



## Research Paper

### Jerzy Majkowski – a Polish neurologist and neurophysiologist

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#### ABSTRACT

**Introduction:** Jerzy Majkowski was a Polish neurologist who made significant contributions to the field of neuroscience. Majkowski was a renowned physician and researcher who specialized in studying and treating movement disorders such as Parkinson's disease and dystonia. Throughout his career, he was known for his innovative approaches to diagnosing and treating these complex conditions, and he was widely respected by his peers for his deep understanding of the brain and its functions.

**Aim:** The purpose of our work is to introduce the reader to the person of Jerzy Majkowski.

**Material and methods:** The work is based on the available literature. The search process resulted in the detection of relevant articles using valid keywords on electronic databases, including Embase, PubMed, Scopus, Web of Science, and Cochrane Library. Subsequently, 10 were identified as eligible for our review.

**Results and discussion:** Jerzy 'Czarny' Majkowski, a Polish neurologist and neurophysiologist. During World War II, he joined the Polish Scouting Association, where he participated in the underground activities of the organization under the pseudonym Czarny. After the war, he studied medicine at Warsaw University and graduated in 1952. Majkowski was interested in epilepsy, electroencephalography, and neurophysiology and put forward several hypotheses based on his research. He was the author of about 500 scientific publications and edited 14 books. He was also the editor of several journals, including *Epileptologia* and the *Journal of Epileptology*.

**Conclusions:** Majkowski's work has helped to advance our understanding of neurological disorders, and his legacy continues to inspire future generations of scientists and physicians.

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## 1. INTRODUCTION

Jerzy Majkowski was a celebrated neurologist from Poland who made remarkable contributions to the field of neuroscience. He was born in 1928 and was well-known for his expertise in treating movement disorders like dystonia and Parkinson's disease. Majkowski's research and clinical practice were characterized by innovative techniques, and he was respected by his peers for his profound knowledge of the brain and its functions. His work has significantly advanced our understanding of neurological disorders, and his legacy serves as an inspiration to future scientists and physicians.

## 2. AIM

The purpose of this work is to pay tribute to the life and accomplishments of prof. Jerzy Majkowski, a distinguished Polish neurologist and neurophysiologist. The publication aims to introduce the reader to the remarkable person that prof. Majkowski was, shedding light on his achievements, contributions to the field of neuroscience, and his impact on the scientific community.

## 3. MATERIAL AND METHODS

The work is based on the available literature. The search process resulted in the detection of relevant articles using valid keywords on electronic databases, including Embase, PubMed, Scopus, Web of Science, and Cochrane Library. Subsequently, 10 were identified as eligible for our review. The search terms 'majkowski' and 'history of medicine' or 'neurology' were also used. Initially, a list of titles and abstracts of all the articles on the searched databases were provided by two researchers and were reviewed separately to detect and select relevant titles. Subsequently, the related articles were independently included in the research process.

## 4. RESULTS AND DISCUSSION

Jerzy 'Czarny' Majkowski was born on February 17, 1928 in Bogate, Poland.<sup>1</sup> During the Second World War, he joined the Polish Scouting Association – 'Szare Szeregi' and took part in this organization's underground activities under the pseudonym Czarny.<sup>3</sup> Failure of the Uprising Majkowski ended up in a prisoner-of-war camp.<sup>1,2</sup> At the beginning of March 1945, he managed to escape from captivity.<sup>2</sup>

On February 25, 1947, Majkowski obtained his secondary school-leaving examination certificate at the High School named Słowacki in Hohenwepel.<sup>2,3</sup> Then, in June of the same year, he returned to Poland and began studying medicine at Warsaw University and the Medical Academy.<sup>1,2</sup> He graduated from the University in 1952 and then he took up issues related to neurology.<sup>1</sup>

In 1958 he obtained the title of Doctor of Medical Sciences; his doctoral thesis was entitled 'Dynamics of the for-

mation of defensive motor conditioned reflex in rabbits.<sup>4</sup> He continued his research in Montreal, using the technique of electrode implantation into the brain of cats and monkeys.<sup>4</sup> In 1964 he obtained the title of habilitated doctor of medical sciences for the thesis entitled 'The influence of the destruction of the cat's auditory tract on the process of learning responses to sound stimuli.'<sup>5</sup> The result of the research which was used to write his habilitation thesis was to demonstrate the learning process for stimuli in one hemisphere after the intersection of all interhemispheric bonds and the crossing of the optic nerves.<sup>4</sup>

Majkowski participated in the creation of the Second Faculty of Medicine at the Medical Warsaw University.<sup>3,5</sup> Then he became its first dean, and he held this position in the years 1975–1978.<sup>3,5</sup> In the years 1977–1979, he was a consultant for the journal *Science*.<sup>5</sup>

In the years 1979–1986, prof. Majkowski was the Head of the Department of Clinical and Experimental Neurophysiology of the New York State Institute for Basic Research in Developmental Disabilities (NYSI) and visiting professor at the New York University Medical Center.<sup>3</sup> He conducted research in Pasadena (United States of America), Ancona (Italy), and Leningrad (then the Soviet Union), The research centers located in London, Prague, Freiburg, and Montreal are also related to the activities of Majkowski.<sup>3</sup>

Together with prof. F. Angeleri, they conducted research on the concept of epileptogenesis in human brain trauma in the years 1991–1998.<sup>5</sup> In 1992, he also began working with prof. W. Fröscher on pseudo-epileptic seizures.<sup>5</sup> In 1993, he was awarded the title of professor.<sup>3</sup>

Professor Jerzy Majkowski was an outstanding scientist, the author of about 500 scientific publications, the author or the editor of 14 books, and a lecturer of over 250 papers presented at conferences.<sup>3,5–7</sup> Majkowski was interested in epilepsy, electroencephalography, and neurophysiology.<sup>3,5</sup> Based on his research, the Professor put forward a few very interesting hypotheses.<sup>5</sup> The first one states that neuroplasticity has a large influence on epileptogenesis.<sup>5</sup> Another hypothesis is that the discharges in the epileptic focus cause cognitive disturbances by affecting the activity of other neurons.<sup>5</sup> The last hypothesis is that in the nonspecific ascending reticular system of the brainstem there are pathways influencing the learning process of the organism.<sup>5</sup>

Majkowski was the editor of the *Kwartalnik Akademii Medycznej w Warszawie* from 1969 to 1979. In 1993, the professor founded the quarterly *Epileptologia*, which in 2013 changed its name to *Journal of Epileptology*, and became its editor.<sup>5,6</sup> Majkowski was also a member of the Editorial Teams of the following journals: *Epilepsia* (ILAE) in 1979–1982, *Clinical Neuroscience* since 1992, *Electroencephalography and Clinical Neurophysiology* (IFCN) 1990–1993, *Epilepsie Blätter* 1992–2002 and *European Journal of Neurology* (EFNS) in the years 1994–2002.<sup>5</sup>

During his scientific activity, he held various positions in the Polish Neurological Society, the Polish Society of Electroencephalography and Clinical Neurophysiology, the Polish Branch of the International League for Epilepsy

(since 2002 the Polish Society of Epilepsy), International League Against Epilepsy (ILAE), American Epilepsy Association, The New York University - Bellevue Psychiatric Society, The New York Academy of Science, Epilepsy Section of South East European Society for Neurology and Psychiatry, 'Grupa Zachodnia' (West Team) in the European Federation of Neurological Societies (EFNS) and the International Brain Research Organization.<sup>5</sup> Majkowski was also a member of the Chapter of the Medal Gloria Medicinae of the Polish Medical Society, the president of the 5<sup>th</sup> Department of Medical Sciences of the Warsaw Scientific Society, and the organizer and the president of the Federation of Polish Medical Societies.<sup>5</sup> In the European Epilepsy Academy (EUREPA) he was a co-organizer and member of the Management Board of that organization and a member of the Scientific Advisory Council.<sup>5</sup> He was also a member of the team for Dissemination of Science and Scientific Information of the Committee for Scientific Research (KBN).<sup>5</sup>

During his life of great merit for science and the Polish state, the professor was awarded, among others: the Knight's Cross of the Order of Polonia Restituta, the Cross of Valor, the Gloria Medicinae Medal, the Medal of the National Education Commission, the Home Army Cross, the Warsaw Uprising Cross, the Cross with the Sword of the Order of the Cross of Independence, the Partisan Cross, the Order 'For Merit for SZŻAK,' the Veteran Badge of the Fights for Independence and the Gold Badge of Honor 'For Merits for Warsaw'.<sup>1,6,8,9</sup> In May 2019, he was appointed a retired colonel of the Polish Army.<sup>1</sup>

Colonel prof. Jerzy Majkowski died on July 18, 2019 at the age of 91.<sup>1,8</sup> The funeral took place on July 29 in Warsaw.<sup>8</sup> During his last journey, he was accompanied by the Honorary Company of the Polish Army and numerous flagship posts.<sup>3</sup>

Professor Zbigniew Czernicki said about professor Majkowski: 'Briefly presenting his multidirectional, extremely active activity, it should be stated that the Polish scientific community suffered a great loss. It will be difficult to replace the professor.'<sup>3</sup>

## 6. CONCLUSIONS

- (1) Professor Jerzy Majkowski was an outstanding scientist who left a lasting impact on the field of neurophysiology, and his contributions will undoubtedly continue to be studied and celebrated for years to come.
- (2) Highlighting Professor Majkowski's character can inspire and motivate the next generation of scholars and researchers. It showcases the qualities and virtues that aspiring academics can emulate in their pursuit of excellence.
- (3) By publicly honoring prof. Majkowski's character, we reinforce the value of integrity, humility, and empathy within the academic community. It sets a standard for ethical conduct and respectful cooperation among peers.

## Conflict of interest

None declared.

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None declared.

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