reflect its growing international representation. In 2015, the ending year of the twelfth five year plan, tourism has been growing steadily owes to "Tourism Strategy 515", "Internet +" and global tourism strategic thinking. The number of domestic tourists nationwide reached 4 billion, which increased by 10% over the previous year. China's domestic tourism industry generated 3.4195 trillion yuan in turnover with an increase of 13.1%. The number of Chinese tourists going overseas reached 127.86 million which increased by 4.4%; and the numbers of inbound tourists arrivals reached 133.82 million with an increase of 4.1%. The international tourism revenues reached \$ 113.7 billion, with an increase of 7.8% in 2015. The number of domestic tourists and outbound tourists, and the consumption of domestic travel and overseas excursions are all listed first in the world. From the market

size point of view, China is the fourth largest inbound travel reception country and the largest outbound travelers' resource country in the world; and the outbound tourism destinations for Chinese citizens have expanded to 151 countries and regions. From the industrial system point of view, by 2015, there have been 27,364 travel agencies in China which saw a net gain of more than 5000 compared with 21649 travel agencies in 2010; there have been 13,491 stars hotels, including 867 five-star hotels, 2,779 four-star hotels and 6,776 three-star hotels. At the end of 2015, there were about 15,000 economy-hotel chains with more than 1.4 million guest rooms in China. At present, new type of industrialization, information, urbanization and agricultural modernization in China are moving forward rapidly. To accelerate the development of tourism is a necessary requirement of people's consumption upgrade and industrial restructuring, as well as plays an important role in job enlargement, income increases, economic growth and ecological environment improvement.

Hot spring tourism has become an investment hot spot. Issued by the State Council in the second half of 2015, Several Opinions on Further Promotion of Tourism Investment and Consumption took investment as the main theme for the first time which improved the government investment in the infrastructure, promotion, reform and innovation of tourism. With development of times and coupling of resort wellness, increased demand for leisure and mobile internet technology, hot spring tourism become the one of the most popular areas of the attracting investment. Under the national macro-control, all regions take measures to expand and stimulate consumption, enhance the support to supply side, attract more investment to hot spring industry and seize the opportunities of the change of tourism consumption pattern from sightseeing to leisure. All these efforts make hot spring industry become the hottest spot of recreation tourism investment. Supply side reforms involve human resource costs, natural resources (including land and hot spring), financial and capital market and policy orientation. Supply side reforms will bring new opportunities for the development of

hot spring tourism industry, and reduce hot springs business enterprise taxes, financing costs, labor costs and natural resources (including land, hot springs, etc.) accounting. That hot spring tourism becomes the hottest spot of recreation tourism reflects that tourism industry fits into the goals of national economic structure adjustment. The large drawing function of hot spring tourism to the consumption and investment of social economy is an important indicator of the improvement of people's living standard, which has important implications for job enlargement, income increases, economic growth and ecological environment improvement.

The innovation of hot spring formats is vibrant and invigorating. With China's rapid economic development and the improvement of people's living standards, great changes are happening in people's concept of tourism. Under the national macro-control, consumers' demand is changing to recreational tourism and tending to diversify in type, which facilitate the development of new forms of tourism. With "Tourism +" and global tourism strategic thinking, there are appearing a multiple trend in hot spring industry and continual innovation of the tourism formats carried by hot spring, which meet the pursuit of the consumer feeling and stimulate the continual innovation of hot spring tourism activities. And the concept of "Hot Spring +" emerges as required. "Hot Spring +", on a theme of hot spring experience and hot-spring bathing culture understanding, rests on the association of hot spring with big data analytics, agricultural development, urban development and affiliate products including hotel-resort, water park and spa etc. "Hot Spring +" meets the demand of different groups of people, boosts the growth of hot spring tourism market and impulses the development upsurge of hot spring tourism. Changes of people's travel concepts enhance the development of recreation tourism market and innovation activities in the tourism, which provide opportunities for the development of hot spring tourism.

The Challenges of Hot Spring Industry in Reform Context

Anti-corruption campaign has an impact on high-end formats. Since CPC central committee issued “eight rules” on the 18th national congress of CPC, the atmosphere of anti-corruption and frugality has become fashionable; and opposing extravagance and exercise thrift has become a common practice around the country. In this context, public funds consumption is vigorously restrained, which severely affects Chinese government reception tourism market, especially the development of high-end government hospitality tourism; and declining performance of enterprise has become an undeniable fact. For hot spring tourism, especially high-end hot spring tourism, business and official hospitality of government are accounted for the lion's share of the tourist market, which are important sources of revenue for high-end industry business. However, with “eight rules”, government spending on official overseas visits, official vehicles, and official hospitality is restrained strictly. Government consumption, public consumption, and the consumption of large meetings are greatly reduced, which lead to a drop in turnover of high-end hot spring enterprise and business distress of some high-end spa hotels. And they have to seek for transformational development.

Great changes are happening in consumption structure under the new situation. With China's economic development and the improvement of people's living standards, great changes are happening in the concept of people's touring consuming. Market demand for travel continues to expand. People start to involve in deep level of consumption and tourism with travel way changing from sightseeing to recreational tourism, and have more and more requirements to health, which stimulate the change of the developing direction of hot spring tourism. National paid leave system encourages flexible schedule and staggering journeys, which greatly stimulated public demand for leisure travel. In the case of increasingly strict management of government expenditure, citizens have become the major customers of hot spring industry. Consumer demand is tending to diversify and deepen; and tourism is no longer

entertainment, but focus more on obtaining experience and pursuing tourist connotation. Therefore, to meet the new situation of consumption in transition, hot spring tourism must lay emphasis on the promotion of connotation and innovation of tourism products, the transformation of development pattern and the innovation of new hot spring formats.

Protection in the development process needs to be strengthened. With the increasing consumer demand for spa tourism, hot spring resources are exploited on a large scale. However, there are still a series of problems on hot spring resources protection in the process of exploitation, such as unreasonable use and low utilization of hot spring water, waste of hot spring resources etc. For example, lack of a scientifically sound development orientation in the process of exploitation, some regions imitate tourist destinations that is doing well to pursue economic interests, which cause homogenization of tourism products and lack of regional features. All these phenomena lead to a vicious circle of improper competition of forcing prices down, homogenization of products and declining competitiveness, as well as severely hinder the innovation and sustainable development of regional hot spring tourism industry.

To summarize, China's deepening reform has not only created development opportunities for Chinese hot spring industry, but also put forward new requirements for formats and business model of hot spring industry. "Protecting in development, and developing in protection" is the key to the sustainable development of Chinese hot spring industry in the future.

MAGICAL ASSETS OF JERMUK

HOVHANNISYAN V.¹, SARGSYAN V.², HAKOBYAN H.³

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²Chief Doctor of Jermuk Armenia Resort and Spa Hotel

³Chief Doctor of Sanatorium “ARARAT” for mothers and children

Dear Mr. President,

Dear participants of the congress,

I have the honor to welcome you and present to you Jermuk City, one of the most magical places not only in Armenia, but also, believe me, in the world.

Parallel to my report a short footage will be shown to you as an introduction of Jermuk city.

History

Jermuk was originally mentioned in the historical documents as a fortress dating to AD190, later becoming a residence of Armenian princes. Since the territory had been at the crossroad of different regional conflicts many historians of that time provided evidences that water of Jermuk has been used to treat stomach disorders, arthritis, wounds of soldiers.

In the early 20th century the government health officials began inspecting Jermuk water, and scientists attested to its “indisputable medicinal properties”. By 1945 Soviet officials decided to transform Jermuk into a health resort of Soviet Union-wide significance.

The word “JERM” means HOT SPRING. During 1970s, the number of visitors made around 30 000 people on average per annum.

State-sponsored referrals made it affordable for very diverse range of customers from all around Soviet Union. The majority of visitors were visiting us as patients, not as tourists.

With collapse of the Soviet Union number of visitors had declined as the services were no longer affordable for wider range of citizens in

Armenia and former Soviet countries. Many of facilities and infrastructures of Jermuk became outdated and fell into disrepair.

Background

Jermuk is located 180 km south-east from Yerevan. The district is at a height of approximately 2100 m above sea level. The climate is characterized by moderate winters (average January temperature is -8 degree) and warm and dry summers (average August temperature is 16 degree). Quantity of sunny days in a year is about 300. Air in Jermuk is absolutely pure, is typically mountainous, without any dust and full of fragrance of alpine flowers. Summer is not hot and winter is long and snowy.

Prevalence of sunny days, healing waters, soft climate, rich green, woody mountains, moderate humidity, snowy winter, organic food and other conditions make Jermuk a first class resort and leisure zone.

Indelible impression on tourists makes the beauty created by the nature itself, known as Jermuk water falls, geysers, canyons between mountains, natural bridge and so on. There are almost 40 curative hot springs in the territory of Jermuk city.

According to data provided by the local municipality, the city's current population is estimated at around 7000 people. Jermuk's neighborhood is well-known for its historical monuments and churches - Gndevank (8c), Noravank (12c), Tatev (9c) and so on.

Wings of Tatev - the longest ropeway in the world is 100 km from Jermuk city. Jermuk is very safe city and has one of the lowest crime rates in the country, with only 8 crimes reported during the first 9 months of 2016.

Transport communication to and from Jermuk (to Yerevan) is provided on regular basis through comfortable buses (\$12 round trip) and taxi services (\$50 round trip).

Banking system is widespread with some major banks of the country with their offices and net of ATMs (French ACBA-Credit Agricole, Russian VTB and Armenian Industrial Bank).

Jermuk mineral water

Information of Jermuk's mineral water dates back to the 13th century according to historians. The springs were investigated in 1830 by a Russian scientists and and researched in more detail later in 1925, after which a decision was made to develop the city and turn it into a spa resort.

The mineral water springs are classified by the "Jermuk master plan" as thermal (32 to 64 degree),lightly acidic to neutral (PH-6.8—7.5), andrich in hydrocarbonates and sulfates. The water contains microelements: iodine, bromide, copper, zinc, iron, cobalt, aluminum, manganese,calciumand etc.

The composition of Jermuk's water is often compared to Karlovy Vary, Zheleznovodsk and is supposed to be as curative as the famous Czech thermal springs.

Jermuk mineral water is used for bathing, drinking, rinsing, syringing, inhalation and in other procedures. The following diseases can be cured in Jermuk resorts.

- 1.Diseases of the alimentary canal /gastritis, peptic ulcer, duodenal ulcer, colitis/.
- 2.Diseases of liver, gall bladder/cholecystitis, cholangitis/, pancreas.
- 3.Diseases of locomotor system, arthritis.
4. Gynecological illnesses.
5. Metabolic imbalance, alimentary obesity, diabetes, gout, oxaluria.
- 6.Peripheral nervous system disorders.
- 7.Dermatological and proctologic diseases.
- 8.Endocrine and hormonal disorders.
- 9.Kidney, prostate, bone disorders.

Along with mineral water procedures other ones can be used in combination—physiotherapy, mudtherapy, massage, showers and so on. The impact of mineral water procedures depends on the stage of the diseases. In general, water treatment is considered most effective at the onset and chronic stage of diseases. Treatment is not recommended for those with heart problems, high-stable blood pressure, cancer diseases, pregnancy.

One Liter Contains	Karlovy Vary	Jermuk
	(by S.M. Ovchinnikov)	(by G. Bozoyan)
Kations		
Lithium	0,0033	0,0037
Ammonium	0,0001	-
Potassium	0,1042	0,0890
Natrium	1,7180	1,2110
Magnesium	0,0465	0,0744
Calcium	0,1025	0,1480
Strontium	0,0003	0,0038
Ferrum	0,0001	0,0008
Anions		
Chlorine	0,6170	0,4757
Bromine	0,0014	0,0001
Fluorine	0,0024	0,0001
Sulfate	1,6620	0,9000
Hydrophosate	0,0001	0,0150
Hydrocarbonate	2,1000	2,2430
Hydroarsenate	0,0001	----
Nitrogen gas	0,40	0,5-0,8
Solid residue (105C)	5,39	3,792
Water temperature °C	73	64

Mineral water is bottled just next to the hot springs and exported to the 30 countries by "Jermuk Group" factory.

Jermuk tourists assets

Jermuk is Armenia's largest and most well-known spa city with 7 operating spas accounting for around 1400 beds. They provide accommodations for about 15000 tourists annually. Each of spas is fully occupied during the high summer season and the first week of January. This drops to 30% occupancy during the low season. It means the number of visitors is 3 times greater in high season. The length of stay varies from 7 to 20 days. Many people come to have different treatments, relaxation or organize 2-5 days seminars. Two spa projects are currently under development. International brand, Hyatt place Jermuk" started its operation in 2015.

"Armenia-resort" health spa, which has 12 years of experience, is considered as a leader in the treatment sector.

On average, the operating spas provide more or less a similar range of services.

Jermuk also offers 6 guesthouses with 110 beds, without offering a treatment.

There are also 4 non-hotel, operating restaurants. Together, they provide up to 600 eating places.

Jermuk ski lift provides a modern and recreational service.

The significant winter snowfall, large number of sunny days and attractive winter temperature provide favorable conditions for skiers. The ski was constructed by the Swiss company; its length is 1 km although there is possibility, in the future to extend it to a network of 16 km. The ski facilities include modern rental services. Other recreational facilities include the central city park, which is under reconstruction now.

Mainly, the health resorts offer full board, providing only an organic food, which is one of the main peculiarities of our city. You can choose yourself a food to your taste or recommendations of a doctor—a dietary food is also provided at restaurants.

There are also many tours to the beautiful places in Armenia.

Government

Jermuk city enjoys a special status designated by the Government and highly supported by the President of Armenia. The Government considers Jermuk as a locomotive for the whole region. The government of Armenia designated Jermuk as a "Tourism Center" in 2008 by its special Decree. The Decree was designed to achieve the following outcomes during the years:

1. To turn Jermuk into a year-round spa resort that meets international standards through the development of facilities and services such as follows:

A/ Spa and winter tourism facilities and services,

B/ A cultural tourism destination,

C/ An international chess championship center and a pan-Armenian youth camp destination.

2. Ensure 50,000 annual visitors

3. Create 2000 additional new jobs

4. Increase tourism-generated income up to US \$50 million

The government provides its technical and financial support possible to improve infrastructures in Jermuk city. Currently millions are being spent on improvement and renovation of the Central Park and city's streets.

Jermuk is an alternative to Austria, Germany, France, Russia, and Czech Republic in both the spa and winter tourism industries.

Dear participants of the congress.

We would be glad and ready to continue cooperation with you to share knowledge, learn more, to provide better services to our customers, to help them live better and healthier. The Government of Armenia is also aware of our intention and is ready to support extensively. Armenia has enough resources and capacity to serve our people. In conclusion, on behalf of the city of Jermuk I would like to welcome you again and wish you a fruitful work and all the best. Welcome to our hospitable country. Please enjoy it.

Thank you for your attention.