

## WFNR SCI SIG Report Activities 2020, following March 3-4, 2019, Genova Meeting

Dear All,

1. During the \ **Special Interest Group Meeting in Genova March 3-4, 2019 the SCI SIG for the WCNR in France 2020 proposed the following**; matters of interest for the **SCI SIG**: Aging, Late onset and “The Big Combo Issue ” in SCI: Does disability--like spinal cord injury (SCI)--complicates "normal" aging-related processes ?, Does Late Onset (Elder SCI) complicates disability related to "SCI" ?, Does Brain Injury (BI)—co-occurring disability complicates "SCI" rehabilitation (The Big Combo Issue)?.

2. March 7, 2019. Visit to ORAS from the Chair of WFNR SIG Developing World Forum Prof. Dr. Nirmal Surya. Networking between the WFNR SIG's.



Nirmal Surya, Humberto Cerrel Bazo, president ORAS Prof. Dr Paolo Pauletto.

3. Following WFNR SCI SIG research interest at the Translational Myology and Mobility Medicine 2019 Spring PaduaMuscleDays meeting on March 28 – 30, Montegrotto, Padova, Italy we presented the following work: "**The Future of Restorative Neurology in spinal Cord Injury: Driving the Translational Research Pipeline From Basic Research to Rehabilitation in SCI**". Humberto A. Cerrel Bazo & Milan Dimitrijevic.

2019 Spring PaduaMuscleDays, March 28 – 30, Montegrotto and Padova, Italy  
**Translational Myology and Mobility Medicine**

WFNR  
Pablo Picasso: 12-1945/01-1946 "El Toro"

Humberto A. Cerrel Bazo, Milan R Dimitrijevic

Motta di Livenza, Treviso, Italy

ospedaleriabilitativo



SESSION I: **Spinal Cord Neuromodulation and h-bFES in SCI**, Chairs: Mayr W, Carraro U.

10.20 Epidural Stimulation for the restoration of function following motor complete spinal cord injury, Claudia A. Angeli, Kentucky Spinal Cord Injury Research Center Louisville, KY, US

11.00 **The future of Restorative Neurology in SCI: Driving Translational Pipeline from basic research to clinical rehabilitation**, Humberto Cerrel-Bazo, et al., ORAS Rehabilitation Hospital & University of Padova, Italy

11.30 Two-year h-bFES improves structure and function of muscles in complete thoracic-level SCI, Christian Hofer et al., Ludwig Boltzmann Institute of Electrical Stimulation and Physical Rehabilitation, Vienna, Austria

11.50 The influence of electrode configuration and pulse shape on neural activation, Steffen Eickoff, et al, Liverpool John Moores University, UK

12.10 h-bFES of DDM SCI patients and muscle co-activation countermeasures, Ugo Carraro, et al., University of Padova, Italy

4. In Joint Venture con la Fondazione Giorgio Brunelli, e con l'intento di diffondere la conoscenza delle lesioni del midollo spinale, il WFNR SCI SIG si è presentato ad una platea composta da: Medici, ingegneri, fisici, informatici e giornalisti. **Brescia, Palazzo Loggia, 30 marzo 2019. HA Cerrel Bazo Lecture: PROGRESS AND NEW FRONTIERS OF NEUROREHABILITATION in SPINAL CORD INJURY.**

**SALUTE IN COMUNE**  
La Disabilità vista da Medici, Ingegneri, Fisici, Informatici, e Giornalisti.  
Un approccio Multidisciplinare  
Brescia, Palazzo Loggia, 30 Marzo, 2019.



Humberto A. Cerrel Bazo  
Motta di Livenza, Treviso, Italy

**I PROGRESSI E LE NUOVE FRONTIERE DELLA NEURORIABILITAZIONE**



5. WFNR SCI SIG was invited to the 2nd Symposium of SURGERY OF THE SPASTIC UPPER LIMB. Spastic-Hand. April, 5th & 6th 2019 Venice, ITALY. HA Cerrel Bazo Lectured : **"Altered motor neurocontrol of the arm & hand and the restorative procedures for upgrading the functional performance of tetraplegic spastic hand "** HA Cerrel Bazo.



2nd Symposium on SURGERY OF THE SPASTIC UPPER LIMB. Humberto Cerrel Bazo. Milan Dimitrijevic.

**6. New Knowledge and Network Acquisition trip, May 2-10, 2019:**

Visit to Prof. Milan Dimitrijevic at Baylor College of Medicine, Houston, Texas, USA May 2-5, 2019. Invitation **Meeting to design a Neurorehabilitation Center to demonstrate the practice of Restorative Neurology of Movement Recovery.**



Milan Dimitrijevic & Humberto Cerrel Bazo      Houston Airport day of arrival

Visit to Prof. Reggie Edgerton, & Prof. Giuliano Taccola at The Terasaki Life Science Building, Brain Research Institute, UCLA, Los Angeles, California, USA. May 8-10, 2019 : Brainstorm Meeting regarding Spinal Cord Injury and Neuromodulation: Advances in Transcutaneous Spinal Cord Stimulation in Movement Recovery.

Note: Visit #2 & #3 useful to explore a new panorama of treatment in SCI as well as to establish a collaborative network for knowledge advancement in the field of restorative neurology. Knowledge propagation for future endeavors.



Reggie Edgerton, Giuliano Taccola & Humberto Cerrel Bazo at the Brain Research Institute, UCLA, Los Angeles, California. Meeting with Researchers from Dr Edgerton Lab.

7. WFNR international collaboration (Italy & Philippines), Participation to **ASCIP** (ACADEMY OF SPINAL CORD INJURY PROFESSIONALS) Educational Conference. **Nashville, USA, September 1-4, 2019.**

**Lecture: “SEXUAL SATISFACTION AMONG SCI SUBJECTS AND THEIR PARTNERS AND THE CONTRIBUTION OF BIO PSYCHO SOCIAL FACTORS”**

Sara Salizzato ClinPsyD<sup>1</sup>; Elia Zanin, PhD, ClinPsyD<sup>1</sup>, Leochico C.FD. MD.<sup>3</sup>, Rey-Matias RR. MD. <sup>4</sup>, Pauletto P. MD.<sup>1</sup>, Rizzardo F. JD <sup>1</sup>, Masiero S. MD. <sup>2</sup>, Cerrel Bazo H. MD. <sup>1,2</sup>

**Poster Presentation: “The neuromodulative role of the spinal cord in cognitive processing after subliminal exposure to sexual stimuli”**

Zanin E. Ph.D., Clin. Psy. D. <sup>1</sup>, Salizzato S. Clin. Psy. D.<sup>1</sup>, Leochico CFD. MD. <sup>3</sup>, Rey-Matias RR. MD. <sup>4</sup>, Pauletto P. MD. <sup>1</sup>, Masiero S. MD. <sup>2</sup>, Cerrel Bazo H. MD. <sup>1,2</sup>

<sup>1</sup> Ospedale Riabilitativo di Alta Specializzazione (ORAS), Motta di Livenza, Treviso, Italy. <sup>2</sup> PM&R Department & Medical School University of Padova, Italy. <sup>3</sup> Philippine General Hospital, Department of Rehabilitation Medicine, University of the Philippines, Manila, Philippines. <sup>4</sup> St. Luke’s Medical Center Bonifacio Global City, Taguig, Philippines.

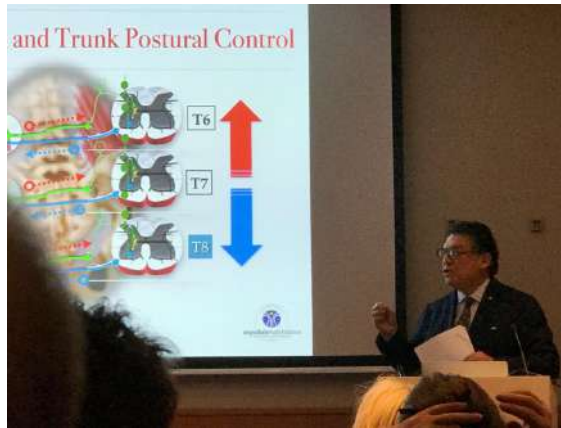
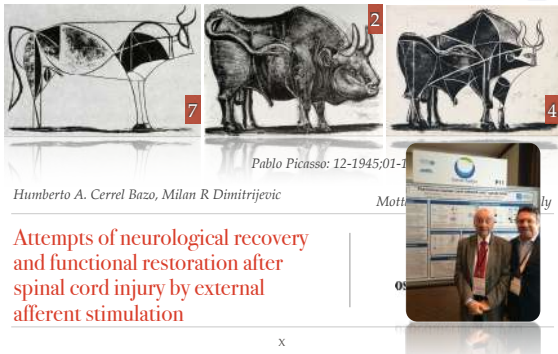


Sara Salizzato, Elia Zanin, Humberto Cerrel Bazo at **ASCIP Nashville, USA, September 1-4, 2019.**

8. Participation and Organization of the Spinal Cord Injury Symposium at **ECNR** European Congress of NeuroRehabilitation 2019. **9–12 October 2019** • Budapest, Hungary. Participation as a Chair & Speaker: Humberto Cerrel Bazo

**“Attempts of neurological recovery and functional restoration after spinal cord injury by external afferent stimulation”**.

European Congress of NeuroRehabilitation 2019  
9–12 October 2019 • Budapest, Hungary



**10:00–11:30 Symposium 16 | Spinal cord injury**

Room Brahms I + II. Chair H. Cerrel Bazo (Treviso/IT)

**10:00 Attempts of neurological recovery and functional restoration**

**after spinal cord injury by external afferent stimulation.** H. Cerrel Bazo (Treviso/IT)

10:23 Dynamic electrical spinal stimulation – a novel tool to neuromodulate spinal networks. G. Taccola (Trieste/IT)

10:46 Transcutaneous spinal cord stimulation – a neuromodulation approach to attenuate lower extremity spasticity and augment locomotor function. U. Hofstätter (Vienna/AT)

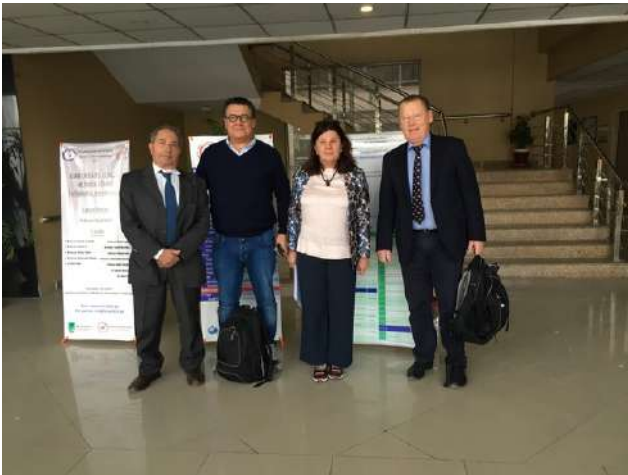
11:09 Epidural spinal cord stimulation for spasticity. B. Freundl (Vienna/AT).



ECNR 2019 Speakers: H. Cerrel Bazo, U. Hofstätter, B. Freundl.

## 9. Flying Faculty activities November 12-16, 2019 Peshawar-Pakistan.

I cannot deny that before coming to Peshawar a good dose of fear accompanied my final decision. I must say, that my obligations as Chair of the WFNR SCI SIG and my word given to one of the organizer of the event Prof Dr Maximilian Medhorn (Chair of the reconstructive and Neurorehabilitative Neurosurgical SIG of the WFNR and WFNS [World Federation of Neurosurgery]), has made REASON prevail than to say NO. Therefore what said before together with the sense of duty has done so that I may have accepted the invitation as a "Flying Faculty".



WFNR Flying Faculty: Paolo Tonin, Humberto Cerrel Bazo, Caterina Pistarini, Maximilian Medhorn.

My visit to Peshawar in Pakistan was painted with colors, scents and human warmth, by a population that proved to be full of human energy and a desire to know and learn. To touch - literally - foreign visitors, who today for different reasons no longer look out on this gateway to the East, Pakistan, an important nation of 256 million inhabitants.

Received by **Prof. Dr. Tariq Khan**, Chairman & Professor, Head of Neurosurgery Department, Northwest School of Medicine and Northwest General Hospital & Research Centre, Peshawar, Pakistan: Participation as Flying Faculty of WFNR to give a two-days course on Neurorehabilitation as part of a series of conferences organized in Peshawar/Khyber Pashtunakhwa/Pakistan, **November 12 – 16, 2019**: The Annual meeting of the Pakistan Neurosurgical Society and ICRAN – International Conference on Recent Advances in Neurotraumatology, by the WFNS Committee on Neurotraumatology (MM member of this committee).

In parallel with this course other teaching courses were also held in the compounds of Northwest Medical School e.g. Course on Clinical Methods, on Brachial Plexus and Nerve Injury, Interventional Neuroradiology in neurotrauma, and a course of Global Neuro Essentials for Neurotrauma.

As a faculty member I presented **Spinal cord injury – improving outcome by improving therapy. ICRAN 2019** Peshawar, Pakistan.



Prof. Dr. Tariq Khan, Humberto Cerrel Bazo



**Television interview**, to talk about the needs for the spinal cord injury individuals living in Pakistan.

**“Improving outcome by improving therapy”** in Spinal Cord Injury could be a very tough issue to solve, but this sort of dogmatic view could be revised **if** and **when** clinical findings can confirm some degree of improvement after a terrible and catastrophic event like a spinal cord injury. In this sense rather than focusing on the deficits and lost function caused by upper motor neuron lesions or disorders we can start discussing about what can we do to improve such a terrible disaster. According to me Restorative Neurology as a branch of neurology and neurorehabilitation could well explain this issue and becomes the subject of my talk that better interpret the matter assign to me today.



Humberto Cerrel Bazo “**Improving outcome by improving therapy**” in Spinal Cord Injury. Northwest Medical School.

The audience was mainly composed of medical students and doctors undergoing specialist training of various levels of expertise in the neurological and neurosurgical area.



Medical Students from Northwest School of Medicine.

Although their knowledge is varied, we all had the impression - as evidenced by the discussions with the students - to have understood that in Pakistan there is no rehabilitation figure (physiatrist and / or neurorehabilitation expert), most patients come treated only in the acute phase and then sent home and left alone. There is only one excellent military rehabilitation institution with very limited access for the non-military population.

I was invited to visit the only Spinal Cord Injury center in Pakistan specialized to deal with Spinal Cord Injuries rehabilitation. The Paraplegic Center Peshawar (PCP) was designed by the International Committee of the Red Cross (ICRC) in collaboration with the Government Department of Health by Khyber Pakhtunkhwa,



in the late 1970s and early 1980s, following the war between Russia and Afghanistan. Since its inception until 2007, it has gone through numerous ups and downs. It was re-established as a self-governing body through a 2007 ordinance, (which resulted in the "Paraplegic Center [Taking over & Re-Establishment] Act 2009"). PCP operates under the auspices of the health department, the government of Khyber Pakhtunkhwa, which provides comprehensive physical rehabilitation services free of charge, including skilled physiotherapy, occupational therapy, orthotic management, psychological counseling, Recreation, Skills Development, Restoration of the community, provision of bespoke wheelchairs, support / support equipment and follow-up services, including minor changes at home along with medical and nursing care for people with post traumatic spinal cord injury from Khyber Pakhtunkhwa, FATA and the rest of the country. The center is managed by a CEO Mr Syed Muhammad Ilvas, a physiotherapist with a degree in the USA and after 9 years he decides to return to Pakistan to help his people.

I was impressed by the paraplegic center, as from a non-medical rehabilitation point of view they are completely autonomous, being able to manage all non-medical rehabilitation services. Rehabilitation projects are directed by rehabilitation



Patients at the Paraplegic Center (PCP) in Peshawar.

therapists, speech therapists, and occupational therapists. They also have the collaboration of psychologists, social workers and nurses. For medical problems they make use of the acute hospital in Peshawar where patients are hospitalized and followed by specialist consultants in the area.

I have to thank Prof Tariq Khan and Prof Maximilian Medhorn who, under police escort, allowed us to get to know the city and the customs of the people of Peshawar in the short time they hosted us. Peshawar was a magnificent human experience, I met a population full of dignity, I understood that appearances can be deceiving into recognizing good from evil. A great Life Experience!

10. **COVID 19** February/March-July 2020 Pandemia Experiences in Italy: Northern Italy was greatly affected. Maximum attention of our hospital to reduce the possibility of contagion among our patients. In our Operating Unit, a 10-bed

department is created to hospitalize so-called "suspect" patients, coming from the Neurosurgery, Neurointensive and Neurology units of our referring hospitals in Treviso, Venice, and the University Hospital of Padua. Unfortunately, a very high commitment from the end of February to August 2020 in managing highly fragile neurological patients in our area had occupied all our efforts and attention coming unfortunately less to WFNR SCI SIG operational activities. Inability to carry out other activities related to WFNR. Period of general paralysis for extra-hospital activities other than University teaching activities via videoconferencing.



Early pictures on March 2020, at ORAS HA Cerrel Bazo & Q. Messina dress attire for visiting SCI & Acquire Brain Injury patients during covid epidemia in ORAS, Treviso, Italy.

**11. IFNR (Indian Federation of Neurorehabilitation) WEB SEMINAR 2020 from Treviso, Italy, 17 April, 2020 12.30 IT time.**

Videoconference Talk: **“Spinal Cord Injury Rehabilitation: Past, Present & Perspectives in the New Millenium”**.

In collaboration with Prof Nirmal Surya. The talk is regarding Spinal Cord Injury Rehabilitation, and the perspectives in the new millenium.

Question & answer was an important part of the meeting session, # 115 questions were sent through mailing messenger mode, #12 Answers were thoroughly responded. The Indian Community was extremely interested in the matter of discussion.

**Indian Federation of Neurorehabilitation & Neurorehab subsecion of IAN**

Neurorehab Webinar from 06<sup>th</sup> – 30<sup>th</sup> April 2020 from 4pm-5pm

Speaker Name : Prof. Humberto Cerrel Bazo, Associate Clinical Professor, Neuroscience & PM&R Dept.  
 Topic: Rehabilitation in Spinal Cord Injury  
 Day: Friday \* Date: 17/04/2020  
 Place : Italy  
 Time : 04.00pm to 05.00pm (IST)

Chairpersons: Dr. P. S. Ramani, Mumbai / Dr. C. E. Deopujari, Mumbai  
 Moderator: Nirmal Surya, Mumbai

Time	Topic
04.00pm-04.05pm	Introduction by Chairperson
04.05pm-04.10pm	Moderator
04.10pm-04.45pm	Lecture by Speaker
04.45pm-05.00pm	Q/A

Zoom Webinar link for all days:- <https://zoom.us/j/199238185>  
 Webinar code:- 199-238-185 Password:- neurorehab

**IFNR WEB SEMINAR 2020**  
 from Motta di Livenza, Treviso, Italy, 17 April, 2020 12.30 IT time

1 2 3 4

Immanuel Kant: "Experience without theory is blind, but theory without experience is mere intellectual play".

Spinal Cord Injury Rehabilitation: Past, Present & Perspectives in the New Millenium

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12. **WCNR FRANCE: August/September 2020 Abstract Reviews.** Following a a point score rule a range of 10 points for abstract rating selection were given, with 1 for worst and 10 for the best work for the congress presentation.

The point score votes influence the decision about the preferential wishes for oral, e-poster presentations by the authors and acceptance rates in general: 1-4 points indicate rejection and 8-10 points acceptance of preferential requests for oral or e-poster presentation.

# 37 abstracts were review for Original Work, Methodology, Data Presentation and Conclusions . The results were as follow:

	Mean	Max (10)	Min (1)
1. <b>Original Work:</b> background relevance,hypothesis generation:	7,29	9	4
2. <b>Methodology:</b> degree of complexity, novelty, statistics:	6,74	9	2
3. <b>Data Presentation:</b> details, numbers and data provided, clarity, quality of figures and tables:	6,26	8	2
4. <b>Conclusions:</b> clinical/scientific relevance:	6,47	10	2

# 18 over 37 abstracts reviewed were selected for presentation at the WCNR France 2020 1st WCNR Videoconference, from these the mean total (Original Work, Methodology, Data presentation and Conclusions) point score for acceptance is 7,73, at the lowest entry level for acceptance.

The characteristics from the accepted papers the sections regarding Original Work & Methodology were scored in the medium high, Data Presentation and Conclusion were weaker at medium low score.

13. **WCNR FRANCE 7-10 October 2020:** 11th World Congress For Neurorehabilitation & 36th Congress of the French Society of Physical and Rehabilitation Medicine. 7-10 October 2020 1st Web Congress: WFNR SCI SIG Participation, Symposium Organization and Chair, and Oral-Poster presentation.

Session 07.10.2020; 16:45–18:15

Seminar

Aging, late onset and "The Big Combo Issue"

Type:WFNR seminar. Room: Stream 3

Chair: Humberto Antonio Cerrel Bazo (Treviso/IT)

16:45 Aging with Spinal Cord Injury

William Scelza (Denver, CO/US)

Talk time: 25 + 5 min

17:15 Late onset in SCI

Giorgio Scivoletto (Rome/IT)

Talk time: 25 + 5 min

17:45 The Big Combo Issue in SCI rehabilitation

Humberto Antonio Cerrel Bazo (Treviso/IT)

Talk time: 25 + 5 min



Poster Session 07.10.2020

P0635

Sexual rehabilitation programs in SCI individuals – the medical approach versus the BioPsycoSocial model:

Speaker: Elia Zanin (Motta di Livenza/IT), Sara Salizzato (Motta di Livenza/IT)

Authors: Elia Zanin (Motta di Livenza/IT), Sara Salizzato (Motta di Livenza/IT), Carl Froilan Leochico (Manila, Quezon City/PH), Reynaldo Rey-Matias (Manila, Quezon City/PH), Paolo Pauletto (Motta di Livenza/IT), Stefano Masiero (Padua/IT), Humberto Antonio Cerrel Bazo (Padua, Motta di Livenza/IT)

07.10.2020

P0637

Breaking the bad news in SCI – the Italian perspective

Speaker: Sara Salizzato (Motta di Livenza/IT)

Authors: Sara Salizzato (Motta di Livenza/IT), Elia Zanin (Motta di Livenza/IT), Paolo Pauletto (Motta di Livenza/IT), Stefano Masiero (Padua/IT), Humberto Antonio Cerrel Bazo (Motta di Livenza, Padua/IT)

Session 09.10.2020. 11:00–12:30

Oral presentation

Best of orals 5

Type: Oral communications

Room: Stream 5. Chair: Humberto Antonio Cerrel Bazo (Treviso/IT)

11:00

OP079 Use of MFM-20 to monitor SMA type 1 and 2 patients under nusinersen  
Laure Le Goff (Bron/FR)

Talk time: 7 + 2 min

11:09

OP047 Fecal impaction is the only independent risk factor of postoperative urinary retention after hip fracture surgery in older patients

Maëlys Teng (Paris/FR)

Talk time: 7 + 2 min

11:18

OP048 Development of a new model to fund episode of care in France

Nathalie Rigollot (Lyon/FR)

Talk time: 7 + 2 min

11:27

OP049 Disability after acquired brain injury in adolescents and young adults – development and validation of a clinical prediction model

Maja Soendergaard Worm (København N/DK)

Talk time: 7 + 2 min

11:36

OP050 Effectiveness and satisfaction with telephone consultation in neuro-urology and its medico-economic consequences – experience of the COVID-19 pandemic

Claire Hentzen (Paris/FR)

Talk time: 7 + 2 min

11:45

OP084 Effects of 6 months functional electrical stimulation rowing training in spinal cord injury patients

Stéphane Drion (Saint-Genis-Laval/FR)

Talk time: 7 + 2 min

11:54

OP080 Kinematic assessment of upper extremity in individuals with spinal cord injury

Lamprini Lili (Gothenburg/SE)

Talk time: 7 + 2 min

12:03

OP081 Minding the gap between brain and cognition – the role of spinal cord

Elia Zanin (Motta di Livenza/IT)

Talk time: 7 + 2 min

12:12

OP082 Risk factors of scoliosis in patients with spinal dysraphism – a retrospective study in a French national reference center

Marine Cacioppo (Brest/FR)

Talk time: 7 + 2 min

12:21

OP098 Bodily hallucinations in spinal cord injured patient with tetraplegia – a case-report

Hugo Ardaillon (Bron/FR)

Talk time: 7 + 2 min

**14. PROJECT "PROTOCOLS" - ERASMUS + AWARD: "European Training on innovative Restorative Protocols for clinical and technological changeable"**

was born from a scientific idea of Humberto Cerrel Bazo, Head of the Spinal Unit & SEVERE ACQUIRED BRAIN INJURY UNIT & Functional Rehabilitation Unit at ORAS, Treviso, Italy, who has always been interested in researching innovative methods and wearable technologies in the field of neurorehabilitation.

Since January 2019 we have began working on the creation of a remote rehabilitation professional figure which resulted in the writing of a project proposal submitted to a call for proposals from the Erasmus + European Funding Program.

**PROTOCOLS** has successfully passed the selection (of almost 250 applications) and will be the beneficiary of a budget of the European Commission of the amount of 375,000.00 euros for its realization.

The importance of this professional figure in the field of rehabilitation assumes greater relevance and importance in light of the period of health emergency caused by COVID-19.

The drafting and presentation procedures of the proposal were guided by the Lepido Rocco Foundation, an institute with consolidated experience and fame in the field of European design, which will be a key partner of the European consortium led by ORAS institution.

In addition to the Institute, the consortium will be composed of a Spanish Hospital of European renown in the Spinal Cord Injury Rehabilitation Field, the Hospital Nacional de Paraplejicos of Toledo, a Portuguese company leader in remote rehabilitation and e-health, Sword Health SA, the Technological Park of Ljubljana in Slovenia and the Portuguese professional institute AEVA in Aveiro.

**Kick off meeting** of project "**PROTOCOLS**" took place online on the **18th December**, 2020 h: **9.45 - 13.30**. And a new meeting will be held by the 2nd half of January 2021.

**We Thanks WFNR presidium for endorsing the project.**

15. New paper Publication:

**Complications of epidural spinal stimulation: lessons from the past and alternatives for the future**

Giuliano Taccola 1,2 • Sean Barber2 • Phillip J. Horner2 • **Humberto A. Cerrel Bazo**3,4 • Dimitry Sayenko 2 Received: 26 March 2020 / Revised: 4 June 2020 / Accepted: 9 June 2020 . Spinal Cord <https://doi.org/10.1038/s41393-020-0505-8>  
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