



# WORLD NEUROLOGY

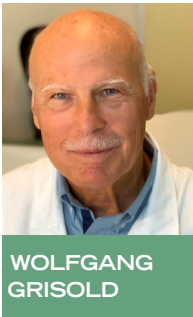
THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

PRESIDENT'S COLUMN

## Brain Health Around the World

Prof. Grisold reviews the impact of the Global Burden of Disease (GBD) update, brain health, and World Brain Day.

WOLFGANG GRISOLD



I welcome you to the new edition of World Neurology, the newsletter of the World Federation of Neurology (WFN). It contains information about the WFN, and reports and publications from members and invited individuals.

World Neurology is free to download from the [WFN website](#), and the World Neurology archive is a valuable source of information on many aspects of neurology. World Neurology is entirely sponsored by the WFN, has no other support, and is not subject to any outside influences.

**The Global Burden of Disease**  
The release of the new version of the GBD will have a strong impact on the neurological community [Collaborators 2024]. It enlarges the spectrum of neurological conditions from 15 to 37, and includes other disease entities and disciplines, which are affected by neurological symptoms and often disability. See an overview in these [infographics](#).

I was privileged to add a comment to the new release of the GBD (Grisold 2024).

One example of many includes neonatal birth injury, where the neurological sequelae are not an immediate effect for neurology, but are inevitable during the life course of the individual. This example and several

others will expand the need for neurological structures and services, and come in a timely manner to align with the efforts of the WHO Brain Health Unit in regard to [Brain Health and the Intersectoral Global Action Plan \(IGAP\)](#). The IGAP and the Toolkit are advancing under the leadership of the WHO, and its overall effect on all aspects of neurology will be tremendous (Grisold et al. 2023).

By choosing the words “all aspects” of neurology, I mean that not only the scientific field of neurology and neuroscience, but all concerned, such as persons with lived experiences and health care professionals. Importantly, the public and the policymakers are also important stakeholders.

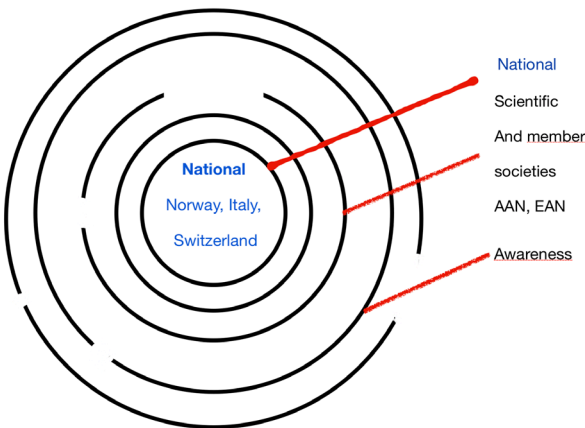


Figure 1: Prioritizing brain health: Awareness and public interest must be promoted.

**Brain Health**  
The process of inserting “brain health” in the agenda of neurological societies, and in the further process on political agendas, is important. In addition to the [European EAN efforts](#) and the efforts of the [AAN](#), brain health has been put on the political agendas of some countries, such as [Norway](#), Switzerland, and recently Italy. These advances help to promote the concept of brain health, and once in a political agenda, it can be assumed that

see [PRESIDENT'S COLUMN](#) page 4

## The Use of Telemedicine Devices and Telehealth in Neuromuscular Disease

The expansion of telemedicine use in NMDs and development of clinically relevant but easy-to-use remote monitoring systems has potential to improve patient access to expert care.



M. S. DAMIAN, MD, FEAN, FNCS, AND PROF. P. LAFORET, MD, PHD

**P**atients with neuromuscular disorders (NMDs) have diverse and complex care requirements, typically served by highly specialized centers. However, these may be geographically remote, and the COVID-19 pandemic underlined the system's fragility by leading to widespread suspension of diagnostic, support, and rehabilitative services.<sup>1</sup> Cancelled routine visits and

limited outreach resulted in morbidity and even deaths. The demand for telehealth and remote care to help resolve this situation increased. This article describes the concept and current options using telemedicine in the care of people with NMDs.

### Telemedicine in NMD at the Onset of the COVID-19 Pandemic

Prior to COVID-19, telemedicine was

see [TELEMEDICINE](#) page 9

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## WORLD NEUROLOGY

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## FROM THE EDITORS

BY STEVEN L. LEWIS, MD, EDITOR,  
AND WALTER STRUHAL, MD, CO-EDITOR

We'd like to welcome all readers to the April 2024 issue of *World Neurology*. The issue begins with the President's Column, where World Federation of Neurology (WFN) President Dr. Wolfgang Grisold provides an update on a number of initiatives, including the Global Burden of Disease study, Brain Health, WFN educational initiatives, and World Brain Day (WBD) 2024 plans. Also in this issue you will find additional details about the upcoming Digital Neurology Updates (WNU) 2024, an exciting online educational initiative planned for September 2024. Registration is now open.

Drs. M. S. Damian and P. Laforet provide a report on the use of telemedicine devices and telehealth in neuromuscular disease, promising to provide state-of-the-art care to remote regions. Drs. Vladimir Hachinski and Ryosuke Takahashi provide an opinion piece (reprinted with permission from the 2023 Hiroshima



STEVEN L. LEWIS, MD



WALTER STRUHAL, MD

Summit) about the future of prevention of neurologic disease, particular with the aging of the population.

Drs. Tissa Wijeratne, David Dodick, Steven Lewis, Alla Guekht, and Wolfgang Grisold report on exciting plans for World Brain Day 2024, which is devoted to Brain Health and Prevention. In this issue's History column, Dr. Peter Koehler provides biographical details about a ship's surgeon (Abraham Titsingh) and cranial injuries, among other interesting historical and medical details.

Drs. Chandrashekhar Meshram, Surat Tanprawate, and Serefnur Ozturk provide a summary of the many activities

of the e-Communications & e-Learning Committee and Migrant Neurology Specialty Group. Dr. Salsabil Abdulrahim Mady Abulazayem details her four-week department visit at the university hospital in Giessen, Germany, as a recipient of the Department Visit Program from the German Neurological Society and the WFN. The WFN also wants to sincerely thank the German Neurological Society for its longstanding and continued support of this important and successful program.

Drs. Chandrashekhar Meshram, Gagandeep Singh, Nirmal Surya, and U. Meenakshisundaram report on the multitude of activities from WBD 2023 in India and their plans for WBD 2024.

In closing, we continue to thank all readers for their interest in the WFN and *World Neurology*, and we look forward to sharing more details about the many upcoming activities for neurologists worldwide in upcoming issues. We encourage contributions about neurology and neurologists from all regions of the world. We look forward to hearing from you. •

# World Brain Day 2024: Promoting Brain Health and Prevention Globally

TISSA WIJERATNE, DAVID DODICK, STEVEN LEWIS, ALLA GUEKHT, WOLFGANG GRISOLD

Neurological disorders represent a significant global health concern, impacting individuals and societies across the globe. With billions of people affected and millions of lives lost each year, the burden of neurological disorders cannot be overstated. Despite advances in medical science, disparities in access to quality care persist, underscoring the urgent need for comprehensive prevention strategies.

World Brain Day (WBD), an initiative launched by the World Federation of Neurology (WFN) in 2014, serves as a platform to raise awareness and advocate for improved neurological care worldwide. In collaboration with six global regions, WBD 2024 focuses on Brain Health and Prevention, aligning with the global agenda to combat disability and promote well-being.

The latest findings from the Global Burden of Disease Study highlight the preventable nature of many neurological conditions, emphasizing the importance of targeted interventions. Stroke, Alzheimer's disease, and other dementias are among the most extensively studied conditions, with identifiable risk factors that offer opportunities for prevention.

Regional neurological societies, including the American Academy of Neurology, African Academy of Neurology, Asian and Oceanian Association of Neurology, European Academy of Neurology, Pan-American Federation of Neurological Societies, and Pan Arab Union of



Neurological Societies, play a pivotal role in leading preventive efforts within their respective regions.

By disseminating educational materials and advocating for policy changes, these societies contribute to the global effort to promote brain health and prevent neurological disorders.

WBD 2024 represents a call to action for stakeholders across all sectors to prioritize brain health and prevention. Through advocacy, education, and community engagement, we can empower individuals and communities to adopt healthy lifestyles and reduce the burden of neurological disorders worldwide. By joining forces with regional neurological societies and leveraging the power of digital communication, we can amplify our message and effect positive change.

Together, let us work toward a future in which neurological disorders are preventable, and all individuals have access to the care and support they need to thrive.

Please visit <https://wfneurology.org/world-brain-day-2024> for more information and a toolkit and join us in our ambitious mission on preventable brain health campaign today. •

## KEY MESSAGE

- World Brain Day (WBD) 2024, in collaboration with six global regions, emphasizes Brain Health and Prevention.
- Promote the WBD 2024 campaign in communities, hospitals, villages, and city-regions.
- Follow updates on the WFN website and social media platforms.
- Six regional societies to lead activities on brain health and prevention.





WORLD FEDERATION  
OF NEUROLOGY

# > WNU 2024

WORLD FEDERATION  
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## PRESIDENT'S COLUMN

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the idea and concept will be developing, surpass attention and awareness, and result in practical advances.

The implementation of brain health in the agenda of scientific societies is essential. The centerpiece is the adoption of brain health into the political agenda of a country.

After Switzerland, the most recent example of taking brain health into the political agenda is Italy, where on March 12, the Strategia Italiana per la Salute del Cervello 2024-2031 was held in the Camera dei Deputati (Chamber of Deputies) in Rome, which is at the highest political level.

It was orchestrated by the Italian Society of Neurology (SIN). The importance of brain health was acknowledged, and during the meeting several Italian societies involved in neurology at all levels participated. Orazio Schillaci, the Italian minister of health, gave an inaugural speech. From the international neurology community, Prof. Paul Boon from the EAN and I (from the WFN) were invited for short speeches of introduction on the importance of brain health. Prof. Matilda Leonardi advised us on the importance of brain health for Italy and was involved in the development of the event.

My address pointed out that the WFN is actively engaged in brain health and has devoted the recent **World Brain Days** (WBDs) to the topic of brain health. The upcoming WBD is on brain health and prevention, following the previous WBDs on brain health, and brain health and disability. I also emphasized that within brain health, the implementation of IGAP will need increased efforts and promotion as the spectrum of persons needing neurological care is likely to increase after the release of the new GBD.

The WFN wants to congratulate SIN and Italian politics for taking up and engaging in this important matter of brain health.

### Education in Neurology

Education Is one of the WFN's core missions. We are happy to announce that the number of applications for

WFN training sites, consisting of training centers and department visits, is increasing. In Africa, we currently have four training centers, and in Mexico, we have one training center.

In Africa, we have a full four-year training position in Senegal and Cape Town, and in Rabat, there is a four-year training position starting up, in addition to two neuromuscular fellowships. Since 2016, the **ICNMD**, a specialty group from the WFN, regularly sponsors one candidate for neuromuscular training in Africa each year from the Congress surplus. The first **ICNMD virtual meeting** in December was successful, and we look forward to the **next ICNMD congress** in Perth, Australia, which will have an exciting program concerning all aspects of neuromuscular disease.

Encouraged by our experience with the Virtual WCN 2021, the hybrid WCN in Montreal 2023, and our successful educational days with AFAN and AOAN, we will launch a two-day **WFN Digital Neurology Updates** (WNU) 2024 meeting. The WNU will be virtual, will take place Sept 26-27, 2024, and will consist of plenary lectures regarding the most frequent neurological conditions, followed by a series of teaching courses in the afternoon. In between the scientific parts, we will also have industry-sponsored symposia. We hope this series of update lectures will be exciting and useful, and our outreach will be as intense as it was for the WCN 2023 in Montreal.

### World Brain Day 2024

The theme for World Brain Day 2024 is "Brain Health and Prevention." It will be organized by the WBD committee and the WFN regions, and will create an attractive program to emphasize and stress the importance of brain health worldwide and selectively emphasize prevention.

Prevention is a pillar of the IGAP, and prevention in non-communicable and infectious disease is a powerful tool. This tool will help to reduce the number of neurological diseases as well as reduce the sequelae such as reduced quality of life and disability.

Visit the **WFN website** to see the progress of development. There will be a toolbox to download material, which can



Prof. Wolfgang Grisold delivering his address on brain health at the Camera dei Deputati in Rome.

be adapted and used for local promotion. We encourage all readers to use this incentive locally and celebrate WBD. We also welcome your reports from WBD celebrations, which will be potential candidates for publication in World Neurology.

### Meet Us

The WFN had a booth at the meeting of the Austrian Society in Vienna and at the meeting of the American Academy of Neurology (AAN) in Denver this year.

We will have booths at the Japanese Society of Neurology in Tokyo, and at the meeting of the European Academy of Neurology (EAN) in Helsinki. If you visit any of these congresses, please visit our booth. You can also make an appointment for a meeting with our office ([carlos@wfneurology.org](mailto:carlos@wfneurology.org)).

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The WNU2024 is a new initiative of the WFN.



Wolfgang Grisold (left) and Carlos Hunt, WFN London Office, at the WFN booth at the meeting of the Austrian Society of Neurology at the Imperial Palace in Vienna.



# Preventing Neurological Disorders: Are We Being Far-Sighted Enough?

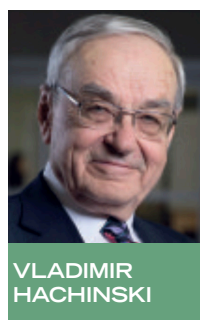
If we do not slow the pandemic of neurological disorders, we face an even greater pandemic driven by aging populations – but still too few health professionals deal in prevention.

VLADIMIR HACHINSKI AND RYOSUKE TAKAHASHI

Health professionals are trained to deal with diseases. Few engage in prevention, which remains underestimated, underfunded, and underused, but is pivotal in stemming the rising tide of neurological disorders. For dementia, billions spent on finding a drug to counter cognitive deterioration have yielded two drugs of efficacy still to be fully determined and unquestionable complications and high costs. Moreover, an effective drug to slow cognitive deterioration in symptomatic patients would only address the symptomatic late phase of the disease. It would do nothing to prevent increasing waves of cognitive impairment, driven by aging populations compounded by an open-scissors crisis of upward aging trends and downward birth rates.

In 1960, global life expectancy was 51 years; now it is 72 years. The global fertility rate was five births per woman; now it is 2.4. In Japan's super-aged and declining birth rate society, life expectancy has changed from 68 years to 85 years, while the total fertility rate has declined from 2 to 1.3 per woman. This poses mounting social, economic, and health challenges.

One approach is keeping older adults healthy and working past their current retirement ages. Another is educating people to optimize their cerebral, mental, and social health so that they can contribute to the increasingly knowledge-based economy. Integral brain health is key to health,



VLADIMIR HACHINSKI



RYOSUKE TAKAHASHI

productivity, and well-being throughout life.

Promoting brain health includes preventing risk factors and enhancing protective factors. Neurological disorders inflict the largest proportion of disability adjusted life years. Stroke and dementia account for 62%. Stroke, ischemic heart disease, and most dementias share modifiable risks and protective factors, and also to a lesser degree, with Parkinson's disease and bipolar disorders.

Risk factors differ in other neurological disorders, but promoting integral brain health might mitigate their consequences and prevent complications from the triple threat of stroke, ischemic heart disease, and dementia.

Integrating and scaling up prevention by promoting integral brain health through multiple approaches can promise a quantifiable difference. The World Health Organization is acting at the global level, and several countries have national brain health plans that must be complemented by community initiatives that can more easily integrate population-focused and individual approaches.

## Integral Brain Health: An Urgent Action Plan

An abyss exists between what is done and what needs to be done. An abyss cannot be crossed in small steps, so we need an Integral Brain Health Urgent Action Plan to:

- Consider integral brain health – cerebral, mental, and social – in all individual, community, and governmental decisions.
- Create a compendium of actionable knowledge on what is known and what needs to be and can be known by experts and users, and strategies of motivation and implementation.
- Fund new approaches to promoting and scaling up integral brain health in different-sized populations, with variable measures and reflecting different cultures.
- Empower existing leaders, organizations, and communities to implement their highest impact measures based on cost effectiveness.
- Create a new integral brain culture through public campaigns featuring highly accomplished brain users, such as sports champions, innovators, artists, writers, media personalities, scientists, and scholars.

One slogan could be "Integral brain health now." The campaign could promote a basic ABC of "Activity and rest, Balanced diet, and Connecting with others" to help people think better, feel better, and perform better. It would emphasize the simplest, most effective individual actions. For example, walking 4,000 steps a day decreases mortality and provides significant health benefits. Doing it with someone else adds the benefit of socializing and doubles

the chance that the person will continue to walk. Walking in greenery adds yet another benefit – long recognized in Japan as *shinrin-yoku* (forest bathing).

But how can health professionals expand their horizons when they are trained to focus on individual patients? The pandemic taught acute care doctors the importance of prevention so that they would not be overwhelmed by cases. It also fostered unprecedented collaboration between public health officers and acute care professionals. Similar cooperation is needed to prevent brain disorders before the painful lessons of the pandemic fade.

Integral brain health concerns everyone. Small efforts by many produce big changes overall. If about 10% of the population adopts a new view, change follows rapidly. The pandemic is still transforming lifestyles, work, and education – now is a propitious time to introduce fundamental changes.

Exhausted by the pandemic and crises, we may ask if this is the best time to ramp up prevention. But there seldom is an ideal time to innovate. If we do not begin to slow the pandemic of neurological disorders, we face an even greater, more relentless pandemic driven by aging populations. Infectious pandemics subside, aging epidemics do not. If we do not act now, then when? If not us, then who? It is for us, and it is now that we need to act. •

Vladimir Hachinski is a Distinguished University Professor in the Department of Clinical Neurological Sciences at the Robarts Research Institute of Canada's Western University and former president of the World Federation of Neurology. He has made major contributions to the understanding, diagnosis, treatment, and prevention of stroke and dementia, and leads a dementia prevention/brain health initiative.

Ryosuke Takahashi is chair of the Department of Neurology at the Kyoto University Graduate School of Medicine. He is the past president of the Japanese Society of Neurology and the vice president of the Asian-Oceanian Association of Neurology. His major research interests are in the diagnosis and treatment of Parkinson's disease and its related disorders.

**Editors' Note:** This article was originally published in G7 Japan: The 2023 Hiroshima Summit, edited by John Kirton and Madeline Koch, published by GT Media. It is available at <https://bit.ly/g7hiroshima>. Reprinted with permission. This article represents the opinion of the authors and is not the official opinion of the WFN.





## HISTORY

# On Ship's Surgeons and Cranial Injury

The history of Abraham Titsingh (1684-1776) as a surgeon.

PETER J. KOEHLER

"In the year 1709, A van D, sailor on the country's warship Catwijck, commanded by the Lord Captain De Veth, was in the Sloop, while it was put out, and when the rear hoist broke, he fell with the right side of his head on the barrel of the cannon: I found him as a Sufferer, who was lying stricken, in a deep Sleep, Motionless and Feelingless, which Accidents usually accompany those who have so fallen, because the Brain, being shaken by the Fall, or Stroke; its Fluids in its Movements, and the Vessels in its Workings, are hindered, especially that, by which the stirring and feeling is working on our muscles, and that alone is powerful to kill us. It also happens, when only the Shaking of the blow is the Cause of this, that these Accidents do not last long; for after bloodletting, which in all, who have fallen on the Head, or have been severely beaten, is duly applied as the first Means, it frequently disappears, and then I saw them as awakening, and looking about with astonishment."<sup>2p.54-5</sup> (See Figure 1.)

It occasionally happened that the surgeon diagnosed temporary paralysis.

Sometimes, during one or more minutes, an arm or leg would remain blocked, on the bruised side, or on the opposite side, and this immediately gave me the impression, as if they were broken; but while I was examining this, the forces resumed, and then they looked, like someone stricken with a violent fever. As soon as they consume any liquid, they gag and vomit. If one touches the head, one finds the place where the blow came, impression ...<sup>1p.54-5</sup>

Abraham Titsingh (1684-1776), the ship's surgeon who wrote this in 1730, had observed this picture more often. See Figure 2. He not only felt an impression, but soon often a swelling would start. The injured persons often continued vomiting from time to time. He felt it was important to write this down because surgeons often did not see these patients until after this episode was over. The patient would be put in bed, the hair should be shaven, and "the hairy scalp was to be stewed with wool rags boiled in wine containing warming herbs." Others would use brandy for this purpose.

## Bed Rest

Bed rest should be continued for several days, in combination with "a cooling lifestyle." He compared the case with a squire, identified as JVK, who had fallen from a moving carriage and was apparently dead, but recovered after a bloodletting. He had a big bump on the forehead and had to keep to bed for a month. For the first 14 days, he swooned every time he stood up.<sup>1p.55</sup>

## Trepan

Titsingh criticized the ship's surgeons who did not bring the trepan on board because it would be useless due to the ship's movements. He was aware of which locations one should not trephine.

"It should also be noted that one should not trephine on the sutures too lightly, and never on the Sutura Sagittalis, because there the Sinus Longitudinalis runs under it; for if one were to drill into it, one would obtain such a great blood discharge that death must necessarily follow."<sup>1p.53</sup> Moreover, he knew of the danger of skull fractures. In some cases,

but not all, it was necessary to trephine to make room, "lest the deposited blood, or its decay, or the departed bone splinters, damage the brain."<sup>1p.53-4</sup>

## Drunken Sailor

Another case he described was of a drunken sailor who fell in the cable hole with his head on the tip of a grapnel. He had a large wound on the side of the back of his head, where Titsingh could feel the injury of the skull with his finger. The wound was bleeding unusually heavily and prevented him from continuing. He was unable to stop the bleeding, and the man died the same evening. The next morning, he and a colleague dissected the skull and diagnosed a fracture with impression, as well as bone chips that reached to the meninges. Moreover, he suspected that

the transverse sinus was damaged, "which we did not investigate, but let him rest with the dead."<sup>1p.60</sup>

## Son of Ship's Surgeon

Abraham Titsingh was the son of an Amsterdam ship's surgeon who worked for the Dutch fleet. The latter died during the Nine Year War (1688-1697) against the French, when Abraham was only 10 years old. After his father's death, he was taught the healing arts by a Swedish ship's surgeon, who was an excellent teacher. Abraham's two brothers Gerard and Isaak also became surgeons in Amsterdam. At least one of them, Isaak, was partly trained by Abraham. In 1702, Abraham was promoted to second ship's surgeon.<sup>1</sup> He was a rough ship's lump and had little respect for his superiors, but was

beloved among the ship's people.<sup>2, p.134</sup>

He remained in the country's service until 1710, when he settled in Amsterdam as a surgeon, having taken his master's examination in 1711.

He became surgeon of the admiralty and guild master. In the surgeon's guild, he later brought about considerable change in the administration that was unprecedented in its history. He brought to light that the incumbent overlords had defrauded the surgeon's diplomas and the guild treasury. The result was that the entire corrupt guild board was deposed in 1732. Titsingh himself stayed on after the guild board was purged.<sup>3</sup> In the same year, the new guild board under leadership of Titsingh was depicted in a group portrait by the painter Jan Maurits Quinkhard (1688-1772). See Figure 3.

## Spina Bifida

Titsingh was critical of guild exams and was hated by his fellow surgeons. He believed practice was more important than theory, and that experience at the bedside was "the safest and surest way."<sup>2p.136</sup> In particular, he criticized theorists. "The reflective pedants misled the young through unproven feelings. They wrote medicinal novels, emblems with sharp acid, salt, oily grease, and other blanket particles".<sup>1p.792</sup> However, he published several books himself, including *Heelkundige verhandeling over de tegennatuurlijke splijtinge der ruggegraad* [Surgical Treatise on the Unnatural Splitting of the Spine]. See Figure 4.<sup>5</sup> The subtitle was "Geschreven aan den uitmuntende chirurgyn Hendrik Ulhoorn" [Written to

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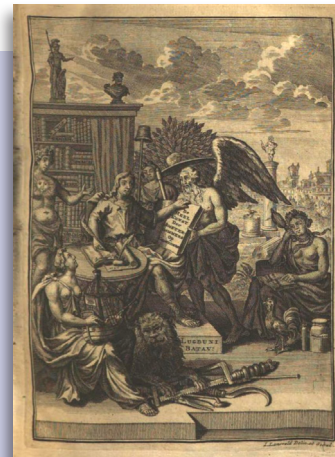


Figure 1. Frontispiece of Titsingh's book *De verdonkerde heekonst der Amsterdammers uit hunne eigen Handvesten*, 1730.



Figure 2. Portrait of Abraham Titsingh, by Jacob Houbraken, after Jan Maurits Quinkhard, 1742-1780, engraving, 18.5 x 13.1 cm, Amsterdam, Rijksmuseum (object number RP-P-OB-48.331; public domain).



Figure 3. Overlords of the surgeon's guild of Amsterdam (1732) with Titsingh on the far right; made by Jan Maurits Quinkhard, oil on canvas, 176.5 x 273 cm, Amsterdam Museum (object number SA 454; public domain).



## HISTORY

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the excellent surgeon Hendrik Ulhoorn]. In fact, he was writing against an earlier treatise on the same subject by his fellow surgeon and citizen Hendrik Ulhoorn (c. 1687-1746), who sought the cause of the defect largely in an unnatural bending of the fetus in the womb. Titsingh, however, ruled that it consisted of defective development of the vertebrae of the spine, caused by dropsy and often accompanied by hydrocephalus, and also did not exonerate the woman's imagination in some cases.

Titsingh's point of contention was mainly directed against Ulhoorn's idea that the surgical training, especially in Leiden, was inadequate, and that it was better to go to Paris. Ulhoorn had indeed studied at Leiden University, but later traveled to Brussels and Paris. In the latter city, he trained in surgery under Joseph Guichard Duverney (1649-1730), after which he settled in Amsterdam and inscribed at the Guild in 1715. Titsingh did not agree at all about Ulhoorn's ideas on training.<sup>5,p.2011</sup> On the contrary, he believed it was excellent in Leiden. In the book, he referred to several authors who had written on spina bifida, including his fellow citizen medicinae doctor Nicolaas Tulp (1593-1674).<sup>6</sup>

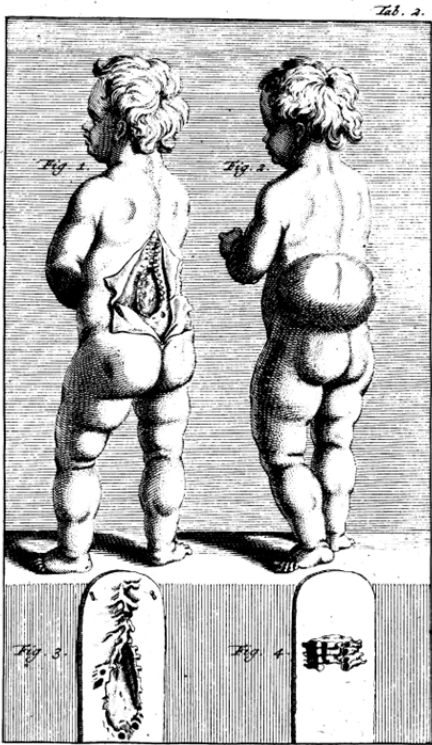


Figure 4. From Titsingh's *Heelkundige verhandeling over de tegennatuurlijke splijtinge der ruggegraad* [Surgical Treatise on the Unnatural Splitting of the Spine] (1736).

In 1750, Titsingh published *Diana, ontdekkende het geheim der dwazen, die zich vroedmeesters noemen* [Diana: Discovering the Secret of Fools Who Call Themselves Midwives], in which he criticized the attitude of some midwives who were interested in money, rather than a humane and considerate manner to assist and help the woman in childbed.<sup>1,p.793</sup> In mythology, Diana was not only the goddess of hunting, but also of chastity and pregnant women.

His last book was *Geneeskunst der Heelmeesters tot dienst der Zeevaart* [Medicine of Surgeons to the Service of Seafaring].<sup>7</sup> On the title page, he mentioned that he was "surgeon of the country's fleet." In this book, one finds some reports from ship's surgeons about various diseases treated by them on their voyages, both on board and on land, in foreign places. He wrote on their medical treatment, about which he widely communicates his reflections, remarks, and clarifications.

## Not Only Surgical Cases

Ship's surgeons did not only treat surgical cases. The surgeon's chest they brought on board contained instruments as well as medicines. The contents of the ship's pharmacy were subject to precise regulations. The Dutch United East India Company made a list of no less than 144 substances in 1704.

Before each voyage, the chest was subjected to a careful inspection in front of the ship's surgeon by a physician and surgeons appointed for that purpose.<sup>9,p.26-7</sup> Ship's journals from the late 17th and early 18th century show that scurvy was the leading cause of death during longer outward voyages to the Cape of Good Hope, in particular if changes in weather and wind caused delays. See Figure 5. As can be expected, there was a relation with the duration of the voyage. None of the voyages with high scurvy mortality during that period lasted less than 19 weeks.<sup>8,p.52</sup> *A Treatise of the Scurvy* by James Lind (1716-1794), who had been employed by the Royal Navy between 1738 and 1748, appeared in 1753.<sup>9</sup> However, the proposed treatment was not immediately adopted by all doctors and surgeons. The lack of a generally accepted theoretical explanation for his observations played an important role here.<sup>10</sup>

In his book *Harde Heelmeesters* [Tough Surgeons], physician Arnold E. Leuftink described the backgrounds of illness and death among 18th century sailors and soldiers, as well as the medical care of the



Figure 5. Ship of the Dutch United East India Company by Gerrit Groenewegen, 1786, engraving, 13.1 x 15 cm, Amsterdam, Rijksmuseum (object number RP-P-1910-3459, public domain).

ship's surgeons, using ship's journals as sources. Infectious diseases were common already upon leaving Europe. Respiratory diseases with coughing and rheumatic complaints were also common. Rain and storms sometimes led to the crew being constantly at work, wearing wet clothes, and often falling ill due to lack of sleep. And then, of course, there were the seasick soldiers.<sup>9,p.69-70</sup>

## Quarrelsome Person

According to his biographer, the physician Jelle Banga (1786-1877), all of Titsingh's writings have something unpleasant, something pugnacious, because of the repeated broad enumeration of his grievances, and something cumbersome because of the elaborate and embellished surgical considerations. The language is flat, uncivilized, and generally prickly and snappy. The style is confused, without coherence, broken up by all kinds of inappropriate ideas, idle thoughts, and short-tempered pranks, which according to his own confession he could not avoid writing. Banga believed it was due to the fact that he had not been properly educated in his early youth and only trained to follow his father's example.

For eight years, he worked as a ship surgeon with rough sailors, roaming everywhere. He was enterprising by nature, but he seems to have applied himself to his craft only with zeal. Only when he established himself as a surgeon

in Amsterdam did he realize his flaws. In the exercise of his art, he showed himself to be a gentle and experienced surgeon.<sup>1,p.795</sup> •

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## THE WFN COMMITTEES AND SPECIALTY GROUPS

# e-Communications & e-Learning Committee and Migrant Neurology Specialty Group

This column highlights the WFN committees and specialty groups that raise awareness and carry information on the important contribution of these groups for the functioning of the WFN.

BY CHANDRASHEKHAR MESHAM, SURAT TANPRAWATE, AND SEREFNUR OZTURK

The committees of the WFN contribute immensely to the functioning of the WFN. The chairs are appointed by the trustees. The present composition and membership can be seen on the [WFN website](#).

The committees work on specific issues while the specialty groups focus on specific neurological conditions.

Information about the Publication Committee and the history of Neurosciences Specialty Group was published in the last issue of World Neurology.

In this issue, Information about the e-Communications & e-Learning Committee and the Migrant Neurology Specialty Group is published. Dr. Surat Tanprawate, who is the chair of e-Communications & e-Learning Committee, which comes under the broad category of education, has summarized the information about this committee. Dr. Serefnur Ozturk, the chair of the Migrant Neurology Specialty Group, has provided the information about this group.

## e-Communications & e-Learning Committee

The e-Communications & e-Learning Committee occupies a critical position in advancing neurology education and communication worldwide. Through strategic consolidation of three subcommittees and targeted efforts, the committee has become a driving force in streamlining activities to enhance visibility, disseminate knowledge, and foster collaboration across electronic media platforms. Initiatives such as website enhancements, social media

management, and the establishment of an e-Learning Hub have significantly extended the WFN's reach and influence within the neurology community. Past-Chair Walter Struhal spent a lot of effort to streamline this committee.

The **official website of the WFN** serves as a central repository for neurology professionals and the general public worldwide. It offers a comprehensive array of resources, including educational materials, networking opportunities, advocacy initiatives, information on WFN programs, and multilingual support. This platform facilitates collaboration and drives the advancement of neurological care across borders.

In today's digital landscape, the role of an e-Communications Committee dedicated to managing social media cannot be overstated. In conjunction with website enhancements, the WFN has harnessed the potential of social media platforms such as X (previously Twitter), Facebook, and LinkedIn to broaden its reach and deepen engagement. This proactive approach has made the organization's initiatives and resources more accessible to stakeholders worldwide.

At the heart of the committee's mission lies the e-Learning Hub, conceived by Morris Freedman, a distinguished committee member. The e-Learning Hub serves as a centralized repository of high-quality educational activities, including rounds, seminars, webinars, master classes, conferences, and special lectures. Leveraging the internet's capabilities, the hub ensures convenient access to educational resources for neurologists worldwide, irrespective of their career stage.

Through close collaboration with regional societies, the committee coordinates Educational Days and e-Learning events tailored to specific neurology subfields and regional contexts. A recent milestone in this collaborative effort is the fourth WFN-AFAN E-Learning Day, focusing on neuropathies. This online event also offers on-demand videos for participants, ensuring

accessibility and flexibility in learning.

World Brain Day 2024, scheduled for July 22, 2024, underscores the importance of brain health and prevention, spearheaded by WFN. The e-Communication

Committee plays a pivotal role in raising awareness and fostering engagement through digital platforms. By leveraging these channels, the committee ensures global outreach and impact, amplifying the message of brain health and prevention to diverse audiences worldwide.

Through strategic initiatives, collaborative efforts, and innovative approaches, the committee continues to play a pivotal role in advancing neurological care and shaping the future of the field.

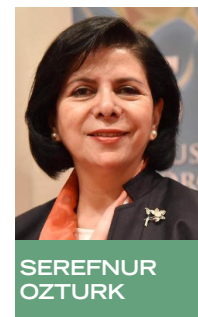
## Migrant Neurology Specialty Group

Migration is a historically old and increasing social, economic, and beyond that, public health problem. The Migrant Neurology Specialty Group was formed Dec. 18, 2018, in Marrakech, Morocco, during the 12th Maghreb Congress of Neurology. Its aim was to attract the attention of neurologists worldwide and health policymakers in the host countries, on the particularity of the neurological disorders in the migrant population. Most human migration is in search of better opportunities, reflecting the desire for an improved quality of life. The current international migration is a reflection of the world, resulting from the dynamics generated by changes in political, economic, and cultural and environmental climate-related structures. Refugees are at significantly higher risk of experiencing disability associated with neurological conditions. Services and care pathways, including access to quality emergency care, should be responsive to the needs of all people with neurological disorders, not least those who are already vulnerable, such as refugees.

Studies on the health of migrants show that migrants have more health problems than the hosting populations. They are more vulnerable to communicable diseases, but also to some non-communicable diseases, such as stroke, hypertension, diabetes mellitus, or obesity. The high prevalence of



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neurological diseases in low- and middle-income countries, where the majority of migrants are originating, a high frequency of diseases of the nervous system should be expected among migrants. However, the incidence, prevalence, and clinical presentation of neurological diseases may differ in migrant people depending on the epidemiology, geography, and genetic background of the native country.

Stroke is a major public health problem among migrants given the high prevalence of vascular risk factors such as hypertension, diabetes mellitus, obesity, and smoking. Dementia, multiple sclerosis, neuroinfectious diseases, and functional disorders are common and important problems among migrants. The WFN Migrant Neurology Specialty Group plans more meetings dedicated to other neurological diseases in migrant people, such as cognitive disorders in elderly migrants, epilepsy, neurogenetics, migraines and headaches, neuromuscular diseases, movement disorders, anxiety, and depression.

The group has a strong collaboration with WFN for refugees as "Brain Health for All on World Refugee Day" to ensure the equitable access to resources, treatment, and rehabilitation that is essential for brain health to all refugees. The interesting book "Neurology in Migrants and Refugees" book was published in 2021. The charter of the global alliance was adopted by the U.N. General Assembly on Dec. 19, 2018, and this constitutes real progress for the cause of migrant people. Past-Chairs Mustapha El Alaoui Faris and Antonio Federico made significant efforts to establish and streamline the activities of this group. •

Chandrashekhhar Meshram is co-opted trustee of the WFN. Dr. Surat Tanprawate is the chair of e-Communications & e-Learning Committee. Dr. Serefnur Ozturk is the chair of the Migrant Neurology Specialty Group.





## TELEMEDICINE

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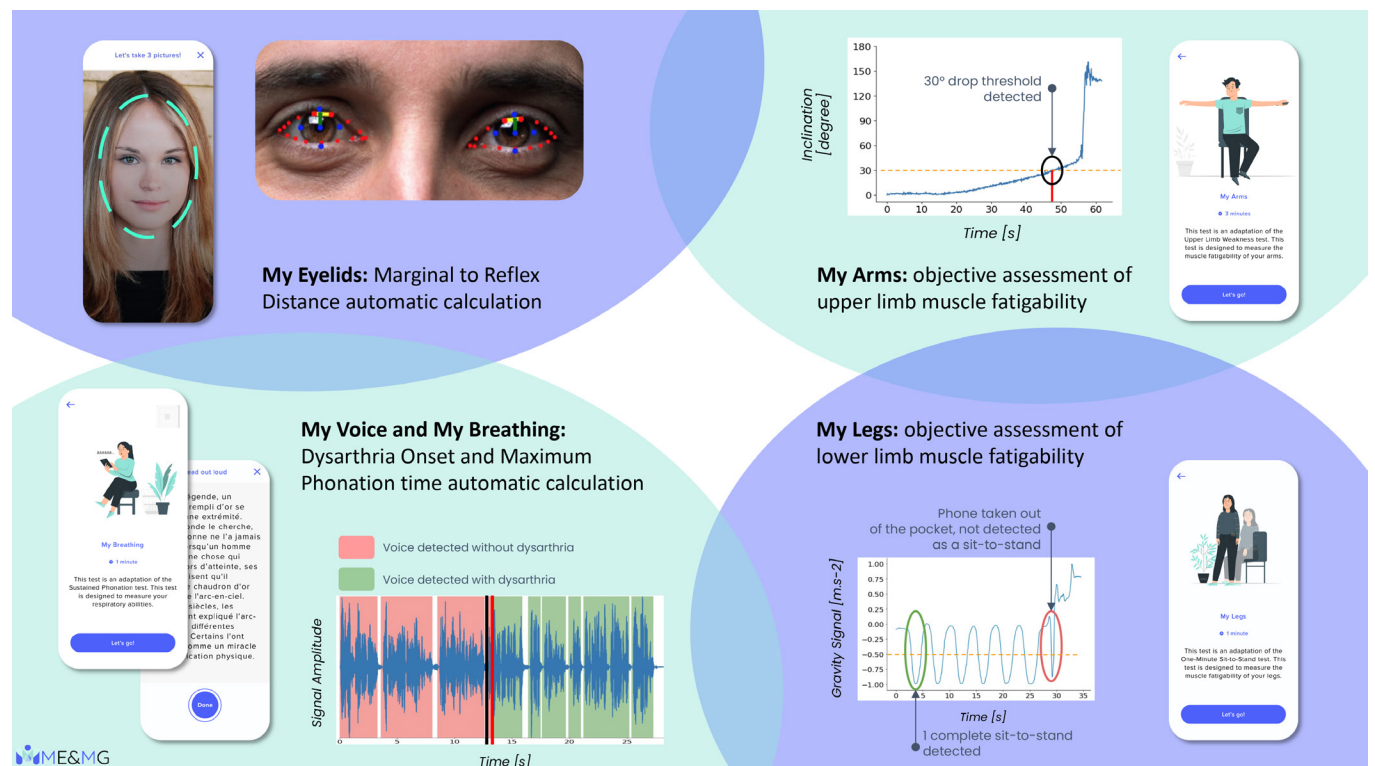
mainly used to overcome geographical challenges in thinly populated or resource-poor regions, or for monitoring patients with impaired mobility at home. Small case series suggested efficacy and economic advantages by reducing hospitalization. Zamarron et al. demonstrated the long-term feasibility of telemonitoring with video consultations plus SpO<sub>2</sub>, BP, ECG, overnight oximetry in home-ventilated patients via a residential internet gateway with alarm system and monthly outreach nurse check-ups.<sup>2</sup> Challenges included changes in the patient-carer relationship, and difficulty procuring individually adapted systems.

COVID-19 forced a hasty rethink of this position. Guidon and Amato discussed neuromuscular telemedicine consultation by phone or videolink.<sup>3</sup> They perceived high potential for follow-up in myopathy, myasthenia gravis (MG), and polyneuropathy when stable, or for management of pain; moderate utility for new or unstable neuromuscular disorders, but low utility where there were discrepant symptom findings, for second opinions, and for primary management of unstable patients. Face-to-face clinics remained mandatory where electrodiagnostic studies and muscle and nerve biopsies were urgently needed, and where the results would change management, as in new onset amyotrophic lateral sclerosis (ALS), MG, and immune-mediated neuropathy or myopathy.

New scores and protocols may mitigate these shortcomings: Garibaldi et al. developed functional scores for myopathies and neuropathies (the Myo-FRS and N-FRS), taking reference to older disease-specific scores such as the MG-ADL for myasthenia gravis, and the ALSFR-R for amyotrophic lateral sclerosis.<sup>4</sup> Ricciardi et al. suggested a protocol for remote clinical testing in MG, featuring:

- Counting aloud test in one breath (CAT)
- Hoarseness test (voice change with high-pitched vocalization)
- Head-up test (10s head flexion from supine)
- Swallowing test (3oz = 90ml water swallow)<sup>5</sup>

Other approaches included the Veteran Affairs Neuropathy Scale, which Wilson et al. piloted in telemedicine clinics<sup>6</sup> and teleswallowing, a remote swallow assessment.<sup>7</sup> This work provides a toolkit to perform a detailed clinical assessment, remotely via videolink. Purely audio remote interviews are more limited. Significant technical challenges for remote clinics remain regarding the availability of monitoring devices, broadband speed, audio-visual quality, internet lagtime for timed tests (10m walk, Timed-up and Go-test), users' technical expertise, and computer literacy. To improve this, protocols to perform a video NMD clinic



**Figure 1. Remote clinical assessment enabled on a smartphone.**

have been published.<sup>8,9</sup> Videoconferencing platforms have been evaluated,<sup>10,11,12</sup> and video platforms are available in a number of commercial patient management systems. Overall, the use of telemedicine in NMDs increased during the COVID-19 pandemic, but telemonitoring was used considerably less.<sup>13</sup>

Telemonitoring found its first application in clinical trials to optimize remote clinical assessment, but also to improve trial recruitment and monitoring. Reliability and strong correlations between wearable physical activity monitors (sensor-based systems using activity watches or body-worn sensors, PAMs) and neuromuscular measures confirmed PAMs' utility as outcome measures and in long term monitoring.<sup>14</sup> Mobility data can be gathered by PAMs, or by ambient measurement systems (AMS), which passively measures movement such as ambulation speed, rise-to-stand speed, and arm-raise speed when someone is in range of a sensor.

Remote monitoring of life-supporting technology, such as home mechanical ventilation (HMV), requires regular monitoring of physiological variables (spO<sub>2</sub>, spCO<sub>2</sub>, respiratory rate) by carers supported by specialist outreach, and requires a continuous data link to the monitoring center for analysis and troubleshooting.<sup>15</sup> It can enable remote initiation of HMV and may reduce costs, and may help predict exacerbations, allow remote interventions and adjustments.<sup>16,17</sup> Challenges about data security and privacy, caregiver involvement and acceptance, availability of high-speed internet, and misconceptions around time needed, remain.<sup>18,19</sup>

### Mobile Phone-Based Clinical Assessment

Wearable monitors have the disadvantage that they are expensive pieces of advanced technology, and the proliferation of devices patients must wear to allow multimodal monitoring can be intrusive.

This makes them both cumbersome as well as unsuitable for low-income health environments. Therefore, exploring the potential of a ubiquitous device, such as a smartphone to provide multimodal monitoring is attractive.

Digital technologies are currently expanding rapidly, especially in the field of NMDs. They can reduce data collection burden and increase knowledge of real-life data. MG is an autoimmune neuromuscular disease characterized by very heterogeneous symptoms potentially associating ocular, bulbar, respiratory and skeletal muscles weakness and fatigability.

In current practice, visits to the physician's office are planned every three to six months. However, since patients might experience worsening symptoms outside of visits, clinicians must often rely on patient recollection during consultations, which present a recall and subjectivity bias that can compromise the estimation of disease status. In this context, it will be clinically relevant to allow patients to self-assess their symptoms and physicians to collect and analyze digital biomarkers for a closer monitoring.

As an example, an ongoing study (ME&MG™, NCT: 05564936) aims to validate a digital solution that runs on patients' smartphones. It is intended to be used as an unsupervised digital self-assessment tool for the monitoring of muscle weakness, fatigability, and disability in patients living with MG. This application contains digital active tests for the assessment of ptosis, breathing, dysarthria, upper- and lower-limb weakness, treatment follow-up, and validated e-questionnaires related to daily activities, pain, fatigue, sleep, and depression. The objectives of this study are to validate the clinical performance of the unsupervised at-home self-assessment of symptoms on the patient's smartphone with ME&MG™ compared to the standard in-clinic testing, including analytical performance as well as to evaluate the

safety of the solution, its usability, and satisfaction. Eight sites in France and the United States will be involved in this study.<sup>20</sup> A further study evaluating the device is ongoing in the U.S. and Canada (NCT05566964).<sup>21</sup>

Figure 1 demonstrates the remote clinical assessment enabled on smartphone using the ME&MG software.

### Machine-Learning Models of Telemonitoring and AI-Based Analysis of Digital Biomarkers

Machine-learning (ML) and AI-based models can conceivably help establish objective, rapid, and more accurate interpretation of remote data acquired by telemedicine monitoring. Vieira et al. devised an objective measure for ALS disease severity based on voice samples and accelerometer measurements, correlated with ALS-FRS-R scores over a four-year period with an audio voice recording and Actigraph GT3X accelerometers on each limb. They also trained ML models to predict bulbar-related and limb-related ALSFRS-R scores.<sup>22</sup>

Similar approaches were used to assess changes in an edaravone-treated patient sample. Wearables can produce an objective severity score.<sup>23</sup> There have been several approaches to wearables for therapy studies,<sup>24</sup> though robust validation is still awaited.

### Conclusion

The expansion of telemedicine use in NMDs and development of clinically relevant but easy-to-use remote monitoring systems has potential to improve patient access to expert care, even in situations where direct face-to-face access is interrupted, as in the recent pandemic, or where scarce resources or geography prevents patient access to specialist care. Going forward, telemedicine might expand the availability of high-quality specialist care to patients in



# Embracing the Future of Neurology

The launch of World Federation of Neurology Digital Neurology Updates (WNU) 2024.

In an era where digital transformation is revolutionizing every aspect of our lives, the World Federation of Neurology (WFN) is proud to announce a significant leap forward in global medical education with the inaugural World Federation of Neurology Digital Neurology Updates (WNU 2024) 2-day online event. Scheduled for Sept. 26-27, 2024, this event is a testament to our unwavering commitment to fostering global collaboration and education in the field of neurology.

## A New Era for Global Neurology Education

The decision to host WNU 2024 as a fully online event was born out of WFN's core goal: to overcome geographical, economic, and logistical limitations, thereby creating a more inclusive and far-reaching educational platform. This initiative allows neurologists, researchers, health care professionals, and interested parties from across the globe to come together in an interactive digital space. By doing so, WNU 2024 not only democratizes access to the latest neurological knowledge but also significantly reduces the environmental

impact typically associated with traditional conferences, underscoring our dedication to sustainability.

## A Rich Tapestry of Neurological Knowledge

WNU 2024 is poised to offer an enriching and diverse educational program. The agenda is meticulously designed to cater to the needs of both seasoned professionals and those in the early stages

of their neurology careers. Participants can look forward to keynote lectures delivered by distinguished experts in the field, promising insightful discussions that are sure to inspire new ideas and propel the practice of neurology into new frontiers.

WNU 2024 demonstrates WFN's adaptability and unwavering commitment to advancing neurological care and education across the globe, regardless of

the obstacles we may encounter.

As we look forward to this exciting event, WFN extends its heartfelt gratitude to all those dedicated to the field of neurology. Your passion and commitment are the driving force behind our efforts. Join us for WNU 2024, Sept. 26-27, 2024, and be a part of an engaging, stimulating online gathering that promises not only to educate but also to inspire.

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## TELEMEDICINE

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low-income societies, who hitherto have had little access. Recent developments in effective treatment can also be seen as an obligation on global medicine to explore how inequality in provision can be mitigated — telemedicine technology may advance us one step in this direction. •

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## DEPARTMENT VISIT

## WFN Clinical Fellowship

Four weeks of learning at the university hospital in Giessen, Germany.

BY SALSABIL ABDULRAHIM MADY ABULAZAYEM

I completed my WFN clinical fellowship at the department of neurology at the University Hospital Gießen in Giessen, Germany, for a period of four weeks under the supervision of Prof. H. B. Huttner. I was welcomed by Dr. M. Jünemann. He showed me the department and introduced me to the entire team. I appreciate the warm and kind welcome. I always felt fully integrated into the department's daily routine, which allowed me to participate in all of the available activities.

During my first week, I regularly attended the movement disorders clinic with Prof. Reuter, where I had the opportunity to evaluate patients with all types of movement disorders and to discuss the cases, the diagnostic work-up, and therapeutic options. I also had the opportunity to witness complex therapies not present back home, such as

subcutaneous apomorphine infusion and deep brain stimulation.

In the second week, I attended the neurocritical unit with Prof. Schramm, Dr. Alhaj Omar and Dr. Khilan, where I had the opportunity to evaluate patients with acute neurological conditions such as Guillain-Barre Syndrome (GBS), acute stroke patients, and post-thrombectomy care, and their diagnostic work-up and management plans. I was truly impressed by the perfect care from all of the medical staff.

During my third and fourth weeks, I attended the stroke unit rounds where cases were assessed and discussed, usually patients presenting with acute ischemic stroke, acute hemorrhagic stroke, acute lower motor neuron lesions such as GBS or myositis, and meningitis.

I had the opportunity to attend an epilepsy clinic with Dr. Mück, an MS clinic, and discuss diagnostic work-up and therapeutic options in different patients. In addition, I had the opportunity to attend the weekly Journal Club during my month. Also, I attended daily morning staff rounds where clinical cases were presented and interactively discussed to reach a final diagnosis.

I was able to increase my knowledge base and to learn therapeutic and diagnostic approaches that I could use in my daily clinical practice thanks to this clinical fellowship.

To conclude, I would like to thank Prof. Huttner and his team, Dr. M. Jünemann, Prof. Reuter, Prof. Schramm,



Dr. Alhaj Omar, Dr. Mück, Dr. Wolff, Dr. Ebert, Dr. Genau, and Dr. Khilan for all of their kindness. Of course, I would like to thank the World Federation of Neurology for granting me the opportunity to do this clinical fellowship and the German neurological Society for their wonderful ongoing help with the WFN Department visit program. I highly recommend it to young neurologists. •

Salsabil Abdulrahim Mady Abulazayemi is Lecturer of Neurology, Cairo University.



## Election of One Trustee for the Council of Delegates Meeting 2024

Review the list of candidates for WFN trustee.

PROF. RAAD SHAKIR, CBE, FRCP

For the upcoming election of a trustee at the virtual Council of Delegates (COD) meeting in September, WFN's Nomination Committee, chaired by Prof. Raad Shakir, has reviewed all applications and has the following recommendations (in alphabetical order):

- Fernando Cendes, Brazil
- Valery Feigin, New Zealand
- Miguel Osorno, Mexico
- Brian Sweeney, Ireland
- Barbara Tettenborn, Switzerland
- Tissa Wijeratne, Sri Lanka

The statements of these individuals will be published in an upcoming issue of World Neurology, and will be available on the WFN website.

The voting process will be announced in due course, and will be accompanied with detailed instructions.

The deadline for nominations was March 15, 2024. Nominations made after this deadline are still possible. Additional nominees must be a member of a WFN member society and must present the supporting signatures of five or more authorized WFN delegates, a CV, and a letter of agreement to stand. This must be submitted to the Secretary General, c/o the WFN Headquarters at [info@wfneurology.org](mailto:info@wfneurology.org) no later than 30 days prior to the start of electronic voting. Deadline for additional nominations will be Friday, July 26, 2024. Electronic voting will occur over three weeks starting Aug. 26, 2024. •

Prof. Raad Shakir, CBE, FRCP, is chair of the WFN Nomination Committee, and a past president of the WFN.



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## Unique activities enhanced World Brain Day in India.

In continuation of the campaign Brain Health for All, the WFN has decided the theme for WBD 2024 is Brain Health and Prevention. The Indian Academy of Neurology will participate in the 2024 campaign in a big way. India has a high incidence of young strokes. With the increase in life expectancy, the problems of diseases such as dementia and Parkinson's disease are on the rise. Lifestyle medication, diet, and air pollution are important issues that need to be addressed. Public awareness for causes and prevention of neurological diseases will be the top priority during the 2024 WBD activity in India. •