



news NEUROVIRTUAL



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53rd Argentine Congress of Neurology

At Neurovirtual we are pleased to have participated at the 53rd Argentine Congress of Neurology, held in Mar del Plata in Argentina from October 25th to October 28th, 2016, and which was organized by the Sociedad Neurológica Argentina. This year, the congress welcomed a group of more than 1000 neurologists, epileptologists, and other neurology specialists. There were several international speakers and guests at the event from the US, the UK, and the Netherlands, together with the most renowned neurologists in Argentina.

This year, the congress hosted integrated sessions and talks with experts from Argentina and from overseas.

The conference discussed topics such as:

- Pharmacology in epilepsy
- The functional and social impact of sleep disorders
- Controversial topics in neurology
- Neurologic emergencies
- Infectious diseases with neurological repercussions

Neurovirtual exhibited its new monitoring equipment BWIII LTM-ICU and BWMini AEEG to the participants in the conference, who showed their interest in interacting with these devices.



Helping your patients
develop their full potential!



BWIII VEEG/ICU/LTM
Epilepsy Monitoring

16° FLASS - Federation of Latin American Sleep Societies

On November 16th, 2016, Neurovirtual participated in the 16th Latin American Sleep Congress and 12th Colombian Congress of Sleep Medicine; this event took place in Medellin, Colombia, at the Intercontinental Hotel, with over 350 specialists in attendance.

Before the Congress, Neurovirtual sponsored a type 1 polysomnography workshop for 107 participants, presented by Dr. Eduardo Medina from Uruguay. During the lecture, one participant was connected to the Neurovirtual BWIII PSG Plus, allowing for a complete clinical experience. This live demonstration made a great impression on attendees, who really enjoyed how the topic was presented.



Besides offering support to the event, Neurovirtual also sponsored Dr. Facundo Nogueira, from the Argentina Sleep Society. Dr. Nogueira presented a lecture on home polysomnography using our BWMini HST/PSG and demonstrated its clinical application to participants.

During the vendor exhibition, customers from Peru, Argentina, Panama, Puerto Rico, Mexico, and Colombia visited our booth, along with hundreds of other sleep specialists and technicians who had interest in our products.





Neurovirtual attends Medica and hosts first annual distributor training event

The largest medical trade fair in the world was held again at the Messe Dusseldorf trade center in Dusseldorf, Germany. The show featured some of the latest technologies from around the world, with participants from nearly every nation and every mass-market and niche-market in the fields of medicine.

Neurovirtual attended the event and featured our latest BWIII EEG and PSG devices, along with our portable (ambulatory) EEG and PSG devices.

We had the opportunity to interact with distributors from around the globe, who were eager to learn about the value proposition and quality provided by Neurovirtual products and services.

This year, Neurovirtual was proud to host our first annual training event for our current and future distributors, held at the Relaxa Dusseldorf Airport Hotel on Sunday November 13th, 2016. This event presented a unique opportunity for Neurovirtual management and our hard-working

distributors to explore the current market conditions in their respective countries, and also allowed us to listen to the challenges they are experiencing and brainstorm solutions to help them be more successful in promoting our brand and their business. This platform allowed for an in-depth training experience and discussions, including input for our future products that will directly affect their success in the field.

At Neurovirtual, we strive to be in tune with our customers, whether they be end users or distributors, so that we can offer truly effective products and tailored software and service to meet the ever-changing demands of the healthcare industry.

We are excited to offer the second annual course on Sunday, November 12, 2017. Please inquire for updates by visiting our site frequently, or sending a message to info@neurovirtual.com for updates as they become available ahead of next year's Medica.



A photograph of a desk with a laptop, a smartphone, and a notebook with a pen. The laptop is open, showing a keyboard. The smartphone is a black iPhone. The notebook has some handwritten notes. A blue line graphic resembling a heartbeat or signal is overlaid on the top right of the image.

Sleep Disorder Due to Work Schedule

Human beings, like any other living beings, have an internal body clock that regulates biological cycles, including sleep-wake cycle. The majority of these cycles last close to 24 hours (Circadian) and are ready to synchronize with the daily environment, light-darkness rhythm, being able to be active and awake during the day, and to sleep and rest at night, which coincides with a decrease of body temperature that starts during the last hour of the day. When a person works at night, or has rotational shifts, the Circadian system does not manage to adapt quickly to the new schedule, and this results in a desynchronizing between the biological rhythm and the schedule external demands.

Nowadays, work demands are higher and higher due to increased competitiveness in the market and the need to achieve production objectives, which is a major reason why company operations go round the clock and workers do fixed or rotational night shifts; during these shifts, there is sleepiness during working hours, which involves an increased risk of having a work-related accident.

Those who work night shifts sleep four to six hours a day on average; if they also suffer from a rotational shift-related sleep disorder, sleep average is reduced to less than five hours. These people, under controlled optimal environmental conditions, can only achieve a six-hour daytime sleep, even though they could sleep longer. Shift rotation at work is a reality and results in negative consequences for the health of workers; these effects are caused by two essential mechanisms: the disruption of the biological

rhythms and sleep deprivation. Because of these, health-related conditions occur more intensely in rotational and night shifts, as evidenced by the prevalence of gastric ulcers, an undisputable biological marker of stress. This pace of work is also associated with the decrease of the immune response, the increase of cardiovascular risk, the development of metabolic disorders, reproductive problems, and the increase of accidents at work, among others.

Shift work sleep disorder, also known as sleep disorder secondary to shift-rotation work, is clinically expressed by insomnia or excessive sleepiness, accompanied by a reduction in sleep total (one to four hours) and in sleep efficiency, poor sleep, a reduced level of alertness, and deficient work performance associated with a work schedule that overlaps sleep regular hours.

According to some research, the prevalence of this disorder is estimated in 20% in developed countries, of which 5% is symptomatic. A number of complications due to shift work sleep deprivation have been described, among them mood swings, social isolation, little interaction with coworkers, depression, risk of substance abuse, making mistakes or having accidents at work, and car accidents, along with worsening of health due the development or exacerbation of gastrointestinal, metabolic, neoplastic, or cardiovascular conditions. In addition, there is higher risk of suffering from cardiovascular conditions, digestive disorders, obesity, psychological disorders, chronic fatigue, insomnia, and sleepiness.

It has also been reported that most



workers consider that the characteristics of their night work not only alter their sleep, but also create difficulties in their family life, restrict their social life, decrease their leisure activities and affect their health negatively; sleep alterations are one of the main problems this type of workers face.

In Mexico, the community of specialists in sleep disorders must work together with entrepreneurs and work authorities to suggest laws aimed at decreasing excessive daytime sleepiness and at increasing sleep quality in order to improve the safety conditions at work for employees with rotational work, such as construction workers, nurses, drivers, security staff, since this would ultimately benefit the safety and health of workers.

We are conducting research with the patients at the Sleep Disorders Clinic of the Universidad Autónoma de México (UNAM) in order to compare the subjective quality of sleep to the polysomnographic variables of the population with Obstructive Sleep Apnea (OSA) who have rotational shift jobs and those with daytime shifts.

The method used was a retrospective and comparative study with a sample of 107 male participants distributed in three groups: Group A was formed by subjects with severe-intensity OSA who work during the day, B was formed by severe-intensity OSA who work rotational shifts, and C was the control group.

The polysomnographic studies were conducted at the Sleep Disorders Clinic of UNAM.

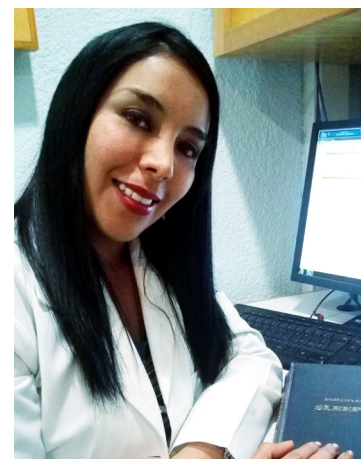
The sleep quality subjective variables

were night awakenings, electroencephalographic activations, sleep hours during weekdays, sleep apnea rate, Epworth sleepiness scale score, oxygen saturation, and nap length.

The preliminary results of this first stage of the investigation show that the assessment of sleep architecture in subjects with OSA did not produce any differences; however, there were statistically significant differences in the respiratory variables, micro-awakenings, and subjective assessment of sleep among these subjects related to a difference in the number of sleep hours (NHS). Finally, it is important to point out that the effects of sleep deprivation due to rotational shift work and the presence of OSA deserve to be included in future investigations.

Ivonne Sellenne Verde Tinoco

Health Promotion specialist from Universidad Autónoma in Mexico City. CPAP Clinic Manager, in charge of the assistance of



and follow-up with patients with respiratory disorders at the Sleep Disorders Clinic of UNAM, Hospital General de México facilities, which has conducted research in shift work sleep disorders.



Auxilio Mutuo

El Gran Hospital de Puerto Rico



A model sleep lab at a model hospital in Puerto Rico

Hospital Auxilio Mutuo is the oldest and largest private hospital on the Island of Puerto Rico. It was founded in 1883 and has been serving the island for well over 100 years. The hospital was founded by seven Spaniards who saw a glaring need to establish affordable health care services for their poor countrymen who were inhabiting the island and adjusting to the new climate. They, along with the initial 187 members of the newly formed partnership, gave their time and considerable monetary contributions to ensure that their dream of providing quality care to the island would come to be.

Today, Hospital Auxilio Mutuo offers the most comprehensive range of services to the island, including a top-rated cardiology program, cardiovascular surgery, oncology, and most recently, one of the most modern and largest sleep labs on the island. Their dedication to quality made their decision to work with Neurovirtual on their upgrade and subsequent expansion a very thoughtful one.

Over the past year, Neurovirtual installed 12 beds at Hospital Auxilio Mutuo. The management



staff at the hospital learned about Neurovirtual products during an annual sleep conference, where they heard about a better option for modernizing and expanding their lab. Their initial purchase of six beds happened in December of 2015, and when the time came to expand, the hospital contacted Neurovirtual to add six additional beds and open a brand new 12-bed lab with state-of-the-art technology, ensuring patient comfort and accurate diagnostics.

Neurovirtual provided in-depth training to the entire sleep staff, facilitating the learning curve, which is perhaps the easiest in the industry due to software features that are designed with the requests and comments of customers in mind, so it feels natural. To paraphrase their lead technician and lab manager, Enid, their experience with Neurovirtual has been extraordinary, and their transition has been very easy due to training and the responsiveness of the 24/7 technical support provided by Neurovirtual. The Neurovirtual system is a very sophisticated one, which has made doing their job much easier. They are truly happy with their experience and would highly recommend Neurovirtual equipment to other labs.

The Neurovirtual difference exists in many facets of the product offering, including intuitive software solutions and budget-friendly cost; however, the most important facet is ensuring that every customer is completely satisfied and knowing that Neurovirtual will always be listening for ways to improve their experience.



Neurovirtual participates on average in 20 to 30 congresses and conferences in different countries around the globe. Taking our goal to humanize the diagnostic, we pride ourselves to be part of this community and be able to give our contribution to clinicians and patients.

Below you will find the list of events for 2017, where Neurovirtual will be presenting its solutions to make neurology and sleep diagnostic more human! We hope to see you there!

USA

AAN 2017 Annual Meeting

📍 Boston Convention & Exhibition Center

22 to 28 April 2017

SLEEP 2017

📍 Hynes Convention Center 900 Boylston St. Boston, MA 02115

3 to 7 June 2017

CANADA

8th Conference of the Canadian Sleep Society

📍 Hyatt Regency in Calgary, Alberta

28 to 30 April 2017

BRAZIL

XV Congresso Paulista de Medicina do Sono

📍 Maksoud plaza R. São Carlos do Pinhal, 424- Bela Vista, São Paulo- SP

12 and 13 May 2017

XI Congresso Paulista de Neurologia

📍 Hotel Sofitel Jequitimar Av. Marjori da Silva Prado- Praia de Pernambuco- Guarujá

24 to 27 May 2017

XXVI Congresso da Sociedade Brasileira de Neurofisiologia Clínica

📍 Centro Convenções Goiânia- Goiás

26 to 28 October 2017

COLOMBIA

XII Congreso Nacional de Neurología Infantil

📍 Bucaramanga, Santander Department, Colombia

17 to 19 March 2017

III Entrenamiento técnico en Polisomnografía

📍 Centro de Convenciones Cafam Floresta

5 and 6 April 2017

Diplomatura Latinoamericana en Medicina de Sueño

📍 Pereira, Colombia

8 to 20 May 2017

ARGENTINA

Lace 2017 - Congreso Liga Argentina Contra la Epilepsia

📍 SALGUERO PLAZA Jerónimo Salguero 2686 - Ciudad de Buenos Aires

5 and 6 October 2017

MEXICO

XXIV Congreso Mexicano de Cirugía Neurológica 2017

📍 Cancún international center

6 to 11 August 2017

SPAIN

XXV Reunión Anual de la Sociedad Española del Sueño (SES)

📍 Santander, Espanha

20 to 22 April 2017

32º International Epilepsy Congress

📍 Palau de Congressos de Catalunya, Espanha

2 to 6 September 2017

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