

## History of neurology and education of neurology in Japan

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**Abstract:** The first medical society of Japanese neurologists and psychiatrists was founded in 1902, but psychiatrists gradually dominated in number. New “Japanese Society of Neurology” (JSN) was founded in 1960. The number of members was only 643 in 1960, while it rose up to 8,555 in 2009, including regular, junior, senior and associate members. JSN contributed much to solve the causes and treatment of the medicosocial and iatrogenic diseases such as Minamata disease and SMON (subacute myelopticoneuropathy) at its early period. In undergraduate education at medical school, neurology is one of the core subjects in the curriculum, and almost all the 80 medical schools have at least one faculty neurologist. The Board of neurology of JSN was started in 1975, as the third earliest of the Japanese Medical Associations. It takes at least 6 years’ clinical training after graduating from the medical school to take the neurology Board examinations. By 2009, 4,000 members passed the Board examinations. In 2002 JSN published evidence-based “Treatment Guidelines 2002” of 6 diseases: Parkinson’s disease, stroke, chronic headache, dementia and ALS. As to the international issues, JSN hosted the 12<sup>th</sup> World Congress of Neurology in 1981, and international activities markedly increased after that. The first informal meeting with JSN and Korean Neurological Association (KNA) was held at the 48<sup>th</sup> JSN Annual Meeting in Nagoya in May 2007. In May 2008 the KNA-JSN 1<sup>st</sup> Joint symposium was held at the 49<sup>th</sup> Annual Meeting of JSN in Yokohama on “International comparison of neurological disorders: focusing on spinocerebellar atrophies (SCA) and epilepsies”. In May 2009, KNA-JNS 2<sup>nd</sup> Joint Symposium was held at the 50<sup>th</sup> JSN Annual Meeting in Sendai, inviting a speaker from Taiwan Neurological Society, on the subject “History and Education of Neurology in Japan, Korea and Taiwan”. In this symposium, a strategy to make up the Northeast Asian Neurological Association was discussed.

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**Key words :** Japanese Society of Neurology, history, education, international activity, treatment guidelines

### 1. History of Japanese Society of Neurology (JSN)

The “old JSN” was founded in 1902 by Dr Kin-no-suke Miura (1864-1950), Professor of Internal Medicine, the University of Tokyo and Dr Shuzo Kure, Professor of Psychiatry, the University of Tokyo, and published “Neurologia”, the official journal dealing with neurology, psychiatry, psychology and related sciences. Professor Miura stayed in Europe during 1890 and 1892, and studied neurology with Dr Erb in Germany and with Dr Charcot in France. He lectured neurology at the University of Tokyo and thus called the founder of neurology of Japan. In “old JSN”, psychiatrists gradually outnumbered neurologists and the name was changed in 1935 to “Japanese Society of Psychiatry and Neurology” (JSPN)<sup>1)</sup>.

The new era came after the World War II when new medicine flowed in from United States. In 1947 Japanese Society of Neurosurgery was founded, and Japanese neurologists

started to organise a new neurological society that was to succeed the neurology section of JSPN. Japanese Society of Psychiatry and Neurology. In 1953 separation of the neurology section and psychiatry section was proposed at the council of the 50<sup>th</sup> Annual Meeting of JSPN and finally JSPN approved a new statute to divide it to psychiatry section and neurology section in 1955. In 1960 “Japanese Society of Clinical Neurology” was founded in Fukuoka and the official journal, “Clinical Neurology” “臨床神経学” was published. In 1960 the council of the 57<sup>th</sup> Annual Meeting of JSPN approved separation of its neurology section and Japanese Society of Clinical Neurology as its successor<sup>1)</sup>. In 1964 Japanese Society of Clinical Neurology changed the name to new “Japanese Society of Neurology”(JSN). Neurology in Japan started a great development in quality and quantity since. In 1975 the government approved neurology as a medical specialty by the law<sup>2)</sup>.

The number of the JSN members was only 643 in 1960,

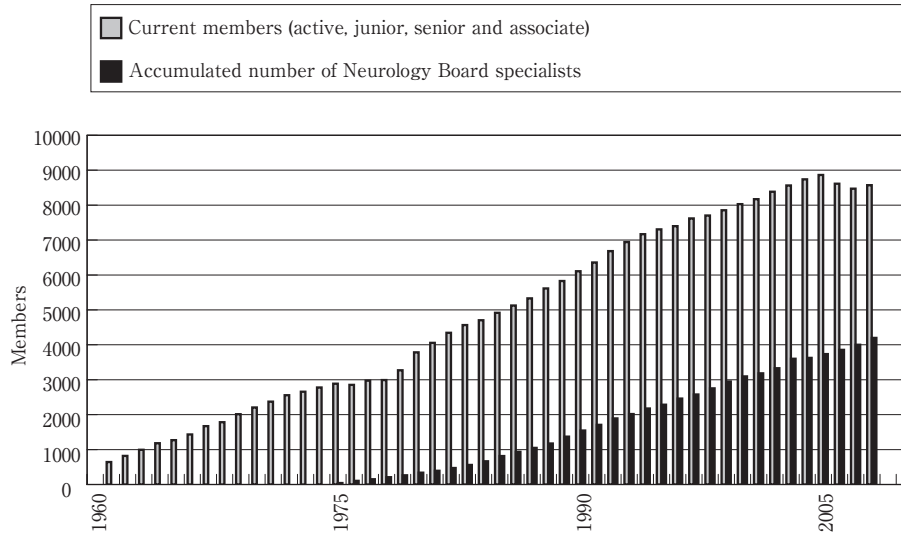


Fig. 1 Current number of members of JSN (gray columns) and accumulated number of members who passed the examination of JCN Board of Neurology (black columns)

and that in 2009, which includes active, junior, senior and associate members rose up to 8,555 (Fig. 1, gray columns). JSN is now one of the most influencing members of Japanese Medical Association. Many neurologists work in primary care hospitals and clinics as well as in medical schools and academic institutes. JSN greatly contributed to investigate and solve the medicosocial issues including Minamata disease, SMON (subacute myelo-optic-neuropathy induced by chionoform), brain death, iatrogenic prion diseases. Japan has faced many problems in the acutely developing aging society and Neurology is one of the most important medical specialties in treating the patients with age-related illness such as stroke, dementia, and neurodegenerative diseases.

## 2. Undergraduate education and curriculum of neurology at medical schools

Medical schools in Japan are uniformly of 6 years' course after graduating from the high school. Neurology is one of the core subjects of clinical medicine, and lectures and practice are done at the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades. Education of neurology has been done by faculty neurologists of department of neurology, or by faculty of department of internal medicine, psychiatry and neurosurgery since some of the medical schools do not have an independent neurology department. As of 2009, 70 of 80 medical schools have full-time professor of neurology and the remaining 10, full-time associate professor.

## 3. Training of neurology specialists and Board of Japanese Society of Neurology

The Board of Japanese Society of Neurology is the third oldest (1<sup>st</sup> exam: 1975) among the Japanese Board of Medical Specialities after Japanese Society of Anesthesiology established in 1962 and Japanese Society of Internal Medicine in 1968 (1<sup>st</sup> exam: 1973)<sup>3</sup>. At present, the training course of neurology specialists is as follows: 1) 2 years' residency for internal medicine, emergency medicine, general surgery, pediatrics, obstetrics, psychiatry and public health is obligated to the graduates of the medical schools, and they are registered as MD after finishing it. Then 2-3 years' residency of internal medicine and training of neurology for at least 2 years is required to apply the Board examination. The Board examination includes two different examinations, a written one and an oral one. The multiple choice written exam asks for general knowledge on clinical neurology, neuroradiology, clinical neurophysiology, neuropathology, neurochemistry, clinical genetics and medical ethics. Oral examination is done by 3 examiners for general knowledge and skill of neurological examination. Approximately 60% of the applicants have passed the Board examination. JSN approved 3,648 neurologists in total as Neurology Board specialists by 2009 (Fig. 1, black columns).

The goal and minimum requirements were proposed by the postgraduate education committee in 1998, and the goal of neurological training for JSN Board specialists is shown in Table 1<sup>3</sup>. The 80 medical schools and their university hospitals, and 297 big hospitals are certified by JSN as the teach-

**Table 1** The minimum requirements and the goal of neurological training for JSN Board specialists proposed by the postgraduate education committee in 1998

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1. Clinical neurology practice
1. Neurological examination, local diagnosis, differential diagnosis, and laboratory tests for diagnosis
2. Neurological emergency
3. Consultation from other fields of medicine
2. Treatment
1. Basic and neurology special
3. Clinical neurophysiology
1. EMG, EEG and SEP
4. Neuroradiology
5. Laboratory studies
6. Clinical and molecular genetics
7. Neuropathology of the brain, spinal cord, muscle and nerve

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**Table 2** International Congresses hosted by JSN and its alliance societies

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1957: World Federation of Neurology (WFN) was founded (Dr van Bogaert)
1959: JSN was approved as the local branch of WFN
1960: New JSN was founded.
1962: The 1 <sup>st</sup> Asia Oceania Congress of Neurology (Professor Okinaka)
1981: The 12 <sup>th</sup> World Congress of Neurology in Kyoto (Professor Katsuki and Professor Tsubaki)
1991: The 8 <sup>th</sup> AOCN in Tokyo (Professor Toyokura)
1991: The 10 <sup>th</sup> International Symposium on Parkinson's Disease (Professor Narabayashi)
1994: The International Congress on Neuromuscular Diseases (Professor Satoyoshi)
1995: The 10 <sup>th</sup> International Congress of Clinical Neurophysiology (Professor Kimura)
2002-2005: Professor Kimura as the President of WFN
2006: The 10 <sup>th</sup> Movement Disorders Society's International Congress (Professor Mizuno)
2006: The International Symposium on ALS/MND (hosted by Japanese ALS Association)
2006: The 4 <sup>th</sup> International Workshop on DLB and PDD (Professor Kosaka)

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ing hospitals which are quailed with training curriculum for residents and 3 or more Neurology Board specialists for teaching. Additional 383 hospitals of middle size are certified as the associate education hospitals with training curriculum and one or two Neurology Board specialists for teaching.

#### 4. JSN Guidelines for Treatment of Neurological Diseases

In 1990s we faced the stream of evidence-based medicine in all the medical fields, and JSN organized the ad hoc committee on "Treatment Guidelines of Neurological Diseases". After discussions on the basis of evidences, JSN in corporation with related medical societies published "Treatment Guideline 2002" on 6 rather common neurological diseases: Parkinson's disease, stroke, chronic headache, dementia, epilepsy and ALS. They are now being revised, and two new guidelines on "multiple sclerosis" and "neurogenetics and gene counseling" are to be added.

#### 5. International affairs of JSN

World Federation of Neurology (WFN) was founded in 1957 and JSN joined it as the local branch of WFN in 1959. Since then JSN has worked with WFN as shown in Table 2. In 1962 JSN hosted the 1<sup>st</sup> Asia Oceania Congress of Neurology (President: Professor Okinaka). In 1981 JSN hosted the 12<sup>th</sup> World Congress of Neurology in Kyoto (President: Professor Katsuki, Secretary General: Professor Tsubaki). It showed the development of JSN for 20 years to many neurologists from all over the world. International activities markedly increased after that as shown in Table 2. It was a great honor that Professor Jun Kimura was elected as the President of WFN during 2002-2005<sup>4)</sup>.

As to the Japan-Korea Friendship and Collaboration, the first informal meeting with JSN and Korean Neurological Association (KNA) was held at the 48<sup>th</sup> Annual Meeting of JSN in Nagoya in May 2007. In May 2008 the KNA-JSN 1<sup>st</sup> Joint symposium was held at the 49<sup>th</sup> Annual Meeting of JSN in Yokohama on "International comparison of neurological disorders: focusing on spinocerebellar ataxias (SCA) and epilep-

sies". In May 2009 KNA-JNS 2nd Joint Symposium was held at the 50<sup>th</sup> JSN Annual Meeting in Sendai. There, speakers from KNA and JSN, and a new member from Taiwan Neurological Society talked and discussed on "History and Education of Neurology in Japan, Korea and Taiwan". In this symposium, a new strategy to make-up the Northeast Asian Neurological Association was proposed.

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