ESSEN

Spring 2012

FOR STEREOTACTIC
AND FUNCTIONAL
NEUROSURGERY

Newsletter no 7

European Society for Stereotactic and Functional Neurosurgery

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PRESIDENT'S MESSAGE

It has been a busy time since we have published the last Newsletter in spring 2011, and with the current edition we want to keep you informed about the progress which has been made since then. Some issues that we were working on since years have gained momentum and we now see the final achievements. The role of the ESSFN in education and training is increasing on the European level and the collaboration with other societies is more fruitful than ever.

As indicated earlier, since January 2011, Stereotactic and Functional Neurosurgery is the official journal of the ESSFN, and it has been decided meanwhile to continue this successful endeavour. All ESSFN members who paid their membership fees have free online



access to the journal also in the future, and they can have an optional printed version at an annual rate of $120~\rm €$. In addition, ESSFN members now have free access to articles published in the journal within the last $10~\rm years$. We are amazed to announce that the impact factor meanwhile has risen further. It is at $1.84~\rm at$ this time. Tributes for this achievement go to David Roberts, who has been working hard as the editor of the journal for more than $8~\rm years$. We should realize that "our journal" has now an impact factor that is higher than that of most other neurosurgical journals.

The second ESSFN training charter Added Competence for Pain Surgery has been published again in collaboration with UEMS (Lazorthes Y, Nuttin B, Trojanowski T, Broggi G, Sakas D, Lindsay KW, Krauss JK: Training charter in pain surgery added competence: as approved by the ESSFN and UEMS section of neurosurgery. Acta Neurochirurgica 153:441-446, 2011). The charter gives a balanced account on what is thought to be necessary to provide quality education all over Europe. It can be approached by ESSFN members on the ESSFN website. After successful completion and publication of this new standard we are now preparing the third training charter on added competence (or superspecialisation) on epilepsy surgery. Again, the final product will be published in collaboration with UEMS as an official document in Acta Neurochirurgica.

I am particularly delighted to announce that from January 2012 all ESSFN members will automatically be also members of the World Society for Stereotactic and Functional Neurosurgery (WSSFN). After long negotiations over several years a mutual agreement has been achieved upon the occasion of the last officers meeting of the WSSFN in Capetown, South Africa, in November 2011. This will open the possibility for other continental stereotactic and functional neurosurgical societies as well to join WSSFN. At this time, the added benefit for ESSFN members to be also WSSFN members will not result in additional costs to the ESSFN membership. The added value of this arrangement is that ESSFN members now can also apply for positions in the WSSFN, they benefit from reduced fees at the congresses and teaching courses, and they may be eligible for the recently established WSSFN prizes.

Progress has also been made regarding the relationship of the ESSFN with the European Association of Neurological Surgery (EANS). After the EANS established various sections for subdisciplines in neurosurgery upon the occasion of the EANS congress in Rome in October 2011, EANS and ESSFN leadership worked out an agreement on the principles of collaboration: 1. EANS will collaborate closely with ESSFN with regard to the organization of CME courses in the field of stereotactic and functional neurosurgery, 2. at least two ESSFN officers will be members of the new EANS section, 3. the development of policies and guidelines will involve collaboration with UEMS. EANS appointed Massimo Sceratti as head of the new EANS section on Stereotactic and Functional Neurosurgery. We all remember very well how nicely Professor Sceratti organized the ESSFN congress in Rimini in 2008. To join him on the section board Professor Sceratti chose the following neurosurgeons: Damianos Sakas, Marwan Hariz, Joachim K. Krauss, Giovanni Broggi, and Jean Regis. The intersocietal agreement will ensure that there is no duplication of educational activities or competition for sponsorship.

The $5^{\rm th}$ ESSFN hands-on course on epilepsy surgery in Ghent, Belgium, October 27 – 29, 2011, was a spectacular success. The local organizer Professor van Roost managed to attract an expert faculty inside and outside ESSFN for teaching and hands-on experience (see detailed report in this issue).

Please, do not forget to encourage your co-workers to apply for the 2012 ESSFN research grant and the 2012 ESSFN publication award on DBS – sponsored by Medtronic, which are advertised in this Newsletter. Note, that the deadline for the grants ends by July 31, 2012. Again, independent committees will select the candidates and the prizes will be bestowed upon the occasion of the ESSFN congress 2012 in Lisboa.

Finally, I would like to invite you all to come to our next congress in Lisboa from September 27 – 29, 2012, to push the field of stereotactic and functional neurosurgery forward together. I look forward to seeing you there.

Joachim K. Krauss Hannover, Germany President ESSFN

SECRETARY'S MESSAGE

Dear Colleagues,

I am delighted to report that our Society goes from strength to strength. Our membership has increased from 249 to 285. Regardless of this increase, however, your continued support in bringing new members to the society is invaluable and we would greatly appreciate it if you encourage others and, particularly, young colleagues to join our Society. The present issue of the Newsletter No7 continues and consolidates our commitment to produce a high quality publication aiming not only to inform our colleagues about recent interesting events in ESSFN but, also, to reflect on the exciting prospects of our society. ESSFN remains committed to an educational and training program aimed to younger colleagues. Following the very successful 2009 Training Course on "DBS for movement disorders" conducted by Mark Levivier in Tolochenaz, we recently organized, for the first time, a highly successful Hands-On Training Course in Epilepsy Surgery in Ghent, Belgium (see report of the Organizer, Prof Dirk Van Roost). Undoubtedly, ESSFN conducts the most comprehensive program of Hands-on Educational Courses in Functional Neurosurgery. If you also wish to organize a meeting under the sponsorship or the auspices of the ESSFN please contact the Secretary.

Following the completion of the Added Competence Charters in Movement Disorders Surgery and Pain Surgery, a similar document in Epilepsy Surgery is near to completion. A most important recent development is that the journal Stereotactic and Functional Neurosurgery, the official journal of our Society, is now available online and in printed form at a reduced rate to our members. I am also pleased to announce that our mission, scientific progress and other material informing the wider scientific community on the activities of our society will be now disseminated even more widely. Information about our Congresses, Training Courses and our other initiatives will be disseminated through organizations such as Touch Briefings and their journal European Neurological Review where other prestigious societies such as the American Society for Stereotactic and Functional Neurosurgery and European Federation of Neurological Societies promote their mission and activities.

After an extensive search and correspondence and thanks to the generosity of senior colleagues, a valuable collection of old photo-

graphs and rare documents related to our Society has been accumulated. These were digitized to form the beginning of a digital ESSFN Archive. Part of this material was selected to create a movie entitled "History of ESSFN". If you have in your possession photographs, documents, instruments or anything of historical value, please contact the Secretary. This material could be digitized for the ESSFN Archives



and form the material of a historical record of our specialty and of ESSFN activities. With regard to our current activities, for detailed information please refer to our website which will certainly continue to be an important forum to disseminate the spirit and mission of the ESSFN all over Europe and worldwide

As a closing remark, I would like to highlight the forthcoming ESSFN Congress 2012 in Lisboa, Portugal in September 2012. The local host Antonio Gonnalves-Ferreira and the Officers have been working hard on organizing an exciting Congress. The local Organizing Committee has ensured the participation of eminent guest speakers and included in the program interesting symposiums aiming to offer a scientific program of high-standards and, also, a beneficial and enjoyable social event. In line with our commitment to raise continuously the standards of our Congresses, the ESSFN Board has decided to bestow a series of awards including: Research Grant, Publication Award on DBS (sponsored by Medtronic), Best Oral Presentation Award and Best Poster Award. Please see the relevant sections in this Newsletter.

I would like cordially to invite you to participate in the ESSFN Congress 2012 in the historic and beautiful city of Lisboa, enrich your knowledge, meet old and make new friends and celebrate the progress of our Society and our field among old and new colleagues.

Damianos E. Sakas Secretary, ESSFN

TREASURER'S MESSAGE

The ESSFN is financially doing well. Paying members of the ESSFN receive online access to the Journal of Stereotactic and Functional Neurosurgery. As soon as the treasurer receives payment, Karger is informed about this payment. The ESSFN has transferred in January 2012 the amount of 20 Euros per member to the World Society for Stereotactic and Functional Neurosurgery, in order to make ESSFN members also WSSFN members.





Spring 2012

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PERSPECTIVES ON STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

The Stereotactic and Functional Neurosurgical Unit

The modern functional neurosurgical treatment of numerous neuro-logical and psychiatric conditions, including Parkinson's disease (PD), dystonias, obsessive-compulsive disorders and intractable depression, requires the close cooperation of neurosurgeons with specialized neurologists and psychiatrists. Superspecialization of neurosurgons involved in these treatment methods and techniques has been a natural consequence. In the light of these developments, I feel worthwhile to express a few thoughts on the future neurosurgical therapeutic prospects for otherwise intractable neurological and psychiatric syndromes.



With regard to the therapy of neurological syndromes, a great advancement took place in 1987, when Alim Benabid became the first

neuroscientist who published good results in the treatment of movement disorders following chronic electrical stimulation of appropriate targets: these results were similar to those observed after brain lesioning for the treatment of PD. Undoubtedly, deep brain stimulation (DBS) with the aid of stereotactically placed permanent electrodes was a great leap forward. Side effects became less frequent, permanent damage was prevented and, thus, it became possible to apply this treatment bilaterally when needed. Most of the PD patients have bilateral symptoms. Hence, in the nineties, DBS became the stereotactic treatment of choice. With modern MRI scanning techniques, the targets may be better visualized in the individual patient, thus making the calculations for targeting the selected nuclei much more reliable, compared to the calculations that are based to atlas-provided anatomical information.

In the last decade, prospective and randomized trials have been published investigating which are the best target structures and the value of microrecording, functional mapping and the optimal stimulation parameters. Until those times, the common practice of one-sided lesioning as the only surgical option has changed. New evidence was accumulated indicating that bilateral stimulation has fewer side effects and should be performed in the subthalamic nuclei. Other nuclei are currently being investigated as potential targets for the treatment of various neurological syndromes.

At present, following the implementation of DBS in stereotactic neurosurgery, the traditional surgical lesioning techniques have been replaced by sophisticated finetuning of stimulation parameters; in such therapies, the cooperation of neurosurgeons with dedicated neurologists and neurophysiologists is indispensable. Modern evidence-based medicine requires that randomized prospective trials should be carried out; in such studies, the functional stereotactic units of many neurosurgical departments should and may collaborate.

With respect to psychiatric syndromes, I feel worthwhile to make the following remarks. The future indications will evolve and include the psychiatric diseases much more commonly than in our days. Functional imaging with PET scanning has shown consistent abnormal activity in the caudate nucleus and other limbic structures indicating new target areas in the subfrontal cortex that might be modulated by DBS. In obsessive-compulsive disorder (OCD) and certain forms of depression, studies are currently carried out, which show very promising results of DBS for patients who are resistant to behavioral therapies or medications.

The application of lobotomies (Fulton) as common practice in the 1950s has been replaced by the strong evidence of DBS efficacy after bilateral subcaudate placement of electrodes. Ongoing research using cross-over designs with blinded "stimulation on" versus "stimulation off" in the clinical assessment of the patients symptoms will provide new insights with regard to the efficacy of this treatment. These studies and treatments require the function and vigorous activity of functional stereotactic units in which the dedicated neurosurgeons and neuropsychiatrists are equally involved in the care of patients.

All neurosurgical trainees who wish to subspecialize in functional and stereotactic methods will be offered by our Society great opportunities, bringing them in contact with training course directors.

When I think of the future prospects, I feel inclined to believe that neurosurgery will evolve in such a way that it will eventually become a specialty of subspecialities: the changes will require the close collaboration of expert surgeons with many other specialists, particularly neurologists, neuroradiologists and neuropsychiatrists, as well as spinal, paediatric and oncology specialists.

The European Association of Neurosurgical Societies and the European Chapter for Neurosurgery in the UEMS will carry on with these great objectives in the years to come. Such perspectives, like those described above, are based on evidence and have shown their scientific value!

D. Andries Bosch,
Professor Emeritus of Neurosurgery,
University of Amsterdam, Academisch Medisch Centrum

2012 XX ESSFN CONGRESS ANNOUNCEMENT, LISBON, PORTUGAL

Dear Colleagues and friends,

It is with great pleasure that we invite you to attend the XX Congress of the European Society for Stereotactic and Functional Neurosurgery (ESSFN), which will take place in Cascais, Lisbon, from September $26^{\rm th}$ to $29^{\rm th}$ 2012.

Lisbon is the city of Egas Moniz, inventor of Angiography and Nobel Prize laureate in 1949 for Psychosurgery, the pioneer of Functional Neurosurgery who inspired the organization of this congress.

The Congress venue will be the Cascais Miragem Hotel, in Cascais on the Lisbon coast, 25 km away from the city centre (25 minutes by train, 15 minutes by highway). It is a modern hotel with excellent facilities for such a scientific event.

The XX ESSFN Congress 2012 will provide a great opportunity to update your knowledge and share your experience with colleagues from Europe and the rest of the world. The field of Stereotactic and Functional Neurosurgery is the most actively expanding field in our specialty, with an enormous amount of new information constantly being produced.

Through a judicious inclusion of relevant themes and recognized speakers, this Congress will provide the state of the art of the most significant scientific and technological developments in a wide range of topics: functionally guided neurosurgery, movement

disorders, epilepsy, pain, psychosurgery, neuroncology, radiosurgery, neuromodulation, brain-machine interface, neuromonitoring, neuroimaging, neuronavigation.

The ESSFN Congress 2012 will be a unique chance to make direct contact with people and authors, equipments and new techniques that will shape the future of Stereotactic and Functional Neurosurgery. And



of course, to meet old colleagues and find new ones, while enjoying the traditional local hospitality.

Come and participate in this congress. Seize the time and the place where, in older times, the Portuguese Nautical Astrolabe became an outstanding tool to guide other well known navigation discoveries.

See you in Lisbon 2012

Antonio Conçalves-Ferreira Chairman, Organizing Committee



EUROPEAN SOCIETY for STEREOTACTIC and FUNCTIONAL NEUROSURGERY



ELIGIBILITY

2012 ESSFN Publication Award on DBS

- sponsored by Medtronic

At the officers' meeting in Lausanne in October 2009, it was decided to establish a new award – the ESSFN publication award on deep brain stimulation – sponsored by Medtronic.

The profile of the grant is clearly different from the ESSFN research grant. The grants will be bestowed biannually upon the occasion of the ESSFN Congress. The grant can be advertised both by the ESSFN and by Medtronic.

The publication must have been published in 2011 or 2012 in a peer-reviewed journal, or it must be available at least online in PubMed. Manuscripts not yet online or published, that is those "in press" or "accepted" are not being considered. The topic of the study may be clinical or experimental, however, it has to deal with the issue of electrical brain stimulation. The ESSFN member must be either the first or the last author of the manuscript. The candidate will be selected by a subcommittee. The prize will be awarded in two papers during the ESSFN Congress.

The application (along with four copies of the publication) must be sent by surface mail - or alternatively by email to the Secretary:

Prof. Damianos Sakas - Department of Neurosurgery Evangelismos Hospital, 4 Marasli Street 10676 Athens, Greece Tel. ++ 30 213 2045553 - Fax ++ 30 213 2041701 E-mail: sakasde@med.uoa.gr

Note: The applicant must be a member of the ESSFN. There is no age limit.

The Publication award is: 2 x 3.000 Euros

EUROPEAN SOCIETY for STEREOTACTIC and FUNCTIONAL NEUROSURGERY



ELIGIBILITY

Deadline July 31, 2012

2012 ESSFN RESEARCH GRANT

In agreement with our Constitution and By-Laws, it was decided by the Board of Officers to promote basic or clinical research projects in the field of Stereotactic and Functional Neurosurgery with a Research Grant available every two years.

The application (curriculum vitae, research project and budget) must be sent by surface mail – or alternatively by email to the Secretary:

Prof. Damianos Sakas - Department of Neurosurgery Evangelismos Hospital, 4 Marasli Street 10676 Athens, Greece Tel. ++ 30 213 2045553 - Fax ++ 30 213 2041701

E-mail: sakasde@med.uoa.gr

L-man. sakasue@meu.uoa.gi

The research project must address either a clinical or an experimental topic in the field of stereotactic and functional neurosurgery ${\bf r}$

The applicant must be a member of the ESSFN. There is no age limit.

The selection will be made by an independent committee which will be commissioned by the officers and the result will be announced at the ESSFN Lisboa 2012 Congress.

FUNDING

Scientific conclusions of the selected project and financial balance must be reported in September 2014, and presented during the 2014 ESSFN Congress.

THE RESEARCH GRANT AMOUNT IS: 20.000 Euros

The financing of the project will be progressive and will be distributed:

September 2012 (selection) : 10.000 € During 2012 (on written proofs): $5.000 \in$ At the conclusion of the report: $5.000 \in$

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OBITUARY

JEAN TALAIRACH (January 15, 1911 – March 15, 2007)



Professor Jean Talairach died on the 15th March 2007 inside the same room that used to be his office at St Anne Hospital in Paris. On that day, the World Steroetactic Community lost one of his most brilliant and attractive personalities. In his lifetime, he developed revolutionary methodologies that we still use in current neurosurgical practice.

He was born in 1911 in Perpignan and, at the very early years of his life, he expressed his interest in violin music, geometry and architecture. He started studying medicine in the historic and prestigious Faculty of Medicine of Montpellier where he showed a great interest in psychiatry; notably, he was the cousin of the psychiatrist Henry Ey.

He had his first contact with neurosurgery in 1942 when he met Professor Marcel David who, a few years later, created the Department of Neurosurgery at St Anne Hospital. Jean Talairach became interested

in functional neurosurgery in 1947. After numerous very interesting studies on the thalamus and its role in the control of pain and motor function, he developed in 1947 the first Talairach stereotactic frame. Talairach performed many studies to find the universal landmarks of the human brain. These studies led to the publication of the *Atlas of Stereotactic Anatomy* in 1957, with the close collaboration of P. Tournoux, H. Corredor and, later, G. Szilka.

At the same time, Talairach developed the technology to obtain precise and reliable landmarks for identifying and targeting cerebral structures without distortion or deformation; this led not only to the formulation of the concept but also to development of the method of teleradiography; currently, this method continues to be applied in various stereotactic procedures. Nowadays, the knowledge and expertise that J. Talairach accumulated is being utilized in numerous different ways. Importantaly, his contribution has become a computerized and statistical entity that has been integrated in various types of software for image-guided surgery and, also, in many methods of statistical parametric mapping.

The interests of Talairach in functional neurosurgery encompassed the surgical treatment of abnormal movements (stereotactic thalamic thermolesion in the context of Parkinson's disease), drug-resistant pain, and psychiatric disorders. He offered his most impressive contribution, however, in the field of surgery for epilepsy by collaborating closely with his friend Jean Banceud. Together they developed the important scientific and neurosurgical technique of StereoElectroEncephaloGraphy (SEEG), i.e. the method for defining the precise correlation between clinical, electrical and anatomical data thus allowing the precise accomplishment of cortical resectomies for epilepsy.

All these impressive achievements of Jean Talairach became possible with the constant collaboration and constructive input of many highly energetic and passionate personalities such as Gabor Szilka, Alain Bonis, Suzanne Trottier, Claudio Munari, Patrick Chavel, Jean-Marie Scarabom and Pierre Buser.

During the period of great developments in stereotaxy for the diagnosis and treatment of cerebral tumors and the refinement of interstitial and endocavitary irradiation, Talairach showed great interest in Stereotactic Radiosurgery. With the assistance of his student Oswaldo Betti, he worked on developing, initially the applications of the Linear Accelerator and, subsequently, of the Gamma Knife. His innovative work and precise methodology in many fields of functional neurosurgery was transferred and applied by his many friends and students in the field of radiosurgery, this novel treatment method that had been introduced by another great neurosurgeon, namely Lars Leksell.

The death of Jean Talairach signified the loss of our teacher and the end of an era in French and international neurosurgery. Undoubtedly, this work will remain forever in the heart of every stereotactic and functional neurosurgeon. I would like to express my feelings, as if I could speak to him, by saying: "Thank you Professor Jean Talairach. You were always very hospitable and interested in the progress and best possible development of your students, not only with respect to their training in the technical aspects of neurosurgery, but also in educating them to obtain a sound clinical and ethical basis for their practice. You were very much concerned about the future of neurosurgery and the implications for the evolution of our field by the progress and the development of robots, computer science and neural networks. You were particularly interested in the progress and development of the students and younger colleagues in your neurosurgical department. You were also concerned about the personal situation of your patients, specially those treated for resistant epilepsy and, very often, you used to visit them and enjoy discussing with the patients themselves and their relatives late in the day".

Based on all his positive attributes I described above, I felt obliged and privileged to share my thoughts and emotions on Jean Talairach with the members of the European Society for Stereotactic and Functional Neurosurgery but, specially, with all his French and foreign students such as P. Kelly, O. Betti, G. Bouvier, T. Hori, A. Musolino, M. Sceratti, C. Munari, V. Petrov and many many others.

Prof. Serge Blond

President of the French Club of Stereotaxy and Functional Neurosurgery

Spring 2012

2011 EPILEPSY SURGERY TRAINING COURSE REPORT

The 5th ESSFN Hands-On Course, the topic of which was "Epilepsy Surgery", was held in Ghent (Belgium) from the 27th to the 29th of October 2011.

Because applicants outnumbered the limited places by far, the ESSFN board had a difficult task to select 24 participants from 15 different countries on the basis of the credentials they had submitted.

The field of epilepsy surgery requires in the first place an intensive collaboration with other disciplines, such as neurology and medical imaging, and it further combines in a unique way stereotactic and functional neurosurgery with microsurgery. Accordingly, a faculty of 15 specialists in their respective fields from 5 different countries focused on these various aspects during theoretical sessions in the mornings and cadaver dissections in the afternoons. Venue and accommodation were at a spacious hotel in the historic town centre, while the hands-on sessions took place at the Anatomy Department of Ghent University. Thanks to the generous support of the sponsoring companies, the anatomy lab could be equipped with all necessary neurosurgical instruments, including 8 full-size microscopes.

The participants were highly interested, diligent, and enthusiastic in their written evaluations about the quality of lectures and hands-on exercices. The EACCME (European Accreditation Council for Continuing Medical Education) granted 18 credit points to the course.

The course banquet was musically adorned by a trio from the Ishtar ensemble, which evoked an unforgettable atmosphere.

The local organizers, Prof. Dr. Dirk Van Roost, Dr. Frank Dewaele, and Mrs. Ilse Noterman from Ghent University Hospital, express their gratitude to the ESSFN officers, furthermore to the faculty, Prof. Dr. Rik Achten (Ghent), Prof. Dr. Paul Boon (Ghent), Prof. Dr. Hans Clusmann (Aachen), Prof. Dr. Antonio Gonnalves-Ferreira (Lisbon), Prof. Dr. Joachim Krauss (Hannover), Prof. Dr. Jórgen Mai (Dósseldorf), Prof. Dr. Christian Raftopoulos (Brussels), Prof. Dr. Jean Rigis (Marseille), Prof. Dr. Damianos Sakas (Athens), Prof. Dr. Johannes Schramm (Bonn), Prof. Dr. Johan Van Loon (Leuven), Prof. Dr. Wim Van Paesschen (Leuven), and Prof. Dr. Kristl Vonck (Ghent), finally to Prof. Dr. Katharina D´Herde of the Ghent Anatomy Department.



Group photo in front of Ghent town hall (courtesy of Jean Rigis)

ESSFN HANDS-ON COURSES 2003 - 2011

	Neurosurgical Field	City	Co-ordinator
2003, October 17-18	Movement Disorders Surgery	Tolochenaz, Switzerland	Prof. Andries Bosch
2005, September 15-16	Surgery for pain	Toulouse, France	Prof. Yves Lazorthes
2007, November 12-14	Radiosurgery	Marseilles, France	Prof. Jean Regis
2009, October 8-10	Deep brain stimulation for movement disorders	Tolochenaz, Switzerland	Prof. Marc Levivier
2011, October 27-29	Epilepsy Surgery	Ghent, Belgium	Prof. Dirk Van Roost

