

**“CAROL DAVILA” UNIVERSITY OF
MEDICINE AND PHARMACY, BUCHAREST
DOCTORAL SCHOOL
FIELD: MEDICINE**

**An Integrative Approach to Diabetes Mellitus
and Metabolic Disorders –
Between Dysfunction and Balance**

Abstract of the Habilitation Thesis

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Abstract

Our profession entrusts us with the crucial role of engaging in three fundamental pillars of society: education, healthcare, and research. Each of these domains relies not only on sustained commitment but also on solid and continuous training in order to meet the specific and ever-evolving challenges they entail. A robust and fulfilling professional trajectory is built upon adherence to high standards and attaining meaningful achievements across all three areas. Ongoing involvement in academic and professional activities has offered a valuable opportunity to remain connected to the latest developments in the field, to support research efforts actively, and to disseminate the resulting findings within the scientific community.

The title of my habilitation thesis, “An Integrative Approach to Diabetes Mellitus and Metabolic Disorders – Between Dysfunction and Balance” reflects contributions to these essential fields over the past thirteen years following the completion of doctoral studies (Order no. 5743/12 September 2012). The thesis follows the “Guide for the Development and Writing of the Habilitation Thesis at the University of Medicine and Pharmacy” and is structured in two main sections: Section I - Scientific, Academic, and Professional Activity; and Section II - Perspectives for the Development of Scientific, Academic, and Professional Career.

The title emphasizes, on the one hand, the complexity and progressive nature of the pathophysiological dysfunctions associated with diabetes mellitus and its comorbidities and, on the other hand, the potential to restore metabolic balance through personalized, patient-centered therapeutic interventions, preventive strategies, and the integration of novel clinical and scientific paradigms. The concept of an “integrative approach” underscores both the multidisciplinary nature of the specialty and the coherence of my professional path, in which fundamental research, clinical practice, academic teaching, and public health initiatives converge to shape a holistic vision of metabolic diseases. This title also reflects the strategic directions for future development centered on innovation, interinstitutional collaboration, and the promotion of personalized, evidence-based medicine.

The first section of the thesis provides a retrospective analysis of my scientific, academic, and professional work, highlighting key outcomes and publications resulting from sustained clinical and research activity. Over these years, I have investigated and studied metabolic

disorders, contributing to a total of 78 Web of Science-indexed publications, including 18 full-length articles as first author, 11 full-length articles as co-author, 13 full-length articles indexed in other international databases, and 32 book chapters. Recognition of this activity is also reflected in the awards received at national and international conferences.

The relevance of my scientific output is further supported by a Hirsch index of 9 (Web of Science), 283 citations, and a cumulative impact factor of 34.89 for the papers in which I am the first author.

Chapter 1 presents my scientific activity and defines the central area of research—diabetology, nutrition, and metabolic diseases. Building upon my doctoral research, the main topics have included the pathophysiological mechanisms involved in the etiology of diabetes mellitus—particularly adipocytokines and their role in insulin resistance—the relationships between proinsulin, insulin, C-peptide, and insulin resistance in both the general population and individuals with type 2 diabetes, chronic complications, scientific contributions in obesity and metabolic syndrome (from pathophysiology to therapeutic interventions), and scientific work in nutrition (from healthy eating principles to their clinical impact).

Chapter 2 outlines the main highlights of my academic career, focusing on my involvement in educational processes, the development of teaching materials, clinical care for patients with diabetes and metabolic diseases, participation in postgraduate training programs, and other academic activities.

My academic career began two decades ago and has progressively developed through sustained effort and active involvement in teaching and medical practice. I have advanced through each stage of the academic hierarchy by competitive selection, from teaching assistant to associate professor, with each step representing a period of professional growth and skill development.

My academic activity has consistently included undergraduate, postgraduate, and continuing medical education. I teach lectures and practical courses for students of the Faculty of Medicine and the Faculty of Midwifery and Nursing. Since 2018, I have been involved in the master's program “Nutrition and Food Safety”, organized by the Faculty of Pharmacy, “Carol Davila” University of Medicine and Pharmacy, where I deliver lectures and practical classes.

I coordinate clinical training activities for resident and specialist physicians, including rotations, case-based learning, and interactive seminars. I have consistently supported young professionals in their development, having supervised over 60 undergraduate and master's theses,

mentored students and residents in the preparation of presentations and scientific articles, and encouraged their participation in academic events.

Chapter 3 reflects my clinical and academic career trajectory. I am a board-certified specialist in Diabetes, Nutrition, and Metabolic Diseases (since 2017), Public Health (since 2013), and Endocrinology (since 2019). I began my medical career at the National Institute of Diabetes, Nutrition, and Metabolic Diseases “N. C. Paulescu”. Subsequently, I continued my clinical and academic work at the Clinical Hospital “Nicolae Malaxa” in Bucharest, where I am currently active. In parallel with my clinical and academic responsibilities, I pursued managerial training, completing the Postgraduate Certificate in Health Services Management in 2019.

Between 2023–2025, I served as elected President of the Ethics Council of the hospital. Additionally, I have been consistently involved in examination boards for specialist and senior physician certification, a role that requires rigorous assessment and institutional accountability.

The second section of the habilitation thesis details, across five subchapters, the strategic directions for scientific, academic, and professional development. It presents the proposed research directions for the upcoming period, emphasizing cardiac reprogramming through nutritional intervention, sarcopenic obesity, gestational diabetes, and the characterization of the gut microbiome. The section concludes with a SWOT analysis, highlighting strengths, challenges, and opportunities for achieving these development objectives.

The completion of the habilitation thesis marks the beginning of a new stage. In my professional journey, scientific and academic activities will continue to focus on the three essential pillars that support the advancement of modern society: education – through the training and support of new generations of healthcare professionals; health – through direct involvement in patient-centered clinical practice and the active integration of preventive principles; and research – through the development of applicable solutions in diagnosis, prevention, and treatment, with a real impact on patient’s quality of life. This commitment reflects my dedication to excellence in education, research, and medical practice.