### Scientific publications

<table>
<thead>
<tr>
<th><strong>scientific evidence/year</strong></th>
<th><strong>carried out:</strong></th>
<th><strong>head of the study</strong></th>
<th><strong>proof</strong></th>
<th><strong>result</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1999 First scientific study of the therapeutic applicability of MR-signals to cartilage structures in vivo</td>
<td>- German University for Sports and Rehabilitation in Cologne - University Munich: “Clinic Grosshadern” department for diagnostic radiology - University Munich: Anatomic Institute</td>
<td>Prof. Ingo Froböse</td>
<td>MRI before and 10 weeks after treatment</td>
<td>Regeneration of cartilage structures were evident Increase of volume up to 30%</td>
</tr>
<tr>
<td>2005 NMR In Vitro Effects on Proliferation, Apoptosis and Viability of Human Chondrocytes and Osteoblasts</td>
<td>Laboratory for Medical and Molecular Biology, Aachen - University of Applied Sciences</td>
<td></td>
<td>cell count</td>
<td>Chondrocytes: 271% above Placebo Osteoblasts: 290% above Placebo</td>
</tr>
<tr>
<td>2008 Functional improvement in finger joint osteoarthritis with therapeutic use of NMR</td>
<td>- Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation (non profit research institute, Austria)</td>
<td>Univ. Doz. Dr. W. Kullich</td>
<td>QUABA score and VAS (visual analog scale)</td>
<td>- Physical function of the hand p &lt; 0,00001 - reduction of peak, burden and resting pain p &lt; 0,000001</td>
</tr>
<tr>
<td>2006 The effect of MBST-NuclearResonanceTherapy on patients with low back pain</td>
<td>Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation (non profit research institute, Austria)</td>
<td>Univ. Doz. Dr. W. Kullich</td>
<td>VAS (visual analog scale) Roland-Morris and Oswestry questionnaire</td>
<td>p &lt; 0,00001 significant improvement in the MBST-group, peak, mean and resting pain and level of disability (24 questions)</td>
</tr>
<tr>
<td>2013 One-year-survey with multicenter (61) data of more than 4,500 patients with degenerative rheumatic diseases treated with therapeutic nuclear magnetic resonance (knee, hip, ankle joint and low back pain)</td>
<td>Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation (non profit research institute, Austria)</td>
<td>Univ. Doz. Dr. W. Kullich</td>
<td>VAS (visual analog scale) Lequesne, Mazur and Oswestry questionnaire</td>
<td>p &lt; 0,000001 significant reduction of peak, burden and resting pain</td>
</tr>
<tr>
<td>2011 Analysis of the Long-Term Effect of the MBST Nuclear Magnetic Resonance Therapy on Gonarthrosis</td>
<td>Analysis of the Long-Term Effect of the MBST Nuclear Magnetic Resonance Therapy on Gonarthrosis</td>
<td>Prof. Dr. med. Walter van Laack</td>
<td>Anonymized patient questionnaire, Lequesne index</td>
<td>sustained improvement in the patients health status with a significant pain relief even after 4 years</td>
</tr>
<tr>
<td>2014 Non-pharmacological treatment of osteoporosis with Nuclear Magnetic Resonance Therapy (NMR-Therapy)</td>
<td>Prof. Dalibor Krpan, Dr. Barbara Stritzinger, Ivan Lukenda Dr. Joachim Overbeck, Univ. Doz. Dr. W. Kullich</td>
<td>Prof. Dalibor Krpan</td>
<td>T-scores (DEXA), laboratory measurement of osteocalcin and Beta Crosslaps</td>
<td>BMD and serum levels of osteocalcin increased significantly (p &lt; 0,001) from baseline to 12 months ß-CTX (Beta Crosslaps) remained stable</td>
</tr>
</tbody>
</table>
MedTec Medizintechnik GmbH

• Founded in 1998
• Own Research and Development
• International activities
• Top-Innovator 2014 and 2016
• Own production, Made in Germany
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Scientific publications

- More than 100 expert publications
- Most of the publications are scientific studies
Scientific publications – Selected studies

1. First scientific study of the therapeutic applicability of MR-signals to cartilage structures in vivo
   Carried out 1999 by:
   - German University for Sports and Rehabilitation in Cologne
   - University Munich: “Clinic Grosshadern” – department for diagnostic radiology
   - University Munich: Anatomic Institute

   Head of the study: Prof. Ingo Froboese

   Result: Regeneration of cartilage structures were evident
   Increase of volume up to 30%

   Proof: MRI before and 10 weeks after treatment

   Published in 2000
2. NMR In Vitro Effects on Proliferation, Apoptosis and Viability of Human Chondrocytes and Osteoblasts

Carried out 2005 by:
- Laboratory for Medical and Molecular Biology, Aachen University of Applied Sciences
- controlled, double-blind and randomized

Results: treatment did not induce apoptosis or inhibit cell viability but revealed a tendency of an elevated cell proliferation rate
- Chondrocytes: 271% above placebo
- Osteoblasts: 290% above placebo

Proof: cell count

Published in 2005
Scientific publications – Selected studies

3. Functional improvement in finger joint osteoarthritis with therapeutic use of NMR
Carried out 2008 by:
- Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation (non profit research institute, Austria)
- placebo controlled, randomized and double-blind

Head of the study: Univ. Doz. Dr. W. Kullich

Results: significant (p < 0,00001) improvement in the physical function of the hand as well as reduction of peak, burden and resting pain (p < 0,000001)

Proof: QUABA score and VAS (visual analog scale)

Published in 2008
4. The effect of MBST-NuclearResonanceTherapy on patients with low back pain
Carried out 2006 by:
- Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation (non profit research institute, Austria)
- placebo controlled, randomized and double-blind

Head of the study: Univ. Doz. Dr. W. Kullich

Results: significant (p < 0.00001) improvement in the MBST-group, peak, mean and resting pain and level of disability (24 questions)

Proof: VAS (visual analog scale), Roland-Morris and Owestry questionnaire

Published in 2006
Scientific publications – Selected studies

5. One-year-survey with multicenter (61) data of more than 4,500 patients with degenerative rheumatic diseases treated with therapeutic nuclear magnetic resonance (knee, hip, ankle joint and low back pain)
Carried out 2013 by:
- Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation (non profit research institute, Austria)

Head of the study: Univ. Doz. Dr. W. Kullich

Results: significant ($p < 0.00001$) reduction of peak, burden and resting pain

Proof: VAS (visual analog scale), Lequesne, Mazur and Owestry questionnaire

Published in 2013
6. Analysis of the Long-Term Effect of the MBST Nuclear Magnetic Resonance Therapy on Gonarthrosis

Carried out 2011 by:
- Institute of Bio-Engineering for Biomechanics, Laboratory of Biomechanics, Aachen University

Head of the study: Prof. Dr. med. Walter van Laack

Results: sustained improvement in the patients health status with a significant pain relief even after 4 years

Proof: Anonymized patient questionnaire, Lequesne index

Published in 2011
MedTec Medizintechnik

Scientific publications – Selected studies

7. Non-pharmacological treatment of osteoporosis with Nuclear Magnetic Resonance Therapy (NMR-Therapy)

Carried out 2014 by:
- Prof. Dalibor Krpan, Dr. Barbara Stritzinger, Ivan Lukenda Dr. Joachim Overbeck, Univ. Doz. Dr. W. Kullich

Head of the study: Prof. Dalibor Krpan

Results: BMD and serum levels of osteocalcin increased significantly (p < 0,001) from baseline to 12 months β-CTX (Beta Crosslaps) remained stable

Proof: T-scores (DEXA), laboratory measurement of osteocalcin and Beta Crosslaps

Published in 2015
Innovation Ace!

Among three million medium sized German companies, MedTec Medizintechnik GmbH was awarded Top-Innovator 2014 by famous host Ranga Yogeshwar.

MedTec, with its patented innovations, is without competition.
These publications are not available in digital form.

1) Therapeutic Application of Magnetic Resonance in Osteoporosis
Language: German

2015:

2) Effects of MagneticResonanceTreatment on the dynamics of liver regeneration
Inaugural Dissertation for Gaining the ‘Doctor Medicinae’ from the Medical Faculty of the Westphalian Wilhelms University of Muenster. Budny, N., University Hospital of Muenster, Department of General and Visceral Surgery, Surgical Research Department, Muenster, Germany; October 2015.

3) Modulation of NF-kB activity by the therapeutic Nuclear Magnetic Resonance (NMR) to explain pain reduction in patients with osteoarthritis
B. Steinecker-Frohnwieser1, W. Kullich1, A. Mann2, B. Stritzinger1, H. G. Kress2, L. Weigl1, ‘Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, LBI for Rehabilitation of Internal Diseases Saalfelden, Austria, ‘Department of Special Anaesthesia and Pain Therapy, Medical University Vienna, Austria; poster presentation at the International Pain Congress of the European Pain Federation EFIC, Vienna, Austria, 2nd-5th September 2015.

Non-pharmacological treatment of osteoporosis with Nuclear Magnetic Resonance Therapy (NMR-Therapy)

5) A new concept of integrated holistic approach in treatment of chronic musculoskeletal diseases The “BAR” method
6) **Effects of Therapeutic-NMR (MBST-Nuclear Magnetic Resonance) on the Circadian Clock and the Hypoxic Signaling Pathway in Zebrafish Cells**

R. Oliva, Master thesis for the acquisition of the academic degree Master of Science (MSc), Faculty of Biology, Department of Ecophysiology, Leopold Franzens University of Innsbruck, Innsbruck, Austria.

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### 2014:

1) **Nuclear magnetic resonance treatment (MBST®) of clinical symptoms caused by osteoarthritis: a double-blinded placebo-controlled study in dogs**


2) **The Influence of Nuclear Magnetic Resonance Therapy (NMRT) and Interleukin IL1-β Stimulation on Cal 78 Chondrosarcoma Cells and C28/I2 Chondrocytes**

B. Steinecker-Frohnwieser, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific lecture at the Scientific Symposium: Microbiome Research / Personalized Medicine, Graz, Austria, 17th – 18th July 2014.*

3) **MBST - Nuclear Magnetic Resonance Therapy, the new opportunity in the treatment of chronic skeleton diseases and sport injuries**

D. Krpan, Policlinica K-Centar, Zagreb, Croatia; lecture at the Russian Slovenian scientific meeting, Terme Olimia, Slovenia, June 2014.

4) **New active principle: Therapy with nuclear magnetic resonance**

W. Kullich; Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific lecture at the “Special pain therapy” course, Pain diploma of the Austrian Medical Chamber, Leogang, Austria, 19th June 2014.* Language: German

5) **The Influence of Nuclear Magnetic Resonance Therapy (NMRT) and Interleukin IL1-β Stimulation on Cal 78 Chondrosarcoma Cells and C28/I2 Chondrocytes**

B. Steinecker-Frohnwieser¹, L. Weigl¹, G. Weberhofer¹, W. Kullich¹, H.G. Kress²; ¹Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; ²Department of Special Anaesthesia and Pain Management, Medical University Vienna, Austria; published in: J Orthopedics Rheumatology, 2014; 1(3):9.

6) **Application of Nuclear Magnetic Resonance Therapy as treatment of degenerative diseases of locomotor system**

I. Mařík, A. Maříková, R. Myslivec; Ambulantní centrum pro vady pohybového aparátu s.r.o, Prague, Czech Republic; scientific lecture at the 19th Kubat’s Podiatric day, 08th or March 2014, Prague. Language: Czech

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* These publications are not available in digital form.
7) **Top 100 2014: Innovation Aces: Ranga Yogeshwar introduces Germany’s innovation elite**

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1) **Clinical Efficiency of Nuclear Magnetic Resonance Therapy in Osteoarthritis**
W. Kullich, B. Stritzinger, B. Steinecker, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; poster presentation at the First LBG Meeting for Health Science, Vienna, Austria, 2nd December 2013.*

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Long-term efficacy of Nuclear Magnetic Resonance Therapy on Osteoarthritis proved by multicentric data of more than 4,500 patients
W. Kullich, B. Stritzinger, B. Steinecker, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Saalfelden; Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; Poster presentation at the first LBG meeting for Health Sciences 2013, 2nd December 2013, Vienna. **Language: German**

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Long-term efficacy of Nuclear Magnetic Resonance Therapy on osteoarthritis proven by multicentric data of more than 4,500 patients
B. Stritzinger, B. Steinecker, W. Kullich, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Saalfelden; Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; published in: Journal für Mineralstoffwechsel 2013; 20(4):159. **Language: German**

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4) **Intracellular Calcium Is Influenced by Nuclear Magnetic Resonance Therapy (NMRT) in Cal-78 Chondrosarcoma Cells**
B. Steinecker-Frohnwieser¹, L. G. Weigel², H. G. Kress², W. Kullich¹-³, ¹Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Saalfelden; ³Department of Special Anesthesia and Pain Management, Medical University of Vienna; ³Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific lecture at the annual meeting of the ÖGR 2013; published in: Journal für Mineralstoffwechsel, Volume 20 2013, Number 4, pp. 161-162.

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5) **Innovative medical technology – Made in Germany**
A. Muntermann, A. Oelsner, MedTec Medizintechnik GmbH, Wetzlar, Germany; scientific lecture at the Dr. Sulaiman Al Habib Hospital, Riyadh, Saudi Arabia, 26th November 2013.*

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6) **MBST-Nuclear Magnetic Resonance Therapy – innovative medical technology made in Germany**
A. Muntermann, A. Oelsner, MedTec Medizintechnik GmbH, Wetzlar, Germany; scientific lecture at the National Guard Hospital, Riyadh, Saudi Arabia, 27th November 2013.*

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7) **Innovative medical technology – Made in Germany**
A. Muntermann, A. Oelsner, MedTec Medizintechnik GmbH, Wetzlar, Germany; scientific lecture at the Saad Specialist Hospital, Dammam, Saudi Arabia, 28th November 2013.*

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8) **MBST - Nuclear Magnetic Resonance Therapy, the new opportunity in the treatment of chronic skeleton diseases and sport injuries**
D. Krpan, Policlinica K-Centar, Zagreb, Croatia; lecture at the scientific meeting, Bucharest, Romania, September 2013.
9) **NUCLEAR MAGNETIC RESONANCE THERAPY. A SHORT ANALYSIS OF THE SCIENTIFIC STUDIES FOCUSED ON THE SPINE**
Assoc. Professor Ivo Mařík, Md, PhD Ambulant Centre for defects of Locomotor apparatus, L. L. c., Prague, Czech Republic, M. Schmitz, A. Oelsner, MedTec Medizintechnik GmbH, Wetzlar; scientific lecture at the THE 15TH PRAGUE-LUBLIN-SYDNEY SYMPOSIUM, Children’s Rehabilitation Center of Orthopaedics and Traumatology, Ogonyok, St. Petersburg, Russia, 15th – 22nd September 2013.

10) **Long-term reduction of pain in different types of Osteoarthritis after the treatment with nuclear magnetic resonance**
W. Kullich, B. Steinecker, J. Overbeck, Ludwig Boltzmann Cluster for Rheumatology, Balneology, and Rehabilitation, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Saalfelden, Austria; private consultant surgeon, Deggendorf, Germany; published in: Schmerznachrichten 4 / 2013, pp. 20-23. Language: German

11) **MBST – Nuclear Magnetic Resonance Therapy on Gonarthrosis, Long-Term Effects**
W. van Laack, University of Applied Science Aachen, Germany; abstract in the congress catalogue of the “Safety and Security”, Innovation Alliance of North-Rhine Westphalia Universities, Brussels, Belgium, 18th June 2013.

12) **MBST - Analysis of the scientific studies and its relevance to the daily application**
J. G. Overbeck, Private Consultant, Deggendorf, Germany; scientific lecture at the Park Hotel, New Delhi, India, 7th June 2013.

13) **MBST – Nuclear Magnetic Resonance Therapy, Analysis of the Scientific Studies and its Relevance to the Daily Application**
J. G. Overbeck, Private Consultant, Deggendorf, Germany; scientific lecture at the East Delhi Gynae Forum, Delhi, India, 7th June 2013.

14) **Magnetic resonance therapy**
J. G. Overbeck, Private Consultant, Deggendorf; scientific lecture at the 32nd Annual Conference of North Zone Chapter of The Indian Orthopaedic Association, Srinagar, Indien, 1st June 2013.*

15) **Therapy with Magnetic Resonance – Sustainable Improvement of Osteoarthritis Pain (Multicentric Observational Study on 4.518 patients)**
W. Kullich, B. Steinecker, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Saalfelden, Austria; Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; published in: “Dream and Reality. Pain Therapy in the Conflict between Ethics and Economy”, OSG lectures, Leykam book publisher, 2013:43-44. Language: German

16) **Therapy with Magnetic Resonance – Sustainable Improvement of Osteoarthritis Pain (Multicentric Observational Study on 4.518 patients)**
W. Kullich, B. Steinecker, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Saalfelden, Austria; Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation; scientific poster presentation at the 21st Scientific Conference of the Austrian Pain Society, winner of the 1st prize for the poster presentation, Klagenfurt, Austria, 9th – 11th May 2013. Language: German

17) **Multicentric data from more than 4.500 patients with degenerative rheumatic diseases proof sustainable effect of Magnetic Resonance Therapy**
W. Kullich, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific poster presentation at the 61st Annual Conference of the South German Orthopaedists and Orthopaedic Surgeons, 1st – 4th May 2013, Baden-Baden, Germany, poster no. p32. Language: German

* These publications are not available in digital form.
18) **Multicentric data from more than 4,500 patients with degenerative rheumatic diseases proof sustainable effect of Magnetic Resonance Therapy**

W. Kullich, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; published in the Special Edition of the Journal für Orthopädie und unfallchirurgische Praxis (abstracts VSOU), Deutscher Ärzteverlag, 2013:305-306. **Language: German**

19) **Intracellular Calcium is influenced by the Nuclear Magnetic Resonance Therapy in Cal-78 chondrosarcoma cells**

B. Steinecker-Frohnwieser, L. Weigl, W. Kullich; Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; Department of Special Anesthesia and Pain Management, Medical University of Vienna, Austria; published in: Bone – Abstracts (ECTS 2013, Lisbon), 2013; 1:248.

20) **Intracellular Calcium is influenced by the Nuclear Magnetic Resonance Therapy in Cal-78 chondrosarcoma cells**

B. Steinecker-Frohnwieser, L. Weigl, W. Kullich; Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; Department of Special Anesthesia and Pain Management, Medical University of Vienna, Austria; scientific lecture at the ECTS 2013, Lisbon, 18th-21st May 2013.*

21) **Functional ability of skeleton and how we can improve it by MBST**

D. Krpan, Policlinica K-Centar, Zagreb, Croatia; Croatian national congress of osteoporosis, Opatia, Croatia, April 2013.* **Language: Croatian**

22) **(N)MRT – Nuclear Magnetic Resonance Therapy, Analysis of the Scientific Studies and its Relevance to Sport Injuries and its Ramifications**

J. G. Overbeck, Private Consultant, Deggendorf, Germany; scientific lecture at the Connective Tissues in Sports Medicine, University of Ulm, Germany, 12th – 14th April 2013.*

23) **One-year-survey with multicenter data of more than 4,500 patients with degenerative rheumatic diseases treated with therapeutic nuclear magnetic resonance**


**2012:**

1) **MBST - Nuclear Magnetic Resonance Therapy, the new opportunity in the treatment of chronic skeleton diseases and sport injuries**


2) **Guide to naturopathic treatment for the doctors practice**

Published by: André-Michael Beer, Martin Adler, Munich 2012, p. 296. **Language: German**

* These publications are not available in digital form.
2011:

1) **Analysis of the Long-term Effect of the MBST® Nuclear Magnetic Resonance Therapy on Gonarthrosis**
   W. van Laack, G. Froning, Institute for Bioengineering (IfB), Laborator of Biomechanics, FH Aachen, Campus Juelich, Orthopedic Practice and Center for ambulant arthroscopic surgery, Herzogenrath, Germany; published in: Orthopaedic Practice 47, 11, 2011, pp. 536-543.

2) **Impact of Magnetic Resonance Therapy on Sickness Absence of Patients with Nerve Root Irritation Following a Lumbar Disc Problem**

3) **MBST – The new treatment of osteoarthritis and osteoporosis**
   D. Krpan, Policlinica K-Centar, Zagreb, Croatia; lecture at the ISCEM 2011 and the 5th Croatian congress of endocrinology with international participation, Pula, Croatia, October 2011.* **Language: Croatian**

4) **30 years of Boltzmann Institute and 30th conference for rheumatism in Saalfelden**
   W. Kullich, Ludwig-Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Institute for Rehabilitation of Internal Diseases, Saalfelden, Austria; published in: Jatros Orthopädie, 5/2011, p. 68. **Language: German**

5) **Therapeutic use of Nuclear Magnetic Resonance in different forms of osteoarthritis**
   W. Kullich, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific lecture at the 30th Rheumatologic Advanced Training Conference, Saalfelden, Austria, 17th-18th June 2011.* **Language: German**

6) **Intracellular Ca²⁺-Regulation as potential contact point of the NMRT**
   L. Weigl, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific lecture at the 30th Rheumatologic Advanced Training Conference, Saalfelden, Austria, 17th-18th June 2011.* **Language: German**

7) **Influence of Nuclear Magnetic Resonance on osteoarthritis-related factors**
   B. Steinecker-Frohnwieser, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; scientific lecture at the 30th Rheumatologic Advanced Training Conference, Saalfelden, Austria, 17th-18th June 2011.* **Language: German**

8) **MBST - NUCLEAR MAGNETIC RESONANCE THERAPY THE NEW POSSIBILITY OF OSTEOARTHRITIS AND OSTEOPOROSIS TREATMENT**

9) **Nuclear magnetic resonance affects osteoarthritis pain**
   W. Kullich, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Institute for Rehabilitation of Internal Diseases, Saalfelden; scientific poster presentation at the 19th annual conference of the Austrian Pain Society, 26th-28th May 2011. **Language: German**
10) MBST – Nuclear Magnetic Resonance Therapy. The new possibility of osteoarthritis and osteoporosis treatment
D. Krpan, Policlinica K-Centar, Zagreb, Croatia; lecture at the international symposium of osteoporosis, Niška Banja, Serbien, May 2011.* Language: Croatian

11) MBST - Treatment of chronic skeleton diseases

12) Next Generation of Medical Technology: Therapeutic Effect of NMR-Therapy against Osteoarthritis proven
2010:

1) **Modulation of VEGF and Cytokines by Therapeutic Nuclear Magnetic Resonance**
   B. Steinecker-Frohnwieser, L. Weigl, N. Fagerer, W. Kullich, H.G. Kress, Ludwig Boltzmann Institute, Department of Special Anaesthesia and Pain Therapy, Medical University of Vienna, Austria; published in: Journal für Mineralstoffwechsel 2010; 17 (4), p. 155.

2) **MBST – The new concept of the treatment of chronic skeleton diseases**
   D. Krpan, Policlinica K-Centar, Zagreb, Croatia; lecture on the orthopedic days in Maribor, Slovenia, December 2010.* Language: Croatian

3) **Modulation of VEGF and cytokines by the Therapeutic Nuclear Magnetic Resonance (Poster)**
   B. Steinecker-Frohnwieser, L. Weigl, N. Fagerer, G. Weberhofer, W. Kullich, H.G. Kress, LBI for Rehabilitation, Saalfelden, Austria, Department of Special Anaesthesia and Pain Therapy, Medical University of Vienna, Austria; scientific lecture, Austrian Society of Rheumatology and Rehabilitation, Vienna, 25th - 27th Nov. 2010.

4) **Breakthrough in Orthopaedics: Causal Solution to Osteo-Arthritis and Osteoporosis**

5) **World wide interest in new technology from Germany**

6) **Medical Progress in the treatment of arthritis**

2009:

1) **NFAT Modulation in Bone and Cartilage Cells by Therapeutic Nuclear Magnetic Resonance**
   W. Kullich, L. Weigl, B. Steinecker, H.G. Kress; Ludwig Boltzmann Institute of Rehabilitation, Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; Medical University Vienna, Clinical Dept. of Special Anaesthesia and Pain Management, Vienna, Austria; Ludwig Boltzmann Institute of Rehabilitation, Gröbming External Office, Gröbming, Austria; Medical University Vienna, Clinical Dept. of Special Anaesthesia and Pain Management, Vienna, Austria; academic lecture and poster: German Orthopaedics and Trauma Surgery Conference, Berlin, 21st - 24th October 2009.

2) **Influence of NMR Therapy on Metabolism of Osteosarcoma- and Chondrosarcoma Cell Lines**

3) **Influence of NMR Therapy on Metabolism of Osteosarcoma- and Chondrosarcoma Cell Lines**
4) **From diagnostic equipment to therapeutic application**
W. Schwägerl; published in: Ärzte Woche, 7.5.2009, p. 22.

5) **Does MBST® NMR Treatment Have any Influence on Post-Traumatic Gonarthrosis in Rabbits?**
Inaugural Dissertation for Gaining the ‘Doctor Medicinae’ from the Medical Faculty of the Westphalian Wilhelms University of Muenster. A 6-week experimental trial from the University Clinic of Muenster, Clinic and Outpatients’ Dept. for Trauma, Hand and Reconstructive Surgery; director: Prof. Michael J. Raschke MD; presented by Thomas Brockamp, April 2009. *Language: German*

6) **Influence of NMR Therapy on Ca2+ Signalling and Gene Expression in Osteosarcoma and Chondrosarcoma Cell Lines**
Lukas G. Weigl, Bibiane Steinecker-Frohnwieser, Carmen Hoeller, Elisabeth Sipos, Hans Georg Kress, Werner Kullich, Department of Special Anaesthesia and Pain Management, Medical University Vienna, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, LBI for Rehabilitation of Internal Diseases, Saalfelden, Austria; Regional Biophysics Conference 2009, 10th - 14th February 2009 Linz, Austria.

7) **Ameliorates Pain and Improves Function: Magnetic Resonance Treatment on Arthrosis**

8) **Fit for sport: training, warming-up & healing**
Author: Prof. Dr. med. Reinhard Weinstabl, Vienna 2009.

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2008:

1) **The Influence of Magnetic Resonance on the NFAT Pathway in Osteosarcoma and Chondrosarcoma Cells**

2) **Therapeutic Use of Magnetic Resonance in Arthrosis**
W. Kullich, Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; Academic presentation at the German Orthopaedics and Trauma Surgery Congress, Berlin, October 2008. ([Link to the text](http://www.egms.de/en/meetings/dkou2008/08dkou326.shtml)).

3) **Arthrosis Treatment with Magnetic Resonance: Procedure Can Stimulate Reparative Processes in the Cartilage and have an Impact on Pain Signal Transduction Cascades**

4) **Treatment of Osteoporosis with Magnetic Resonance Therapy**
T. Handschuh, C. Melzer, Waldkrankenhaus Bad Düben, Specialist Clinic for Orthopaedics, Bad Düben, Germany; published in: Orthodoc, pp. 1-4.

5) **Improving Function in Cases of Finger Joint Arthrosis through Magnetic Resonance Treatment**
W. Kullich, M. Ausserwinkler; published in: Jatros Orthopädie, no. 4/2008, p. 29. *Language: German*

6) **Arthrosis and Pain Treatment Using Magnetic Resonance**
Published in: Wirtschaftsmagazin für den Orthopäden, June 2008, p. 16. *Language: German*
Functional Improvement in Finger Joint Arthrosis by Therapeutic Use of Magnetic Resonance
W. Kullich, M. Ausserwinkler, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases; scientific poster presentation at the 56th Annual Convention of the Association of South German Orthopaedists, 1st - 4th May 2008. Winner of a ‘Poster Award’ from the Association of South German Orthopaedists, Baden-Baden, Germany, 1st - 4th May 2008.

Results of gene expression surveys under the influence of Nuclear Magnetic Resonance
W. Kullich, B. Steinecker, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; lecture at MedTec Medizintechnik GmbH – presentation of study results, Wetzlar, Germany 10th April 2008.* Language: German

MBST-Therapy and its influence on the molecular physiology of osteocytes, chondrocytes and PC12 cells
B. Steinecker, W. Kullich, L. Weigl, Ludwig Boltzmann Institute for Rehabilitation of Internal Diseases, Ludwig Boltzmann Cluster for Rheumatology, Balneology and Rehabilitation, Saalfelden, Austria; lecture at MedTec Medizintechnik GmbH – presentation of study results, Wetzlar, Germany 10th April 2008.* Language: German

MBST Magnetic Resonance: Innovation in the Treatment of Ailments of the Locomotor System
Published in: DOV Magazin, the magazine of the German Orthopaedists Society, issue May/June 2008, pp. 4 - 6. Language: German

Functional Improvement in Finger Joint Arthrosis by Therapeutic Use of Magnetic Resonance

2007:

1) Magnetic Resonance Therapy and Bone Health
Joachim Overbeck MD, Deggendorf, Germany; scientific lecture at Kings College Hospital, Bone Health Group, London, UK, December 2007.

2) Chronic Joint Problems: Magnetic Resonance Pulse Therapeutically Used
Dr. Peter Valentin MD, Trauma Surgery Centre, Klosterneuburg, Austria; published in: Ärztewoche, Austria, 13th December 2007, p. 14. Language: German

3) Application of Nuclear Magnetic Resonance on degenerative rheumatic diseases
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