

World-class sports medicine

2011

Every year about three quarters of a million Danes are injured while doing some form of sport. This high figure covers everything from small sprains to major injuries requiring treatment. In the Capital Region of Denmark alone 50 000 to 60 000 sports injuries are processed by the healthcare system. In fact, as Professor Michael Kjær from the University of Copenhagen at the Institute of Sports Medicine Copenhagen, Copenhagen University Hospital, Bispebjerg, explains, there is only one other thing more risky than doing sport – namely not doing sport...

What is the objective of your work – and how do patients stand to benefit?

- In the clinic we see about 7000 patients with sports injuries every year, whom we heal as best and as effectively as we can. We are trying to develop a detailed understanding of sports injuries, especially injuries due to strain, so that we, together with the patients, can prevent them from sustaining new injuries. Success for us is when a patient never returns but does continue to do sport. Physical exercise has a well documented prophylactic effect and improves many functions in the body.

How is your work/cooperation structured and organised?

- We largely work using a so-called “translational” approach – in other words we continuously try to translate the knowledge we gain in our research projects into new principles for treatment. Some of the doctors at the institute have patient contact on most days of their working week, while others spend most of their days on research. However we work closely in small groups, also together with our sports surgeons, which means continuously combining laboratory and clinical practice. We have numerous international partners – and here at home we work very closely with the Panum Institute. We also work closely with the Cardiology and Respiratory Medicine Departments here at the hospital.

What has been your greatest achievement in recent years?

- For a long time we have had a good understanding of both bones and muscles, while tendons and ligaments were regarded for the most part as being relatively uninteresting in terms of research in a biological context. However, we have documented that much more happens in this tissue than we were aware of. If the tissue is used after an injury, healing occurs much faster than if it is inactive. Thus we have found out that light-weight exercise can strengthen the connective tissue, while over-exercising during rehabilitation is not beneficial. So the challenge lies in finding the optimal level of exercise for the healing process.

What do you hope will be the next step?

- Tissue engineering – in other words the generation of tissue. We have already made headway in creating a new tendon grown from the patient’s own cells to replace an injured ligament and our hope is clearly to be able to develop a replacement tendon or ligament that can be surgically implanted in the body. We have already made good progress. Using a piece of tendon from an adult, we can grow a new tendon in 14 days. However, we have not yet succeeded in growing one that is robust enough to cope with the strains to which the body is exposed – and that is our ultimate goal.

Why they received the award

The Institute of Sports Medicine Copenhagen is internationally renowned and conducts research on the adaptation of muscle and connective tissue to training and excessive strain and on rehabilitation after injury and reconstructive surgery.

This specialist environment has demonstrated in exemplary fashion how research, diagnostics and prevention can be successfully combined. The assessment panel recognises in particular the value of the fundamental understanding of the body’s motor system that is integral to the work of the Institute of Sports Medicine Copenhagen and which is of key importance with regard to future demographic challenges and higher numbers of chronically ill patients.

Facts

Located at Bispebjerg Hospital, the Institute of Sports Medicine Copenhagen has a staff of approximately 25 and treats about 7000 patients per year.

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The Institute of Sports Medicine Copenhagen has succeeded in exemplary fashion in linking research, diagnostics and prevention.
 Pictured: Professor Michael Kjær, University of Copenhagen

Facts about Global Excellence – In Health

In 2010 the Regional Council presented the Global Excellence – In Health awards for the first time, presenting the award to ten specialist environments. In 2011, five additional Global Excellence awardees were presented. The award – established in close collaboration with the University of Copenhagen and the Technical University of Denmark – was launched in order to highlight and acknowledge the hospital and university environments in the region that perform first-rate international level research leading to the development and implementation of new, pioneering healthcare services, treatment methods and products for the benefit of patients.

The 15 Global Excellence environments have been chosen by the executive committee of the Capital Region of Denmark on the basis of evaluations by a specialist review committee of national as well as international experts. The awardees are characterised

by unique efforts within one or more areas such as: The extent and quality of their research and development, teaching, examination and treatment of patients, and innovation and dissemination of the new knowledge.

In addition to the Global Excellence distinction, which is valid for a period of five years, the awardees each receive a grant of EUR 200,000 to help strengthen and further their international profile.



Facts about the Capital Region of Denmark

One of five administrative units in Denmark, the Capital Region of Denmark carries out research and also provides healthcare, mental healthcare and regional development for 1.7 mio. people or approx. 30% of the population in Denmark. In addition to hosting the largest health care system in Denmark, the region is also home to one of the world’s strongest life science clusters, and 70% of Denmark’s biotech companies are located in the area.

Denmark is in third place among the OECD countries regarding scientific publications per inhabitant and similarly in third place regarding citations. Along these lines, health science in the Capital Region ranks among the best in Europe. In close collaboration with the University of Copenhagen, the Capital Region of Denmark represents frontline health science and clinical research. Health research is carried out for approx. EUR 185,000,000 annually in the region (including internal as well as external funds).

The Capital Region is home to a number of specialist environments that perform world-class health research and have the ability to translate this new, innovative knowledge into pioneering health care services and treatment of the highest international order. In order to highlight and acknowledge these environments, in 2010 and 2011 the Global Excellence – In Health award has been presented to a total of 15 hospital and university environments.

Sources: OECD Territorial Reviews: Copenhagen, Denmark (OECD, 2009); Research Barometer 2010 (Danish Agency for Science, Technology and Innovation, 2010)

