
EDUCATION OF BALNEOTHERAPY IN THE HUNGARIAN UNIVERSITIES

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Background

Health care professionals are educated in four universities in Hungary (figure 1). The length of education for general medicine is 6 years. The structure of education is similar in all four universities : 2 years of basic science, 3 years of clinical sciences and 1 year of practice under supervision in 5 different basic clinical branches (internal medicine, surgery, gynecology, pediatry, neurology).

Although the length of education is regulated, the content of the different disciplines are hardly harmonized. The allocated time for theoretical and practical education, the content of the education and the type of examinations in each faculty are accredited by the National Accreditation Board. By this means the similarities between the education in the different universities are assured.

The subjects can be divided in three categories :

- obligatory disciplines (Category A – Table 1) ;
- obligatory choosed disciplines (i.e. the students should choose a certain number of subjects from a list of different subspecialities : for example balneotherapy, rheumatology, neurosurgery, pediatric surgery, etc. - Category B – Table 2) ;
- voluntary subjects (for example : lipid lowering therapy, patho-anatomy of rheumatic diseases, use of computers in medicine, etc. Category C – Table 3).

Graduate education

As a separate subject balneology or medical hydrology is not included into the Category A programme of any universities. It is included in Category B programme of rheumatology (one out of 12 lectures in University of Debrecen) or rehabilitation and physical medicine (2 out of 12 lectures in University of Pécs, one out of 12 lectures in University of Szeged – Table 4). It is also included in the Category C programmes of several universities. In the Pécs University there is a course entitled “Thermal and mineral waters of Hungary, balneology”, this is a course of Category B level (Table 5)

Post graduate education

In Hungary there are 34 different specialities, which are the basic or primary specialities. These specialities can be choosen by the young medical doctors as their first

specialization. Till 1993 rheumatology was coupled with physiotherapy i.e. “rheumatology and physiotherapy” was a primary speciality. Physiotherapy included balneotherapy too. Since 1993 rheumatology remained a first or basic speciality and “physiotherapy” became a subspeciality. Subspeciality means that the given subspeciality can be chosen only after having a basic or primary speciality p.ex. rheumatology. The duration of the training in the primary and basic speciality is about 5 or 6 years (after graduation), but in the subspecialities the duration of the training is only 2 or 3 years. The entry criteria for a given subspeciality is prescribed. In the case of physiotherapy, the requirement for the subspeciality is a specialization in any of the “clinical” specialities. The subspecialization required a training of 2 years in physiotherapy. The trainee should spend a certain time in each clinical field (Table 6) and should participate in two courses of physiotherapy (Table 7).

To become the situation more complicated since 2002 a new basic or primary speciality was created : “medical rehabilitation and physical medicine” (5 years of training) which also contains basic and applied studies on balneotherapy (Table 8).

In summary, the balneology is educated in the graduate and post-graduate level as a part of the curriculum, partly in the subject of physiotherapy. No special training exists in Hungary for balneotherapy itself, only as part of the different specialities (rheumatology, rehabilitation). Therefore the situation is not ideal for development of this discipline of the medicine.



Figure 1. Map of Hungary

Universities with medical schools in Hungary : Budapest, Pécs, Debrecen, Szeged

Lectures

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Subject	Duration	Theoretical	Seminars	Practice
Anatomy	2	80		216
Anaesthesiology	1	11		22
Basic oncology	1	13		
Basic surgery	1	15	18	12
Biochemistry	2	87	29	60
Biophysics	1	30	53	22
Cell biology	1	30	25	20
Clinical biochemistry	2	74		44
Clinical genetics	1	21		
Clinical oncology	1	14	7	
Clinical physiology	1	20	30	
Dentistry	2	24		42
Dermatology	2	42	12	56
Ethics	1		14	
Family medicine	1		10	
Genetics	1	30		30
Gynaecology-Obstetrics	2	21		42
Immunology	1	38	10	12
Infectiology	10	21		14
Internal medicine	6	166		140
Legal medicine	2	28		28
Medical chemistry	1	48	60	45
Microbiology	2	50		60
Molecular biology	1	42	14	15
Neurobiology	1	62	14	52
Neurology	2	28		42
Ophthalmology	2	28		42
Orthopedics	2	28		42
Oto-rhino-laryngology	2	28		42
Oxyology	2	42		42
Patho-anatomy	2	75		90
Paediatrics	2	35		56
Pharmacology	2	77		42
Preventive medicine	2	56	28	71
Psychiatry	2	35		42
Physiology	2	96	48	82
Psychology	2	30		20
Pneumology	2	42		42
Radiology	2	21		42
Reanimation	2	12		30
Surgery	2	21		42
Surgery practical skills	1	3		16
Traumatology	1	14		21
Urology	2	28		42

Table 1. Category A, subjects which are obligatory for all medical students (Debreceen

Subject	Hours
From research to clinical practice	30
Neuropathology	12
History of medicine	16
The regulatory role of cell membrane	20
Treatment of infertility	16
Laparoscopic surgery	12
Case reports-physiology	20
Reanimation	15
Pharmacotherapy	28
Geriatrics	30
Neurosurgery	14
Toxicology	28
Medical informatics	30
Clinical pharmacology	20
Clinical geriatrics	30
Communication skills	30
Examinations in physiology	24
Use of library	10
Behavioural sciences	10
Biophysics	21
Molecular basis of diseases	25
Anthropology	15
Medical genombiology	20
Medical sociology	15
English for medicine	30
Latin for medicine	30
Medical rehabilitation	16
Case reports- patho-anatomy	30
Problem based learning in haemostasis	20
Problem based learning in physiology	30
Problem based learning in ophthalmology	20
Problem based learning in dermatology	30
Irradiation practice	14
Traumatology	14

Table 2. Category B, subjects from which obligatory to choose (Debrecen University)

Subject	Hours
Functional anatomy of the brain	22
Advanced histology	16
Quality controll	15
Health law	20
Malpractice law suites	20
Chinese massage	20
Complementer and alternative medicine	20
Sport medicine	16
Metabolic –X syndrome	20
Modern treatment and diagnostics of hypertension	16
Systemic lupus erythematosous	10
New research results in rheumatology	10
Intensive care in paediatrics	10
ECG	16
Medical rehabilitation and physical medicine	8
Psychotherapy	18
Neuroradiology	10
Reconstructive surgery	8
Andrology	8
Epidemiology of non-communicable diseases	45
Occupational medicine	30
Infection control	15

Table 3. Category C, subjects free for choose (examples from the 295 topics) from the Debrecen University

	Lecture (2 hours)	Practice (3 hours)
Introduction	X	
Rehabilitation as a concept	X	
The handicapped people	X	
Physiotherapy I*	X	
Rehabilitation team	X	
Physiotherapy II*		X
Rehabilitation of brain injured	X	
Rehabilitation of spine injuries	X	
Rehabilitation in neurology	X	
Rehabilitation of post traumatic patient	X	
Rehabilitation in rheumatology	X	
Rehabilitation in psychiatry	X	
Medical aids I		X
Medical aids		X
Examination		

*Electrotherapy, excercise and hydrotherapy

Table 4. The Category B subjects : The programme of medical rehabilitation and physical medicine (University of Szeged)

Hydrogeology of thermal and mineral waters
 The relationship between the chemical composition and the geological specificities
 Hidrology of the thermal and mineral waters
 Description of the Hungarian mineral and thermal waters
 Chemical description of the mineral and thermal waters
 Unorganic chemical analytic classification
 MicroMikorelemek előfordulása
 Unorganic ions, and complexes and their therapeutic effects
 Organic ions and complexes and their therapeutic effects
 Water analysis at site
 Unorganic analytical examinations
 Microbiological analysis
 Artificial thermal and mineral waters
 The source of peloids, chemical, physical properties, Hungarian peloids
 Thermal and mineral waters
 The scope and history of balneology
 The water and ion transport of the human body
 External application of thermal and mineral waters, the pathophysiology of the use of thermal waters
 Mechanical, thermal, chemical and psychical effects. The bath reaction.
 Different type of water in the thermal cure
 The use of thermal cure in different diseases
 Peloid course and the properties of peloidsi
 Internal application of thermal and mineral waters, the pathophysiology of the use of thermal waters
 Inhalation
 Further applications : climatotherapy, physiotherapy
 Examinations

Table 5. Category B, course of “Mineral waters and thermal waters of Hungary, balneology” at the University of Pécs

Training (in-patient department)	Duration (month)
Rheumatology	3 months
Medical rehabilitation	3 months
Post traumatic ward	1 month
Pulmonology	1 month
Neurology	1 month
Sport medicine	2 weeks
Cardiology, rehabilitation	2 weeks
Courses	1 month
Rest of the training	In the original speciality (clinical science)

Table 6. The curriculum of the subspeciality “Physiotherapy”

Topic	Hour
The requirements of the post graduate education in physiotherapy	1
Biophysics for physiotherapy	2
Electrotherapy	4
Balneotherapy (physiology, different application of balneotherapy)	3
Laser therapy	1
Light therapy (UVa/V/C, etc.)	1
Climatotherapy	1
Cave therapy	1
Radon therapy	1
Drinking cure, mineral waters	1
Peloids, mud treatment	2
Carbon dioxide baths	2
Exercise	3
Manual therapy	2
Ultrasound	2
Massage	2
Magnethotherapy	1
The spa treatment (technical details)	2
The role of physiotherapy in the prevention, treatment and rehabilitation	2
The role of kinesiotherapist in the physiotherapy	1
Special techniques in kinesotherapy	3
Physiotherapy in post-traumatic care	6
Physiotherapy in rheumatology	2
The treatment of paraplegics	2
The treatment of stroke	2
The treatment of amputee	2
Physiotherapy in dermatology	1
Physiotherapy in gynecology	1
Physiotherapy in cardiology	1
Physiotherapy in the care of patients with spinal diseases	6
Physiotherapy in sport medicine	2
Physiotherapy in neurology	2
Drinking cure	2
Physiotherapy in urology	1
Physiotherapy in pulmonology	2
Day-care in physiotherapy	1

Table 7. The programme of the one month course (two courses) of physiotherapy

Topic	Duration (month)
Common trunk	
• Emergency medicine	6
• Internal medicine	6
• Neurology	6
• Traumatology	6
Speciality training	
<i>Physiotherapy and rehabilitation</i>	12
• courses	1
• physiotherapy and sport medicine	1
• cardiology	1
• pulmonology	1
• post-traumatic care	1
• rheumatology	6
• rheumatology-rehabilitation	1
<i>Rehabilitation and physiotherapy</i>	22
• courses	1
• geriatry	1
• psychiatry	1
• paediatric rehabilitation	2
• paediatric orthopedic	1
• rehabilitation of locomotor disease	16
incl. Brain injury	1 month
incl. Paraplegics	1 month

Table 8. The curriculum of the specialization in “medical rehabilitation and physical medicine” (60 months)