Studies, evaluations and expertises regarding the effectiveness of MBST®-NuclearMagneticResonanceTherapy

Completed MBST®-studies:

Study 1

Location:	**ReAgil Behandlungszentrum (Treatment Center) – Cologne – Germany**
Scientific leadership/ responsible:	**Dr. med. G. Breitgraf, Dr. med. M. Krösche**
Duration of study:	12 months (completed about 12/1998)
Selection of patients:	Patients with arthrotic degeneration of the ankle joint, foot joint, knee joint, hip joint, as well as lumbar spine, shoulder and hands.
Title of study:	*„Long term evaluation of MBST®-MultiBioSignalTherapy“ (preliminary product of the MBST®-NuclearMagnetic-ResonanceTherapy)“*
Contents of study:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion, LYSHOLM-Score, WOMAC
Participants of study:	30 patients
Remarks:	Specialist report on the „deutschen Orthopädenkongress“ (German Orthopaedics Congress) 2000 in Wiesbaden.
Results of study:	All evaluation methods showed significant differences including improvements of the evaluation values during all evaluation times up to 3 months compared with the initial values before of the MBS-Therapy.

Study 2:

Deutsche Sporthochschule (German Sports High School) Cologne – Institute of Rehabilitation – Germany

Scientific leadership/ responsible:	**Prof. Dr. I. Froböse, Dr. med Eckey**
Duration of study:	12 months (completed by about 09/1999)
Selection of patients:	Patients with gonarthrosis of the knee joint
Title of study:	„Evaluation of the effectiveness of three-dimensional electromagnetic fields of the MultiBioSignalTherapy (MBST®) for regeneration of the cartilage structures“
Contents of study:	First scientific study for therapeutical application of NuclearMagneticResonance MBST®) Therapy on cartilage structures in vivo. Before of the therapy the experimentees of the MBST®-study were partly suffering from severe cartilage defects (Wirth 2 to 3). MRT-imaging of the knee joint before and 3 months after the MBS-Therapy.

	Final quantitation of cartilage and pictorial embodiment of the positive effects on the cartilage structure of the knee joint regarding thickness, volume as well as in surface.
Participants:	14 patients
Remark:	The results of the study were published after termination of the study itself in the german-speaking professional journal – Orthopädische Praxis, No. 08/2000, 36th Year, pages 510 to 515.
Results of study:	Highly significant regenerative processes in cartilage structure, were revealed which coincided with the subjective indications of the patients.

Study 3:

Location of study:	**Waldkrankenhaus (Forest Clinic) Bad Düben** **Fachkrankenhaus für Orthopädie (Specialist Clinic for Orthopaedics) – Bad Düben – Germany**
Scientific leadership/ responsible:	**Prof. Dr. med. C. Melzer, Dr. med. Auerbach**
Duration of study:	8 months (completed by about 04/2003)
Selection of patients:	Patients with gonarthrosis of the knee joint
Title of study:	*„Prospective evaluation of the effectiveness of MBST®-NuclearMagneticResonanceTherapy for treatment of gonarthrosis“*
Contents of study:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion, LYSHOLM-Score, Western Ontario and MCMasters Universities, Osteoarthritis Index (WOMAC A, B, and C)
Participants:	60 patients
Remark:	Specialist report on the German Orthopaedics Congress 2003 in Berlin.
Results of study:	All evaluation methods showed highly significant differences and improvement of the evaluation values during all evaluation times up to 6 months in comparison to the initial values before start of the MBS-Therapy.

Study 4:

Location of study:	**Waldkrankenhaus (Forest Clinic) Bad Düben – Germany** **Fachkrankenhaus für Orthopädie (Special Clinic for Orthopaedics) – Bad Düben - Germany**
Scientific leadership/ responsible:	**Prof. Dr. med. C. Melzer, Dr. med. Auerbach**
Duration of study:	12 months (completed by about 10/2004)
Selection of patients:	Patients with gonarthrosis of the knee joint
Title of study:	*„Prospective evaluation of the effectiveness of MBST®-NuclearMagneticResonanceTherapy for treatment of gonarthrosis within an evaluation period of 12 months“*
Contents of study:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion, LYSHOLM-Score, Western Ontario and McMasters Universities, Osteoarthritis Index (WOMAC A, B and C)

Participants of study:	60 patients
Remark:	Specialist report on the German Orthopaedics Congress 2003 in Berlin The results of the study were presented for publication in german professional journals after termination of the study with high impact-factor. All applied evaluation methods showed highly significant differences and improvement of the evaluation values during all evaluation times up to and including 12 months compared with the initial values before start of the MBS-Therapy.

Study 5:

Location of study:	**Ludwig Boltzmann-Institut für Rehabilitation interner Erkrankungen (Institute for Rehabilitation of Inner diseases)** **PVA-Saalfelden-Austria**
Scientific study/ responsible:	**University lecturer Dr. W. Kullich, Prim Dr. med. Schwann**
Duration of study:	12 months (completed by about 08/2004)
Selection of patients:	Degenerative diseases of the spinal column
Title of study:	„Effects of MBST®-NuclearMagneticResonanceTherapy with complex 3-dimensional electromagnetic MRI-field for patients with low back pain“
Contents of study:	Doubleblind, placebo-controlled and randomised
Participants of study:	62 rehabilitation patients, distribution n=31
Remark:	The results of the studies were presented for publication in english- and german-speaking professional journals with high impact-factor. Poster for the European Rheumatism Congress EULAR 2005
Results of study:	Contrary to the normal rehabilitation methods the treatment success of which was no longer evident after a period of 3 months, patients who were actively treated with MBST®-NuclearMagneticResonanceTherapy showed significant improvements of all evaluation parameters.

Study 6:

Location of study:	**Ordination Dr. med. W. Klapsch –Spittal (Clinic)/Drau – Austria**
Scientific leadership/ responsible:	**Dr. med. W. Klapsch**
Duration of study:	12 months (completed by about 04/2003)
Selection of patients:	Patients with arthrosis of the knee joint, ankle joint, ellbow joint and hand joint
Title of study:	*„Prospective evaluation of the effectiveness of the MBST®-NuclearMagneticResonanceTherapy for the treatment of gonarthrosis“*

Contents of study:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion, LYSHOLM-Score, WOMAC A, B and C
Participants:	123 patients
Remark:	Special report on the 27th Orthopaedics Congress 2003 in Graz (A)
Results of study:	All applied evaluation methods showed highly significant differences within all evaluation times up to and including 6,2 months compared with the initial values before the MBS-Therapy.

Study 7:

Location:	**2 Facharztpraxen (specialist practices) – 2 Stück Orthopädie, 1 Stück allgemein Medizin -(2 times Orthopaedics, 1 time general medicine) Deggendorf, Worms, Wendelsheim – Germany**
Scientific leadership/ responsible:	**Dr. med. J. Overbeck, Dr. med. A. Uran, Dr. med. G. Gerhard**
Duration of study:	12 months (by about 08/2003)
Selection of patients:	Patients with whole-body Osteoporosis
Title of study:	*„Scientific study for prospective evaluation of the effectiveness of MBST®-NuclearMagneticResonanceTherapy – OsteoDolorMed – for whole-body Osteoporosis treatment“*
Contents of study:	Measurement of bone density with the DXA-procedure before and after the MBS-Therapy, as well as three and six months after the MBST®-Osteoporosis therapy During the therapy laboratory values of Calcitonin-, Phosphates-, Calcium, Creatinine-, Parathhormon of the blood as well as Desoxipyridivolin in the second morning urine were determined for examination purposes. During the evaluation no Bisphosphates, Calcitonin, Fluoride, SERM-products or similar medicines were given, beside of Calcium products, Vitamine D and E. The following measuring method for determination of bone density were applied: DXA or Osteo-CT
Participants of study:	27 patients
Remark:	The results of the study were published after termination and were highly significant. The bone densitiy could be increased by up to 60 % compared with the initial values. During all test phases the laboratory values did not show any change regarding the standard values.

Multi-centrical evaluation of internationally approved evaluation scores 8

Location:	**IEB Institut – Wetzlar – Germany**
Scientific leadership/ responsible:	**IEB-Institute, Dr. med. J. Overbeck, Dr. Hoffmann**

Duration of evaluation:	24 months (completed by about 09/2004)
Selection of patients:	Patients with arthrosis in the knee joint, hand joint, ankle joint, shoulder joint, hip joint and ellbow joint as well as the spinal column.
Title of evaluation:	*„Multi-center evaluation of the treatment results of more than 13.000 treated patients up to twelf months after the MBST®-NuclearMagneticResonanceTherapy“*
Contents:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion, LYSHOLM-Score, WOMAC part A, B and C
Participants:	Over 13.000 patients
Remark:	The results of the study were published.
Results:	The statistical evaluation methods showed highly significant differences with improvements of the evaluation values during all evaluation times up to and including twelve months compared with the initial values before of the MBS-Therapy.

Clinic-pharmacological expertise ordered by the Investitionsbank Hessen (Investment Bank) Hessen 9

Location:	**PLC- Prof. Dr. med. Lücker – Grünstadt – Germany**
Scientific leadership/ responsible:	**Prof. Dr. med. Lücker, FACP** **Doctor for Pharmacology / Toxicology, Doctor for Clinical Pharmacology**
Duration of evaluation:	1 months (completed by 10/2004)
Selection of treated patients:	Patients with arthrosis in the knee joint, hand joint, ankle joint, shoulder joint, hip joint, and ellbow joint as well as in the spinal column
Title of the evaluation:	„Klinisch-Pharmakologisches Gutachten im Auftrag der InvestitionsBank Hessen zur Frage der Wirksamkeit der KernspinResonanztherapie bei verschiedenen orthopädischen Indikationen“ „Clinical-pharmacological expertise by order of the InvestitionsBank Hessen to evaluate the effectiveness of NuclearMagneticResonanceTherapy for different orthopaedic indications“.
Contents of expertise:	Report on the following evaluation scores: LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion, LYSHOLM-Score, WOMAC A, B and C
Participants:	Evaluation of the results of more than 13.000 patients, as well as 7 conducted and terminated studies and evaluations.
Remark:	The expertise was published.
Results oft the expertise:	The statistical evaluations results are highly significant. The success rate is more than 70 to 90 % depending on the indication.

All applied evaluation methods showed highly significant differences and improvement of the evaluation values during all evaluation times up to and including 12 months in comparison to the initial values before start of the MBS-Therapy.

Study 10:

Location: **Fachhochschule Aachen / Jülich**
Fachabteilung Physik. Technik (Physic/Technology Department)
Field Botissue Engineering
- Bioengineering Kompetenzplattform (Competence center) -

Scientific leadership / responsible: **Prof. Dr. rer. nat. habil. G.M. Artmann**

Duration of study: 3 months (by 12/2004)

Selection of patients: in vitro study with human Chondrozytes and Osteoblasts

Preliminary title of the Study: *„Effects of the MBST®-NuclearMagneticResonanceTherapy to in vitro cultivated Chondrozytes and Osteoblasts“.*

Contents of study: simple-blind, placebo-controlled and randomised
Different cell cultures were treated 9 x, within two weeks, at different treatment times,
with MBST-NuclearMagneticResonanceTherapy and its resonance field.
The daily sessions were 30 resp. 60 minutes.
Depending on the type of cell there are 5 groups:

1. Control no static permanent magnetic field, no HF-field
2. Group 2, static permanent magnetic field, HF-field 30 minutes
3. Group 3, static permanent magnetic field, no HF-field
4. Group 4, static permanent magnetic field, HF-field 60 minutes
5. Group 5, static permanent magnetic field, no HF-field

12 test groups were cultivated in total and finally 2400 probes were enumerated.
Evaluation was made on: determination of apotose rate
survival rate
vitality test
proliferation rate

Participants: Human cell cultures of Chondrozytes and Osteoblasts
Results of studies are presented for publication in english-speaking and german-speaking professional journals with high impact-factor

Results of study: **no apotosis**

no negative influence on the cell vitality
clear and proved increase of the proliferation rate of Osteoblasts as well as of Chondrozytes.

Proliferation rate after 15 days (9 sessions of 30 minutes MBST®-therapy per day).

- **Clear increase of Chondrozytes by about 271%**
- **Clear increase of Osteoblasts by about 290 %**

Proliferation rate after 15 days (9 sessions of 60 minutes MBST®-Therapy per day.

- **so Clear projection of the cartilage corpuscles (Chondrozytes) that these, because of her big number with > 60% of the specimens were no more countable.**
- **so Clear projection of the Osteoblasten that these were no more countable, because of her big number with > 60% of the specimens.**

Running MBST®-studies

Study 11

Location:	**Waldkrankenhaus (Forest Clinic) Bad Düben** **Fachkrankenhaus für Orthopädie (Special Clinic for Orthopaedics) – Bad Düben - Germany**
Scientific leadership/ responsible:	**Prof. Dr. med. C. Melzer, Dr. med. Handschuh**
Duration of study:	12 months (by about 08/2005)
Selection of patients:	patients with degeneration of the spinal column
Preliminary title of the study:	*„Evaluation of the effectiveness of MBST®NuclearMagneticResonanceTherapy for treatment of degeneration of the spinal column“*
Contents of study:	Double blind, placebo-controlled and randomised
Participants:	100 patients, distribution n=50
Remark:	The results of the study were presented for publification in english-speaking and german-speaking professional journals with high impact factor
Results of study:	The results of the study were very positive, as already several thousands long-term results (within a period of up to 24 months) could be received for the treated patients from other studies.

Study 12:

Location:	**Waldkrankenhaus (Forest Clinic) Bad Düben** **Fachkrankenhaus (Specialist Clinic for Orthopaedics) für Orthopädie**
Scientific leadership/ responsible:	**Prof. Dr. med. C. Melzer, Dr. med. Handschuh**
Duration of study:	12 months (by about 08/2005)
Selection of patients:	patients with whole-body Osteoporosis
Preliminary title of study:	*„Evaluation of the effectiveness of MBST®-Therapy –OsteoDolor Med – for whole-body treatment of Osteoporosis“.*
Contents of study:	Measurement of bone density acc. to the DXA-procedure before MBS-Therapy and three months as well as 6 months after the MBST®-NuclearMagneticResonance Therapy for treatment of Osteoporosis.
Participants:	100 patients

Remark:	The results of the study were presented for publication in international professional journals with high impact factor.
Results of study:	The results of the study will be very positive, as several hundred evaluation protocols of the treated patients could be received from other studies within an evaluation period of 12 months.

Study 13:

Location	**Ludwig Boltzmann-Institut für Rheumatologie (Institute for rheumatology)** **Privatklinik (Priviate Clinic) – Austria**
Scientific leadership/ responsible:	**Prof. Dr. med. Moser, Dr. med. Michael Ausserwinkler**
Duration of study:	12 months (by about 12/2005)
Selection of patients:	patients with arthrosis of the finger joint
Preliminary title of the study:	*„Evaluation of the effectiveness of the MBST®-NuclearMagneticResonanceTherapy for arthrosis of the finger joint“*
Contents of study:	doubleblind, placebo-controlled and randomised
Participants:	80 patients, distribution n=40
Remark:	The results of the study will be presented for publication in english- and german-speaking professional journals with high impact-factor. The results will be very positive. Several thousand evaluation protocols of the treated patients during an evaluation period of up to 12 months have been received from other studies so far.

Study 14:

Location:	**UKM-University Clinic Münster** **Surgery Research Department**
Scientific leadership/ responsible:	**Prof. Dr. med. U. Spiegel**
Duration of study:	12 months (by about 10/2005)
Selection of patients:	Anmimal experiments
Preliminary title of the study:	*„Evaluation of the effectiveness of MBST®-NuclearMagneticResonanceTherapy with different stimulation pattern and times for different sound and degenerative tissues and cell types“.*
Contents of study:	Doubleblind, placebo-controlled and randomised
Participants:	50 male rats, distribution n=25
Remark:	The results of the study will be presented for publication in english- and german-speaking professional journals with high impact-factor.

Results of study:	The results of the study are very positive and will lead to new fields of application, which have been unthinkable to realise so far.

Study 15:

Location:	**UKM-Universitiy Clinic Münster** **Clinik and clinic for accident surgery, hand surgery and recovery surgery**
Scientific leadership/ responsible:	**Prof. Dr. med. Raschke, PD MD R. Meffert**
Duration of study:	12 months (by about 06/2005)
Selection of patients:	Animal experiment
Preliminary title of study:	*„Which effect does MBST®-NuclearMagneticResonanceTherapy have on the cartilage morphology in case of knee-joint arthrosis of rabbits?“*
Contents of study:	Doubleblind, placebo-controlled, randomised
Participants:	50 rabbits, distribution n=25
Remark:	Results of the study will be presented for publication in english-speaking and german speaking professional journals with a high impact-factor.
Results of study:	The results of the study are very positive and will lead to new fields of application, which have been unthinkable to realise so far.

Study 16

Location:	**Landeskrankenhaus Stolzalpe** **Fachkrankenhaus für Orthopädie (Specialist Clinic for Orthopaedy) – Stolzalpe -Austria**
Scientific leadership/ responsible:	**Prof. Dr. med. Graf, Dr. med. MD Hapack**
Duration of study:	15 months (completed by about 06/2005)
Selection of patients:	Patients with degenerations of the spinal column
Title of study:	*„Evaluation of the effectiveness of MBST®Nuclear MagneticResonanceTherapy for treatment of degeneration of the spinal column“*
Contents of study:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain in motion. LYSHOLM-Score, Western Ontario and MC Masters Universities Osteoarthritis Index (WOMAC A, B and C)
Participants:	60 patients
Remark:	Results of the study will be presented for publication in english-speaking and german speaking professional journals with a high impact-factor.
Results of study:	The results of the study are very positive.

All evaluation methods showed significant differences including improvements of the evaluation values during all evaluation times up to and including 12 months compared with the initial values before of the MBST-NuclearMagneticResonanceTherapy.

Study 17:

Location:	**Landeskrankenhaus Stolzalpe** **Special Clinic for Orthopaedics – Stolzalpe- Austria**
responsible:	**Prof. Dr. med. Graf, Dr. med. MD Hapack**
Scientific leadership/	
Duration of study:	15 months (completed by about 06/2005)
Selection of patients:	Patients with Coxarthrosis of the hip joint
Title of study:	*„Evaluation of the effectiveness of the MBST®-NuclearMagneticResonanceTherapy for treatment of arthrosis of the hip joint“*
Contents of study:	Prospective evaluation via LEQUESNE-Index, visual analog-scale for pain while resting and pain on motion, LYSHOLM-Score, Western Ontario andMcMasters Universities Osteoarthritis Index (WOMAC A, B and C)
Participants:	60 patients
Remark:	Results of the study will be presented for publication in english-speaking and german speaking professional journals with high impact-factor.
Results of study:	The results from all evaluation methods were very positive. All evaluation methods showed significant differences including improvements of the evaluation values during all evaluation times up to and including 12 months compared with the initial values before of the MBS-Therapy.