

ENS 2005

At the 15th Meeting of the European Neurological Society (ENS) in Vienna, international experts discussed latest developments in research, for instance in the treatment of multiple sclerosis, cell and gene therapy or the visualisation of mental processes by means of up-to-date imaging techniques. Regardless of prejudice, neurological diseases are in fact highly common: In the EU alone, 51 million people are affected, burdening national economies with a mean annual amount of €144 billion.

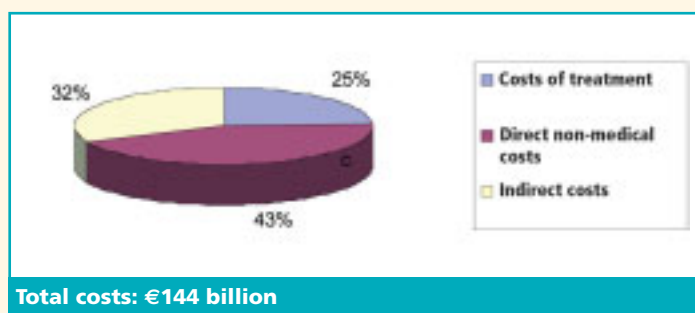
"Neurological disorders are developing into veritable mass-diseases," said Congress-President Prof. Franz Fazekas (Graz, Austria) in Vienna. In Europe alone, 1.1 million people suffer from stroke per year. Migraine torments just about 41 million people, 5 million people are affected by dementia and 1.2 million are diagnosed with Parkinson. To summarise, more than 51 million men and women suffer from a neurological disorder. Prof. Fazekas does the maths: "Neurological diseases put an annual burden of €144 billion on EU national economies." A mere 25% of which are on account of direct costs of the disease and the treatment, €46 billion are caused by indirect costs such as cancelling of jobs or working disability, as a topical publication of the Brain Research Council shows.

Even so, neurological diseases hardly get the same public or political attention, as do cardio-vascular diseases or tumours, experts criticised at the Vienna Meeting. ENS-congress reflects up-to-date state of research.

The ENS meeting, assembling more than 1,700 experts from 65 countries, takes into account the topical developments in the field of neurology. "We discuss the latest diagnostic, therapeutic and technological developments concerning all groups of neurological disease that affect so many people: stroke, dementia, migraine and Parkinson," says Prof. Dr. Gerard Said (Paris), Secretary General of the ENS. "But there is also latest research on so called orphan diseases, such as genetic syndromes." A total of more than 600 scientific contributions, 18 advanced training sessions and eight high-level lectures ("Meet the experts' sessions") reflect the current state of research.

Table 1: Participants' statistic: Top 10

Country	Participants
Germany	183
Italy	144
Austria	137
USA	86
France	84
United Kingdom	83
Belgium	59
Switzerland	58
Greece	49
Iran	48



Total costs: €144 billion

Gene and cell therapy – Imaging our mind

"One important highlight of the meeting are the latest research-results from the fields of stem cell and gene therapy," reports Prof. Said. "We can see what results can already be achieved with cell therapy, for instance in the treatment of Parkinson's disease. Apart from that we re-evaluate new approaches in gene therapy, especially in certain muscular disorders and in brain tumours." Expectations are high too for a symposium dealing with the function of human thinking and feeling and their visualisation. Prof. Said: "Modern technical imaging procedures allow for a visualisation of mental processes such as concentration, attention or imagination. We expect to get important clues for the further development of cerebral research, but also for the treatment of people with neurological impairments."

European research expenditures must be increased

It is important to show that all this scientific accomplishment is no costly end in itself, stresses Congress-President Prof. Fazekas. Quite the opposite: In the end, all the knowledge benefits those who are suffering. "The ENS wishes to help in this respect too. We have to commu-

nicate to the decision-makers in Europe and to the general public that neurology is a field of medicine whose achievements need to stand on an even broader base than now. After all, this becomes even more important with demographic changes towards more and more elderly people in our part of the world."

In light of these developments research grants in Europe should be increased as quickly as possible, declares Prof. Fazekas. "We demand an increase of research-costs at EU-level to €500 million per year. This corresponds to not even 0.3% of the costs caused by these diseases – a more than wise investment." Apart from that, further education and training in this field should be stressed. "Education and training and the international exchange of expertise are among the main tasks of the European Neurological Society, which was founded in 1988," declares ENS Secretary General Prof. Said. "Contrary to other European medical societies, the ENS was not implemented by joining national societies, but is based on individual membership of neurologists not only from Europe, but also from the US, the Middle East or Northern Africa."

Table 2: Expansion and costs of diseases of the brain and nervous system

Disease	Number of afflicted persons in Europe	Costs of disease in €
Neurosurgical Diseases		
Brain-tumour	135,251	4,586,000,000
Neurological Diseases		
Epilepsy	2,690,608	15,546,000,000
Migraine/Headache	40,777,009	27,002,000,000
Multiple Sclerosis	379,599	8,769,000,000
Parkinson	1,158,990	10,722,000,000
Stroke	1,128,986	21,895,000,000
Dementia	4,886,252	55,176,000,000
Total	51,156,695	143,696,000,000

"Pacemaker" against Parkinson's Disease Symptoms

"Deep brain stimulation" (DBS) could delay and even improve symptoms of one out of five patients suffering from Parkinson's disease – if they and their neurologists only knew.

At the International Congress on Parkinson's Disease (ICPD) in June in Berlin, Parkinson specialists and patients talked about their experiences on DBS.

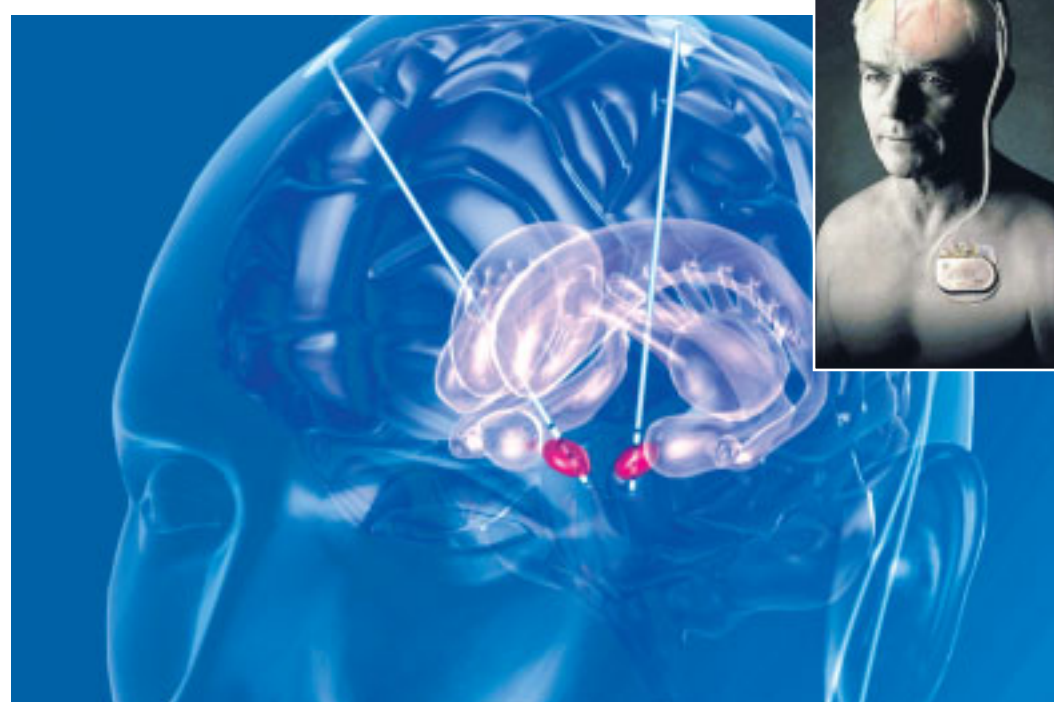
"When I went out to my favorite Italian restaurant, it used to take me 15 minutes to get from the entrance to the table – now I walk to the table within seconds," says Erhard Maron to describe how his symptoms improved after DBS. Maron has been suffering from Parkinson's Disease (PD) for more than 14 years. Before he was operated in 2003, he spent most of the day motionless, in a situation he calls "like being covered with concrete," even though he took 28 pills a day.

Maron is one of 250,000 PD patients in Germany. With approximately four million patients, PD is one of the most common neurological disorders worldwide. As the stories from Michael J. Fox to Pope John Paul II tell, PD can affect anybody in any age group. One out of 10 patients is 40 years or younger when Parkinson hits.

"We used to think that PD was a matter of direct nerve degeneration – we now know that it's quite the opposite, the symptoms are due to uncontrolled nerve activity," explains Dr. Jens Volkmann, senior physician at the neurological department of the University of Kiel. Even though medicine has not yet been able to come up with a cure for PD, Volkmann considers a lot of insight into the disease. The mobility and patient's quality of life can be significantly improved already. Medication replacing dopamine is one of the options. "Unfortunately dopamine replacement does not work forever," Volkmann emphasizes.

Changing strategies

This is where deep brain stimulation takes over: An electrode is stereotactically implanted in the subthalamic nucleus of the brain and then connected to a pulse generator which is implanted subcutaneously below the collar bone. The generator sends electrical signals to the subthalamic nucleus to regulate its activity, thus working like a pacemaker to the brain. Mobility disorders decrease and the ability to move improves significantly. The symptoms do not cease altogether, however, physicians can tell in advance how much improvement can be expected at best. Symptoms will not become any better than under maximal medication – and only symptoms that react to L-Dopa can be influenced by DBS.



First-hand experience on DBS

"I would definitely have surgery again"

Before they decided to get a "brain pacemaker" (Activa therapy), Erhard Maron and Monika Heinen, both born in 1956, had suffered from Parkinson's Disease for more than 10 years. Looking back, they only regret that they did not start earlier on this therapy.

Hospital Post: How did you find out about deep brain stimulation?

M. Heinen: I browsed through the internet and found an article on DBS. My physician did not know anything about the procedure then. But he was very open-minded about it and he referred me to a DBS center immediately. He did not have a problem at all.

Do you think the procedure came at the right time for you?

E. Maron: Personally, I think one needs to feel pretty miserable before he decides on that kind of surgery. The very thought of having some sort of wire in your brain does not necessarily make you feel good. I really think that an earlier operation would have made sense, though. If I had had DBS 10 years earlier I could have enjoyed its advantages for 10 more years. Surgery itself did not cause any trouble whatsoever.

How did your life change after surgery?

M. Heinen: I'm happy that I can go out again. I can ride my bike. I can go out for dinner without being afraid that somebody will stare at me for making a mess.

E. Maron: Whenever people knew about me having PD they usually acted positively – if they did not know I usually had a hard time. Now I don't have to care about all that any more, because my medical condition does not present itself right away.

in Berlin 156 patients with advanced PD symptoms either took L-Dopa or underwent DBS. How the respective responses differ became evident as soon as six months after the treatment had started: The length of daily immobility ("off periods") decreased from six to 1.3 hours in the DBS group, while the duration of smooth movement ("on periods") went up from 3.5 to 8.4 hours. The control group which continued to use their prior medication at maximum dose

did not experience major changes. Concerning quality of life, DBS patients also performed significantly better. Erhard Maron considers DBS as his major step to a better quality of life. His hardest task was to finally decide on having the surgery done – surgery itself felt like a piece of cake: "I had a dentist appointment two weeks ago, which was worse by far."

Dr. Katja Flieger, Berlin

Transcranial Doppler



Transcranial Doppler supports diagnostics: Course participants at Albacete (Photo courtesy Emma Pérez Romera)

Neurologists from the Hospital Complex of Albacete University and from other Spanish hospitals came together recently to bring their know-how of transcranial doppler (TCD) use up to date. The device permits detailed

monitoring of the bloodstream in the cervical and cranial arteries, supporting – amid further applications – diagnosis of cerebral infarction (stroke). The detection of microembolic signals and diagnosis of brain death using

TCD were also part of the workshop organized by the Servicio de Neurología del Complejo.

Michael Reiter

Breast Cancer

from Diagnosis to Therapy

- Mammography – RIS with PACS
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Special in Hospital Post 5/2005

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