

**"VICTOR BABEȘ" UNIVERSITY OF  
MEDICINE AND PHARMACY TIMIȘOARA  
DOCTORAL SCHOOL  
MEDICINE**



# **HABILITATION THESIS**

## **NEW PERSPECTIVES RELATED TO HEALTH, RHEUMATOLOGY AND REHABILITATION**

**A B S T R A C T**

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## **ABSTRACT**

The habilitation thesis entitled "New perspectives related to Health, Rheumatology and Rehabilitation" presents the results of the didactic, professional and scientific activity that I carried out during my whole career, starting as Assistant Prof and after with the beginning of my doctoral studies and was developed according to the national and university standards.

The undersigned, Assoc. Prof. Răzvan Gabriel Drăgoi, currently part of the teaching staff within the XVI Department at the Discipline of Physical Medicine, Balneology and Rheumatology, of the Faculty of Medicine within the UMF "Victor Babeș" Timisoara, I appreciate my activity within this institution and outside it, as adequate to the professional-scientific rigors, considering the following aspects regarding my activity up to now and the future one. After graduating from the Faculty of General Medicine of the "Victor Babeș" University of Medicine and Pharmacy in Timișoara in 2006, I was recruited through a competition on October 1, 2007 with the degree of university trainer in the XVI Department - discipline Medical Recovery within the Faculty of General Medicine, "Victor Babeș" University of Medicine and Pharmacy from Timisoara. I obtained the title of doctor in medical sciences with the doctoral thesis "Educational needs and quality of life in rheumatic patients" thesis developed in co-supervision (University of Medicine and Pharmacy "Victor Babeș" Timisoara and University of Medicine in Vienna) and evaluated with the qualification "SUMMA CUM LAUDE" in 2014 (Diploma Series I No. 0003552 / 21.01.2014), proposing that I continue to obtain post-doctoral projects.

I have followed until now all the academic steps (preparator and university assistant: 2007-2015; Lecturer from 2015-2020 and Associate Professor from 2020 to the present) being permanently concerned with practical activity based on modern theoretical concepts, presenting them to students of the Faculty of General Medicine specializes in balneo-physio-kinotherapy, both the classic concepts and those based on new trends, necessary for the formation of scientific thinking and the acquisition of practical skills in the field of

physiotherapy. At the same time, I teach Physical medicine and rehabilitation to sixth-year students specializing in General Medicine, Romanian and French section, presenting them with the fundamental notions of the clinical specialty of physical medicine and rehabilitation. Since 2020, I have been mandated by UMF Timișoara to train resident doctors in the specialty of Physical Medicine and Rehabilitation, being one of the main reasons for changing the discipline of Medical Recovery to that of Physical Medicine and Balneology.

The habilitation thesis is structured in compliance with academic standards into four specific parts: (1) the first part is dedicated to scientific achievements, (2) the second part is dedicated to academic achievements, (3) the third part reflects the professional activity and the last part (4) is devoted to academic, scientific and professional perspectives.

The post-doctoral scientific research activity, which represents the first part of the habilitation work, naturally continued the research direction approached in the case of doctoral studies, being later developed and correlated to several interdisciplinary fields, thus managing to achieve performances for the department and the institution from which I belong

The postdoctoral scientific activity is visible both internationally and nationally through scientific publications: 10 articles in ISI journals with impact factor as main author, more than 15 articles in ISI journals with impact factor as co-author, 3 indexed papers on Web Of Science (WOS) as first author, 8 papers indexed on WOS as co-author, 6 articles in ISI journals as first author, over 15 articles in ISI journals as co-author, 2 articles in Romanian journals indexed in databases international data as first author and more than 20 articles published in other scientific journals.

I participated in research projects, both as a project manager and as a member: the Young Researchers competition in 2015 of UMF "Victor Babeș" from Timișoara - manager in the project "Recovery and improvement of the quality of life of patients with functional deficit of the upper limb through methods modern virtual reality training (RECVIRT)"; partner director in the project "Robot partner for the activation of people with dementia" (ReMIND, Total Value: 657.228 lei representing 146.050 euro), the project is financed by the PNCDI III Program: European and International Cooperation - Subprogram 3.5 Other European and international initiatives and programs through the European axis

AAL (Active Assisted Living); member in EULAR projects (recommendations for adherence to treatments improvement, Empowered2work and points to consider/recommendations for the health professionals' prevention and management of osteoporotic fractures). Reviewer activity for 5 international publications indexed WOS (Quality of Life Research/ Springer; ISSN: 0962-9343 (print version); Health and Quality of Life Outcomes/ BioMed Central; ISSN: 1477-7525; Qualitative Health Research/ Sage; Print ISSN: 1049-7323; Online ISSN: 1552-7557; Rheumatic and Musculoskeletal Diseases Open/ BMJ; Online ISSN: 2056-5933; Rheumatology International; ISSN: 0172-8172), gives me the opportunity to follow the latest themes and research directions , at the same time training me in the development of critical thinking, necessary in the elaboration of my own scientific works.

I was awarded at the Romanian Congress of Rheumatology 2013 with the "excellence award" of the Romanian Society of Rheumatology for the oral presentation "Evaluation of the educational needs of patients with rheumatoid arthritis using a Romanian version of the educational needs assessment questionnaire (RoENAT) - pilot study" and with the 2nd mention of the Society of Physical Medicine and Recovery for the work "Educational Needs of the Austrian Patient with Rheumatoid Arthritis, Psoriatic Arthropathy and Hand Osteoarthritis". The published scientific articles were in journals with a high impact factor, located in the first quarter in their area of interest, so we obtained 6 PRECISI awards from the Ministry of Education and Research as follows: 2021: PRECISI red for the articles: "Intravenous iron infusion as an alternative to minimize blood transfusion in peri-operative patient", and "2020 EULAR points to consider for the prevention, screening, assessment and management of non-adherence to treatment in people with rheumatic and musculoskeletal diseases for use in clinical practice", and PRECISI yellow for the article: "Using Portable Ultrasound to Monitor the Neuromuscular Reactivity to Low-Frequency Electrical Stimulation", than in 2014: PRECISI red Award for the article "Patient education, disease activity and physical function: can we be more targeted? A cross sectional study among people with rheumatoid arthritis, psoriatic arthritis and hand osteoarthritis"; in 2015: PRECISI yellow Award for the article "Do patient reported outcome measures cover personal factors important to people with rheumatoid arthritis?" A mixed methods design using the International

Classification of Functioning, Disability and Health as frame of reference" and in 2016 the PRECISI red Award for the article "Inspiratory muscle training improves aerobic capacity and pulmonary function in patients with ankylosing spondylitis: A randomized controlled study" Clinical Rehabilitation .

The second part of the thesis is devoted to activities related to academic development. Being an employee of the University of Medicine and Pharmacy "Victor Babeș" Timișoara since 2007 in the discipline of Medical Rehabilitation, I went through all the academic steps, being constantly concerned with the practical activity based on modern theoretical concepts, presenting to the third year students the specialization Balneophysiokinetotherapy as well as the classical concepts as well as those based on new trends, necessary for the formation of scientific thinking and the establishment of the best practical attitude in the field of physical therapy. At the same time, teaching both the course and practical internships of physical medicine and rehabilitation to students of the 6th year of general medicine, french section, I have the opportunity to guide them in acquiring the basic concepts of this clinical discipline. I supervised and guided the students of the Balneophysiokinetotherapy and Rehabilitation specialization during the summer practice, in order to correctly apply in the current clinical practice the theoretical notions accumulated during the academic year both in the period 2007-2012 in the Balneophysiiotherapy clinic where I carried out my residency and and currently where I work as Head of the clinical department of Rehabilitation, Physical Medicine and Balneology. So far, I have managed a number of 14 bachelor theses. The coordinated students graduated from the Balneophysiokinetotherapy specialization at UMF Timișoara. With the integration in the university clinic (2015) I was also appointed as a residency guide in the clinical specialty of Physical medicine and Rehabilitation by the coordinator from the Timișoara university center, supporting over time multiple presentations for residents and coordinating numerous case presentations by doctors residents. Since 2020, I have been appointed residency coordinator in the specialty of Physical Medicine and Rehabilitation in the Timișoara University Center, an activity that I consider of utmost importance in my future career, proposing to train them as thoroughly as possible.

The third part is dedicated to professional activity. During my career, I participated in eight postgraduate courses that I considered relevant for my activity as a researcher, clinician and teacher as follows: in 2013: "Biostatistics" 1- organized by the Medizinische Universität Wien and "Communication with the patient" organized by Inspireas Learning Experience; in 2011: "CARDIOvascular disease from METabolic diseases" organized by the Romanian Society of Cardiology; "European Teaching Course on Neurorehabilitation" organized by the World Federation for NeuroRehabilitation; "Introduction to Clinical Research and ICH GCP for Investigators" organized by QUINTILES; in 2010: "Ensuring the free movement of workers and the interoperability of health indicators between EU member states" organized by the Ministry of Health and in 2007: at "Pain therapy in rheumatic diseases. Indications and technique of Infiltrations and "Therapy of acute and chronic pain. Pain therapy in adults and children. Neuropathic pain therapy" both organized by UMF "Victor Babeș" Timisoara.

In 2009, I won a research and mobility scholarship through the competition within the POSDRU/88/1.5/S/63117 project "Doctoral scholarships for competitive doctoral students in the European area of research". This fact marked my career in a positive way, successfully defending my doctoral thesis in co-supervision (University of Medicine and Pharmacy "Victor Babeș" Timisoara - University of Medicine in Vienna), thesis evaluated "Summa cum Laude". Also, in 2014 I participated in an exchange of experience within The COPE – A Clinical Observational Program at Copenhagen Center for Arthritis Research, Glostrup Hospital, University of Copenhagen, Denmark September 12-13, 2014).

I consider the biggest career achievement to be the active participation in 3 EULAR task-forces, the participation resulting in the application for grants within the EULAR framework and the publication of 2 recommendations, one for the approach to patients suffering from osteoporotic fractures by the average medical staff : "2019 EULAR points to consider for non-physician health professionals to prevent and manage fragility fractures in adults 50 years or older", and the other for the management of adherence of patients with musculoskeletal conditions to treatment: "2020 EULAR points to consider for the prevention, screening , assessment and management of nonadherence to treatment in people with rheumatic and musculoskeletal diseases for use in

clinical practice" both being published in Annals of Rheumatic Diseases, the first top international journal in the field of rheumatology.

The last part of the present work is dedicated to the future perspectives regarding the scientific, academic and professional evolution, centered on the continuation and improvement of the activities already successfully undertaken, the final goal being the increase in the visibility of the "Victor Babeș" University of Medicine and Pharmacy in Timișoara and the medical specialty of Physical Medicine and Rehabilitation.

The habilitation thesis ends with the bibliographic references and the list of the 10 representative scientific publications.

## LIST OF 10 REPRESENTATIVE SCIENTIFIC PAPERS

1. Chioran D, Sitaru A, Macasoi I, Pinzaru I, Sarau CA, Dehelean C, Dinu S, Szuhaneck C, Zetu IN, Serafin AC, Rivis M, Poenaru M, **Dragoi, R**. Nicotine Exerts Cytotoxic Effects in a Panel of Healthy Cell Lines and Strong Irritating Potential on Blood Vessels. *Int. J. Environ. Res. Public Health* 2022; 19:8881. <https://doi.org/10.3390/ijerph19148881>
2. Rednic R, Marcovici I, **Dragoi R\*(coresp)**, Pinzaru I, Dehelean CA, Tomescu M, Arnautu DA, Craina M, Gluhovschi A, Valcovici M, Manea A. In Vitro Toxicological Profile of Labetalol-Folic Acid/Folate Co-Administration in H9c2(2-1) and HepaRG Cells. *Medicina (Kaunas)*. 2022 Jun 10;58(6):784. ISSN: 1010-660X <https://pubmed.ncbi.nlm.nih.gov/35744047/>
3. Catan L, Boariu M, Amaricai E, Popa D, Puenea G, Drăgoi M, Stratul Ș, **Drăgoi RG**. Predicting functional disability in patients with spondyloarthritis using a CRP-based algorithm: A 3-year prospective study. *Exp Ther Med*. 2021 Jan;21(1):89. ISSN: 1792-0981 <https://pubmed.ncbi.nlm.nih.gov/33363600/>
4. Petraș A, **Drăgoi RG\*(coresp)**, Pupazan V, Drăgoi M, Popa D, Neagu A. Using Portable Ultrasound to Monitor the Neuromuscular Reactivity to Low-Frequency Electrical Stimulation. *Diagnostics (Basel)*. 2021 Jan 3;11(1):65. eISSN:2075-4418 <https://pubmed.ncbi.nlm.nih.gov/33401607/>
5. Iftode A, Drăghici GA, Macașoi I, Marcovici I, Coricovac DE, **Dragoi R\*(coresp)**, Tischer A, Kovatsi L, Tsatsakis AM, Cretu O, Dehelean C. Exposure to cadmium and copper triggers cytotoxic effects and epigenetic changes in human colorectal carcinoma HT-29 cells. *Exp Ther Med*. 2021 Jan;21(1):100. ISSN: 1792-0981 <https://pubmed.ncbi.nlm.nih.gov/33363611/>
6. Ionescu A, Sharma A, Kundnani NR, Mihailescu A, David VL, Bedreag O, Sandesc D, Dinu AR, Sandesc MA, Albuiescu N, **Dragoi RG**. Intravenous iron infusion as an alternative to minimize blood transfusion in peri-operative



- patients. Sci Rep 10, 18403 (2020). ISSN:2045-2322  
<https://www.nature.com/articles/s41598-020-75535-2>
7. Farcas CG, Moaca EA, **Drăgoi R\*(coresp)**, Berceanu Vaduva D, Marcovici I, Mihali CV, Loghin F. Preliminary results of betulinic acid-loaded magnetoliposomes – a potential approach to increase therapeutic efficacy in melanoma. Rev Chim 2019, 70 (9), 3372-3377. ISSN:0034-7752  
<https://revistadechimie.ro/Articles.asp?ID=7552>
  8. Avram C, **Drăgoi RG\*(coresp)**, Popoviciu H, Drăgoi M, Avram A, Amaricăi E. Association between arterial stiffness, disease activity and functional impairment in ankylosing spondylitis patients: a cross-sectional study. Clin Rheumatol. 2016 Aug;35(8):2017-2022. ISSN:0770-3198 <https://pubmed.ncbi.nlm.nih.gov/27169859/>
  9. **Drăgoi RG**, Amaricai E, Drăgoi M, Popoviciu H, Avram C. Inspiratory muscle training improves aerobic capacity and pulmonary function in patients with ankylosing spondylitis: a randomized controlled study. *Clinical Rehabilitation*. 2016;30 (4):340-346. ISSN:0269-2155 <https://pubmed.ncbi.nlm.nih.gov/25810425/>
  10. **Drăgoi RG**, Ndosu M, Sadlonova M, Hill J, Duer M, Graninger W, Smolen J, Stamm TA. Patient education, disease activity and physical function: can we be more targeted? A cross sectional study among people with rheumatoid arthritis, psoriatic arthritis and hand osteoarthritis. Arthritis Res Ther. 2013 Oct 20;15 (5):R156. ISSN:1478-6354 <https://pubmed.ncbi.nlm.nih.gov/24286444/>