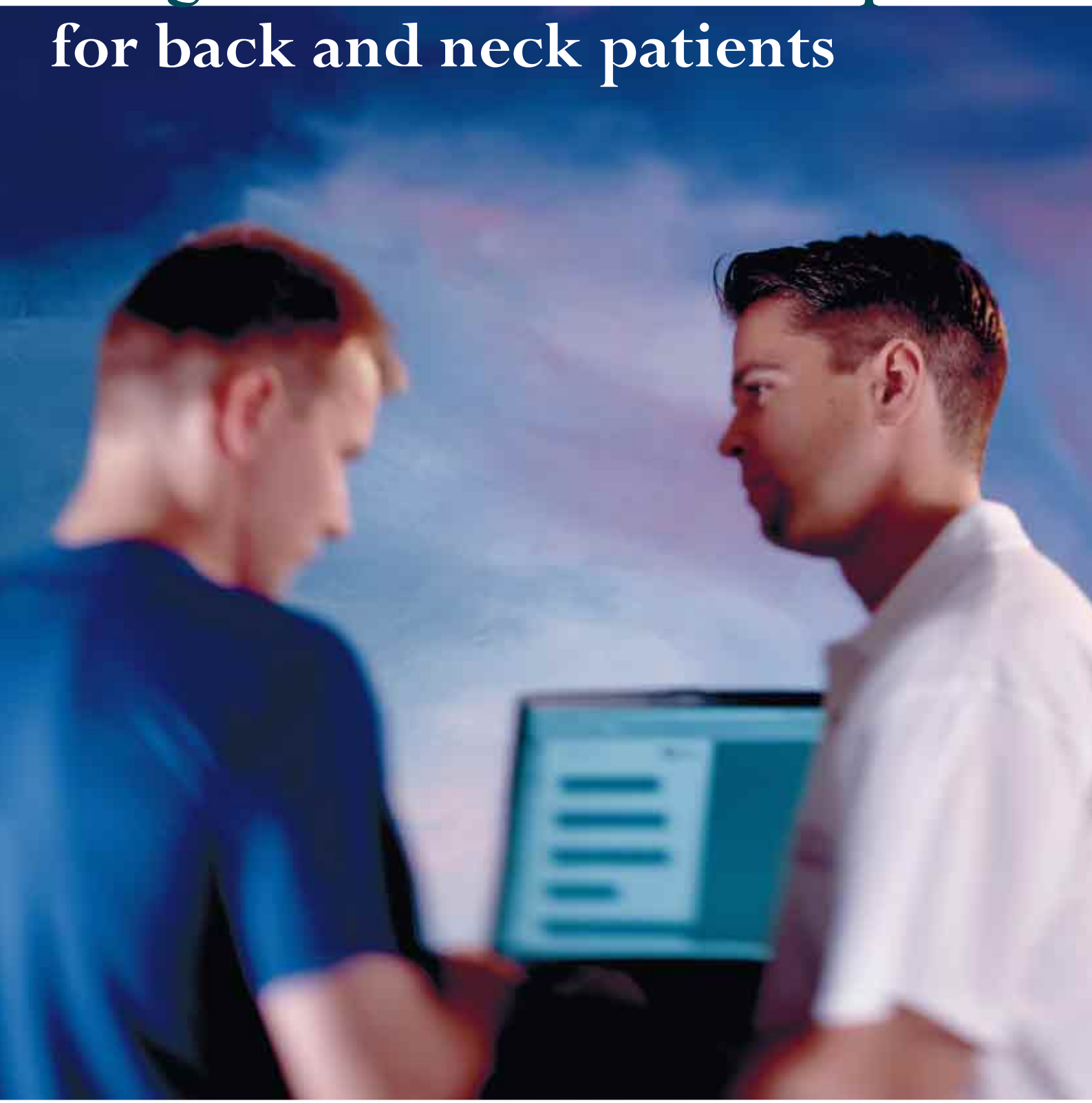
integrated treatment concept for back and neck patients



DBC
DOCUMENTATION BASED CARE

what is DBC?

Documentation Based Care (DBC) is an approach that promotes the integration of valid and applicable clinical and research-derived evidence in health care. The best available evidence from DBC clinics worldwide, moderated by individual patient circumstances and preferences, is synthesized and applied to improve the quality of clinical judgements. This forms the basis for advancing the technological concept of DBC.

A Complete Concept for Documentation Based Back and Neck Care

DBC treatment programs are individually constructed of proven and proprietary modules for patient evaluation, treatment and maintenance of the results.

Measurements

Baseline

A patient profile is created before treatment based on a clinical examination and a functional evaluation of the spine. The patient's pain characteristics, physical impairment and associated psychosocial distress, and categorization of the pain pattern are documented. Predictors of unsatisfactory outcome are controlled.

Progress and Outcome

Progress in physical function and pain reduction is monitored during the treatment. An evaluation of spinal function, pain and impairment levels and overall treatment satisfaction is performed after the treatment.

Follow-up

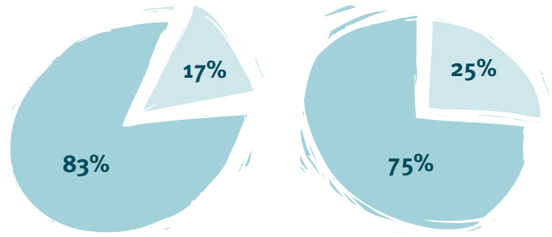
Patients are encouraged to maintain the results after the treatment program by staying active and taking good care of themselves. Spine function, pain and working ability may be monitored.

Treatments

DBC back and neck treatment programs are constructed of modular elements of physical exercise and behavioral modification enabling the design of individual treatment programs. Exercises with specific devices enable precise and targeted loading in a planned, controlled way. These progressive, specific exercises are combined with functional exercises and relaxation training. The individual guidance and behavioral support of experienced DBC therapists to reduce the fear of pain is an essential factor in achieving the outstanding results of DBC treatment.

Continuation and Maintenance Programs

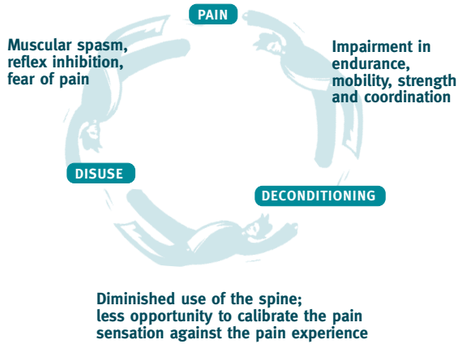
Helping the patient learn how to maintain the results after treatment is an essential part of every DBC treatment program. Ongoing training programs at DBC clinics or individual home-exercise programs are designed using special computer software.

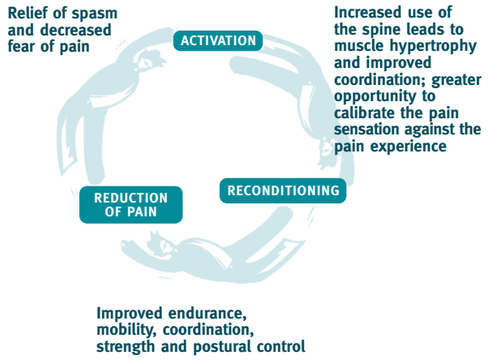


A positive response rate of approximately 80 percent is gained by DBC treatment in terms of pain reduction and function improvement. This has been verified in independent studies.
Ref: Kankaanpaa et al, Spine 1999
Ref: Taimela and Harkapaa, Journal of Spinal Disorders 1996

patient selection

DBC active treatment is intended for patients who are suffering from prolonged or recurrent back or neck problems. Pain and subsequent muscular spasms, protective guarding and avoidance behavior expose people to functional deterioration. DBC treatment attempts to restore normal spine function and prepare the patient for normal life activity parallel to pain reduction.

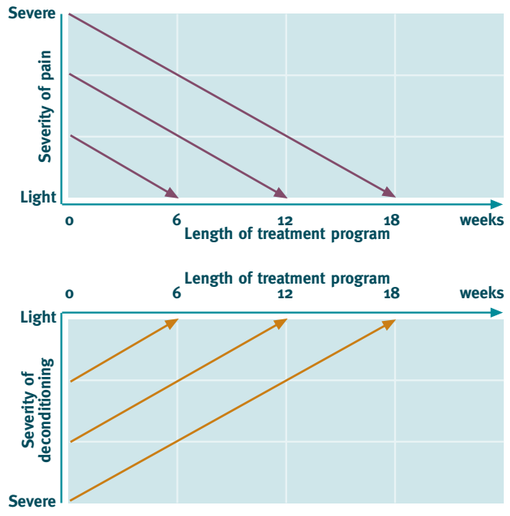




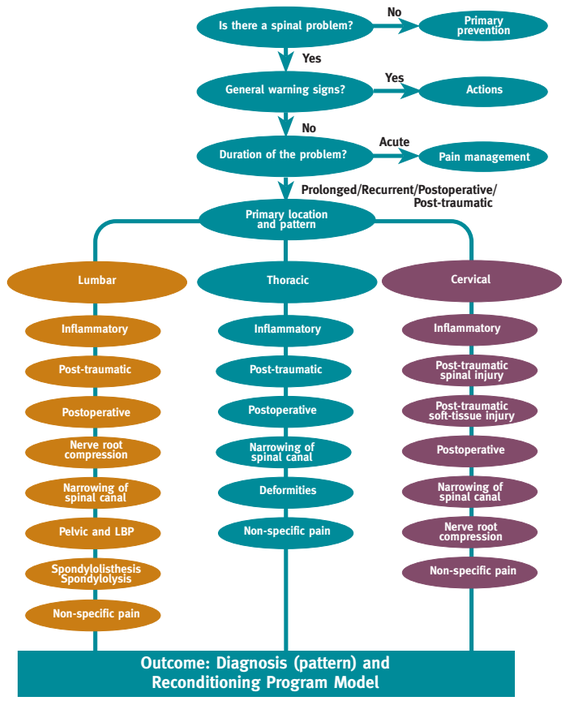
Indications

Prolonged, recurrent or chronic back or neck pain	Duration › 3 months or continuous pain over 4 weeks
Mostly moderate to severe pain and impairment	Average pain in the last six weeks › 35 mm on Visual Analogue Scale; DBC Impairment Index › 7

Determining the Length of the Treatment Program



Selection Criteria



Contraindications

Neural Tissue Involvement

- Current nerve root entrapment with intolerable pain
- Cauda equina syndrome
- Spinal cord compression
- Tumors
- Other corresponding disorders

Disorders of the Spine

- Severe instability
- Severe osteoporosis
- Fresh fracture
- Other corresponding disorders, usually indication for surgery

Systemic Diseases

- Severe cardiovascular diseases
- Severe metabolic diseases
- Other corresponding disorders preventing active rehabilitation

Acute Infection

- Disc infection
- Osteitis
- Systemic infection

Recent Major Operation

Lack of Cooperation

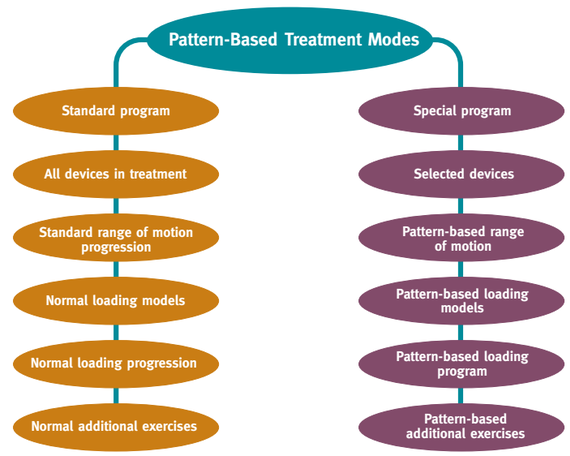
- Severe psychological disturbance / psychiatric disease

Individual Treatment Modules

An individual treatment program is constructed based on the duration and pattern of the back or neck problem.

Very high impairment and/or severe, continuous pain	12- to 18-week DBC treatment + ongoing treatment + home program + follow-up
High impairment and/or moderate to severe pain	12-week DBC treatment program + 3-month ongoing treatment + home program + follow-up
Moderate impairment and/or moderate pain	6-week DBC treatment program + home program + follow-up

Treatment Planning



patient evaluation

Each patient's treatment is individually planned, based on a thorough baseline evaluation. Patient progress and results are monitored during and after the treatment program. The evaluation protocol consists of validated measurement methods for back and neck symptoms and signs, functional capacity of the patient as well as other variables influencing the treatment results. The data obtained from the evaluations are systematically saved in a DBC database program.

Questionnaire

The evaluation includes a questionnaire completely charting the patient's clinical history and present status of the back and neck, functional status, psychosocial status, general health and working conditions. Validated indexes and measurement tools contain:

Pain Intensity VAS, Frequency and Pain Drawing

The pain intensity as well as the level of trouble caused by it is measured using a 100 mm Visual Analogue Scale. A pain drawing and frequency categories are used to differentiate the severity of the problem and obtain guidelines for treatment planning.

Physical Impairment Index

The index is used for assessing the level of self-experienced physical impairment and disability.

RBDS

Rimon's Brief Depression Scale is used to screen for depressive symptoms.

RLC

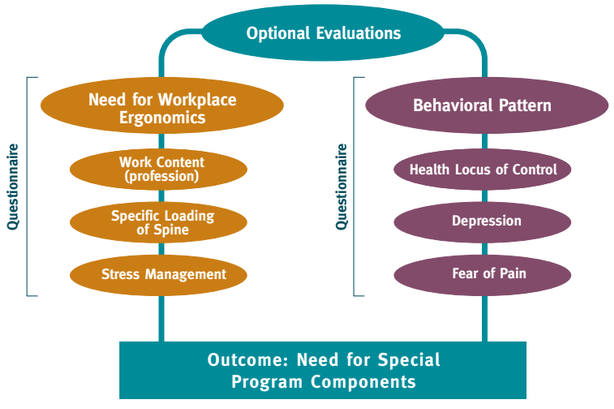
Recovery Locus of Control tests the patient's attitude towards treatment.

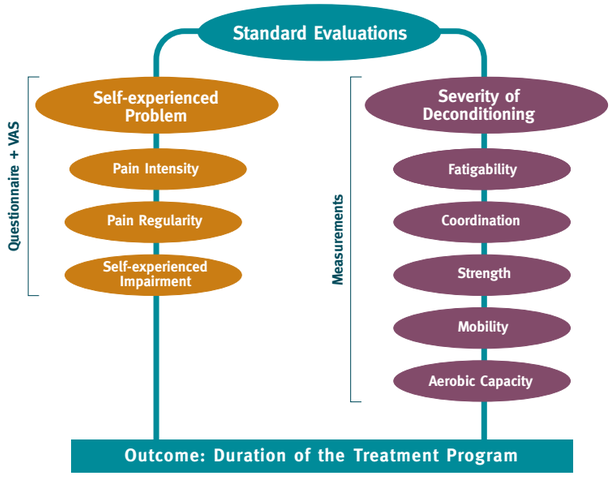
FABQ

The Fear Avoidance Behavior Questionnaire assesses the patients' beliefs on how physical activity and work affect their pain.

PA

Physical Activity is measured by obtaining a MET (metabolic equivalents) score.





Clinical Examination

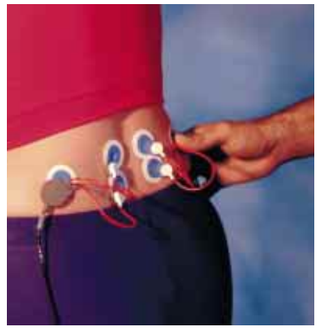
Patients are referred to a DBC clinic by a doctor or insurance provider. A physiotherapist may also examine the patient's neurological, functional and musculoskeletal status when indicated.

Functional Evaluation

Functional tests consist of electromyographic examinations and measurements of the patient's range of motion.

ROM

Range of motion (ROM) correlates with the severity of the physical condition and gives guidelines for the treatment planning. Range of motion is measured in terms of extension, flexion, rotation and lateral flexion of the lumbar spine, and sagittal and rotational directions in the cervical spine.



Muscular Spasms

Abnormal muscular activity (spasms) is detected with a forward-bending test utilizing an EMG (electromyography) analysis.

Lumbar Endurance Assessment

A validated evaluation protocol for the assessment of trunk extensor endurance is used. The subjects perform repetitive exercises against loading and the result is expressed in terms of the endurance time and the EMG fatigue index. The EMG measurement system provides an objective evaluation of lower-back muscle endurance based on changes in the frequency content of muscle activity.

Reports of Progression

DBC software enables the systematic collection of data and analysis of patient progress. Specific reports meeting the information requirements of the referring doctor, employer, insurance company and other parties are a part of the treatment protocol. Feedback on the progress achieved during the treatment also serves as an essential motivational factor for the patient.

personal guidance and precision exercise

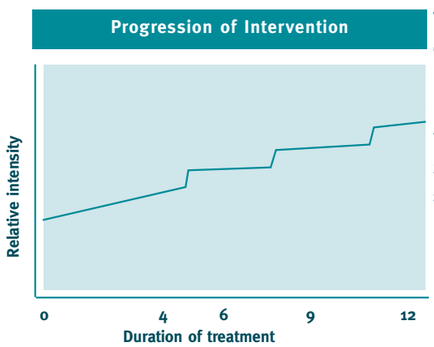
DBC equipment is used to guide the patients through planned, controlled exercises. This special technology enables precise and targeted loading.

Correct Movement Pattern

The selected movement patterns are a result of thorough biomechanical research. The natural movements of the lumbar and cervical spine are reconstructed using isolated movements and variable resistance with three-dimensional movement arches when indicated.

Individual Adjustments

Individual adjustments are made to each device before performing the exercises. These adjustments may be stored on a magnetic card allowing instant, accurate adjustment for future sessions.



The treatment first focuses on improving the control of movement in the back and neck. The endurance capacity and range of motion are gradually trained by progressive loading.

Targeted Exercise

DBC's patented hip-lock system safely targets the desired muscle groups of the lower back while simultaneously guiding the correct movement pattern.

Treatment in Small Groups

The treatment program's duration and content are individually planned. To gain the positive influence that group behavior is known to have on treatment results, DBC treatment sessions are performed in small groups.

Relaxation and Functional Exercises

Relaxation between exercises and adequate resting periods are included to relieve muscle tension. The program also integrates functional exercises to improve overall function in daily activities.

Individual Guidance, Cognitive and Behavioral Support

The support and guidance of DBC's experienced physiotherapists is an essential factor in achieving the outstanding results of DBC treatment.

Ergonomics and Psychological and Workplace Intervention

Psychological and workplace interventions can be added to the program as supplementary modules based on individual needs.

Active Back Care Devices

LTE Lumbar Thoracic Extension

LTF Lumbar Thoracic Flexion

LTR Lumbar Thoracic Rotation

LTL Lumbar Thoracic Lateral Flexion

HLP Horizontal Leg Press

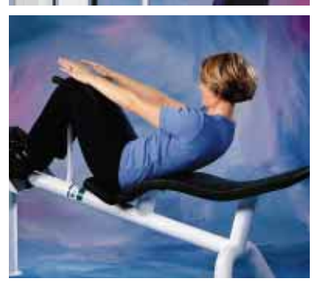
Active Neck Care Devices

CEE Cervicothoracic Elliptic Extension

C3R Cervical 3D Rotation

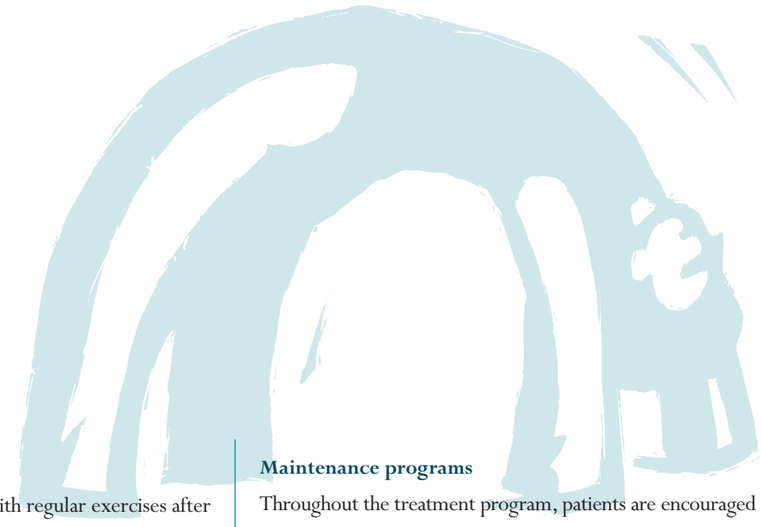
SBA Shoulder Blade Adduction

MLU Multipurpose Low-Friction Unit

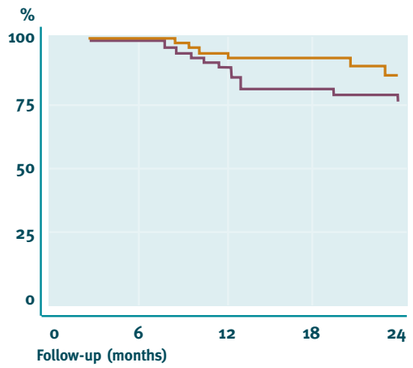


AB Abdominal Crunch

maintenance of treatment results



By continuing an active lifestyle with regular exercises after the treatment ends, the DBC results are maintained for years. This holds true both in terms of keeping people at work and free of chronic pain.



ref: Taimela et al, Spine 2000

Maintenance programs

Throughout the treatment program, patients are encouraged to stay active after it ends. With special computer software, an individual home-exercise program is built-up with written instructions on its content. Patients are supervised in guiding their own training, or they can continue training in their DBC clinic's ongoing program.

documentation based care

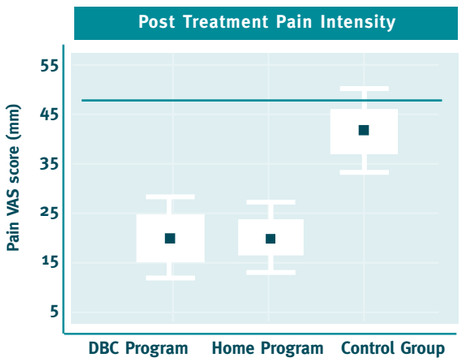
DBC active back and neck care relieves pain and restores spinal function in more than 80 percent of patients referred to the clinics. Patients with severe pain and years of functional impairment return to a normal quality of life and the effect is long term.

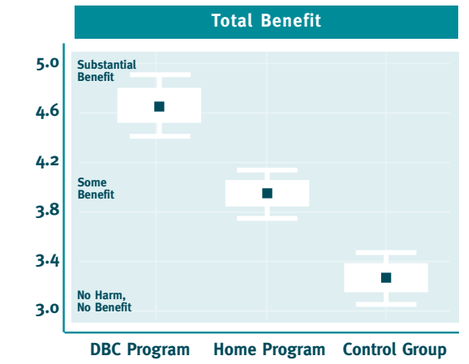
Scientific Evidence for DBC

The DBC measurement and treatment concept is based on the principles of modern evidence-based medicine. DBC collaborates with a wide network of scientific researchers in various countries. DBC's measurement and treatment methods have been developed and tested in several independent studies, and the results have been published in leading medical journals in the field of back research.

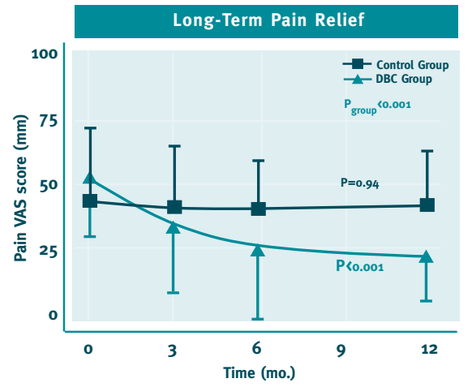
Evidence Leading to Ongoing Development

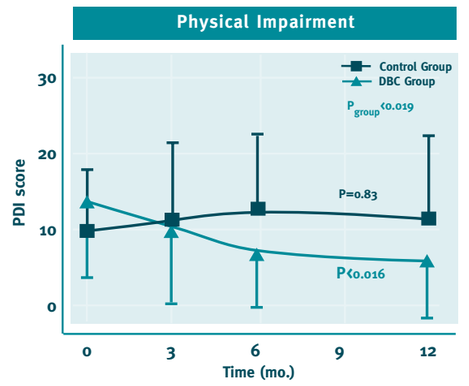
Thousands of patients have already been treated with the active DBC method. DBC International collects the results from each clinic unit for quality assurance. Further development of the concept is based on both independent scientific studies as well as the clinical information gained from the treatment units.





A clinical trial verified DBC active neck treatment to be more efficacious compared to activated home exercises or the recommendation of exercise in terms of pain reduction and total benefit for the patient. ref. Taimela et al, Spine 2000





A randomized, controlled study verified that the reduction in symptoms and functional restoration gained by a DBC active back treatment group was sustained over a one-year follow-up period. The control group that had received passive, conventional physiotherapy gained little or no benefit during the treatment, and showed no improvement at the one-year follow-up.
ref: Kankaanpaa et al, Spine 1999

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