



# RESEARCH STRATEGY

2018-2022 · Version 1

**CONNECTING  
WITH THE  
PATIENT**

Nordic Institute of Chiropractic  
and Clinical Biomechanics

# PREFACE

The Nordic Institute of Chiropractic and Clinical Biomechanics (NIKKB) hereby presents its fourth research strategy, which, going forward, will be dynamic and digital. Our intention is to revisit and update the document at least once a year.

## BACKGROUND

Research in the health sciences domain plays an integral role in a modern knowledge society like ours. Research generates understanding, insight and development. It forms the foundation for effective treatment, state-of-the art core education and credibility within the health care professions. NIKKB's research will continue to contribute new knowledge in the musculoskeletal field by focusing on solving specific challenges at the level of both the patient and society.

## POSITIONING

The new Research Strategy will strengthen our position as an international centre for research, quality assurance and communication of knowledge within the chiropractic profession. It builds upon and expands the fields in which NIKKB has provided high quality research for many years.

## FUNDING

The backing from the Danish Chiropractors' Association and the Danish Regions has provided the requisite stability and continuity for NIKKB to fulfil its role. We are very grateful for their ongoing support.

## RESEARCH FOCUS AREAS

Patients with musculoskeletal problems experience different clinical courses, which is why we will continue our work to *establish 'customised' interventions* based on new knowledge.

To optimise evidence-based chiropractic practice for the Danish health care system, we need more knowledge about typical chiropractic practice and about patients with musculoskeletal conditions. But we also need to understand the conditions necessary to maximise uptake of new concepts and methods by practising chiropractors.

Consequently, this strategy increases our emphasis on practice-based research through NIKKB's network of chiropractic research clinics.

Our ambition is to *focus on implementation research* where new knowledge about the barriers to, and methods for, promoting the systematic application of research findings is further developed and embedded in daily clinical practice.

At NIKKB, our research has always sought to *understand the life trajectories of musculoskeletal disease*. This will still apply. We will continue to study these clinical courses in order to develop insights that are useful and practical in prevention and treatment.

Details of these three research focus areas are provided on the following pages.

### **RESEARCH CAPABILITY**

NIKKB employs a number of internationally recognised researchers. In addition, we have a number of promising post-graduate research students and talented early career researchers whom we support and mentor in order to sustain our momentum in musculoskeletal research.

NIKKB celebrated its 25th anniversary in 2015. Since 1991, our researchers have published more than 300 peer-reviewed articles, book chapters and reports.

### **COLLABORATION**

We will maintain and strengthen our existing research collaborations as well as establish new ones, both inside and outside Denmark. The location of the new European research centre ECCRE (European Chiropractic Centre for Research Excellence) at NIKKB in 2016 has opened up exciting possibilities to extend and collaborate across borders within our profession.

NIKKB has a sound and healthy infrastructure. It is well integrated into the physical surroundings at the Institute of Sports Science and Clinical Biomechanics and this co-location has facilitated cross-disciplinary cooperation with the musculoskeletal research teams at the University of Southern Denmark, while maintaining NIKKB's independence.

With the new Research Strategy, we commit to continuing the strong tradition of conducting clinically relevant research at NIKKB in collaboration with our partners, with the aim of advancing the chiropractic profession, and ultimately improving the health and well-being of people with musculoskeletal diseases.

# PATIENT PROFILES & DIFFERENTIATED CARE

## GENERAL DESCRIPTION

Individuals with musculoskeletal problems have varied trajectories in terms of pain intensity and levels of activity limitation, ranging from few episodes with mild pain and no activity limitation to more frequent episodes, higher pain intensity and greater activity limitation, and even persistent severe pain and/or significant reduction in activities of daily living and participation in work and social activities.

At present, our ability to predict these trajectories is limited, but recent evidence points towards the benefits of better matching patient profiles and specific treatments. Thus, we need to get better at tailoring interventions.

Based on distinct patient profiles and trajectories, NIKKB will study how to best tailor treatment to the individual and optimise the amount, content and mode of delivery to optimise the benefits for patients.

The main focus will be on patients presenting to chiropractic clinics, but other primary and secondary sector care settings will be considered as patients sometimes seek help across professions and sectors.

## WE WILL:

- **identify** individual profiles and trajectories of specific and non-specific musculoskeletal pain conditions in clinical and non-clinical populations
- **determine** treatment needs of various groups of pain sufferers
- **identify** predictors of different trajectories matched with treatment needs
- **describe** current practice, existing care programs and clinical pathways
- **investigate** the effect of established clinical care programs
- **design** and test new targeted care programs.





## **FIVE-YEAR GOALS**

With a focus on selected clinical questions, we will have identified several patient subgroups with either a high or low need for interventions, and the characteristics and predictors that distinguish these subgroups from each other.

Within these selected subgroups, we will have described the core components of effective interventions in existing and newly designed care programs.

## **ONE-YEAR GOALS**

The main aspects of current practice related to differentiated care in Denmark will have been identified, described in full and prioritised for further investigation.

NIKKB will have identified potential target groups of patients and established data collection methods.

One or more project protocols addressing the abovementioned topics, will have been formulated and submitted for funding consideration.

# IMPLEMENTATION RESEARCH & KNOWLEDGE TRANSLATION

## GENERAL DESCRIPTION

Implementation research investigates the barriers to, and the methods for, promoting the uptake of research findings into routine clinical practice. Activities that can be the objects of such investigation are, for example, training courses for clinicians, the introduction of clinical support tools and dissemination of clinical guidelines.

Implementation research investigates if initiatives, such as the ones mentioned, have the intended impact on clinical practice and how adoption of evidence-based practice is best facilitated.

NIKKB's implementation research focuses on determining how evidence is best integrated into chiropractic practice. The wider aim is to generate knowledge that is useful across the disciplines of health care.

## WE WILL

- **describe** current practice and any potential 'evidence-practice gap' in the care of patients with spinal pain in Danish chiropractic clinics
- **investigate** factors affecting chiropractors' decisions about imaging in back pain and whether these are in accordance with clinical guidelines
- **explore** how knowledge regarding low back pain course trajectories can be integrated into the clinical consultation
- **investigate** to what extent a shift from a structural and biomedical model towards a more bio-psycho-social model for musculoskeletal pain has been implemented in clinical practice, and how such a shift could be promoted in a balanced way with maximal value for clinical practice
- **study** methods to facilitate the implementation of new skills and insights in NIKKB's continued professional development program.



## **FIVE-YEAR GOALS**

NIKKB, via its implementation research activities, will have informed how the implementation of best available evidence in chiropractic practice can be supported.

We will be publishing papers on implementation research in collaboration with well-established implementation researchers.

The Danish chiropractor profession will be acknowledging NIKKB for conducting implementation research.

## **ONE-YEAR GOALS**

NIKKB will have initiated high-quality projects within the field of implementation research.

We will have collaborated with well-established implementation researchers within the field.

# MUSCULOSKELETAL HEALTH FROM A LIFE COURSE PERSPECTIVE WITH A SPECIAL FOCUS ON SPINAL HEALTH

## GENERAL DESCRIPTION

Life course epidemiology provides a framework to investigate how health and well-being develop over the lifespan - from childhood through adult life and into old age - as well as the factors influencing health trajectories. Thus, life course epidemiology helps us understand when musculoskeletal conditions start, how they progress over time, what affects their prognosis, and whether a prognosis can be modified through prevention or treatment.

Back pain episodes, as well as other musculoskeletal conditions, have traditionally been regarded as individual events, but new knowledge indicates that for many, these are chronic, recurrent conditions.

In addition, evidence is mounting that the pain experience tends to persist over long periods so that people with pain continue to experience recurrences for years, whereas in contrast, people without pain tend to never develop pain.

Back pain in adolescence results in decreased physical activity and lower quality of life, and often tracks into adulthood. In adults, back pain results in work disability, loss of social identity, and significant individual and societal costs.

In the elderly, back pain is associated with reduced physical function, loss of independence, a range of other diseases and even premature death. We need to better understand these patterns over the life course so that adverse trajectories can be changed through prevention and treatment.



## WE WILL:

- **develop** and implement a longterm research program investigating possibilities for the primary prevention of back pain and other musculoskeletal disorders
- **identify** factors that influence the trajectory of back pain at different stages of life
- **describe** best practice for treatment and prevention of back pain and musculoskeletal disorders and their consequences at different stages of life
- **identify** how back pain and other types of musculoskeletal pain occur in clusters in some individuals and how this relates to their general health and prognosis.

## FIVE-YEAR GOALS

NIKKB will have facilitated a paradigm shift away from an episode-specific biomedical understanding of back pain towards one based on trajectories and a life course bio-psycho-social perspective.

NIKKB will understand the origin of first onset back pain and how this relates to other aspects of young people's health, well-being, and social development

## ONE-YEAR GOALS

NIKKB will have consolidated existing collaborations and established new Danish and international links to research groups and databases focusing on life course epidemiology.

# NIKKB

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