

news **NEUROVIRTUAL**



Neurovirtual News interview with **Dr. Javier Puertas**, head of the sleep center at the University Hospital in Valencia "La Ribera" - [Page 2](#)



Inside the World's Largest Medical Fair, You Will Find Neurovirtual!

- [Page 5](#)

Top Universities Favor Neurovirtual for its Neurodiagnostic and Sleep Diagnostic Equipment - [Page 7](#)



"I believe in telemedicine and in new technologies to offer better treatment"

In an interview for Neurovirtual News, the Spanish doctor, Javier Puertas, shares his points of views about sleep disorders, diagnosis, quality of life, the impact of weather on sleep and other perspectives.

N: The sleep unit at La Ribera University Hospital is a reference in Spain for this field. How does it work and what are its main differences?

Dr. Puertas: The sleep unit at La Ribera Hospital opened in 1999, and since the beginning it has been structured to make the exchange possible between different fields of study, as this has already happened in other European countries or in the United States. This means that the sleep laboratory, patients' beds and polysomnography studies are located in a place where it is possible to have collaboration between other specialties, such as pulmonology, neurophysiology, and pediatrics.

Thus, every one to two weeks patients are examined by other colleagues. The unit was planned to enable that sleep studies could be an integrated part of the diagnostic process and a patient's treatment in a way that it is not just a test or a medical return but a coordination between various specialists. Another difference is that the unit was one of the largest in Spain when it opened, with four beds working every night of the week.

NN: Since 2007 there has been a subspecialty for sleep medicine in the United States. How do you see the professional development of sleep medicine in Europe?

Dr. Puertas: Since the late 1990s, there has been a recognition of sleep medicine as a subspecialty in Germany. Recently, France has also joined. The subspecialty can allow accessibility and collaboration with other segments, such as neurology, psychiatry, pulmonology, pediatrics and otolaryngology. With France and Germany recognizing sleep medicine, I believe that it is a very important aspect to influence other European countries, such as Spain and Italy, for their health authorities to advance in their recognition as an area of knowledge. Which means that as a medical discipline this could provide an integrated view of the patient's sleep disorders beyond the partial view that some specialties may have. I believe there may be a rapid advance in the recognition of sleep medicine as a subspecialty in other countries, especially in the European Union.

NN: Returning to the sleep unit at La Ribera Hospital, you have conducted in-depth studies and clinical trials that contribute to the development of medications for sleep

disorders such as insomnia, restless legs syndrome, and others. What are the recent results of those studies? Are you following the results of the drugs that are currently being tested?

Dr. Puertas: Fortunately, we have collaborated on several clinical trials for some sleep disorders, and we are seeing some slowing down in terms of drug development. There is a new group of molecules in some drugs that are being researched that have shown results for both insomnia and restless legs, as well as narcolepsy or idiopathic hypersomnia. Studies from a few years ago and other more recent ones reveal a very important group of molecules that can help patients with sleep disorders, mainly in the field of insomnia, for example, that act with mechanisms different from the GABAergic effect as hypocretin antagonists. With regard to restless legs syndrome, we found an important group of clinical trials that point to intravenous iron, for example, as helping patients who respond poorly to other medications. We also helped develop some epilepsy antagonists, and there are currently a number of trials with new drugs to improve the sleepiness of narcolepsy, such as histamine H3 inverse receptor antagonists, that may help patients with narcolepsy and complement other narcolepsy drugs.

NN: You were a board member of the World Association of Sleep Medicine, as well as other European ones – a great expert in the field of sleep. How do you see the evolution of studies and treatment for sleep disorders worldwide? Are there any studies that are more frequent or that address a specific specialty?

Dr. Puertas: Well, I believe that the perception of sleep disorders has changed in the last few years, no longer being considered as an outsider in hospitals, as it used to be, and especially the sense of seriousness that sleep disorders had among the general population and primary care physicians. Nowadays, in my consultations, I have received many patients with sleep disorders, referred by general doctors, sometimes with symptoms that started very recently, which gives me the impression that primary care physicians are asking more and more about sleep disorders for the general population. This change has a good part and a difficult part. The good part is that sleep is starting to be seen as an important health problem, and this is essential because it



is an important factor in quality of life and overall health. It is also true that as some sleep disorders such as insomnia, apnea and restless leg syndrome are generally prevalent, we are starting to see a lot more pressure for concern on the public hospital sleep units. This means that the sleep units in hospitals need to facilitate campaigns or training actions so that general doctors could also start managing sleep disorders, as we cannot directly receive the large amount of patients with some degree of sleep pathology. I believe that in a medium term this will make health authorities realize that sleep is a real health concern that generates the demand for treatment. Although it's difficult for sleep units to grow a lot in Europe, as they have in the United States – where there are sleep units with 20 beds or 20 rooms – it's true that we have to look for ways to diagnose or facilitate outpatient diagnosis. I think that telemedicine can facilitate both diagnosis and patient monitoring/treatment. Since we can't have bigger and bigger sleep units in hospitals, we have to look for alternatives to network with general practitioners to diagnose and treat patients. We doctors who work with sleep medicine hope that telemedicine and information and communication technologies will make it easier for us to reach more patients to provide better treatments. In this sense, companies that are working on new diagnostic techniques will also have to get out of the hospital diagnostic realm a little bit and look for other parameters, diagnostics like algorithms, that help us see heart rate, body temperature, and other symptoms. And when we have technologies that allow us to analyze a lot of data, we will be able to integrate them with sleep studies, in order to have a better perception of what healthy sleep is for patients.

NN: As a percentage of the population, looking mainly at Spain, what is the percentage of people who continue to suffer from sleep disorders without ever being diagnosed because they have not been referred by general practitioners to a specialist?

Dr. Puertas: Our impression, and we think it's no different from other countries, is that basically half of the general population has some sleep disorder, and half of them, in the last year, have required ongoing medical attention. In general terms, we are talking about 20% of the population. It is unlikely that we are giving access to the hospital to less than 5% of the population, considering patients with insomnia, sleep apnea, narcolepsy and parasomnias, so we have something like 15- 20% of the population that are waiting for help with their sleep problem.

NN: Is there any type of disorder more frequent in any specific Spain region?

Dr. Puertas: We did some research with the Ministry of Health's data. For example, we found that in the northern regions of Spain more hypnotics are consumed than in the south. We don't know very well the reason, whether it is because there is less light or because it is colder, but the consumption of sleeping drugs is almost double than in the southern regions. They are also more developed regions, in socioeconomic terms, and there may be more stress or easier access to general medicine, but in general, the reality in Spain is not very different from other western countries. There is a widespread problem: stress. The cities and the crisis have generated more insomnia, in addition to the issue of obesity, which affects both adults and children, increasing the potential for patients with sleep apnea associated with being overweight. This is often seen in developing countries: Mexico, in particular, has the highest percentage of childhood obesity in the world. One consequence is increased pediatric sleep apnea, changing the profile of hypertrophy and tonsils. The treatment and risk factor for each of these children is different. A small child – under 6 years old – with hypertrophy is operated on if there is an indication that they have apneas, but we realize that a 7-, 8-, 9- or 10-year-old obese child with many apneas sometimes needs a CPAP.

NN: It is known that more developed societies have a higher rate of people with sleep disorders. Do you think there is any explanation for this?

Dr. Puertas: I believe so. There are several factors that clearly influence more industrialized societies, such as a higher percentage of the population that works during night shifts. The more industrialized a society is, more 24-hour or 24/7 service is required. More urbanized societies also use more time in transportation, and most jobs are sedentary rather than outdoors. Getting less sleep has a metabolic impact, favoring obesity, while getting less exercise and spending too much time in the car and at work. We also expose ourselves less to natural light. When we leave the house, we go into the garage, get in the car, go to work, where there is usually a parking lot, and sometimes, without going out into the street, we go up to work without even seeing daylight. And for most of the day we are exposed to artificial light. This series of habits is tremendously harmful, not only for health, but also for sleep, if we compare it to what our bodies were programmed for. In the past, in an agricultural or hunting society, we were societies in which



we had exposure to ambient light and physical activity associated with work. Industrialized societies are noisy; we live in buildings, there are streets and cars generating continuous ambient noise, and that's when you don't live near airports or next to highways. It has been proven through sleep electroencephalograms that during the first year that we live next to an airport, our bodies wake up slightly when an airplane arrives. In the second year, these awakenings fall down, but the cardiac reactivity persists, and we never fully adapt to noise or a potentially threatening environment, because it is a physiological thing.

So, we have a number of elements in our environment that together are detrimental to health. If we stop to think about it, how much stress did our ancestors in the Paleolithic era suffer when a bear chased them? But if we add lack of exercise, lack of exposure to light, sedentary lifestyle, sleeping in a noisy environment, among others, we have a set of factors that not only impact our quality of life, but also the quality of sleep. We have to take these factors into account, insofar as we live in an urban environment, and try to improve as we can. That is, we should avoid – when we get home after work – technology, tablet light, excessive technology, television, artificial lights. We should allow ourselves a period of disconnection from the stress of work when we go to sleep. With this, we improve family relationships, human communication in the family environment, generating a habit that breaks a little of the artificiality that we have in the cities. Everybody knows a little bit about how to do this. Sometimes those who work shifts can't avoid disturbing their sleep, but we have to take this into account in order to acquire better habits, such as avoiding alcohol before going to bed or avoiding coming home from work exposed to dawn light. Sometimes coming home from night works with sunglasses on makes it easier to sleep at home in the morning with curtains and a mask. In other words, these cases need to be individualized, but in general we take on lifestyle habits that are detrimental to our health.

NN: Recently, you gave an interview about the difficulties of sleeping when the weather is too hot. How does the weather influence the quality of sleep?

Dr. Puertas: We know that there is an important relationship between the regulation of body temperature and the quality of sleep, which means that to sleep well, especially in the first half of the night, our body needs the internal body temperature to decrease. To do this, we need the peripheral skin temperature to increase, as it is the way our feet and hands act as antennae to exchange heat with the environment. Women especially know that you can't sleep with cold feet and hands, inspired by their grandmothers who slept with hot water bags in bed when there was no heating or air conditioning. So, when we have a low temperature difference between our body and the outside, we eliminate heat with difficulty, and with this, the depth of our sleep is less. Therefore, it is more difficult to

sleep at night in hot and humid environments, because we are not able to regulate our body temperature, and consequently sleep becomes more superficial. In winter, if we have cold hands and feet, we will not be able to sleep deeply. Also, with age, body temperature regulation becomes less effective, one of the factors that we believe is associated with worsening sleep quality as we age. On the other hand, we know that levels of melatonin, a hormone related to sleep quality, decrease with age. At night, the higher the melatonin peaks, the better the depth of sleep. And melatonin also helps produce peripheral dilation of the hands and feet, contributing to the elimination of heat. This is why sometimes taking melatonin helps us to rest, because of its effect and the fact that it helps us to regulate body temperature. For these reasons, there is an important relationship between the regulation of body temperature and room temperature: When it is close to 86°F and with a significant degree of room humidity, it is more difficult to eliminate heat and the tendency is to sleep poorly.

NN: In the long run, can extended heat – for example, in a place like North Africa or even in Florida where it is always hot – help develop a specific sleep disorder?

Dr. Puertas: There are no studies that indicate that living in one climate or another affects sleep. It is true that in this life the contrast helps all the biological rhythms, developed from the rotation of the Earth and the light-dark cycles. So, the heat-cold contrast at night also helps to sleep well, but at the same time the human body has an incredible capacity to adapt; that is, we find ourselves from the Berbers of the Sahara, who cover themselves with a robe, to the Eskimos. We are in extreme temperature conditions, but we have no evidence that this has a long-term effect on the quality of sleep, and we believe that this is because the body is able to adapt to almost any situation on Earth.

NN: Is there any kind of contraindication when it's very cold which can cause some injury to sleep? You told us that there must be a difference in body temperature. When it is very cold, is there any prejudice?

Dr. Puertas: Cold produces peripheral vasoconstriction; that is, in order for us not to get too cold or lose heat, our skin arteries constrict and prevent blood from reaching the skin in a significant way so that heat is not lost. There is no significant damage. What happens is that sleep will be of a lower quality in extreme temperatures. The ideal temperature for sleeping is between 64°F and 68°F in an environment that is not too humid. It's not always easy to achieve this and we recommend not sleeping all night with the air conditioner on, because this causes problems with dryness of the mucous membranes and some people wake up with pharynx irritation. Empirical evidence shows that ceiling fans, such as those that exist in tropical countries, which turn slowly during the night, make it easier to sleep than air conditioning on all night, because the moving air helps to balance body heat.



Leading International Trade Fair
DÜSSELDORF, GERMANY
15-18 NOVEMBER 2021

Member of  **MEDICAlliance**



**World
Forum for
Medicine**

www.medica.de

Inside the World's Largest Medical Fair, You Will Find Neurovirtual!!

Imagine a fair with a 40-year success story. An event that brings medical device businesses and health professionals together from around the globe. This describes Medica, the world's largest medical device and health solutions fair. Once again, Neurovirtual was an exhibitor in this great event and has been a part of it since 2008.

In 2021 Medica took place between November 15th and 18th, once again hosted by Germany, at the Convention Center Düsseldorf (MESSE) in Düsseldorf, Germany. As always, it was a huge success. It had the support of more than 3000 exhibitors, organized in seven different categories, such as imaging and diagnosis, medical equipment and devices, laboratory equipment, and diagnostic tests, among others.

For Neurovirtual, events like this are always a great opportunity to reinforce its brand commitment to global health, and a chance to expand its horizons and open itself up to different markets. Attending reaffirms its position to establish new relationships with those who are committed daily, to humanizing diagnoses.



New edition, new time, same success

Still, under the shadows of COVID-19, this year's edition had many differences. This time around, pavilions were less crowded, had fewer visitors to the stands, but was no less successful. According to organizers, Medica exceeded expectations. The optimism overcame fear and more than 45,000 visitors from 150 different countries were registered.

These thousands of visitors to Neurovirtual's stand were able to see the brand's latest innovation: the HST BWMini Compass device, a new solution for home exams, opening a new market sector for the company. In addition, the full range of EEG and PSG equipment was also present, everything presented by Neurovirtual CEO, Ed Faria, US Sales Manager, Sergio Solis, and Technical Support Coordinator, Sebastian Ortiz.

Neurovirtual's stand was placed in a new pavilion with an excellent location. This year's fair was another success for Neurovirtual. Visitors found the space easily and were able to enjoy a great experience, develop new partnerships, and participate in great discussions. This experience shows one more time that physical interactions and personal contact are still the best ways to enjoy an event.



II International Master Degree in Sleep Medicine

2022-2023

Request information



The Sleep Institute Foundation, in collaboration with the Universidad Europea (Madrid, Spain), has developed an international master's degree in sleep medicine, both in English and Spanish, CME- accredited by the American Academy of Family Physicians (AAFP) and endorsed by the European Sleep Research Society (ESRS). It is designed so that students do not have to interrupt their professional career while advancing in their education with us. The master's degree also serves as preparation for the European certification exam in sleep medicine (European Sleep Research Society). Once completed, students will have the possibility of an extracurricular internship under the direction and supervision of Dr. García-Borreguero.

This is a very complete master's degree in sleep medicine, 100% online, lasting 11 months and credited with 60 ECTS (European Credit Transfer System). The master's degree incorporates leading international experts within all fields involved in sleep medicine. It also offers synchronous webinars, workshops, and tutorials where students will have the opportunity to interact with leading specialists and teachers in a versatile, dynamic, and complete format through the virtual campus of the Universidad Europea.

- **Degree/Accreditation:** International master's degree in sleep medicine issued by the Universidad Europea.
- **Duration:** 11 months.
- **Academic Calendar:** Start date of the master's program will be on Wednesday, April 6, 2022.
- **Language:** Spanish or English, depending on student's preference.
- **Tutorials in English or Spanish.** All webinars, workshops, textbook and additional support material in English.
- **Modality/Mode:** 100% online.
- **Program Director:** Diego García-Borreguero, MD, PhD, Sleep Research Institute.
- **Program Coordinators:** Celia García Malo, MD, PhD, Neurologist, and Sofía Romero Peralta, MD, Pulmonologist.
- **Academic Coordinator:** Enrique Garrido, PhD.
- **Requirements:** Any person from any nationality, preferably with a background in health sciences, but not mandatory.

supported by:



Endorsed by:



CME - Accredited by:



Top Universities Favor Neurovirtual for its Neurodiagnostic and Sleep Diagnostic Equipment

When building your practice as a medical professional, it can be challenging deciding which diagnostic equipment to purchase. Sales representatives from every brand are eager to visit and sell their EEG and PSG equipment as the best.

The marketing language that sales representatives use can make it hard to know what your best diagnostic equipment options really are. Every EEG or PSG machine you hear about might sound good, so how do you know which to purchase?

If you look past the marketing pitches and look at academic recommendation and scientific research, it's clear that Neurovirtual is a leading authority in neurology and sleep medicine technologies worldwide.

Academic Acclaim in University Hospitals

Neurovirtual's reputation is esteemed worldwide in renowned universities. This is a good sign – leading international universities provide insightful medical research that requires the best medical equipment to produce their data. They look for cutting-edge sleep technologies to back the authority of their own results.

Neurovirtual is used in the following prominent medical university hospitals and sleep research centers around the world:

- The Ohio State University, USA
- The Cincinnati Children's Hospital affiliated with the University of Cincinnati, USA
- Queen's University, Ontario, Canada
- Fundación Santa Fe de Bogota University Hospital, Colombia
- Pontificia Universidad Católica de Chile, Chile
- Sleep Research Institute SL Madrid, Spain
- University Hospital of La Ribera, Spain
- Sleep Laboratory at the Charité University, Germany
- Beijing Capital Medical University Hospital Sleep Center, China
- Chao-Yang Hospital Sleep Center, Beijing, China

Eight top university medical facilities around the world rely on Neurovirtual PSG and EEG equipment to conduct their

research. With our equipment these sleep and neurology research centers have conducted numerous important studies that have improved the understanding of sleep and neurology around the world.

Neurovirtual PSG and EEG use in scientific research

Neurovirtual provides quality diagnostic equipment for scientific research into sleep and neurological disorders. Some key research that has been conducted using our diagnosis equipment are as follows:

- Neurovirtual BWII PSG used in sleep apnea treatment study
- Neurovirtual BWIII PSG Plus Sleep System used in schizophrenia sleep study
- Neurovirtual BWII EEG device and BW Analysis software used in epilepsy diagnosis study
- Neurovirtual BWIII PSG sleep system used in obstructive sleep apnea study
- Neurovirtual 32-channel EEG used for ophthalmological examination in photosensitive epilepsy study

These are just a handful of the many studies around the world that have relied on Neurovirtual equipment to produce reliable diagnostic data. For more information, check out our blogs on Neurology News and Sleep Medicine News.

The Latest Reliable Innovations in Neurology and Sleep Equipment

Here at Neurovirtual, we're passionate about supplying the best diagnostic equipment to benefit medical professionals and patients. We are intensely involved in the neurology and sleep diagnostic community; our team of professionals regularly attend events, symposiums, and meetings related to sleep disorders, neurology, and epilepsy to learn what medical professionals and patients need most in a product.

We provide 24/7 technical support that sets the bar for professionalism and dedication. If you're interested in learning more about our world-renowned diagnostic equipment, please contact us.



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 in being part of this community and to be able to give our contribution to clinicians and patients.

Below you will find the list of events for 2022, where Neurovirtual will be presenting its solutions to make neurology and sleep diagnostics more human! We hope to see you there!



The **BWMini PSG** is designed for PSG Type I, II, III, IV and Ambulatory EEG (Holter EEG) – 42 channels

Request
information



USA

The American Academy of Pediatrics

Phoenix, AZ
February 18-20, 2022

SLEEP 2022

Charlotte, NC
June 4-8, 2022

BRAZIL

39th Congress of the Brazilian Epilepsy League

Campinas, SP
August 11-13, 2022

XXX Congress of the Brazilian Academy of Neurology

Fortaleza- CE
September 21-24, 2022

XIX Brazilian Congress of Sleep 2022

Goiânia- GO
November 30 -
December 04, 2022

COLOMBIA

Update symposium on sleep medicine ACMES

Bogotá, Colombia
February 25-26, 2022

Symposium on Sleep in Pediatric Patients - Asconi

Barranquilla
June 18-19, 2022

I International Congress of Neurology - Eduardo Palacios Sanchez

Cartagena
July 24-27, 2022

MEXICO

Course-Workshop Qualification of Polysomnography in Pediatrics

Mexico City
March 25-26, 2022

XXXI Annual Congress of the Mexican Society of Pediatric Neurology A.C.

Juriquilla, Querétaro
May 16-21, 2022

Contact us:

Neurovirtual News - 3303 W Commercial Blvd. Fort Lauderdale, FL 33309 - USA
+1 (786) 693-8200 - info@neurovirtual.com / www.neurovirtual.com - **Marketing:** Jessika Brito (jessika@neurovirtual.com). **Supervision:** Ed Faria (efaria@neurovirtual.com). **Contributors:** Sergio Solis (ssolis@neurovirtual.com); Allison Ries (aries@neurovirtual.com).

Copyrights all rights reserved. Neurovirtual News is a newsletter publication by Neurovirtual. The reproduction of this newsletter is not permitted without written consent. Neurovirtual is not responsible for the content of the individual articles, included on this issue, and any questions should be addressed directed to the author.
© copyright reserved.