Multiple Independent Current Control: 16 independent current sources engineered for fine adjustment of stimulation position and shape.

The Boston Scientific Deep Brain Stimulation (DBS) Systems are indicated for use in unilateral or bilateral stimulation of the subthalamic nucleus (STN) or internal globus pallidus (GPi) for treatment of levodopa-responsive Parkinson's disease which is not adequately controlled with medication and also for treatment of intractable primary and secondary Dystonia, for persons 7 years of age and older. Thalamic stimulation using the Boston Scientific Vercise DBS Systems are indicated for the suppression of tremor not adequately controlled by medications in patients diagnosed with Essential Tremor or Parkinson's disease. All cited trademarks are the property of their respective owners.

CAUTION: The law restricts these devices to sale by or on the order of a physician. Indications, contraindications, warnings and instructions for use can be found in the product labeling supplied with each device. Information for the use only available upon separate label reading, learned in a training program.
Multiple Independent Current Control: 16 independent current sources engineered for fine adjustment of stimulation position and shape.

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Organisation and Imprint

Venue and Date
Heinrich-Heine-University
Building 23.01 • Main Entrance
Universitätsstrasse 1
40225 Düsseldorf (DE)
15–16 March 2016

Conference Website
www.dbs-conference.de

Conference Chairs
Alfons Schnitzler, MD, PhD
Jan Vesper, MD, PhD

Conference Secretaries
Lars Wojtecki, MD
Martin Südmeyer, MD, PhD • Philipp Slotty, MD

Centre for Movement Disorders and Neuromodulation
University Hospital Düsseldorf
Heinrich-Heine-University
Moorenstrasse 5
40225 Düsseldorf (DE)

Conference Organisation
Conventus Congressmanagement & Marketing GmbH
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Editorial deadline 5 February 2016
Dear Sir or Madam,

Welcome to the “International Conference on Deep Brain Stimulation”, welcome in Düsseldorf!

I am very pleased to see that the conference will take place for the second time in Düsseldorf. Conferences like the “International Conference on Deep Brain Stimulation”, as well as international trade events, such as the world’s largest medical leading trade fair “Medica”, proof the value and diversity offered by the healthcare location Düsseldorf, embedded in a strong research and clinical landscape with the flagship Heinrich-Heine University and other prestigious academic institutions. In a word, Düsseldorf is a city where health is one of the main focal points of a “healthy city”.

You are cordially invited to discover the other, no less attractive sides of our beautiful Rhine city, such as the world-famous „Königsallee“, the traditional old town or the modern „Medienhafen“. Immerse yourself in the vibrant art and culture scene with all its facets. Thanks to all these various offers, Düsseldorf is a city in which it is good to live in.

I wish you a pleasant stay in Düsseldorf and an enriching exchange with your colleagues at the “International Conference on Deep Brain Stimulation”.

Sincerely yours

Thomas Geisel
Mayor
Dear colleagues and friends,

It is our great pleasure to invite you to the II. International Conference on Deep Brain Stimulation in Düsseldorf, Germany from 15–16 March, 2016. Since the first conference in 2013 the DBS field has witnessed considerable advancements and innovations prompting for updates. Regarding the program structure we have maintained the successful concept of a state-of-the-art coverage of DBS ranging from animal models and basic mechanisms, human electrophysiology and imaging, established and emerging clinical applications in movement disorders, epilepsy, pain and neuropsychiatric diseases, to ethical aspects and future directions. These topics will be dealt with in plenary lectures, short oral communications and poster presentations. To further enhance interactions and discussions among the participants we have included “Controversy Sessions” with “pro” and “contra” presentations of controversial issues. Company sponsored lunch and dinner symposia will provide us with the latest technological innovations in the DBS field.

We cordially invite you to join us in Düsseldorf and hope you will find this second DBS conference as interesting and stimulating as the first one. Düsseldorf is the bustling Rhine metropolis and capital of the federal state of North-Rhine Westphalia. Arts, history, fashion, business and Rhenish lifestyle – Düsseldorf has a lot to offer to its visitors. Enjoy your stay in this vibrant city. We are very pleased to welcome you in Düsseldorf and look forward to sharing and discussing interesting scientific results and new ideas with you.

With best wishes

Alfons Schnitzler, MD, PhD

Jan Vesper, MD, PhD
09:00–09:15 Opening
Room 3 D
Welcome
A. Schnitzler, J. Vesper (Düsseldorf/DE)

Welcome
A. Steinbeck (Düsseldorf/DE)
(President Heinrich-Heine-University Düsseldorf)
J. Windolf (Düsseldorf/DE)
(Dean Medical Faculty Heinrich-Heine-University Düsseldorf)

09:15–10:45 Update on DBS in Movement Disorders
Room 3 D
Chairs
J. Vesper (Düsseldorf/DE)
A. Fasano (Toronto/CA)

09:15 Update on DBS in PD
M. Schüpbach (Bern/CH)

09:45 Update on DBS in Dystonia
J. Volkmann (Würzburg/DE)

10:15 Update on DBS in other Hyperkinetic Disorders
A. Fasano (Toronto/CA)

10:45–11:00 Break

11:00–11:45 Keynote Lecture
Room 3 D
Chairs
A. Schnitzler, J. Vesper (Düsseldorf/DE)

The Modern view on basal ganglia function
J. Obeso (Madrid/ES)
(see p. 30)

11:45–12:00 Break
13:30–14:30  ePoster session I (s. p. 15 ff.)

Movement Disorders I (EP 1–EP 12)  Terminal 1

14:30–16:00  Update on DBS in Neuropsychiatry
Room 3 D
Chairs  J. Kuhn (Cologne/DE)
        C. Lüscher (Geneva/CH)

14:30  Update on DBS in depression
H. Mayberg (Atlanta, GA/US)

15:00  Update on DBS in dementia
Y. Temel (Maastricht/NL)

15:30  Update on DBS and circuits in addiction
C. Lüscher (Geneva/CH)

16:00–16:15  Break

16:15–17:45  Controversies I
Room 3 D
Chairs  J. Vesper
        A. Schnitzler (Düsseldorf/DE)

16:15  How much imaging is needed?
J. Krauss (Hanover/DE)
V. A. Coenen (Freiburg/DE)

16:45  Awake surgery versus general anaesthesia
L. Timmermann (Cologne/DE)
J. Voges (Magdeburg/DE)

17:15  PPN versus SN stimulation in freezing of gait
E. Moro (Grenoble/FR)
R. Krüger (Luxembourg/LU)

17:45–18:00  Break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Room</th>
<th>Chairs</th>
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<tbody>
<tr>
<td>09:00–10:30</td>
<td>Mechanisms of DBS</td>
<td>3 D</td>
<td>R. Costa (Lisbon/PT) R. Hashemiyoon (Cologne/DE)</td>
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<tr>
<td>09:00</td>
<td>DBS mechanisms in dystonia</td>
<td>3 D</td>
<td>W.-J. Neumann (Berlin/DE)</td>
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<td>09:30</td>
<td>Mechanisms of action control and DBS in OCD</td>
<td>3 D</td>
<td>R. Costa (Lisbon/PT) L. Mallet (Paris/FR)</td>
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<td>10:00</td>
<td>Imaging networks modulated by DBS</td>
<td>3 D</td>
<td>R. Hilker-Roggendorf (Recklinghausen/DE)</td>
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<tr>
<td>10:30–10:45</td>
<td>Break</td>
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<tr>
<td>13:45–15:15</td>
<td>Challenges and Ethical Considerations</td>
<td>3 D</td>
<td>M. H. Mehdorn (Kiel/DE) V. Visser-Vandewalle (Cologne/DE)</td>
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<tr>
<td>13:45</td>
<td>Impulsivity and decision making</td>
<td>3 D</td>
<td>V. Voon (Cambridge/GB)</td>
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<tr>
<td>14:15</td>
<td>Challenges in epilepsy treatment</td>
<td>3 D</td>
<td>S. Chabardes (Grenoble/FR)</td>
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<tr>
<td>14:45</td>
<td>Ethical aspects</td>
<td>3 D</td>
<td>J. Clausen (Tübingen/DE)</td>
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<tr>
<td>15:15–15:30</td>
<td>Break</td>
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</table>
Scientific Programme • Wednesday, 16 March 2016

15:30–17:00  Short Presentations
Room 3 D
Chairs  J. Huston, L. Wojtecki (Düsseldorf/DE)

SP 11  Subthalamic cross-frequency coupling mediates direct cortico-subcortical connectivity in Parkinson's Disease
A. Gharabaghi (Tübingen/DE)

SP 1  Parkinsonian rest tremor can be detected based on frequency domain features of the Cerebral Tremor Network
J. Hirschmann (Düsseldorf/DE; Nijmegen/NL)
J.-M. Schoffelen (Nijmegen/NL)
A. Schnitzler (Düsseldorf/DE)
M. A. J. van Gerven (Nijmegen/NL)

SP 2  Pallidal low frequency activity correlates with Dystonic Symptoms in patients with Cervical Dystonia
W.-J. Neumann, J. Huebl, C. Brücke
C. Slentz, G.-H. Schneider
A. A. Kühn (Berlin/DE)

SP 3  Direct involvement of the nucleus accumbens in action preparation: evidence from human intracranial recordings
M.-P. Stenner, S. Dürschmid (Magdeburg/DE)
R. B. Rutledge (London/GB), T. Zaehle
F. C. Schmitt, J. Kaufmann, J. Voges
H.-J. Heinze (Magdeburg/DE)
R. J. Dolan (London/GB)
A. Schoenfeld (Magdeburg/DE)

SP 4  Distribution of oscillatory activities in MRI confirmed subthalamic nucleus subregions
M. Beudel (Groningen/NL)
A. Oswal (Oxford/GB), A. Jha (London/GB)
T. Foltynie, L. Zrinzo, M. Hariz
P. Limousin (London/GB)
S. Derrey (Rouen/GB), H. Akram
V. Litvak (London/GB), P. Brown (Oxford/GB)
| SP 5 | Poor modulation of event related local field potentials in the Subthalamic Nucleus during nocturnal movements in Parkinson’s patients – Are Subthalamic Neurons sleeping?  
M. Hackius, E. Werth, H. Baumann-Vogel  
M. Uhl, O. Sürücü, C. Baumann  
L. Imbach (Zurich/CH) |
| SP 6 | Preliminary experience with chronic directional DBS in the STN  
C. Pollo, I. Debove, J. Müllner  
L. Lachenmayer, M. Oertel, F. Rossi  
M. Schüpbach (Bern/CH) |
| SP 7 | How to address the poor treatment acceptance for Deep Brain Stimulation in Parkinson’s Disease  
L. Dinkelbach (Düsseldorf/DE), B. Möller  
K. Witt (Kiel/DE), A. Schnitzler, L. Wojtecki  
M. Südmeyer (Düsseldorf/DE) |
| SP 8 | Cortico-subcortical increase of resting state functional connectivity with GPi DBS in dystonia  
R. Jech, A. Fečíková, F. Růžička, V. Čejka  
P. Havránková, T. Serranová, V. Boček  
J. Vymazal, I. Štětkářová  
D. Urgošík (Prague/CZ), K. Mueller (Leipzig/DE) |
SP 9  Individualized identification of the motor part of the Subthalamic Nucleus in Parkinson’s Disease
B. Plantinga (Maastricht, Eindhoven/NL)
Y. Temel (Maastricht/NL)
Y. Duchin (Minneapolis, MN/US)
K. Uludag, A. Roebroeck, M. Kuijf
A. Jahanshahi (Maastricht/NL)
B. ter Haar Romenij (Eindhoven/NL; Shenyang/CN), J. Vitek
N. Harel (Minneapolis, MN/US)

SP 10  Innsbruck experience in Neuropathic Pain Syndromes – re-think and re-construct old methods for better results
W. Eisner, F. Sohm, R. Rehwald
L. Scharnboeck, C. Siedentopf
S. Quirbach, E. Gizewski
J. Kerschbaumer (Innsbruck/AT)

17:00–17:15  Break
### Special Joint DBS-DGKN Lecture

**Room 3 D**

**Chair**

H. J. Freund (Düsseldorf/DE)
H. Bergman (Jerusalem/IL)

The future of neuromodulation
A. Lozano (Toronto/CA)
(see p. 31)

### Controversies II

**Room 3 D**

**Chairs**

J. Vesper
A. Schnitzler (Düsseldorf/DE)

**18:00**

Targets in Tourette syndrome – pallidum versus thalamus
V. Visser-Vandewalle (Cologne/DE)
J. Mehrkens (Munich/DE)

**18:30**

Pain – DBS versus MCS
V. Tronnier (Lübeck/DE)
C. Honey (Vancouver/CA)

**19:00**

Pro und Contra DBS in Huntington’s Disease
L. Wojtecki (Düsseldorf/DE)
R. Reilmann (Münster/DE)

**19:30–19:45**

Poster Awards

**19:45–20:00**

Conclusion

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### Industrial Symposia • Tuesday, 15 March 2016

**Room 3 D**

**Medtronic GmbH**

**12:00**

Sensing and epilepsy
P. Stypulkowski (Minneapolis, MN/US)

**12:30**

Translating brain states into patient benefit
S. Goetz (Minneapolis, MN/US)

**13:00**

MRI safety and device interactions
M. Conroy (Minneapolis, MN/US)
### Industrial Symposia • Tuesday, 15 March 2016

**18:00–19:30** Boston Scientific Medizintechnik GmbH  
**Room 3 D**

**Chairs**  
V. Visser-Vanderwalle (Cologne/DE)  
J. Obeso (Madrid/ES)

**Reshaping the future of DBS – A novel approach to Directional Steering**

18:00  
Directional Steering – what is needed from the IPG? Single source versus Multiple Independent sources (MICC patent). Engineering Perspective  
S. Carcieri (Boston Scientific/US)

18:15  
Clinical Chronic Experience with Vercise: Surgical Perspective  
C. Polo (Bern/CH)

18:35  
Clinical Chronic Experience with Vercise: Programming Perspective  
L. Timmermann (Cologne/DE)

18:55  
Directional DBS of the subthalamic nucleus: A pilot study – Preliminary Observations  
J. Volkmann (Würzburg/DE)

19:15  
From Biophysics to Clinical Practice  
C. McIntyre (Cleveland, OH/US)

### Industrial Symposium • Wednesday, 16 March 2016

**12:00–13:30** St. Jude Medical GmbH  
**Room 3 D**

12:00  
Directional Lead/Infinity  
A. Lozano (Toronto/CA)

12:30  
Constant current vs constant voltage: What is the evidence?  
H. Bergman (Jerusalem/IL)

13:00  
Evidence for Secondary Dystonia  
J. Krauss (Hanover/DE)
13:30–14:30 Movement Disorders I
Terminal 1
Chairs M. Schüpbach (Bern/CH) J. Krauss (Hanover/DE)

**EP 1**
The effect of Subthalamic Deep Brain Stimulation on impulsivity in Parkinson’s Disease patients
A. L. de Almeida Marcelino, A. Kühn, P. Krause
W.-J. Neumann (Berlin/DE)

**EP 3**
Nigral stimulation for freezing of gait – clinico-anatomic correlations
I. Hanci, M. Scholten, L. P. Roncoroni
R. Krueger (Tübingen/DE; Luxembourg/LU)
A. Gharabaghi, D. Weiss (Tübingen/DE)

**EP 4**
Long term recordings of deep brain activity from the subthalamic nucleus in PD patients using PC+S
F. Staub, W.-J. Neumann, A. Horn, J. Schanda
G.-H. Schneider (Berlin/DE), P. Brown (Oxford/GB)
A. Kühn (Berlin/DE)

**EP 5**
Unappreciated side effect of DBS – aggressive behavior
H. Kaptan (Izmir/TR), H. Ekmekçi (Izmir, Konya/TR)

**EP 6**
Chronic directional subthalamic nucleus deep brain stimulation in Parkinson’s Disease – a pilot study
P. Reker, T. A. Dembek, A. Gierich, J. Wirths, H. S. Dafsari
M. T. Barbe, L. Timmermann
V. Visser-Vandewalle (Cologne/DE)

**EP 7**
The Burke-Fahn-Marsden Dystonia rating scale is age-dependent in healthy children
M. Kuiper, L. Vrijenhoek, R. Brandsma, R. Lunsing
H. Burger, H. Eggink (Groningen/NL)
K. Peall (Cardiff/GB)
M. F. Contarino (Amsterdam, The Hague/NL)
J. Speelman (Amsterdam/NL), M. Tijsen
D. Sival (Groningen/NL)
EP 8
Motor outcome of the bilateral subthalamic stimulation in Parkinson’s Disease, one-year follow-up results from the neuromodulation centre in Budapest
G. Tamás, A. Kelemen, D. Albert, I. Rózsa, E. Csibri
L. Entz, D. Fabó, L. Halász, G. Rudas, P. Barsi
P. Golopencza, L. Erőss (Budapest/HU)

EP 9
GPI deep brain stimulation for the treatment of status dystonicus in tardive dystonia
A. Trezza, A. Landi, D. Pirillo (Monza/IT)
A. Antonini (Venice/IT), E. P. Sganzerla (Monza/IT)

EP 10
Pallidal stimulation affects speech fluency in dystonia
J. Rusz, T. Tykalova, A. Fecikova, D. Urgosik
R. Jech (Prague/CZ)

EP 12
Tremor12 – an open-source mobile app for tremor quantification
P. Kubben, M. Kuijf, L. Ackermans, A. Leentjens
Y. Temel (Maastricht/NL)
13:30–14:30 Neuropsychiatry
Terminal 2
Chairs V. A. Coenen (Freiburg/DE) H. Mayberg (Atlanta, GA/US)

EP 13
Tailored anesthetic techniques in patients with severe Tourette Syndrome undergoing surgery for deep brain stimulation
M. Bos, L. Ackermans, A. Smeets, P. Kubben
V. van Kranen-Mastenbroek, A. Leentjens
W. Buhre (Maastricht/NL)
V. Visser-Vandewalle (Cologne/DE)
Y. Temel (Maastricht/NL)

EP 14
Clinical experiences with long term thalamic deep brain stimulation in severe Tourette Syndrome
A. Smeets, A. Duits, A. Leentjes (Maastricht/NL)
V. Visser-Vandewalle (Cologne/DE), Y. Temel
L. Ackermans (Maastricht/NL)

EP 15
Choreatic side effects of deep brain stimulation of the subthalamic nucleus for treatment resistant OCD – a case history
A. Mulders, A. Leentjens, B. Plantinga, K. Schruers
A. Duits, L. Ackermans, Y. Temel (Maastricht/NL)

EP 16
Nucleus accumbens stimulation in severe obsessive compulsive disorder
S. Kohl, J. C. Baldermann, D. Huys
V. Visser-Vandewalle, J. Kuhn (Cologne/DE)
EP 17
Preserved frontoparietal brain morphology correlates with beneficial response to Deep Brain Stimulation of the Nucleus basalis of Meynert in patients with Alzheimer’s Disease
J. C. Baldermann, K. Hardenacke (Cologne/DE)
K. Zilles (Jülich/DE), H.-J. Freund (Düsseldorf/DE)
V. Visser-Vandewalle, V. Sturm, F. Jessen
J. Kuhn (Cologne/DE)

EP 18
Deep Brain Stimulation improves behavior and modulates neural circuits in a rodent model of Schizophrenia
R. Hadar (Dresden/DE), L. Bikovsky (Tel Aviv/IL)
M. Soto-Montenegro (Madrid/ES), J. Klein (Berlin/DE)
I. Weiner (Tel Aviv/IL), R. Hadar (Dresden/DE)
J. Pascau (Madrid/ES), C. Hamani (Toronto/CA)
C. Winter (Dresden/DE)

EP 19
Low frequency DBS of the hippocampal formation enhances memory function – evidence from 2 case reports
L. Paschen, G. Deuschl, K. Witt (Kiel/DE)

EP 20
Deep Brain Stimulation (DBS) of the Subthalamic Nucleus (STN) in Obsessive Compulsive Disorder (OCD): a clinical and neurophysiological observation
L. Wojtecki, J. Hirschmann, S. Elben
J. Vesper, A. Schnitzler (Düsseldorf/DE)

EP 21
Neuromodulation of the hyperdirect pathway to study flexibility as an endophenotype of obsessive compulsive disorders
N. Benzina, K. N’diaye, I. Mallet, E. Burguiere (Paris/FR)

EP 22
Deep brain stimulation of ventral internal capsule for refractory obsessive compulsive disorder
A. Gupta (Gurgaon/IN)
EP 23
Bilateral Epidural Prefrontal Cortical Stimulation (epcs) over fronto-polar and mid-frontal gyrus accesses mood regulation networks – evidence from diffusion tensor imaging
S. Hannoun (Paris/FR), N. Williams (Palo Alto, CA/US)
G. Sahlem, B. Short, I. Takacs
M. George (Charleston, SC/US), Z. Nahas (Beirut/LB)

EP 24
Contralateral smiles induced by Deep Brain Stimulation of the nucleus accumbens region in a patient with major depressive disorder
D. Rasche (Lübeck/DE), C. K. Moll (Hamburg/DE)
N. Brüggemann, B. Zurowski, V. Tronnier (Lübeck/DE)

13:30–14:30 DBS Mechanisms
Terminal 3
Chairs L. Timmermann (Cologne/DE)
A. Gharabaghi (Tübingen/DE)

EP 25
The role of Deep Brain Stimulation in Somatic Cervical Pain
H. Ekmekci, H. Kaptan (Konya/TR)

EP 26
Magnetic nanoparticles to modulate neuronal activity?
M. Roet, Y. Temel (Maastricht/NL)
P. Anikeeva (Cambridge, MA/US)
A. Jahanshahi, B. Rutten (Maastricht/NL)

EP 27
Is DBS Therapy delay the progression of Parkinson’s Disease? – Case Report
H. Hao, Z. Zhang, J. Yuan, L. Cui (Beijing/CN)

EP 28
Fornix DBS enhances long-term spatial memory independent of Hippocampal Neuroplasticity
M. Aldehri, Y. Temel, A. Jahanshahi
S. Hescham (Maastricht/NL)
EP 29
Field distribution for Deep Brain Stimulation using an Anatomical Partially Anisotropic Volume Conductor Model of the Rat Brain
A. Böhme, U. van Rienen (Rostock/DE)

EP 30
Deep Brain Stimulation both at 130 Hz and 340 Hz suppresses Cortical Alpha and Beta Band Activity
O. Abbasi (Düsseldorf, Bochum/DE)
J. Hirschmann, L. Storzer (Düsseldorf/DE)
T. Özkurt (Ankara/TR), S. Elben, J. Vesper
L. Wojtecki (Düsseldorf/DE), G. Schmitz (Bochum/DE)
A. Schnitzler
M. Butz (Düsseldorf/DE)

EP 31
Deep Brain Stimulation-induced Neurogenesis is gender-independent
F. Chamaa, W. Sweidan, Z. Nahas, N. Saade
W. Abou-Kheir (Beirut/LB)

EP 32
Frequency of Subthalamic Nucleus Stimulation (STN) in Parkinson’s Disease (PD) modifies response accuracy in a decision making task
K. Witt, T. Sauer, G. Deuschl (Kiel/DE)

EP 72
Effect of Deep Brain Stimulation on sleep is outcome-dependent in patients with Temporal Lobe Seizures
F. C. Schmitt, A. Ilse (Magdeburg/DE), W. Hamel
P. M. House, C. K. Moll (Hamburg/DE)
H. Lee (Magdeburg/DE), S. R. Stodieck
B. R. Voges (Hamburg/D37)
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<tr>
<td>10:45-11:45</td>
<td><strong>Movement Disorders II</strong></td>
<td>J. Maciaczyk (Düsseldorf/DE) K. Bötzel (Munich/DE)</td>
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**EP 33**
Prolonged pauses in Verbal Fluency tasks under Active VIM-DBS – Does it delay automatic lexical co-activation?
F. Ehlen, I. Vonberg, O. Fromm, A. Kühn
F. Klostermann (Berlin/DE)

**EP 34**
Effects of Deep Brain Stimulation of the globus pallidus interna on Huntington’s Disease at 1 year
E. Kocabicak (Samsun/TR; Maastricht/NL)
D. Aygun, O. Yildiz, O. Taskin (Samsun/TR)
O. Alptekin Y. Temel (Maastricht/NL)

**EP 35**
Deep Brain Stimulation for multiple Sclerosis related Tremor: clinical reports
O. Yildiz, M. Terzi (Samsun/TR), B. Tugcu (Istanbul/TR)
O. Alptekin, Y. Temel (Maastricht/NL)
E. Kocabicak (Samsun/TR; Maastricht/NL)

**EP 36**
Could Parkinson’s Disease symptoms depend on a Cortical Malfunction
G. Arbuthnott, M. Garcia Munoz (Onna-Son/JP)

**EP 37**
Impedance changes occur during threshold measurements in Subthalamic Nucleus (STN) Deep Brain Stimulation patients
J. Volkmann, M. Reich, A.-D. Kirsch (Würzburg/DE)
L. Timmermann, M. T. Barbe (Cologne/DE)
A. Kühn, C. van Riesen (Berlin/DE), A. Whone
J. Bigfoot, L. Mooney (Bristol/GB), A. Schnitzler
S. Jun Groiss, A. Moldovan (Düsseldorf/DE), R. Eleopra
E. Belgrado, S. Rinaldo (Udine/IT)
N. Pavese (London/GB), J. Garmizo
S. Carcieri (Valencia, CA/US)
EP 38
Subthalamic Nucleus Deep Brain Stimulation (STN-DBS) reduces freezing of gait in Parkinson’s Disease in the VANTAGE prospective, multi-center trial
M. T. Barbe (Cologne/DE), C. Stummer (Nijmegen/NL)
N. Van Dyck, R. Jain, L. Chen (Valencia, CA/US)
P. Reker (Cologne/DE), T. Brücke (Vienna/AT)
F. Seijo, E. Suarez San Martin (Oviedo/ES)
C. Haegelen, M. Verin (Rennes/FR)
M. Amarell (Cologne/DE) S. Gill, A. Whone (Bristol/GB)
M. Porta, D. Servello (Milan/IT)
B. R. Bloem (Nijmegen/NL), L. Timmermann (Cologne/DE)

EP 39
Clinical experience with Deep Brain Stimulation in Huntington’s Disease
D. Rasche, S. Zittel, V. Tadic (Lübeck/DE)
C. Moll (Hamburg/DE), A. Fellbrich, N. Brüggemann
T. Bäumer, V. Tronnier, A. Münchau (Lübeck/DE)

EP 40
Evaluation of Cognitive Side-Effects of Pallidal Deep Brain Stimulation for Primary Cervical Dystonia – one-year follow-up results of a prospective multicenter trial
L. Dinkelbach (Düsseldorf/DE)
J. Müller (Innsbruck/AT; Berlin/DE), W. Poewe
M. Delazer (Innsbruck/AT), S. Elben (Düsseldorf/DE)
A. Wolters (Rostock/DE), E. Karner (Innsbruck/AT)
M. Wittstock, R. Benecke (Rostock/DE)
A. Schnitzler (Düsseldorf/DE)
J. Volkmann (Würzburg/DE)
M. Suedmeyer (Düsseldorf/DE)

EP 41
Deep Brain Stimulation for movement disorders in Kazakhstan
C. Shashkin, S. Akshulakov, B. Dzhamantayeva
V. Akhmetzhanov, A. Shpekov, Z. Komarov (Astana/KZ)

EP 42
Bilateral Subthalamic Deep Brain Stimulation can help preserve working Capabilities in Parkinson’s Disease
N. Kovacs, G. Deli, M. Kovács, A. Makkos, I. Balás (Pécs/HU)
EP 43
Impulse Control Disorder (ICD) and Dopamine Dysregulation Syndrome (DDS) in Parkinson’s Disease (PD) and Deep Brain Stimulation Surgery – a clinical Case
M. Sousa, F. Moreira, N. Canário, R. Pereira, M. Rito C. Januário (Coimbra/PT)

EP 44
Treatment perspectives using Deep Brain Stimulation in patients with Parkinson’s Disease in the Republic of Moldova A. Andrusca, M. Gavriliuc, O. Gavriliuc (Chisinau/MD)

EP 45
Emotional Valence and Arousal Gradient along the anterior-posterior axis within the Subthalamic Nucleus in Parkinson’s Disease

EP 2
Non-motor outcomes of Subthalamic Stimulation in Parkinson’s Disease depend on the location of active contacts

EP 11
Quality of life after subthalamic stimulation depends on non-motor symptoms in Parkinson’s Disease
EP 46
Accuracy of Deep Brain Stimulation electrodes placement using frameless system – Nexframe©
J. Bardon, D. Krahulik, M. Nevrly, P. Otruba
M. Vaverka, P. Kanovsky (Olomouc/CZ)

EP 47
Three new techniques for improving DBS therapy: controversies
L. Bour (Amsterdam, Enschede/NL)
F. Contarino (Amsterdam, The Hague/NL)
S. van Gils (Enschede/NL)

EP 48
Effects of Thalamic Deep Brain Stimulation on spontaneous language production
F. Ehlen, I. Vonberg, A. Kühn, F. Klostermann (Berlin/DE)

EP 49
Complications in impulse generator exchange surgery for Deep Brain Stimulation – a single center, retrospective study
A.-K. Helmers, K. Witt, H.-M. Mehdorn, I. Lübbing
G. Deuschl, M. Synowitz, D. Falk (Kiel/DE)

EP 50
High Frequency Stimulation of the Rat Dorsal Cochlear Nucleus Inhibits Tinnitus.
G. van Zwieten, J. Smit, A. Jahanshahi, R. Stokroos
Y. Temel (Maastricht/NL)

EP 58
Corticomuscular coherence during Isotonic Contractions with DBS and medication in PD patients
K. S. Sridharan, A. H. Nielsen, E. L. Johnsen, N. A. Sunde
S. Beniczky (Dianalund, Aarhus/DK)
K. Østergaard (Aarhus/DK)
EP 59
Gait specific modulation of local field potentials in the STN of patients with Parkinson’s Disease
F. Hell, J. H. Mehrkens, A. Plate, K. Bötzel (Munich/DE)

EP 60
Bicycling suppresses Beta Power more strongly than walking in the Subthalamic Nucleus of Parkinsonian patients
L. Storzer, M. Butz, J. Hirschmann (Düsseldorf/DE)
O. Abbasi (Düsseldorf, Bochum/DE), M. Gratkowski
D. Saupe (Konstanz/DE), A. Schnitzler (Düsseldorf/DE)
S. S. Dalal (Konstanz/DE)

EP 61
Performing Deep Brain Stimulation and Neural Recordings at the same Target from awake animals – a new Bidirectional Wireless Device
L. Melo-Thomas, A. Engelhardt (Marburg/DE), U. Thomas
D. Hoehl (Giessen/DE), F. Bremmer
R. Schwarting (Marburg/DE)

EP 62
Motor evoked potentials mapping improves detection of Capsular Side Effects during Deep Brain Stimulation
Y. Parpaley, M. Machado Lemos Rodrigues
L. Schönlau, S. Skodda (Bochum/DE)

EP 63
Spectral analysis and visualization of multi-unit activity in Subthalamic Nucleus in Parkinson’s as a tool for automated Electrophysiological Classification of basal ganglia structures during Deep Brain Stimulation procedures
M. Machado Lemos Rodrigues, S. Skodda
Y. Parpaley (Bochum/DE)
R. Hilker-Roggendorf (Recklinghausen/DE)

EP 64
Filtering of DBS artifacts for HD-EEG recording
J. Buril (Brno/GB)

EP 65
DBS-Induced Alpha Desynchronization in the Subthalamic Nucleus of PD Patients
S. Castaño-Candamil, V. A. Coenen, P. Reinacher, T. Piroth
M. Tangermann (Freiburg/DE)
EP 66
Cortico-subthalamic neural interactions – relation to cognitive task performance and evidence for a novel interaction mode across multiple time scales in patients with Parkinson’s Disease
F. Hohlefeld (Berlin/DE), A. Ewald (Hamburg/DE)
F. Ehlen, H. Tiedt, A. Horn, A. Kühn, G. Curio
F. Klostermann, V. Nikulin (Berlin/DE)

EP 67
Characterization of Thalamic Nuclei and Somatosensory evoked potentials in anesthetized humans
L. Vega-Zelaya, C. Torres, R. G. Sola, J. Pastor (Madrid/ES)

EP 68
Identification of electrophysiological Biomarkers in a Novel Animal Model of Tourette Syndrome
H. Edemann-Callesen, M. Voget (Dresden, Berlin/DE)
R. Hadar, C. Tatarau, F. Wieske, C. Reinel (Dresden/DE)
C. van Riesen, I. Puls, M. Bader (Berlin/DE)
C. Winter (Dresden/DE)

EP 51
Motor Cortex Stimulation does not lead to functional recovery after severe controlled cortical impact in rats
L.-M. Schönfeld (Maastricht, Hasselt/BE)
A. Jahanshahi (Maastricht/NL)
E. Lemmens (Hasselt/BE), M. Bauwens, S.-A. Hescham
S. Schipper, M. Lagiere (Maastricht/NL)
S. Hendrix (Hasselt/BE), Y. Temel (Maastricht/NL)

EP 53
Determining the orientation of Directional Deep Brain Stimulation Leads from Computed Tomography Data
H. Bokil, D. Dorman, R. Velasco (Valencia, CA/US)

EP 54
Modeling the effects of current steering with directional leads
T. Krishnan, R. Mustakos, K. Steinke (Valencia, CA/US)
EP 55
Deep Brain Stimulation for Sleep-wake disorders: a preclinical approach
S. Masneuf, F. Büchele, G. Colacicco, L. Imbach, M. Penner
C. Ineichen (Zurich/CH), A. Jahanshahi, Y. Temel (Maastricht/NL)
O. Sürücü, C. R. Baumann, D. Noain (Zurich/CH)

EP 56
Optogenetic control of the locus coeruleus in mice: behavioral and electrophysiological data
K. Janitzky, M. Lippert, J. Tegtmeier, H.-J. Heinze
F. W. Ohl (Magdeburg/DE)

EP 57
Surgical quality assessment of different DBS centers using the six Sigma Principle
W. Polanski, K. D. Martin, G. Schackert
S. B. Sobottka (Dresden/DE)

10:45-11:45 Epilepsy • Imaging
Terminal 4
Chairs R. Hilker-Roggendorf (Recklinghausen/DE)
S. Chabardes (Grenoble/FR)

EP 69
Unilateral blinking evoked by anterior Temporal Activation
E. Hartl, J. Goc, C. Vollmar, F.-W. Kreth
S. Noachtar (Munich/DE)

EP 70
High-and Low-frequency Stimulation of Thalamic reticular Nucleus on ptz-induced Seizures in rats
V. Magdaleno-Madrigal, A. Valdés-Cruz
D. Martínez-Vargas, S. Almazán-Alvarado
R. Fernández-Mas (Mexico City/MX)
EP 71
Single cell Firing Patterns in the anterior nucleus of the thalamus relate to therapy response in deep brain stimulation for refractory epilepsy
F. Schaper (Maastricht/NL), Y. Zhao (Twente/NL)
L. Wagner, A. Colon (Heeze/NL)
V. van Kranen-Mastenbroek, E. Gommer, M. Janssen
L. Ackermans (Maastricht/NL)
R. van Wezel (Nijmegen/NL), Y. Temel (Maastricht/NL)
T. Heida (Twente/NL), R. Rouhl (Maastricht/NL)

EP 73
Anterior Thalamic Stimulation for Intractable Epilepsy
A. Gupta (Gurgaon/IN)

EP 74
Deep Brain Stimulation Parameters in intractable Epilepsy: an EEG based selection mode
H. Jaseja (Gwalior/IN)

EP 75
Pedunculopontine Nucleus Stimulation – a Novel Adjunctive Therapy in Intractable Epilepsy
H. Jaseja (Gwalior/IN)

EP 76
Striatal dopamine transporter availability and clinical course in Parkinson’s Disease patients with deep brain stimulation of the subthalamic nucleus within one-year follow-up
J. Löser, J. Luthardt, M. Rullmann, P. M. Meyer
A. Seese, D. Weise, D. Winkler, J. Meixensberger
O. Sabri, S. Hesse (Leipzig/DE)

EP 77
Target identification in deep brain stimulation for Parkinson’s Disease – the role of probabilistic tractography
L. Halász (Budapest/HU), D. Kis (Szeged/HU)
L. Entz, G. Tamás (Budapest/HU), P. Klivényi (Szeged/HU)
D. Fabó (Budapest/HU), P. Barzó (Szeged/HU)
L. Erőss (Budapest/HU)
EP 78
Probabilistic imaging of Motor Projections of Dentate Nucleus as target structure for Deep Brain Stimulation in Tremor
Y. Parpaley, S. Skodda, A. Kowoll (Bochum/DE)

EP 79
Comparative study of Microrecording-based STN location and MRI-based STN location
R. Verhagen, P. R. Schuurman, P. van den Munckhof M. F. Contarino (Amsterdam, The Houg/NL)
R. M. A. de Bie, L. J. Bour (Amsterdam/NL)
The interest if not fascination for understanding the function of the Basal Ganglia started more than a century ago, when it was established that lesion of the striatum, subthalamic nucleus, and substantia nigra was associated with disorders of motor control. The description of the nigro-striatal dopaminergic projection and its degeneration in Parkinson’s disease further fueled the notion that the BG deals with movement control. That notion has been attacked over the last decades, and considered too narrow to account for the profuse cortical input to the striatum as well as BG output to the cortex and subcortical structures. Thus, evidence has accumulated favoring that the BG is engaged in the control of movement, behavior and emotions throughout parallel circuits connecting motor, associative and limbic structures. However, several enigmas remain unresolved despite extensive newer information regarding connectivity, functional features and pathological manifestations.

In this Lecture I shall review first, the basic concepts about BG functional anatomy and pathophysiology; secondly, will discuss the main unknowns and paradoxes mainly derived from clinical observations and, lastly, will propose some essential characteristics of BG function as deduced from basic observations in animals and patients with Parkinson’s disease.
It is increasingly being recognized that neurologic and psychiatric disturbances are caused by dysfunction in specific brain circuits. Using a novel surgical technique called Deep Brain Stimulation (DBS), it is possible to introduce electrodes within malfunctioning circuits in the human brain and deliver constant electrical stimulation through implanted pacemakers. This permits the adjustment of the activity of the malfunctioning brain circuits—turning them either up or down as required. This is being done mostly for Parkinson’s disease and over 120,000 patients worldwide have now received DBS with striking results.

With the success of modulating circuits that control movement as in Parkinson’s disease, the possibility of introducing electrodes and modifying other circuits, for example those regulating mood and cognitive function is being examined. The use of Deep Brain Stimulation in treating depression, obsessive compulsive disorder, anorexia, epilepsy and even Alzheimer’s disease is actively being investigated. The advantage of the DBS procedures is that because of the precision of the surgical techniques, specific brain areas can be targeted— influencing only those brain structures that are malfunctioning and delivering treatment only where it is needed. In addition, by controlling the dose of electrical current delivered, DBS allows the adjustment of the activity of these circuits to optimize clinical benefits and minimize any untoward effects.
These techniques are driving us to probe novel areas in the brain and allowing us to gain a better understanding of what goes wrong in the brain in neurologic and psychiatric disorders. The application of DBS is showing promise in developing novel therapies to treat many of the patients throughout the world who continue to be disabled despite our currently best available efforts.
Did You Know?

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* Sorted in descending direction of contribution. State of printing. Detailed information regarding the FSA-Codex can be found on page 35.

Social and Cultural Programme

Scientific Networking • Open Discussion
Right after the Dinner Symposium we would like to invite you to our Scientific Networking with open discussion. Be our guest and round the evening in a relaxed and communicative atmosphere and meet your colleagues, as well as friends.

Date Tuesday, 15 March 2016
Time from 19:30 hrs
Place Heinrich-Heine-University • Gebäude 23.01 Main Entrance • Universitätsstrasse 1 40225 Düsseldorf (DE)

Visit „Düsseldorfer Altstadt“
Join us directly after the Conclusion of the Conference and experience the lively old town of Düsseldorf (“Düsseldorfer Altstadt”) with its lovely buildings, pubs and its special charme.

Date Wednesday, 16 March 2016
Time from 19:45 hrs
Place Detailed information regarding the meeting point will be provided at the Check In.
Fee 10 EUR, registration required
Registration
Registration is required. Please register online via www.dbs-conference.de.

Registration fees

<table>
<thead>
<tr>
<th></th>
<th>until 2 Feb</th>
<th>from 3 Feb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference ticket</td>
<td>175 EUR</td>
<td>200 EUR</td>
</tr>
<tr>
<td>Day ticket – 15 March 2016</td>
<td>95 EUR</td>
<td>120 EUR</td>
</tr>
<tr>
<td>Day ticket – 16 March 2016</td>
<td>95 EUR</td>
<td>120 EUR</td>
</tr>
<tr>
<td>Visit “Düsseldorfer Altstadt”</td>
<td>10 EUR</td>
<td>10 EUR</td>
</tr>
</tbody>
</table>

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Opening Hours*

<table>
<thead>
<tr>
<th></th>
<th>15 March</th>
<th>16 March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check-In</td>
<td>08:00–19:30</td>
<td>08:00–19:30</td>
</tr>
<tr>
<td>Self-study-desks</td>
<td>08:30–19:30</td>
<td>08:30–19:30</td>
</tr>
<tr>
<td>Industrial exhibition</td>
<td>09:00–19:30</td>
<td>09:00–19:30</td>
</tr>
</tbody>
</table>

*Subject to change.

Accreditation
An application by the State Chamber of Physicians of North Rhine was made as follows:

15 March 2016  6 CME Points
16 March 2016  6 CME Points

Transparency
The members of the association “Freiwillige Selbstkontrolle für die Arzneimittelindustrie e. V. (FSA)” (Voluntary Self-regulation for the Pharmaceutical Industry) have re-defined the FSA codex for claiming more transparency. In future congress organizers are obliged to inform potential congress participants about the scope and terms of the assistance of the pharmaceutical industry, prior to the event. We comply with this regulation and inform you about the sponsoring amount of the participating pharmaceutical company:

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Instructions for Authors and Presenters

Please prepare your presentation in 4:3 aspect ratio. A presentation notebook with a PDF reader and MS Office PowerPoint 2010/2007 will be provided. The use of personal notebooks is possible upon agreement. However, it may interrupt the flow of the programme in the lecture hall. A notebook, presenter and laserpointer are available at the speaker’s podium in the lecture hall. A technical supervisor will help you.

Please note: Certain encodings for video and audio files could lead to problems. Please visit our speakers’ preview centre, in advance. Should you wish to use non-digital equipment, please contact us (dbs@conventus.de).

Speakers Preview Centre
The Speakers Preview Centre is located in the room 23.02.U1.22. Please follow the signage on-site or ask the staff at the Check-In. Please submit your presentation on the day in advance to your presentation, but no later than 2 hours before the presentation should begin. You may view and/or edit your presentation. For submission, please use a USB flash drive, CD or DVD disc and do not protect it with software.

ePoster Presentation
The DBS conference will introduce a new way of presenting and discussing scientific posters. Posters will be submitted electronically only and can be retrieved on presentation screens during the complete congress. Separate self-study-places will give you the ideal chance to browse within all submitted abstracts – even if the ePoster session the abstract is belonging to already passed.

Prizes
Two ePoster Prizes will be provided from the AG Tiefe Hirn-stimulation. It is estimated to award the winners in the Conclusion of the conference.
All authors which abstract has been accepted as ePoster are asked to prepare one ePoster. Please prepare your E-Poster according to the following requirements and upload it via https://dbs2016.abstract-management.de.

**Format**  
16:9 (resolution 3840 x 2160 px, 72 dpi)

**File format**  
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**Maximum file size**  
max. 20 MB

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**ePoster Presentations**
The ePoster sessions will be scheduled as the following:

**Tuesday, 15 March 2016**  
13:30–14:30 • ePoster Session I (s. p. 15 ff.)
  Terminal 1
  Terminal 2
  Terminal 3

**Wednesday, 16 March 2016**  
10:45–11:45 • ePoster Session II (s. p. 21 ff.)
  Terminal 1
- Other (EP 46–EP 57)  
  Terminal 2
  Terminal 3
- Epilepsy • Imaging (EP 69–EP 79)  
  Terminal 4

Please follow the signage onsite to find your terminal.
# Index of Invited Speakers and Chairs

<table>
<thead>
<tr>
<th>Letter</th>
<th>Name</th>
<th>Pages</th>
<th></th>
<th>Name</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Bergman, H.</td>
<td>13, 14, 31</td>
<td>Mehrkens, J.</td>
<td>13, 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Böttzel, K.</td>
<td>21, 24</td>
<td>Moro, E.</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Chabardes, S.</td>
<td>9, 27</td>
<td>Obes, J.</td>
<td>7, 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clausen, J.</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coenen, V. A.</td>
<td>8, 17, 25</td>
<td>Reilmann, R.</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conroy, M.</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Costa, R.</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Fasano, A.</td>
<td>7</td>
<td>Schüpbach, M.</td>
<td>7, 11, 15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freund, H. J.</td>
<td>13, 18, 31</td>
<td>Slotty, P.</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Gharabaghi, A.</td>
<td>10, 15, 19</td>
<td>Steinbeck, A.</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goetz, S.</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Hashemiyoony, R.</td>
<td>9</td>
<td>Temel, Y.</td>
<td>8, 12, 17, 18, 19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hilker-Roggendorf, R.</td>
<td>9, 25</td>
<td>Timmermann, L.</td>
<td>8, 14, 15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honey, C.</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Huston, J.</td>
<td>10</td>
<td>Tronnier, V.</td>
<td>13, 19, 22</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Krauss, J.</td>
<td>8, 14, 15</td>
<td>Vesper, J.</td>
<td>4, 6, 7, 8, 13, 18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Krüger, R.</td>
<td>8</td>
<td></td>
<td>20, 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kuhn, J.</td>
<td>8, 18</td>
<td>Visser-Vandewalle, V.</td>
<td>9, 13,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kühn, A.</td>
<td>10, 15, 21, 24, 26</td>
<td></td>
<td>15, 16, 17, 18</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Lozano, A.</td>
<td>13, 14, 31</td>
<td>Voges, J.</td>
<td>8, 10, 28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lüscher, C.</td>
<td>8</td>
<td>Volkmann, J.</td>
<td>7, 14, 21, 22</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Mallet, L.</td>
<td>9, 19</td>
<td>Voon, V.</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mayberg, H.</td>
<td>8, 17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>McIntyre, C.</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mehdorn, M. H.</td>
<td>9, 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>Obes, J.</td>
<td>7, 30</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Reilmann, R.</td>
<td>13</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Schnitzler, A.</td>
<td>4, 6, 7, 8, 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Schüpbach, M.</td>
<td>7, 11, 15</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Slotty, P.</td>
<td>23</td>
<td></td>
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<tr>
<td></td>
<td>Steinbeck, A.</td>
<td>7</td>
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<tr>
<td></td>
<td>Stypulkowski, P.</td>
<td>14</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Südmeier, M.</td>
<td>4, 11, 23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Temel, Y.</td>
<td>8, 12, 17, 18, 19</td>
<td></td>
<td></td>
<td></td>
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Kennen Sie die Alternative?

- Reversible
- Weniger invasiv
- Testbarer
- Therapieerfolg


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