

Dermatological Research at Roskilde Hospital

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The Department of Dermatology at Roskilde Hospital was established on 1 January 2006, and is the youngest dermatological department in Denmark. The department has fully integrated research into its mission statement, making research a core value on a level with patient treatment and care. With the growth of the department, several areas of scientific interest have developed, centred on clinical research and the benefits of being the dermatological referral centre for the approximately 800,000 inhabitants of Region Zealand as well as the 45,000 inhabitants of the Faroe Islands. Academic growth has been both organic, i.e. within the organization, as well as through close collaboration with other national and international institutions, and an ambitious programme of further development is being planned.

The overall research interest has been in outcomes research, as a valid and reproducible quantification of morbidity is the prerequisite not only for the practice of evidence-based medicine and organizational development, but also for investigations of pathogenic mechanisms, disease aetiology and associated risk factors. It is, however, not possible to provide an exhaustive overview of the academic activities of the department in this short article. The fertile environment of the department has meant that the core competency of disease quantification has been supplemented by other areas of interest, which overlap and intermingle to produce a broad range of academic interests that the department pursues on various levels.

Hidradenitis suppurativa

Hidradenitis suppurativa has long been an orphan disease, both clinically and academically. The department is currently responsible for more than 5% of all references to this disease in PubMed, and continues to play a prominent role in the studies of epidemiology, aetiology, pathogenesis and treatment of this often debilitating condition. This is done in close collaboration with partners in Sweden, the Netherlands and Norway, but also with other national and international collaborators. Most recently the department has become involved in the establishment of a Nordic database, which will provide clinical epidemiological data on the disease and its treatment in Norway, Sweden and Denmark.

Optical coherence tomography

The department is instrumental in defining and exploring the use of optical coherence tomography (OCT) in dermatology. This rapidly developing imaging technique provides real-time, *in vivo* images of skin, with a near-histological resolution.

The research is carried out in close collaboration with the Danish Technical University, and led to the successful conclusion of the first PhD thesis on the subject in 2010 (1). Since then additional international collaborations have been established with centres in, for example, the US, in consequence of the rapid technological developments in this technology. The aim of the research is to establish rapid and accurate non-invasive diagnostic methods, which also allow monitoring of biological processes and thereby provide not only an indicator of clinical outcomes, but also a method for more detailed studies of pathogenesis and the evolution of skin lesions for more basic research.



Prof Gregor Jemec, Head of the Department of Dermatology and Venereology.

One area in which OCT has particularly great potential is the study of skin cancer. The method enables early diagnosis and non-invasive monitoring to supplement the many non-invasive therapies that are becoming available in response to demands from patients. The department is involved not only in the diagnosis, but also in other studies of skin cancer, particularly in other areas of expertise such as non-invasive therapy and outcomes. The department is currently developing a questionnaire for measurement of disease-specific quality of life in patients with skin cancer or its precursors.

Quality of life

The study of quality of life also reflects the departmental academic interest in the psychosocial consequences of skin disease. The psychosocial consequences form a “soft” outcome measure of particular importance to dermatology, where dis-



Some of the people working at the Department of Dermatology in Roskilde. From left: Tomas N. Dam, Christina Banzhaf, Gregor Jemec, Kristina Ibler, Søren Kamp, Solveig Esmann, Gabrielle R. Vinding, Iben Miller.

eases are inevitably “public” and subject to scrutiny by other people. A psychodermatological focus furthermore provides appropriate methods for the study of coping and patient education programmes aimed at refining existing adjuvant therapies and helping patients. In addition to developing methods within this area, the department is involved in numerous basic studies and disseminating basic knowledge, not least by hosting the 2013 congress of the European Society for Dermatology and Psychiatry (ESDaP).

Miscellaneous

Finally, 3 areas of research reaching beyond outcomes should be mentioned. Focusing on the chain of events that lead to skin disease, these enlarge the department’s span of interest from aetiology and risk factors to the organization of health services.

Psoriasis. The department has a profound interest in psoriasis as a model for inflammation, and has been collaborating over the last 8 years with researchers at Århus University, Århus, Denmark to study immune modulation and drug delivery in psoriasis. This work has been the basis for the development of a psoriasis model that allows the investigation of a series of basic immunological mechanisms of psoriasis and normal skin. The projects have funded two senior scientists and one PhD student, and currently three medical students are actively participating in the projects. This expertise is highly relevant for studying new potential drugs in psoriasis. Our interest in new treatments of this disease has also naturally led to the establishment of a national registry for biological treatment of psoriasis. The steering committee of the DermBio database has been located in Roskilde since its establishment in 2007 and is represented by members of all 5 dermatology departments in Denmark. Besides being a national quality-ensuring registry that can produce clinically relevant feedback to the participating dermatologists, the registry can

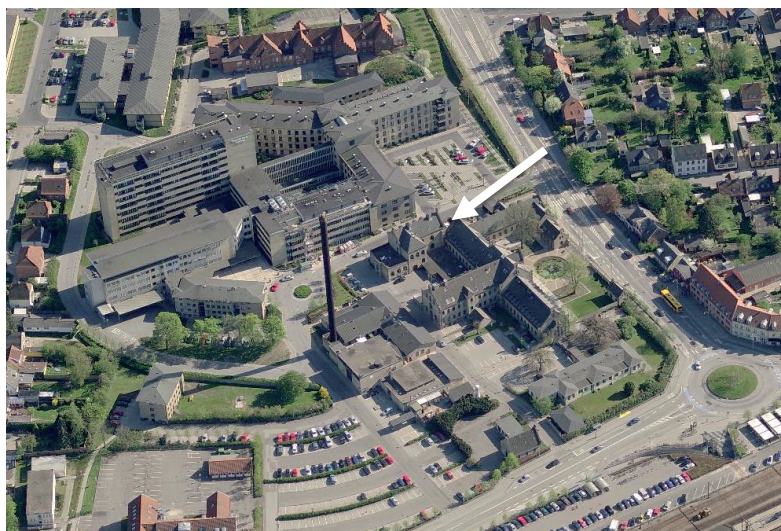
serve as a biobase for genetic studies related to the treatment outcome of the individual therapies given to patients.

Epidemiology. In 2010 the department established a close collaboration with the Næstved Population Study. This marked an important extension not only of our academic collaboration, but on epidemiological studies in dermatology. The Næstved Population Study aims to provide systematic data on the health of approximately 30,000 unselected inhabitants reflecting the general population, and for the first specific dermatological data have been included in such a database, providing a unique opportunity to study the epidemiology of a number of common skin diseases. This continues the department’s previous epidemiological work on peristomal skin diseases and on hand eczema in healthcare workers on a larger scale, and thereby strengthens competencies in the organization.

Teledermatology. Finally, the department’s extensive experience in teledermatology has led to studies within systems research. In a 3-year project the department is currently assessing the potential of teledermatology as a method for improving wound care outside a hospital setting. The project is funded by the Interior Ministry and is being carried out in close collaboration with the local authority of Vordingborg Kommune. The establishment of secondary teledermatology within a local area requires analysis and identification of the factors predicting utility to both organizations and patients, and the study supplements the department’s interests in developing international tertiary teledermatology with Mongolia.

The integration of research in the work of the department is providing a relevant perspective not only on clinical problems, but also on training and organizational development, from which we hope to benefit for many years to come.

Department of Dermatology (arrow), Roskilde Hospital.



<p>Facts</p> <p>The Roskilde Hospital was founded in 1854. The Department of Dermatology appointed its first Professor in 2010.</p> <p>The group of researchers at the Department of Dermatology in Roskilde Hospital comprises:</p> <ul style="list-style-type: none"> 1 Professor 3 Associate Professors 2 other specialists 5 registered PhD students 1 research assistant (MA in Psychology and Education) 1 research nurse 1 scholarship student <p>A total of 52 publications in peer-reviewed indexed journals, numerous invited lectures, posters, book chapters, a book and 3 PhD theses were produced in 2010–2011.</p>
