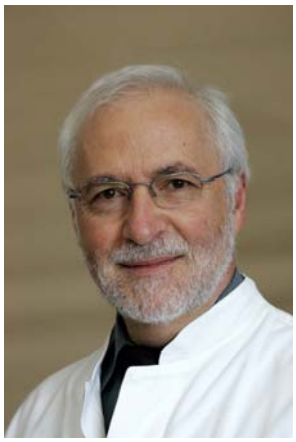
Research Profile



Alois Ebner

1975	Dipl. Psychol., Ludwig Maximilian University Munich / Germany
1978	Dr. med. LMU / Germany
1978 – 1980	Max Planck Institute of Psychiatry Munich / Germany
1980 – 1988	Training in Neurology and Clinical Neurophysiology Universities of *Rechts der Isar* / Munich / Germany and University of Freiburg / Germany
1988 – 1990	Assistant Medical Director Neurologic Clinic Ammerland / Germany
1990 – 1992	Training in Epileptology at Cleveland Clinic / Ohio /USA
1992 – 6/2007	Head of Department of Presurgical Evaluation and Epilepsy Surgery, Clinic Mara, Epilepsy Center Bethel / Germany
7/2007 – present	Head of Epilepsy Clinic Mara, Epilepsy Center Bethel / Germany

Current Research

The largest epilepsy center in Germany provides extensive opportunities for research in clinical epileptology. The main focus at present lies in (1) clinical studies with new antiepileptic drugs, (2) further development of structural and functional imaging for epilepsy patients considered for epilepsy surgery, and (3) identifying prognostic factors with regard to seizure and psychosocial outcome in surgically treated epilepsy patients.

1. Antiepileptic drugs

With current available antiepileptic drugs, a considerable number of epilepsy patients do not reach satisfactory seizure control or must take considerable side effects into account. The epilepsy clinic Mara, therefore, initiates studies and participates in studies exploring the

efficacy and tolerance of licensed but new ADEs or substances presently investigated in phase II and phase III studies.

2. Imaging

The present focus is on investigating patients with hippocampal sclerosis with high-field (7 Tesla) MRI technology in order to find different subgroups of hippocampal sclerosis, which has so far only been described histologically. Preoperative identification of subtypes of hippocampal sclerosis is expected to provide prognostic information with regard to both seizure and cognitive post-operative outcome.

3. Identification of prognostic factors

Due to the large number of patients who have undergone surgery (about 2000 cases since 1991), there is a considerable database to identify possible prognostic factors. Over the last 10 years we have used this database to conduct studies correlating presurgical test results with short and long-term postoperative outcomes. We have published the results of our studies in several scientific journals.

4. Future projects and goals

(a) Stem cell research

The adult human brain contains stem cells that physiologically contribute to normal brain function and appear to fail in conditions such as temporal lobe epilepsy. To have adult neural stem cell lines from humans available for research would greatly improve our prospect of developing pharmacological or other strategies for neurological and psychiatric disorders. The goal is to modulate intrinsic cellular plasticity, including the generation of new neurons (adult neurogenesis). In collaboration with the Center for Regenerative Therapies (Prof. G.Kempermann) we aim to establish genetically diverse primary neural stem cell lines from human hippocampal tissue as resected in temporal lobe surgery. This research project is supported by a 3-year grant from the BMBF. The project is complemented by studies on the genetic bases of stem cell activity in epilepsy, especially with regard to cognitive parameters, and the characteristics that define the potential of adult human neural stem cells.

(b) Emotion and memory

Further research projects together with the department of Physiological Psychology of the University Bielefeld (Head: Prof. H.J. Markowitch) are aimed at investigating the relationship between emotion in autobiographic memory as well as exploring the possibilities of predicting postoperative memory loss by using f-MRI techniques in patients with temporal lobe epilepsies.

Sample of publications

Elsharkawy AE, Alabassi AH, Pannek H, Oppel F, Schulz R, Hoppe M, Hamad A, Nayel M, Issa A, **Ebner A**
Long-term outcome after temporal lobe epilepsy surgery of 434 consecutive results
J Neurosurgery, in press

Elsharkawy AE, Behne F, Oppel F, Pannek H, Schulz R, Hoppe M, Pahs G, Gyimesi C, Nayel M, Issa A, **Ebner A**
Long-term outcome of extratemporal epilepsy surgery among 154 adult patients
J Neurosurgery 2008;108: 676-86

Janszky J, Janszky I, Schulz R, Hoppe M, Behne F, Pannek HW, **Ebner A**
Temporal lobe epilepsy with hippocampal sclerosis: predictors of long-term surgical outcome
Brain 2005; 128: 395–404

Woermann FG, H Jokeit, R Luerding, H Freitag, R Schulz, S Guertler, M Okujava, P Wolf, I Tuxhorn, **A Ebner**
Language lateralization by Wada test and fMRI in 100 patients with epilepsy
Neurology 2003; 61: 699-701

Janszky J, Jokeit H, Heinemann D, Schulz R, Woermann FG, **Ebner A**
Epileptic activity influences the speech organisation in medial temporal lobe epilepsy
Brain 2003 126: 2043-2051

Group structure

Group leader:	Alois Ebner
Staff doctors:	Christian Brandt, Matthias Hoppe, Theodor May, Margarete Pfäfflin, Reinhard Schulz, Ulrich Specht, Friedrich Wörmann

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