



## Prof. Elżbieta Jankowska

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Professor Elżbieta Jankowska is one of the most eminent experts in the field of functional organization of the spinal cord. She began her scientific career at the Nencki Institute and was awarded the doctor's and *doctor habilitus* degrees there. In the 1960s she completed several internships, *inter alia* at the *Sahlgrenska Academy, Gothenburg University (Swe. Göteborgs Universitet)*. In the Department of Physiology headed by Professor Anders Lundberg, she had an opportunity to learn the newest electrophysiological methods allowing for measurement of intracellular output from spinal motoneurons and interneurons. Research opportunities and unique scientific atmosphere created by Professor Lundberg fascinated her so much that she decided to link her career with this leading center of spinal cord studies where she has worked with unceasing appreciation until now. Although development of a brilliant scientific career by a woman of foreign nationality in Sweden in the 1980s was very difficult, in acknowledgement of an outstanding quality of her scientific achievements she was granted the title of professor and was employed at that position in the Sahlgrenska Academy at the University of Gothenburg.

It is not easy to describe the most important scientific achievements of Professor Jankowska and her collaborators because in essence they consist in discovering step-by-step building blocks of spinal neuronal networks, characterization of their peripheral and supraspinal inputs and outputs, and, based on these morphological and functional data, creation of coherent pictures of spinal neuronal networks. Professor Jankowska tries to make these difficult experimental data more understandable both to neurophysiologists and clinicians by publishing review articles, that she is regularly invited to write.

In the last work (Brain Research Reviews, 2008, 57, 46–55), she characterized and classified commissural interneurons of the spinal cord and showed their significance to the control of different types of movements, from locomotor to precise manipulations. She wrote: “*Boundaries between different neuronal networks may be considered as not being sharp, especially when individual neurones form part of different networks under different circumstances and when neuronal networks change their configuration and elements depending on which movements they sub-serve.*”

And later on: „*However, independently of how spinal interneuronal networks are defined, there is no doubt that their constituent neurones cannot be distinguished by mere topographical factors. Interneurones that appear to belong to one interneuronal population are as a rule intermixed with other types of neurones, are distributed over considerable lengths of the spinal cord and do not form nuclear complexes in any parts of the spinal grey matter, even if they are preferentially located in more rostral or more caudal segments, and in more dorsal or more ventral Rexed's laminae.*”

I cite these fragments because, on the one hand, they constitute a synthetic characterization of type 2 interneuronal networks of the spinal cord, and on the other, they show, how difficult it had to be to perform the studies, which led to such conclusion. Only a person with vast knowledge, experience and talent, which Professor Jankowska has, could be successful in demonstrating that. Excellent scientific accomplishments of Professor Jankowska were honored, among other things, by a symposium presenting her achievements, entitled „Spinal cord functions and rehabilitation” held during The 30<sup>th</sup> American Neuroscience Congress in New Orleans, USA in 2000 which was attended by the most famous experts in the field of motor system studies from all over the world.

The symposium showed the significance of Professor Jankowska's research, highly valued not only by the most distinguished neurophysiologists but also by clinicians. In recognition of the importance of her vision, in the last years she was awarded a special NIH grant for eminent scientists, which allowed her to continue her research also after she retired. Thanks to further successes in gaining financial support for studies (in 2011 her project once again won NIH support), Professor Jankowska is still an active scientist. She still supervises exhausting, 24-hour electrophysiological experiments and still performs laminectomy. Over the last ten years, she annually has published three to four papers on the average!

At the end of the 1990s she was awarded the *honoris causa* doctorate by the Senate of the Academy of Physical Education in Poznań. In 2010, Professor Elżbieta Jankowska was honored by the Christophera Reeve's medal and the award of the Reeve-Irvine Foundation and Athalie Clarke Foundation established by the Reeve-Irvine Research Center in California for distinguished scientists engaged in research of repair processes after spinal cord injuries. It is an individual award granted annually for outstanding scientific achievements which have withstood the test of time, stood against critique and made essential contribution to the better understanding of the spinal cord function.

Professor Jankowska has been very generous in sharing her knowledge and experience with a great many of colleagues from the Nencki Institute (A. Cabaj, B. Chojnicka, J. Czarkowska-Bauch, S. Jeleń, K. Maleszak, U. Sławińska, B. Sybirska), Medical University of Warsaw (L. Kubin and J. Lipski) and Academy of Physical Education in Poznań ( J. Huber and P. Krutki). Scientific collaboration with Professor Jankowska and many visits to Gothenburg resulted in about 19 her joint scientific papers with the Nencki Institute employees published in renowned journals. However, not only joint publications, but most of all an opportunity to work in the "sanctuary" of spinal cord research made available by Professor Jankowska to the next generation of scientists, plays a crucial role in shaping our approach and understanding of neurophysiology.

Our contacts with Professor Jankowska are not limited to periods of joint research in Gothenburg. She constantly follows our achievements, shows vivid interest in what and why we do and offers her invaluable assistance, critique and encouragement. She comes to Poland every year and always visits the Nencki Institute, analyzes our results and shares with us her concerns. She always cares for us with attention and diligence.

*J. Czarkowska-Bauch*

### **Najwybitniejsze publikacje:**

[Interneuronal relay in spinal pathways from proprioceptors.](#)

**Jankowska E.**

Prog Neurobiol. **1992**;38(4):335-78. Review. (**liczba cytowań 573** wg Web of Science)

[The effect of DOPA on the spinal cord. 5. Reciprocal organization of pathways transmitting excitatory action to alpha motoneurons of flexors and extensors.](#)

**Jankowska E,** Jukes MG, Lund S, Lundberg A.

Acta Physiol Scand. **1967** Jul-Aug;70(3):369-88. (**liczba cytowań 329** wg Web of Science)

[The effect of DOPA on the spinal cord. 6. Half-centre organization of interneurons transmitting effects from the flexor reflex afferents.](#)

**Jankowska E,** Jukes MG, Lund S, Lundberg A.

Acta Physiol Scand. **1967** Jul-Aug;70(3):389-402. (**liczba cytowań 285** wg Web of Science)

[An electrophysiological demonstration of the axonal projections of single spinal interneurons in the cat.](#)

**Jankowska E**, Roberts WJ.

J Physiol. 1972 May;222(3):597-622. (**liczba cytowań 260** wg Web of Science)

[Synaptic actions of single interneurons mediating reciprocal Ia inhibition of motoneurons.](#)

**Jankowska E**, Roberts WJ.

J Physiol. 1972 May;222(3):623-42. (**liczba cytowań 247** wg Web of Science)

[Spinal interneuronal networks in the cat: elementary components.](#)

**Jankowska E**.

Brain Res Rev. **2008** Jan;57(1):46-55. Review. (**liczba cytowań 88** wg Web of Science)