

CURRICULUM VITAE**Jin Woo Chang, MD, PhD**

Dr. Chang finished medical school in 1983 at Yonsei University, Seoul, Korea.

He had a neurosurgical residency and fellowship for stereotactic & functional neurosurgery at Severance Hospital in Seoul, Korea. Also, he spent two years at University of Chicago for in vivo research work for movement disorders.

His major in the field of Neurosurgery is stereotactic & functional neurosurgery and his main interest is the neuromodulation of the central nervous system with new innovative techniques (electrical stimulation, focused ultrasound and etc).

Currently he is working as a section editor of World Neurosurgery and also a member of editorial board for the official journal of World Society for Stereotactic & Functional Neurosurgery, and the official journal of the International Neuromodulation Society (INS). Also, he is currently working as a secretary of World Society for Stereotactic & Functional Neurosurgery.

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CURRENT POSITION

Professor of Department of Neurosurgery, Yonsei University College of Medicine
Director of Brain Research Institute, Yonsei University College of Medicine, Seoul, Korea

EDUCATIONAL BACKGROUND

1977-1983	Yonsei University College of Medicine, Seoul, Korea
1983-1984	Rotating Internship. Severance Hospital, Yonsei University College of Medicine
1984-1988	Four-year Residency. Department of Neurosurgery, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
1984-1986	Master of Science (Medical Science). Graduate School, Yonsei University College of Medicine, Seoul, Korea
1986-1993	PhD. Graduate School, Yonsei University College of Medicine, Seoul, Korea



PROFESSIONAL BACKGROUND

- 1991-1993 Clinical Fellow, Department of Neurosurgery, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
- 1993-2000 Assistant Professor, Department of Neurosurgery, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
- 1996-1998 Research Associate, Department of Neurology & Neurobiology, Pharmacology & Physiology, The University of Chicago
- 2000-2005 Associate Professor, Department of Neurosurgery, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
- 2005-present Professor, Department of Neurosurgery, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea

ACADEMIC ACTIVITIES IN MEDICAL SOCIETIES (INTERNATIONAL)

- 2013- World Society for Stereotactic & Functional Neurosurgery: Secretary & treasurer
- 2011-2014 Asian Australasian Society for Stereotactic & Functional Neurosurgery: Past president

CURRENT EDITORIAL WORKS FOR JOURNAL (INTERNATIONAL)

- 2007-present Reviewer, Stereotactic & Functional Neurosurgery
- 2006-present Reviewer, Neuromodulation
- 2015-present Section editor, World Neurosurgery



The Stereotactic & Functional Neurosurgery: Past, Present & Future

장 진 우

연세대학교 의과대학 신경외과학교실

Our knowledge of the nervous system in health and disease has, however, increased considerably during the last fifty years and today, neurosurgery reveals promising new stereotactic strategies such as neuromodulation by the thermal lesioning, deep brain stimulation, radiosurgery, or etc to deal with diseases of the nervous system. This stereotactic procedures have been one of the unique surgical techniques mainly used for the treatment of functional brain disorders. As well, the functional neurosurgery has progressed markedly in its technical and theoretical aspects due to the rapid development of the basic neuroscience, computerized imaging techniques and advanced medical instruments.

Some of these results have been implemented with success in the treatment of Parkinson's disease by deep brain stimulation, a common neurodegenerative disease affecting approximately 1% of the population aged seventy or more. And, the renaissance of functional neurosurgery in the treatment of neurodegenerative diseases has sparked also the interest in other diseases of the nervous system, which are refractory to medical treatment. Future developments in this rapidly advancing area will no doubt include widening indications for this relatively safe surgical procedure, elucidation of the mechanisms of action of electrical stimulation, and technological advancements improving effectiveness and convenience. It is therefore possible that deep brain stimulation in motor circuit in the basal ganglia as well as in other targets could become a potent therapeutic tool in the near future for diseases of the nervous system.

As well, at the interface between the old and new surgical paradigms such as MR guided focused ultrasound surgery (MRgFUS) to reduce the damage in normal brain tissue and further improvements in the precision of surgery will be try out.

Although there are some points to be clarified and estimated in the future, these new tendencies will stand to the next century, and further progress will definitely be achieved because it contains some truth in the light of the modern neuroscience.

In this review, I would like to summarize the available past and present data and the future perspectives in the field of the stereotactic & functional functional neurosurgery.



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