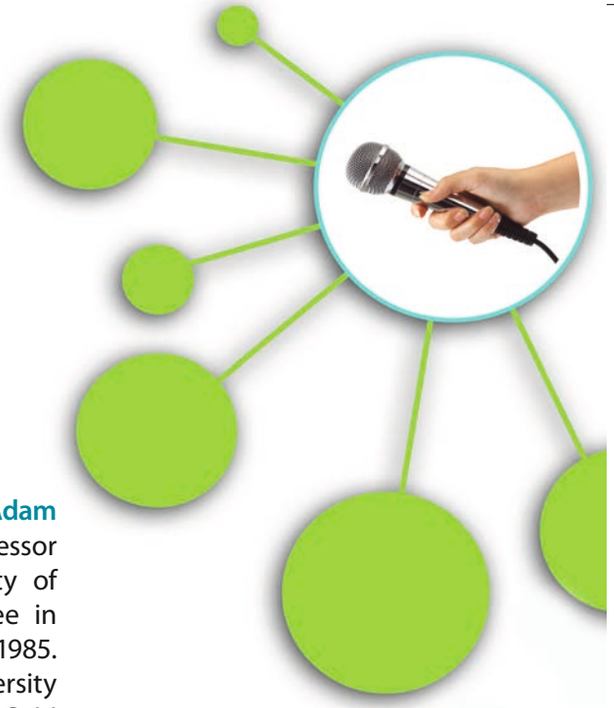
Back pain research



Professor Claus Manniche* speaks to Adam Born, Assistant Commissioning Editor: Professor Claus Manniche graduated from the University of Copenhagen (Denmark) in 1982 with a degree in medicine and gained his license to practice in 1985. After gaining a law degree from the same university in 1988, Professor Manniche concentrated on the field of back pain and rheumatology, becoming a specialist Doctor in the latter area in 1994. He rejoined the University of Copenhagen as part of its medical faculty in 1995 before being appointed as Professor and Director of the Spine Center of Southern Denmark 3 years later, where he has since risen to the role of consultant. He has been a part of several influential committees and research groups including the Danish Rheumatology Society, the Copenhagen Back Research Association and, more recently, was appointed by the Minister of Health as a member of a specialist committee investigating the prevention of back problems. Professor Manniche has been a recipient of the Danish Society for Manual Medicine Honorary Award, 1989: Hvirvelsøjleprisen; a recipient of the Danish Chiropractors' Association Researcher Prize, 1991; and a recipient of the *Scandinavian Journal of Rheumatology*'s 40th Nordic Anniversary Prize in 1995. Two clinics that Professor Manniche helped to develop have also been recognized: the outpatient back clinic at Aarhus County Hospital (Denmark) received the 'Quality Award for the year 1996, Aarhus Amt'; the Back Center at Fyn was a recipient of the Danish Chiropractors' Association honorary award in 2008.

Q Could you tell our readers a little about your career to date & how you came to your current role?

From the very beginning of my career my chief interests were research methodology and clinical databases in back pain and general organizational issues.

In 1984, I developed a new pain measurement tool (the low back pain rating scale) and a new clinical research design for randomized controlled trials (RCTs), which contributed to a greater appreciation of the importance of patient-reported data. These data may represent important and efficient outcome parameters, contrary to the objective data. Around that time nobody else valued the patient-reported information. Most researchers found these 'subjective' parameters too unreliable [1].

To test my new research methods I conducted a RCT in chronic back pain patients, comparing intensive exercises with light exercises or no exercises. Originally published in 1988 in *The Lancet* [2], with the long-term results in *Pain* [3]; the results showed the clinically important and

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statistically significant effects of intensive exercises and showed – surprising many of my research colleagues – that it was possible to conduct RCTs in patient groups like this. This implementation of a newly designed RCT in 1984–1988 [2] in the area of back exercises [4] was the start of intense international research activity with a view to generally investigate the effect of back exercise as a therapy in patients with acute and chronic back pain. I am proud to have been one of the initiators of this research, which has developed powerful treatments that have been implemented all over the world. I would hope that a lot of patients with this treatment are happy too.

I have been a part of the process to develop and integrate clinical databases in the area of back pain all over Denmark. I was the founder of the research group: the Back Science's Support Association, Copenhagen Environs 1990. The name was later changed to Copenhagen Back Research Association (COBRA). As part of this group, I helped to develop and implement the COBRA database, and later, in 2007, the SpineData database. The latter is still in use at the Spine Centre of the University of Southern Denmark and is an important research tool in most of the department's scientific papers.

I was also the initiator and Chairman of the multidisciplinary steering committee that developed and trialed the clinical database Dansk DiscusBase, with a view to a systematic registration of treatment results of herniated disc surgeries between 1996 and 2005.

I have also served as part of many organizations and committees concerned with back pain. I was appointed by the National Board of Health to function as head of the interdisciplinary working group that drafted: 'Low back pain. Frequency, Management and Prevention an Health Technology Assessment (HTA) perspective, NIH Technology Assessment, 1995–1999' [5]. This report has had an enormous importance for the concept of multidisciplinary therapy of back pain patients in the primary and the secondary sector in Denmark. The report also contributed significantly to a better interdisciplinary collaboration between doctors, physiotherapists and chiropractors. This is quite a remarkable difference compared with the situation in other countries, and the HTA report had a great impact on the development of such cooperation. As well as the HTA report I also participated in an interdisciplinary working group that drafted: Patient Program for the back science in the Region of Southern Denmark (2008–2009).

In 1994, I began the professional and organizational development of the Disc-outpatient clinic in the Orthopaedic Hospital in Aarhus (Denmark). The clinic received all patients in an outpatient setting for examination and investigation, and the diagnosis was based on interdisciplinary principles. In all other clinics at that time, patients such as this were received and examined in an inpatient setting. This radical change in treatment policy earned the clinic the Quality Award in 1996 as best public institution in Aarhus.

Following on from this I was appointed as professor and developer of the new Back Center in Funen (Denmark) in 1998, which later became the Back Center of Southern Denmark in 2010. Since 1997, the principles behind 'The Learning Organization' were incorporated as a part of the interdisciplinary outpatient concept to allow the center to adapt and better develop new techniques and treatment strategies.

Since 2002, I have supported and contributed to research regarding Modic changes at the Back Center of Southern Denmark. This is a new area of research from which results have the potential to become, over the next decade, one of the greatest achievements in the back pain area – in relation to improved quality of life for patients with persistent back pain.

Q Has your law degree impacted on your work or your opinions during your career?

It certainly has had an impact. I feel that many medical doctors and researchers view problems or questions posed as quite one dimensional hurdles to be overcome. My law degree, in combination with my medical qualifications means that my approach to most questions has two dimensions; a

biological science focus and a legal, economical and administrative dimension. If we want to develop the very best treatments then it is important to be aware of all the details.

Q What is your research focusing on at present?

I am trying to determine the prognostic factors that indicate whether a patient will develop chronic low back pain. Type 1 Modic change seems to be the most powerful prognostic factor at the moment, which may surprise a lot of back pain epidemiologists, followed by several psychological and social ones. This tells us that the classical biopsychosocial model is still valid, and when examining or exploring every single back patient we have to include findings or information relevant to all elements of the model. Right now I am running a study involving 1000 potential low back pain patients that aims to collect 2000 different pieces of information from every patient through a 2-year period, including an MRI from the start and another scan at 1-year follow-up.

Q How important do you think an interdisciplinary approach is to the treatment of back pain?

An interdisciplinary approach is very important, but that does not mean just visiting a GP and a chiropractor. It is especially important to cooperate and for all practitioners to follow the same national guidelines for treatment strategies, independent of whether you are a GP, surgeon, physiotherapist or a chiropractor – there has to be consistency. Equally, it should be a 'no go' to repeatedly treat a chronic patient, or to follow completely different treatment strategies in the same patient. Also, the amount of spine surgery currently being performed needs to be reduced generally, both because it is expensive to perform and because the procedure is irreversible.

Q Could you explain more about your recently published paper in the *European Spine Journal* concerning the treatment of back pain with antibiotics? What were the main aims & conclusions?

We wanted to replicate the findings of Stirling *et al.* from *The Lancet* in 2001 [6] and demonstrate the presence of bacteria in the discs of patients with back pain. This would then allow us to investigate the treatment of lower back pain following a disc herniation, in this case related to a type 1 Modic change, using antibiotics. We succeeded in finding bacteria in the discs of patients, in most cases we found *Propionibacterium acnes*, and we successfully demonstrated the use of antibiotics as an effective treatment for back pain [7]. The findings of our and Stirling *et al.*'s papers create a totally new platform for research into back pain and opened up a new avenue for lots of future research programs in the area. I am rather confident that a lot of international researchers may now be inspired to replicate some of our work and to take it further into new studies on the subject. In the next 10 years I am hopeful that this branch of research will lead to new treatment principles that could be implemented all over the world and help a lot of chronic back pain patients.

Q What would you say has been your greatest academic achievement to date?

I have a few things that I am particularly proud of. The development of the Low Back Pain Rating Scale to better standardize subjective measures of back pain stands out. As does the introduction of intensive exercise therapy in the treatment of chronic low back pain patients. Recently, I am proud of the introduction, or potential introduction, of antibiotic treatment principles in some patients with chronic back pain and type 1 Modic changes, and the demonstration of this as a scientifically valid treatment.

Q What do you enjoy most about your educational commitments? Which is more important, education or research?

I think it is difficult to say one is more important than the other; there is a lot of essential interplay between the two. It is very important to develop adequate and nationally implemented guidelines and patient treatment strategies in the area of low back pain. To develop them is research, but to implement them is education, and then this education of sorts must

be monitored as part of quality assurance programs – further research. It is also important to ensure that young professionals, who will one day conduct their own research and develop their own strategies, understand and appreciate the importance of guidelines such as these.

Q Finally, what do you think will be the hot topics in the treatment of back pain over the next few years?

The greatest priority currently must be to reduce the frequency of useless or even harmful treatments in back pain patients.

Disclaimer

The opinions expressed in this interview are those of the interviewee and do not necessarily reflect the views of Future Medicine Ltd.

Financial & competing interests disclosure

C Manniche is one of the owners of MASTMedical.com, a not-for-profit company related to educational activities regarding the new spine disease 'Modic changes'. C Manniche has no other relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript apart from those disclosed.

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