

The Danish Allergy Centre

Translational Research Centre for Allergic Diseases

The Danish Allergy Centre is a clinical research centre for allergy and the related diseases asthma, eczema, rhinitis, and food and drug reactions.

Aim

The aim of the Danish Allergy Centre is to carry out translational research at an international level, and to improve prevention and treatment of allergic diseases through a better understanding of disease mechanisms and the gene-environment interaction.

Activities

The Centre promotes evidence-based prevention and treatment of allergic diseases through research. New knowledge is translated into clinical practice through identification of risk groups, early intervention, new treatments and individualised information and patient empowerment programmes.

Research

The Danish Allergy Centre has a strong research team, making it internationally competitive: 80 academics doing full-time research, 80 yearly peer-reviewed papers, a 5-year research budget of 100 million DKK from external sources, and a high level of both pre- and postgraduate teaching.

Awards

In 2010 the Centre was awarded the prestigious "Global Excellence in Health" prize by the Capital Region of Denmark. The aim of the award is to promote internationally outstanding healthcare departments.



Plans for 2010-2013

The Danish Allergy Centre aims to modify or, at best, prevent allergic disease development through identification of risk groups, early intervention, new courses of treatment such as immunotherapy, and individualised information and patient empowerment programmes.

The clinical collaboration within the units of the Centre will be intensified to provide high-quality investigations and treatment of complex cases of allergic diseases, and to attract more patients from other regions of Denmark and from abroad.

A close collaboration will be made with the primary health care sector to ensure optimal treatment and prevention. New research results which are of general benefit will be implemented in the primary sector.



Main results within the latest 5 years

- An important genetic variant (filaggrin) present in 8% of the European population and of major importance in the development of eczema, allergy and asthma was identified with the Copenhagen Studies on Asthma in Childhood (COPSAC) as one of the discovery cohorts. This is an excellent illustration of the way the Danish Allergy Centre's participant branches collaborate: The discovery was made possible through research conducted by the COPSAC branch of the Danish Allergy Centre, and has been brought to the patients through routine testing in the clinical dermatology branch of the Danish Allergy Centre.



- Fundamental changes in the way we understand asthma and allergic diseases, and new clinical phenotypes have emerged, based on genetic screening of population-based cohorts and clinical cases.

- A new paradigm in the understanding of the origins of asthma, allergy and eczema with a focus on the bacterial ecosystem in the perinatal life is being built. The unique approach is translational research in birth cohorts combining in-depth clinical phenotyping with basic research and randomized interventions. This holds the promise of modification or prevention of the development of asthma, eczema and allergy.

- Far-reaching pioneering immunological studies have recently led to participation in the first comparison studies of sub-lingual and subcutaneous immunotherapy (allergy vaccines) and the documentation of safe clinical use of recombinant allergens. This translation of knowledge and the fruitful industry interaction has given Denmark international leadership in the oral allergy vaccine development programme.

- Diagnostic tools for new low-molecular allergens causing anaphylaxis during anaesthesia and surgery have been identified and validated. The department is the national referral centre for the complex diagnosis of patients who experience anaphylactic reactions during surgery and anaesthesia.

- Allergen risks of genetically modified foods, and the prevalence and pathophysiology of food allergy have been studied as part of national and EU-research programmes.

- Investigations into allergy against nickel, chrome, different preservatives and a number of fragrances have led to important EU regulatory intervention.

- The intervention programme for nickel has been evaluated and found to have produced a significant reduction in the incidence of nickel allergy in the population among young women resulting in improved quality of life and socio-economic gain. This makes it a successful model for primary prevention of allergy to chemicals on a population basis.

- Investigation of the inflammatory mediators involved in the immune reactions to chemical allergens shows that chemical allergens in combination can cause a compound effect on the immune system; but also that tolerance can be developed. All these findings are important for the treatment and prevention of contact allergy and eczema.

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