



WORLD NEUROLOGY

THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

PRESIDENT'S COLUMN

World Congress of Neurology 2025 Caps a Busy Year

The congress welcomes a new WFN president and votes on the 2028 location.

Welcome to *World Neurology*, a publication circulated and read by about 25,000 neurologists worldwide. This issue provides the results of the election at October's Council of Delegates, which was held at the World Congress of Neurology (WCN) in Seoul, South Korea.

All candidates were approved by the WFN Nomination Committee. The election was supervised by two ad hoc appointed overseers: Prof. Carlayne Jackson, past president and current board member of the American Academy of Neurology (AAN), and Prof. Richard Stark, past treasurer and trustee of the WFN. Approximately 75% of World Federation of Neurology (WFN) member societies took part in the electronic voting.

Dr. Chandrashekhhar Meshram, who joined WFN as a co-opted trustee in 2022 and became an elected trustee in 2023, was re-elected to the position and will continue his important work. We welcome Prof. Riadh Gouider as the new vice president. Prof. Gouider served two periods as an elected trustee and also served as a co-opted trustee. His ongoing efforts on behalf of the WFN and for the African and Pan-Arab regions are greatly appreciated.

Prof. Steven Lewis was elected WFN incoming president and needs no introduction. He has been the secretary general during my tenure and has been actively involved in all WFN procedures. He has also served as a trustee and is the current editor of *World Neurology*. His election as president guarantees continuity for many WFN activities and long-term



The WFN Council of Delegates participants in Seoul, South Korea.

projects. His interest in education at all levels will help WFN continue its goal of supporting neurological education worldwide.

One change in the newly elected board is Europe is not in any elected position. Europe has always been an important and strong part of the WFN and is needed in the future. It is worth noting that the 2013 WCN in Vienna was a joint congress with the European Federation of Neurological Societies (EFNS) and the Austrian Society of Neurology. And Europe will also host the 2028 WCN in Copenhagen.

The final question in the election asked delegates to select the site for WCN 2028, following Cape Town in 2027. Out of the three destinations on the shortlist, Copenhagen was selected by the delegates.

Another highlight of the WCN was the presentation of the 2025 World Federation of Neurology Medals. The 2025 World Federation of Neurology Medal for

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The trustees and co-opted trustees at the COD meeting in Seoul, South Korea. Absent is Dr. Briseida Feliciano, who was unable to attend.



The Location Committee enjoys dinner at the Tivoli in Copenhagen before the site visit. From left to right: Prof. Faisal Amin, Prof. John Vissing, Prof. Gunhild Waldemar, Prof. Wolfgang Grisold, and Prof. Christina Kruuse.

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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 worldwide to the October 2025 issue of *World Neurology*.

In this issue, World Federation of Neurology (WFN) President Prof. Wolfgang Grisold updates readers on many important WFN activities, including the successful conclusion of the World Congress of Neurology (WCN) in Seoul, South Korea, and the recent voting results from the Council of Delegates.

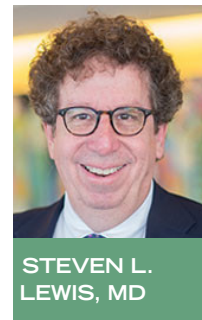
This issue includes reports from the recent World Brain Day in July 2025 with the theme of "Brain Health for All Ages." The colorfully illustrated articles in this issue include WBD reports from member societies in Brazil, regions of Sri Lanka, and Türkiye.

In this issue's history column, Dr. Peter J. Koehler delves into the historical and international collaborative aspects of the infections of diphtheria, tetanus, and poliomyelitis which affect the nervous system. He also explores the development of their vaccines.

This issue also features heartfelt obituaries of two giants of international neurology who recently passed away: Dr. Robert B. Daroff and Dr. Peter J. Dyck.

Whether you attended October's WCN or not, be sure to see this issue's photo pages that highlight many of the activities at the congress. There will be more reports to come about this remarkable WCN in the next issue!

In closing, we again thank all neurologists and neurologic trainee readers in all regions of the world for your interest in the WFN and *World Neurology*.



STEVEN L. LEWIS, MD



WALTER STRUHAL, MD



PRESIDENT'S COLUMN

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Services to International Neurology was presented to Prof. Bo Norrving. Prof. Hans Lassmann received the Medal for Scientific Achievement in Neurology, and Prof. Axel Siwa was awarded the Medal for Scientific Advancement in Neurology.

Here are major upcoming WFN events for the next three years:

- WNU 2026 (WFN Digital Neurology Updates)
- WCN 2027 in Cape Town
- WCN 2028 in Copenhagen

A call will be made next year for WCN 2029 applicants from the Americas.

The future WCN meetings will continue to be compact and shorter in duration. The content will focus on matching organizational and regional needs. We will continue adapting due to the rising costs of congress sites, increasing burdens for travel and visas, and the decreasing enthusiasm of the pharmaceutical industry to sponsor meetings.

The **International Congress on Neuromuscular Diseases** (ICNMD) 2025 will be held virtually Nov. 20-21 with an update on recent developments in neuromuscular field. New therapies for neuromuscular disease are effective and have changed the possibilities of interventions in many neuromuscular

diseases. The 2026 ICNMD will be held in Florence, Italy, followed in 2027 by Chiba, Japan, and in 2028 in Vancouver, Canada.

WFN Goals

As WFN president, my goals included continuity, increasing the impact of the WFN, and innovation. As my term comes to an end, here are my thoughts on each of those goals:

The need for **continuity** is important. Not only are many educational and advocacy programs based on long-term commitments, but WFN global advocacy projects are planned for several years. Equally important are administration and core procedures. WFN is regulated by U.K. charity law, which needs accurate and precise management provided by the London office and its collaborators.

The **impact of the WFN** continues to grow. In recent years, we have been dedicated to increasing its impact through publications, including *World Neurology* and social media. The growing interest in World Brain Day (WBD) has increased the WFN's impact as well. Being quoted in the media is important not only for the WFN, but for the topics promoted: prevention, disability, and brain health in all age groups.

Innovation of any kind is always a challenge for large organizations, because "unlearning" and adjusting are required. We have increased the participation of



WFN President Wolfgang Grisold congratulates Prof. Bo Norrving (right) as he is awarded the 2025 World Federation of Neurology Medal for Services to International Neurology.

regional members through positions such as co-opted trustees on the board. We have also changed many internal structures, such as committee compositions and tasks. The principle for all committees is gender equity and the representation of all regions. We have achieved an almost 50/50 distribution of female and male committee members.

The trustees' move to establish a president-elect and a past president passed the vote at the 2024 COD meeting in London. However, strict U.K. charity laws required a subsequent vote at an

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PRESIDENT'S COLUMN

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extraordinary trustee meeting on July 1, 2025. The delegates changed their minds, and the vote, although positive, did not reach the required 75%. The reason for this change of mind by the delegates is unclear. However, there is a need to move toward the longer participation of a president-elect and past president in the future.

We have spent much energy on infrastructure, developing tools for voting, and considering legal issues with legal advisors, and we have increased and refined communication.

Significant changes are needed in the structure of the WFN congresses. Sites are expensive, travel and visas have become an issue, and pharmaceutical sponsorship support is declining. We have made the decision to host an annual WCN that will be rotated through three regions. This will require us to rewire our collaboration with the hosting societies. The professional conference organizer (PCO) and the WCN will have to adapt to future needs.

Global Outreach

More progress is being made on global advocacy. The acceptance of the WFN as a member with consultative status by the **U.N. Economic and Social Council (ECOSOC)** marked a new era of political possibilities, which cannot be overestimated. It was a privilege that then current U.N. ECOSOC president and Canadian Ambassador Bob Rae sent a

video message for the 2025 WBD.

We are not only a nonstate actor of the World Health Organization (WHO), we are also engaged in several projects including the **International Global Action Plan (IGAP)**, the **Model Lists of Essential Medicines**, and the **WHO Guidelines on Meningitis**.

The most recent **Global Status Report on Neurology** was released by Dr. Tarun Dua, medical officer for the WHO Program for Neurological Diseases and Neurosciences, at the WCN in Seoul, South Korea. We are committed to proceed with the IGAP and **our support of the WHO activities**.

Education

There is no standing still in education. The trajectory from apprentice-type teaching to virtual self-teaching is expanding. Artificial intelligence (AI) has become a commonly used tool that can be employed to solve complicated topographical, anatomical, or therapeutic neurological issues in seconds. It is here to stay.

The goal of WFN's education efforts is to train and educate students and trainees and provide CME for practicing neurologists. Two key elements of the WFN education program are the WFN Training Centers and the Department Visits.

We are determined to continue the work with the WFN Training Centers as they are a valuable resource for crystallizing education in neurology, especially within Africa. As the number of African training institutions increases, a shift of resources from Training Centers

toward accreditation of training units may be needed.

Education of neurologists is not enough. Other disciplines and health care professionals need to develop an understanding and interest in neurology. The global development of primary care will need input from neurology. Activities for the education of people with lived experience also need to be developed. Continuous education is the implicit duty of all neurologists. It is based on neuroscience, research, and experience with the goal of providing optimal care for patients.

Teaching advocacy and leadership have played a significant role in the content of the first **Global Advocacy Leadership Program (GALP)**, a joint effort of the AAN and the WFN. The program began in 2025 at the AAN Annual Meeting in San Diego and ended at the WCN in Seoul, South Korea. Fifteen people graduated and will be future leaders in neurology. This is an enormous investment by both associations. It emphasizes the idea that education and training in neurology must also involve "soft" aspects such as advocacy and leadership at all levels.

Other opportunities for education and training include listening to patients and persons with lived experience. The patient at the opening of the WCN so brilliantly explained his journey of disease and rehabilitation. It is an example on how much we need to learn from patients. More efforts will be needed to use the potential of patient platforms and organizations.

Publications

Communication and publications are important WFN activities. In addition to the *Journal of the Neurological Sciences (JNS)*, *eNeurologicalSci*, and *World Neurology*, social media channels have become an important informational resource. In addition to excellent reports from *World Neurology*, you can receive additional information on the quarterly **JNS service pages**. These pages go into more details of WFN matters and invite additional reports.

The WFN has begun developing "**The White Book on Global World Neurology**," describing key elements and structures of neurology. This book, edited by Profs. Wolfgang Grisold, Alla Guekht, Steven Lewis, and Riadh Gouider, is intended as a status quo, and a reference for implementing future neurological structures. It will be published in early 2026.

Moving Forward

The WFN's main interest is to serve its member societies. This is accomplished by providing global advocacy for neurology and promoting education at all levels. Using all external and internal support, such as press and media activities, publications, meetings, congresses, and educational days, gives us a solid backbone for our mission. The larger the impact is — presently there are 126 member societies — the greater the potential for neurology. •

Acknowledgment: Photos provided by Kenes Group and J.D. Widdicombe.



A joint press presentation on the WHO activities was chaired by (from left to right): Prof. Alla Guekht, Prof. Wolfgang Grisold, and Dr. Tarun Dua.



Dr. Tarun Dua of the World Health Organization gave an overview on the progress in IGAP and released the 2025 Global Status Report on Neurology.



Coffee talks on the important aspects of global neurology and the implementation of the IGAP.



At the opening of the WCN, Mike Davis, a person with lived experience recovering from meningitis, shared his rehabilitation progress and gave fascinating insight from the patient's perspective. He currently works with the Meningitis Research Foundation and the Confederation of Meningitis Organizations.



Incoming WFN President Steven Lewis (left) and outgoing President Wolfgang Grisold presenting the new "White Book on Global World Neurology."



The GALP attendees listening to presentations in Seoul, South Korea.

IN MEMORIAM

Prof. Robert Barry Daroff (1936-2025)

Service, leadership, and education marked his contributions to neurology.

BY PROF. VLADIMIR HACHINSKI AND PROF. RAAD SHAKIR

Prof. Robert Daroff's gifts showed up early in his life. He was admitted to the University of Chicago at the age of 15 and then transferred to the University of Pennsylvania, where he obtained a degree in American studies and a medical degree. He completed a residency in neurology at Yale University.

I first heard about him when I was a trainee in neurology, and he was part of a small group of gifted neuro-ophthalmologists at the University of Miami. Early in my career, I was elected to the Board of the American Neurological Association when he was president. At the first meeting, I was amazed that from a long list of candidates, so few were selected for membership. It made me wonder whether the committee was tired when they elected me for membership, given the high standards.

At the end of the process, I was astounded when Prof. Daroff suggested to the committee to commission pins for the members of the board, a distinguished senior neurologist dismissed the idea as being "elitist." I spoke in the most respectful tone that I could muster, and said, "Sir, what would you call the process that we just went through? I believe, to paraphrase President Thomas Jefferson, 'We must dream of an aristocracy of achievement arising out of a democracy of opportunity.'"

Prof. Daroff was immensely amused that the single Canadian on the board would quote an American president to try to persuade his American colleagues. We got our pins.

Prof. Daroff was proud of his front-line service in Vietnam, his contributions to the understanding of cerebral malaria, and his interview with General Vo Nguyen Giap, the successful North Vietnamese commander in chief. Bob asked him, "Who

was the greatest military leaders in history: Alexander the Great, Napoleon, or Giap?" He responded, "Giap was not inferior."

When I became chair of the Department of Neurological Sciences, I invited Prof. Daroff as a visiting professor. He gave a clear and compelling lecture and later discussed a complex neuro-ophthalmology case. He disposed of every red herring with incontestable logic until one possibility became glaringly obvious: He was right, of course.

His services to global neurology span many decades. He chaired the WFN finance committee beginning in 1993. With James Toole, he edited *World Neurology* in 1989. He previously chaired the Publication Committee in 1987. The development of the *Journal of Neurological Sciences* and *World Neurology* was guided by his advice and direction. The WFN is most grateful for his services. His last contribution was at the 2011 World Congress of Neurology in Marrakesh, Morocco.



Incoming President Prof. Robert Daroff of the American Neurological Association, after receiving the gavel from his predecessor, Prof. David Drachman in 1991. Photo courtesy of the archives of the ANA.

Prof. Daroff will be remembered for his major contributions to neurology, education, and leadership, and for his warmth as a human being. •

Profs. Vladimir Hachinski and Raad Shakir are past presidents of the World Federation of Neurology. This article also appears in the *Journal of the Neurological Sciences* and is simultaneously published here with permission.

IN MEMORIAM

Peter James Dyck (1927-2025)

Pioneering neurologist leaves a decades-long legacy of research and education.

BY DR. P. JAMES B. DYCK, DR. MICHELLE MAUERMANN, AND DR. WILLIAM LITCHY

Peter James Dyck, professor emeritus of neurology, died on July 26, 2025, at the age of 97. Dr. Dyck was a brilliant neurologist and a cherished colleague, mentor, and friend.

Dr. Dyck was born in 1927 in South Caucasus, Russia, and emigrated to Canada with his family as a young child. He received his bachelor's degree in 1950 from the University of Saskatchewan and his medical degree in 1955 from the University of Toronto.

After internal medicine training at the University of Toronto and neurology and neuropathology training at University Hospital in Saskatoon, Canada, he pursued his fellowship in neurology at the Mayo Clinic in 1959. He was appointed to the staff of the Mayo Clinic on July 1, 1961, and became full professor in neurology in 1973.

Dr. Dyck's career spanned seven decades with international recognition as a pre-eminent clinician, investigator, and educator in the field of peripheral nerve disease. He studied the natural history and pathophysiologic alteration in peripheral nerves with development in diseases using clinical, genetic, and pathophysiologic studies and treatment trials. He studied diabetes mellitus, diabetic sensorimotor

polyneuropathy, and chronic inflammatory demyelinating polyradiculoneuropathy (CIDP), a previously unrecognized condition he helped define.

He pioneered successful therapeutic trials in chronic inflammatory CIPD, neuropathy associated with monoclonal gammopathy of undetermined significance (MGUS), and hereditary transthyretin amyloidosis polyneuropathy. Several unique endpoints, which he originated, were analyzed for these trials. Dr. Dyck introduced the following quantitative and referenced approaches to the study of peripheral neuropathy:

- Fascicular biopsy of nerves, especially sural
- Morphometric assessment of nerve fiber diameters
- Teased nerve fiber pathologic conditions
- Quantitative sensation testing using computer-assisted sensation evaluator (CASE IV)
- Points for percentile abnormality of composite attributes of nerve conduction

Dr. Dyck wrote more than 460 peer-reviewed articles, 129 book chapters, and 27 reviews. He (with P. K. Thomas of London, England) was the editor of four editions of *Peripheral Neuropathy* (Saunders/Elsevier). He wrote and edited four other books on peripheral neuropathy.

Dr. Dyck was the founding member

of the Peripheral Nerve Study Group, Peripheral Nerve Association, Peripheral Nerve Society, and the Quantitative Sensation Testing Society. He served as president of the American Neurological Association and the Peripheral Nerve Association.

Dr. Dyck's accomplishments in the field of peripheral neuropathy were recognized with numerous awards and honors, including:

- The Roy E. and Merle Meyer Professor of Neuroscience
- Mayo Clinic Distinguished Investigator Award (2004)
- Mayo Clinic Distinguished Alumnus Award (2007)
- Mayo Clinic Teacher of the Year Award in the department of neurology (1996)
- The Robert S. Schwab Award from the American Clinical Neurophysiology Society (2023)
- Neurodiab Lifetime Achievement Award
- The Albert Nelson Marquis Achievement Award

He was honored to be the Wartenberg Lecturer at the American Academy of Neurology. He was an honorary member in several organizations, including the American Academy of Neurology, American Neurological Association, American Association of Electrodiagnostic Medicine, Canadian Society of



Peter James Dyck

Clinical Neurophysiologists, European Neurological Society, and the Mexican Neurological Association.

Dr. Dyck mentored approximately 150 international fellows in the field of peripheral neuropathy. He has inspired and educated generations of health care professionals. His legacy will live on in the clinical and pathological training he provided.

Dr. Dyck was a lover of classical music, especially the music of Johann Sebastian Bach. He loved spending time at his farm on the Mississippi River and writing papers with the music playing at loud volume in the background. Dr. Dyck is survived by his wife of 70 years, J. Isabelle (Bonham), his four children, Ernie, Fred, P. James (Marian) and Kate (Scott), six grandchildren, and five great-grandchildren.

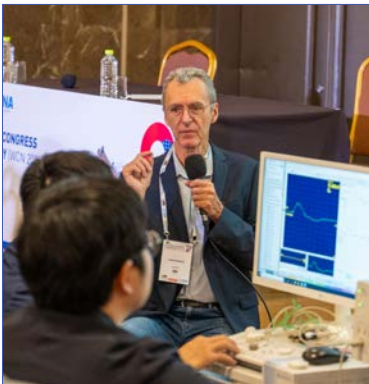
We are deeply grateful for his mentorship and friendship. We will miss him dearly. •

WCN 2025 IN PICTURES

The World Congress of Neurology (WCN) in Seoul, South Korea, featured compelling educational sessions, poster presentations, the Tournament of Minds, and more, as well as the election of a new WFN president, vice president, and trustee. Look for more WCN coverage in the next issue of *World Neurology*.



DAY 1



WCN 2025 IN PICTURES



DAY 2



WCN 2025 IN PICTURES



DAYS 3 & 4



WORLD BRAIN DAY 2025

World Brain Day 2025 in Sri Lanka

Celebrations throughout the country included public lectures and community workshops.

BY DR. AJANTHA KESHAVARAJ

World Brain Day 2025 was a proud and transformative moment for Sri Lanka. Under the leadership of the Association of Sri Lankan Neurologists (ASN), in partnership with World Federation of Neurology (WFN), we delivered a comprehensive, inclusive, and culturally sensitive campaign that made “Brain Health for All Ages” a household message across our island nation of 23 million people.

Sri Lanka, with its rich cultural and linguistic diversity, responded with unity and enthusiasm to this year’s global call for brain health awareness. The ASN led the effort through four major regional events in the North, South, East, and

West. These celebrations ensured that people from every province — regardless of language or background — could participate in and benefit from the campaign.

Each regional event brought together neurologists, general physicians, students, educators, and members of the public. We delivered public lectures, screenings, and community workshops, as well as direct engagement with local health authorities. The focus was on practical, preventive brain health strategies across all life stages, from child neurology to stroke, epilepsy, and healthy aging.

Our campaign extended beyond the lecture halls. Through a powerful national media strategy, ASN’s outreach included:

- Television broadcasts in Sinhala, Tamil, and English
 - Radio interviews and health bulletins discussing brain health for all age groups
 - A series of national newspaper articles, op-eds, and interviews with senior neurologists
 - Digital content and educational videos made available on the ASN website
- One highlight was a collection of short video messages from Sri Lanka’s leading neurology experts. These included key insights on topics such as:
- **Epilepsy** | Prof. Ranjanie Gamage
 - **Stroke Prevention** | Dr. Gamini Pathirana
 - **Child Neurology** | Prof. Jithangi Wanigasinghe

- **Hypertension and Brain Health** | Prof. T. Kumananypertension
 - **Broader Challenges and Opportunities in Neurology in Sri Lanka** | Dr. Ajantha Keshavaraj
- Together, these efforts formed a unified national campaign that not only celebrated World Brain Day but laid the foundation for year-round engagement in brain health.

We are proud of what we achieved in 2025 and are committed to doing even more in the years to come. Brain health for all is possible, and Sri Lanka stands ready to lead the way in our region. •

Dr. Ajantha Keshavaraj is president of the Association of Sri Lankan Neurologists.

WORLD BRAIN DAY 2025

World Brain Day 2025 in Batticaloa, Sri Lanka

Inclusive, community-based celebration prioritizes brain health across the life course.

BY DR. RUCHIRA PALLIYAGURUGE, DR. AJANTHA KESHAVARAJ, AND DR. JEEWANA LEELARATHNE

The auditorium of Teaching Hospital Batticaloa in Sri Lanka became a vibrant platform for unified brain health advocacy as health care professionals and community members gathered to commemorate World Brain Day (WBD) 2025 under the global theme of “Brain Health for All Ages.”

Jointly organized by the Association of Sri Lankan Neurologists (ASN) and the Batticaloa Medical Association, the event marked a significant milestone in Sri Lanka’s commitment to equitable neurological care.

This inspiring session brought together a diverse interprofessional group of consultants, physicians, nurses, allied health staff, and students who joined hands in a show of solidarity. This inclusive, community-based approach echoed the goals of the World Health Organization (WHO) Intersectoral Global Action Plan (IGAP), which emphasizes multisectoral collaboration and prioritization of brain health across the life course.

The event opened with a welcome from Prof. Viji Thirukumar, president



The faculty at Teaching Hospital Batticaloa, home of the city's World Brain Day 2025 celebration.



RUCHIRA PALLIYAGURUGE



AJANTHA KESHAVARAJ



JEEWANA LEELARATHNE

of the Batticaloa Medical Association. It was followed by a special address by Prof. Tissa Wijeratne, co-chair of the World Brain Day campaign and trustee of the World Federation of Neurology (WFN). Reflecting on 12 years of global advocacy, Prof. Wijeratne highlighted how World Brain Day has matured into a powerful movement for policy change, awareness, and action. “Brain health is a human right, across all ages, and all regions,” he said.

In a keynote titled “Silent Struggle: Understanding the Brain Health in Parkinson’s Disease,” Dr. Ajantha Keshavaraj, president of ASN and consultant neurologist, emphasized the invisible burden of neurodegenerative conditions and the importance of patient-centered, multidisciplinary care.

Scientific sessions explored critical topics. These included:

- **Lifestyle Modification for Brain Health** | Dr. K.T. Sundaresan
- **Connecting Textbook to Practice** | Dr. Ruchira Palliyaguruge
- **Gut-Brain Interactions** | Dr. V. Vijitharan

- **Nurturing Brain Health from Early Life** | Dr. Jeewana Leelarathne
 - **Aging Wisely** | Dr. R. Kamalraj
- The event concluded with an interactive discussion and strong consensus: Brain health is not just a medical issue; it is a societal imperative. The Batticaloa WBD 2025 commemoration stands as a historic example of how global vision can be translated into impactful local action, fully aligned with the principles of WHO-IGAP. •

Dr. Ruchira Palliyaguruge is acting consultant neurologist (TH Batticaloa), Dr. Ajantha Keshavaraj is president of ASN and consultant neurologist (TH Jaffna), and Dr. Jeewana Leelarathne is acting consultant pediatric neurologist (TH Batticaloa).

WORLD BRAIN DAY 2025

World Brain Day 2025 in Hambantota, Sri Lanka

Activities featured a school-based brain health camp and art competition.

BY DR. ANOMALI VIDANAGAMAGE

World Brain Day 2025 in Hambantota, Sri Lanka, featured an innovative and impactful set of events that brought brain health

awareness directly to the community — especially children and public sector professionals.

For the first time in Sri Lanka, a school-based brain health camp and art competition were conducted in conjunction with the

Association of Sri Lankan Neurologists (ASN) and the World Federation of Neurology (WFN), making this year's celebration both unique and historic.

A vibrant brain health awareness program was held July 16, 2025, at Dehigaslanda Maha Vidyalaya, a prominent national school in Hambantota. More than 300 students and schoolteachers participated in this engaging initiative. Neurology consultants and medical officers from District General Hospital Hambantota addressed four key topics relevant to children and youth:

- **Stroke** | Dr. Nadeesh Jayasinghe
- **Brain Health and Lifestyle** | Dr. Gihani Diwakara
- **Epilepsy Awareness** | Dr. Pradeep Chathuranga
- **Understanding Disability** | Dr. Anomali Vidanagamage

The program included a touching and educational drama performance, directed by the school's drama teacher. The play portrayed the story of a child with epilepsy and demonstrated how peers and teachers can respond with care and compassion during a seizure. This performance delivered powerful health messages to a young audience in a culturally resonant format.

A colorful art competition with the theme of "Brain Health for All" attracted enthusiastic participation from students across three grade levels. Nine winners were selected, and their artwork will be showcased in future ASN campaigns promoting neurological well-being.

Building on this momentum, a second program was held July 23, 2025, at the Government Office Complex Auditorium, targeting public sector workers and administrators. This session was attended by 300 professionals and included lectures on:

- **Stroke and Brain Health** | Dr. Anomali Vidanagamage



- **Mental Well-Being and Brain Rewiring** | Dr. Navoda Harischandra, consultant psychiatrist
- **Understanding Back Pain: A Neurological Perspective** | Dr. Chulika Makavita, consultant neurologist at National Hospital of Sri Lanka

The Hambantota initiatives stand as a model for interprofessional collaboration, early education, and community outreach.

These programs successfully delivered the core message of World Brain Day 2025: "Brain Health for All Ages."

We are proud to have been part of this global movement and remain committed to expanding brain health awareness in the Southern Province and beyond. •

Anomali Vidanagamage is a consultant neurologist at the District General Hospital in Hambantota, Sri Lanka.



Samples of artwork submitted for the art competition.

WORLD BRAIN DAY 2025

World Brain Day 2025 in Jaffna, Sri Lanka

World Brain Day in Sri Lanka's Northern Province featured speeches from leading medical personnel as well as healthy activities for attendees.

BY DR. AJANTHA KESHAVARAJ

World Brain Day was celebrated with a major public health campaign in Sri Lanka's Northern Province for the first time, marking a watershed moment in national efforts to promote "Brain Health for All Ages." The event, hosted on May 25, 2025, in Jaffna, was organized by the Association of Sri Lankan Neurologists (ASN) in partnership with the Northern Stroke Awareness Campaign. Activities were closely aligned with the World Federation of Neurology (WFN) and the World Health Organization (WHO) Intersectoral Global Action Plan (IGAP) for neurological disorders.

The centerpiece of the celebration was a simultaneous Stroke Awareness Walk and Marathon Relay, attracting more than 600 participants. The event unified children, professional athletes, patients, health and education professionals, military and

police personnel, and local communities in a powerful display of solidarity and commitment to preventive brain health.

The 2 km Stroke Awareness Walk featured individuals living with diabetes, cardiac disease, and stroke survivors. They were joined by hospital directors, health officials, and families. In parallel, a 27 km Marathon Relay brought together schoolchildren, university athletes, and professional runners from across the province. These physical activities were not only symbolic but served to educate and empower communities to adopt healthier lifestyles, reducing the burden of stroke and other neurological disorders.

The event was further amplified by live national media coverage from Sri Lanka Broadcasting Corporation and Dan TV, ensuring broad visibility and public engagement. A press conference, jointly convened by the Ministries of Health and Education, underscored the power of intersectoral collaboration

and set a precedent for unified action in health promotion.

Keynote speeches were delivered by Dr. Ajantha Keshavaraj, ASN president, Dr. T. Sathiyamoorthy, director of Teaching Hospital Jaffna, and Dr. Saman Pathirana, provincial director of Health Services. They addressed the burden of brain disorders in the region, highlighting conditions such as hemorrhagic stroke, Parkinson's disease, and traumatic brain injury, especially in the wake of the COVID-19 pandemic.

They called for urgent preventive and early intervention strategies.

This historic World Brain Day celebration in Jaffna has set a national benchmark. It is a compelling reminder that brain health is a shared responsibility, and such inclusive, community-driven events are essential to building health equity, resilience, and awareness across all regions of Sri Lanka. •

Dr. Ajantha Keshavaraj is president of the Association of Sri Lankan Neurologists (ASN).



Dr. Saman Pathirana.



Dr. Ajantha Keshavaraj, ASN president.



WORLD BRAIN DAY 2025

World Brain Day 2025 in Türkiye

Neurological experts gather in Istanbul to increase public understanding of the importance of brain health.

BY PROF. FÜSUN MAYDA DOMAÇ

To mark World Brain Day 2025, the Turkish Neurological Society (TNS), in collaboration with the World Federation of Neurology (WFN), organized a series of meaningful events across Türkiye under this year's global theme of "Brain Health for All Ages." These efforts reflect our unwavering commitment to raise awareness of brain health among health care professionals and the wider public.

In preparation for the campaign, we translated into Turkish the full set of educational and promotional materials provided in the WFN toolbox, including posters, presentations, and social media content. This important task was undertaken jointly with my colleague and fellow TNS board member, Prof. İpek Midi. These resources were then shared widely through the official website of the **Turkish Neurological Society**. We invited all our members to join the movement by delivering awareness sessions within their institutions on July 22.

The central celebration took place in İstanbul at the Bakırköy Mazhar Osman Mental Health and Neurological Diseases and Research Hospital and at the University of Health Sciences. The event brought together members of the TNS board, including myself, Prof. İpek



FÜSUN MAYDA DOMAÇ

Midi, Prof. Hacer Durmuş Tekçe, our President Prof. Murat Terzi, and neurology colleagues from various training and research hospitals and universities across the city.

The program opened with speeches by Associate Prof. Mustafa Nuray Namlı, chief director of the Bakırköy Hospital, and Prof. Terzi,

who both highlighted the vital role of World Brain Day in increasing public understanding of neurological health. This was followed by presentations from myself, Associate Prof. Gökçen Gözübatık Çelik, Associate Prof. Günay Gül, and Prof. Dursun Kırbaş. We shared key messages from the WFN campaign materials with an audience comprising physicians, nurses, health care staff, and patients.

To maintain momentum beyond the day itself, the TNS continues to promote brain health through dedicated social media posts, especially on Instagram, reinforcing the message that brain health is essential at every stage of life.

World Brain Day 2025 has once again demonstrated the power of collective action in neurology. Through education, collaboration, and advocacy, we continue to work toward a healthier future for all. •

Prof. Füsün Mayda Domaç is WFN delegate of the Turkish Neurological Society.



University of Health Sciences Bakırköy Mental Health and Neurology Training and Research Hospital in Istanbul (central celebration location).



Assoc. Prof. Gökçen Gözübatık Çelik.



WORLD BRAIN DAY 2025

World Brain Day 2025 in Piauí, Brazil

A community celebration of brain health focused on adults and older individuals.

BY NATALIA REBECA ALVES DE KARPEJANY, PEDRO BORGES BONFIM JR., ADEMIR ARAGÃO MOURA, MARTHA MARIA DA SILVA LIRA BATISTA, DENISE FALCÃO COSTA COELHO, TÂMARA LARISSA SILVA BARBOSA, ISIS MARIA LIMA DA CRUZ, ARTUR GUILHERME FEITOSA FERREIRA, RAFAEL ARMANDO COUTINHO AGUIAR, AND YASMIN VITÓRIA LUZ ALVES

World Brain Day, observed globally on July 22, is dedicated to raising awareness of the importance of brain health and mental well-being at every stage of life. This year, at the University Hospital of the Federal University of Piauí in Brazil, we celebrated the day with a vibrant and inclusive event focused on adults and older individuals. Our goal was to empower our community with simple, practical strategies to maintain a healthy brain.

The day began with a heartfelt video message from Prof. Tissa Wijeratne,

co-chair of the World Brain Day campaign, setting a reflective and inspiring tone for the activities to follow. In both morning and afternoon sessions at the hospital's outpatient clinics, the event provided a warm and engaging environment for patients, staff, students, and residents to come together and learn about the foundations of lifelong brain health.

Our approach emphasized three core principles: quality sleep, balanced nutrition, and regular physical activity. These pillars were tailored to individual needs, making the information both relatable and actionable. Throughout the day, our team — comprised of neurology residents, medical students, and other health care professionals — engaged

directly with attendees through one-on-one conversations, interactive Q&A sessions, and informative handouts designed to be taken home and applied in everyday life.

We also conducted brief screening questionnaires and distributed educational materials that highlighted simple lifestyle changes known to enhance brain function and

overall well-being.

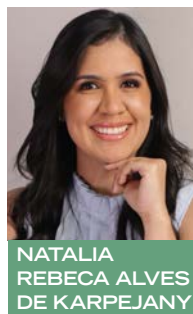
The response from the community was overwhelmingly positive, with several hundred individuals joining us to learn, connect, and share their experiences.

The event was more than a health campaign; it was a celebration of community, learning, and hope. It reinforced the idea that brain health is not

just a medical issue but a vital part of daily life, deserving attention from all of us, regardless of age.

This World Brain Day reminded us that with the right knowledge and support, everyone has the power to protect their brains and enjoy healthier, more fulfilling lives. We look forward to continuing this work in the months and years to come, building a more informed and resilient community together. •

Dr. Natalia Rebeca Alves de Karpejany and Pedro Borges Bonfim Jr. are neurology residents. Dr. Ademir Aragão Moura is a speech therapist. Martha Maria da Silva Lira Batista is a psychologist. Denise Falcão Costa Coelho, Tâmara Larissa Silva Barbosa, Isis Maria Lima da Cruz, Artur Guilherme Feitosa Ferreira, Rafael Armando Coutinho Aguiar, and Yasmin Vitória Luz Alves are medical students. All of the contributors to this article work at University Hospital of the Federal University of Piauí in Brazil.



NATALIA REBECA ALVES DE KARPEJANY

HISTORY

Three neuroinfections and vaccinations

A story of international collaboration on diphtheria, tetanus, and poliomyelitis.

BY PETER J. KOEHLER

A few months after the birth of my grandfather in March 1884, two of his sisters died within 10 days of each other at ages 2 and 3. If we look at the child mortality statistics of that year in the Netherlands, we see that diphtheria, scarlet fever, measles, “other diseases of the respiratory organs,” and “diseases of the digestive organs” were among the major killers of children, especially in the age group of 1 to 4 years.¹

It was a time in which knowledge about bacteria was increasing through the work of Robert Koch (1843-1910) and his colleagues. Louis Pasteur (1822-1895) was experimenting with vaccinations with weakened microorganisms. Antibiotics were not yet available. In current times of declining vaccination rates in developed countries, it is useful to revisit the history of some infections that also affect the nervous system.

Diphtheria

Caused by the *Corynebacterium diphtheriae*, epidemics of diphtheria have probably been recognized since antiquity. Sometimes, the name *morbo strangulatorio* was given. It was often confused with scarlet fever, caused by toxins of a *Streptococcus*.

A severe diphtheria epidemic occurred in New England during the 1735-1740 period. It killed more than 5,000 individuals, mostly children.² In 1825, the French physician Pierre-Fidèle Bretonneau (1778-1862) performed the first successful tracheostomy for diphtheria, on 5-year-old Elizabeth de Puysegur and described the contagious nature of the disease in 1826.

At the time, the laryngeal form of diphtheria was often fatal, even if tracheostomy was applied. It was another 60 years before the German physician/bacteriologist Friedrich Loeffler (1852-1915), who had worked with Koch, proved that a specific bacterium was the etiologic agent of diphtheria in 1884. This led to the discovery of antitoxin or serum therapy by Emil von Behring (1854-1917). Von Behring received the Nobel Prize for this work in 1901. The role of Paul Ehrlich (1854-1915) in the discovery was insufficiently recognized. However, he received the Nobel Prize for his work on immunity six years later.

It was during this period that American physician Joseph O'Dwyer (1841-1898) applied intubation in New York (1890s), leading to successful treatment of asphyxia associated with laryngeal diphtheria. An analysis of data submitted by members of the American Pediatric Society on 1,700 children suffering from laryngeal diphtheria and treated



Pierre-Fidèle Bretonneau by René Théodore Berthon (c. 1810). © Académie nationale de médecine, Paris.

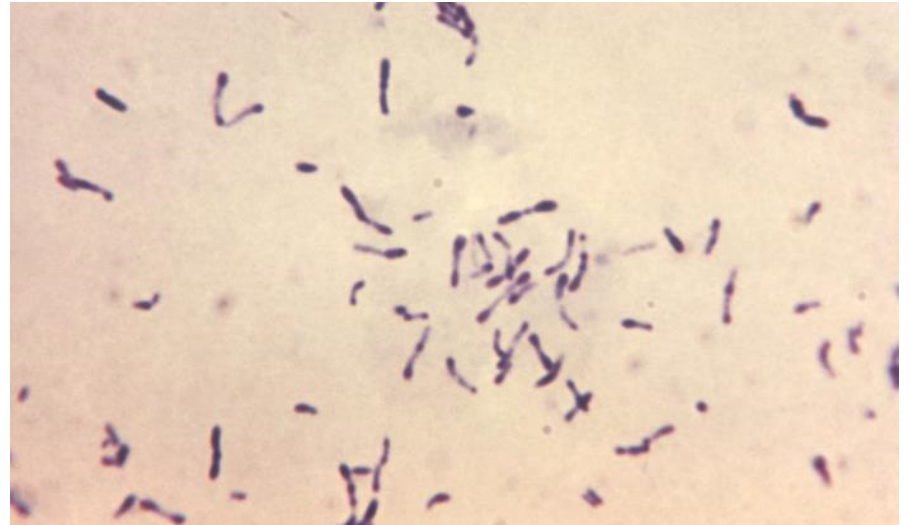
with antitoxin was positive. It showed that antitoxin lowered the necessity for intubation from 90% to 39%. It also lowered the mortality rate from 73% to 27% in this severest form of diphtheria.³

In 1888, Émile Roux (1853-1833, collaborator of Pasteur) and Alexandre Yersin (1863-1843, co-discoverer of *Yersinia pestis*) were the first to demonstrate that the bacterium causing diphtheria was releasing a deadly toxin. In 1923, Gaston Ramon (1886-1963) treated the toxin with formalin and heat, resulting in the concept of anatoxin as a means of vaccination. The vaccination of infants against diphtheria with the Ramon anatoxin became compulsory in France in 1938.⁴ The use of anatoxin was a new type of vaccination following those with weakened microorganisms.

What are the symptoms and signs of diphtheria? The disease can have many different symptoms. These depend on the site of infection and whether the bacteria produce toxins. If the infection is confined to the nose, the course is usually mild. With diphtheria on the skin, sores develop there. However, if the respiratory tract is infected, the patient will likely have a fever and may become seriously ill with shortness of breath. It can lead to suffocation.

In 10% to 20% of patients, the toxin affects cardiac muscle and may affect the nervous system. Diphtheritic neuropathy is an acute demyelinating polyneuropathy, which has long been recognized as the most common severe complication. Guillaume-Benjamin-Amand Duchenne (1806-1875) contributed to the description of the disease.⁵ The patients may experience severe choking, squinting, or poor vision.

Today, diphtheria can be prevented by vaccination. However, multiple doses and booster doses are needed to produce



Photomicrograph of a number of Gram-positive *Corynebacterium diphtheriae* bacteria, stained by the methylene blue technique. © CDC Public Health Image Library ([Details: Public Health Image Library \(PHIL\)](#)).

and sustain immunity. Those who are not immunized or under-immunized are at risk of the disease. For unvaccinated individuals without proper treatment, diphtheria can be fatal in about 30% of cases, with young children at higher risk of dying.

Recent diphtheria outbreaks stress the importance of sustaining high levels of vaccination coverage in communities across the life course. In 2023, an estimated 84% of children worldwide received the recommended three doses of diphtheria-containing vaccine during infancy.⁶

Tetanus

The responsible bacillus *Clostridium tetani*, an obligate anaerobic bacterium, can form spores that survive in adverse environmental conditions.

Risus sardonius and *trismus* (lockjaw) were described in ancient Egypt (c. 1500 BCE). Trismus was mentioned by Hippocrates (c. 460-c. 370 BCE) and opisthotonus by Aulus Cornelis

Celsus (c. 25 BCE-50 CE). Aretaeus of Cappadocia (second-century CE) called tetanus an incurable disease.

Post-traumatic tetanus in soldiers has been well documented, and their death often resulted from a wound sustained in battle. The Roman historian Livy (59 BCE-17 CE) wrote about the war between the Romans and the Etruscans, in particular the siege of Sutrium, north of Rome, in 309 BCE. He mentioned that more soldiers died of their injuries after the battle than had fallen on the field. Ibn Sina (Avicenna, 980-1037) also wrote about tetanus.

French surgeon Ambroise Paré (c. 1510-1590) studied trismus and introduced a device to keep a patient's mouth open despite the abnormal contracture. In 1838, Italian physician Luigi Carlo Farini (1812-1866) lectured on the use of electricity in the treatment of tetanus.⁷

Arthur Nicolaier (1862-1942) described the bacillus in Berlin in 1884. Von Behring and his Japanese colleague

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Emil von Behring (© E. Behring, Digital Collections, National Library of Medicine) and Shibasaburo Kitasato (© [Shibasaburo Kitasato] Digital Collections, National Library of Medicine).



HISTORY

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Shibasaburo Kitasato (1853-1931) conducted experiments in which they immunized rabbits against an inactivated culture containing *Clostridium tetani*. They collected the blood from the animals and injected it into the abdominal cavity of mice. After that, they inoculated a virulent culture of the bacillus in the same group of mice.

The diphtheria experiments mentioned above were conducted again shortly thereafter by von Behring using guinea pigs. In 1890, they were able to produce the first serum capable of counteracting tetanus toxins.⁸ Serum therapy against tetanus was used widely during World War I, when it was administered to wounded soldiers admitted to military hospitals.⁹

The tetanus toxin was discovered by three groups of researchers in Denmark, France, and Italy. It was able to induce the disease and kill mice, guinea pigs, and rabbits. A vaccine was developed in a similar way as described above on diphtheria in the 1920s.

Poliomyelitis

Poliomyelitis, or polio, has been documented for many centuries. A funeral stele of the priest Ruma from the 19th Egyptian dynasty shows atrophy and shortening of the leg, which was probably caused by the disease.⁵ Although not yet described in Michael Underwood's (1737-1820) first edition of his *Treatise on the Diseases of Children*, he described infantile poliomyelitis in the second edition of 1789.^{10,11} In a chapter titled "Debility of the Lower Extremities," we find the following text:

"It seems to arise from debility, and usually attacks children previously reduced by fever ... a debility of the lower extremities, which gradually become more infirm, and after a few weeks are unable to support the body. ... When only one of the lower extremities has been affected, the above means, in two out of five or six, entirely removed the complaint: but when both have been paralytic,

nothing has seemed to do any good but irons to the legs, for the support of the limbs, and enabling the patient to walk. At the end of four or five years, some have by this means got better, in proportion as they have acquired general strength ..."¹¹

The German orthopedist Jacob Heine (1800-1879) described anterior poliomyelitis in 1838, when a child was demonstrated in Freiburg, and more extensively in his monograph *Beobachtungen über Lähmungszustände der unteren Extremitäten und deren Behandlung* [Observations on Paralysis Conditions of the Lower Extremities and Their Treatment] of 1840. (See Figure 1.)¹²

Although the disease was described in the first two editions (1855 and 1861), Duchenne gave an extensive description in the second chapter, "Paralyse Atrophique de l'Enfance," of his *De l'électrisation Localisée et de son Application à la Physiologie, à la Pathologie, et à la Thérapeutique* [Localized Electrification and its Application to Physiology, Pathology, and Therapeutics], In that chapter, Duchenne wrote that he saw anterior horn cell atrophy.¹³

The atrophy of the anterior horn was confirmed by Victor André Cornil (1837-1908) in 1863.⁵ At a meeting of the *Société de Biologie* on Nov. 13, 1869, Jean-Martin Charcot (1825-1893) and Alix Joffroy (1844-1908) demonstrated pathology data of a patient who suffered from "paralyse infantile" at age 7 and died of pulmonary consumption at age 32:

"M. Charcot concluded that his case involved infantile paralysis, basing himself on the essential facts of the sudden development of the successive events of paralysis, of the muscle atrophy with limb deformity. He adds that the muscular atrophy seems to him to be linked to the lesion of the spinal cord, which he considers to reside in the anterior horns, and considers it to be subordinate to the lesion of the white matter when it exists."¹⁴

Polio became the first disease of the nervous system to be described clinically

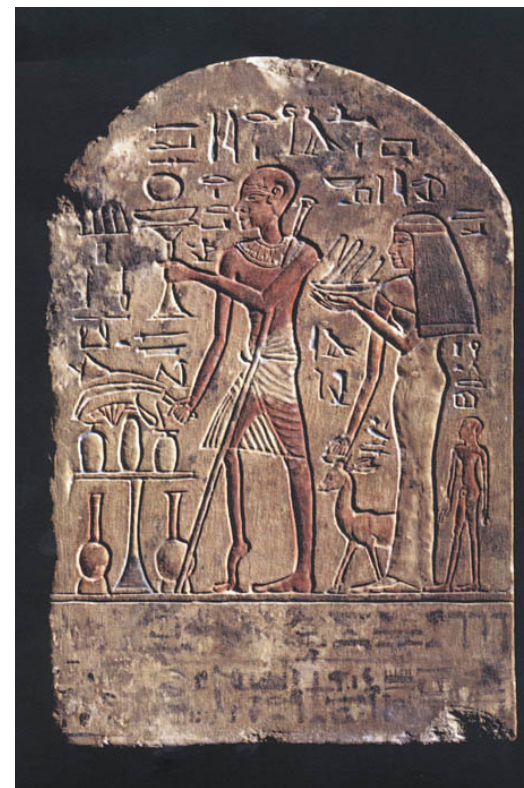
and from the laboratory standpoint. The epidemic nature was noted by the Swedish pediatrician Karl Oskar Medin (1847-1927) in 1890.¹⁵ It was the Swedish physician Ivar Wickman (1872-1914) who, during the Swedish epidemic of 1905, described the infectious nature of the virus in a monograph in 1907.¹⁶ As written by Flexner and Lewis, "The most convincing evidence of the contagiousness of epidemic poliomyelitis is supplied by Wickman's studies of several Swedish epidemics."¹⁷

Two groups were able to transmit the virus and the disease to monkeys.⁵ Karl Landsteiner (1868-1943), who left Vienna for The Hague (1919-1922) and then New York (1922), and Erwin Popper (1875-1955) transmitted polio to monkeys by intraperitoneal injection of spinal cord material from a child who had died of polio in 1909. Simon Flexner (1863-1946) and Paul A. Lewis (1879-1929) reported similar experiments in 1910: "In September 1909, we secured the spinal cord from two cases of infantile paralysis in human beings."¹⁷

Poliomyelitis played an important role in the development of mechanical ventilation and intensive care. The first iron lung, or "spirophore," was built by Eugène-Joseph Woillez (1811-1882) for drowning victims in 1876 in Paris.

"Dès l'année 1854, il y a plus de vingt ans, je déposais sous pli cacheté, à l'Académie des sciences (Institut de France), la description d'un appareil qui était l'application primitive du principe de respiration artificielle, d'après lequel a été construit plus tard le spirophore."¹⁸ [As early as 1854, more than 20 years ago, I deposited in a sealed envelope to the Académie des Sciences (Institut de France), the description of an apparatus the primitive application of the principle of artificial respiration, after which the spirophore was later constructed]."

A smaller apparatus for asphyxia was suggested by him. (See Figure 2.) An apparatus that was more widely used, however, was made in Boston in 1929 by the industrial hygienist Philip Drinker (1894-1972) and instructor of physiology Louis Agassiz Shaw (1886-1940). The iron lung is a cylinder in which, with the aid of a piston, alternating negative and positive



Representation of a probable polio victim, Egypt, around Amenophis III's reign, 1403-1365 BCE; © Ny Carlsberg Glyptotek, Copenhagen.

pressures can be created. It was used to treat patients with polio.¹⁹

In 1952, Denmark was hit by a major epidemic of poliomyelitis. Within a few months, 2,300 patients were admitted, 1,000 of whom developed paralytic symptoms. The physicians realized that it was not the virus that was the direct cause of death, but rather carbonic acid intoxication due to severe hypoventilation. With the help of 250 medical students, 600 nurses and many volunteers, manual ventilation reduced mortality from 90% to 25%.²⁰ The epidemic soon led to the construction of positive pressure ventilators.²¹

In 1954, John F. Enders (1897-1985), Thomas H. Weller (1915-2008), and Frederick C. Robbins (1916-2003) received the Nobel Prize "for their discovery of the ability of poliomyelitis viruses to grow in cultures of various types of tissue." It provided opportunities to produce polio vaccines, both inactivated as well as live.

Global immunization against polio became possible through two types of

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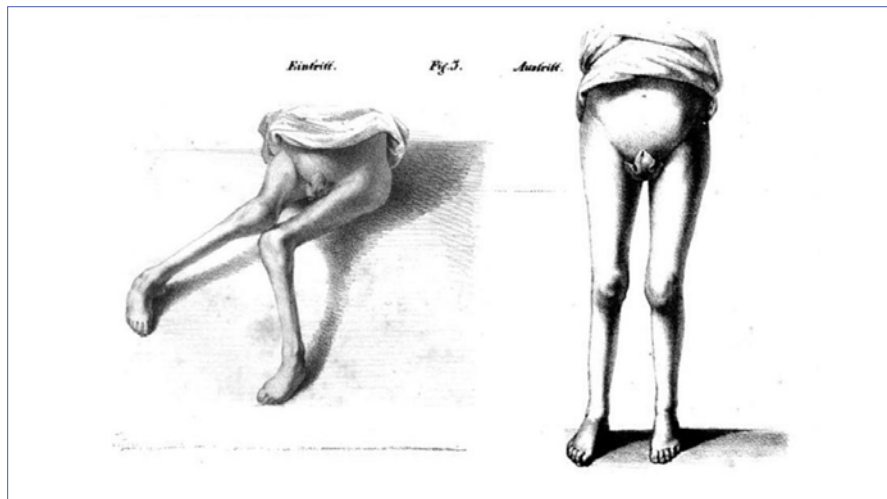


Figure 1. Heine's third case K.M. on admission and after two years of treatment.

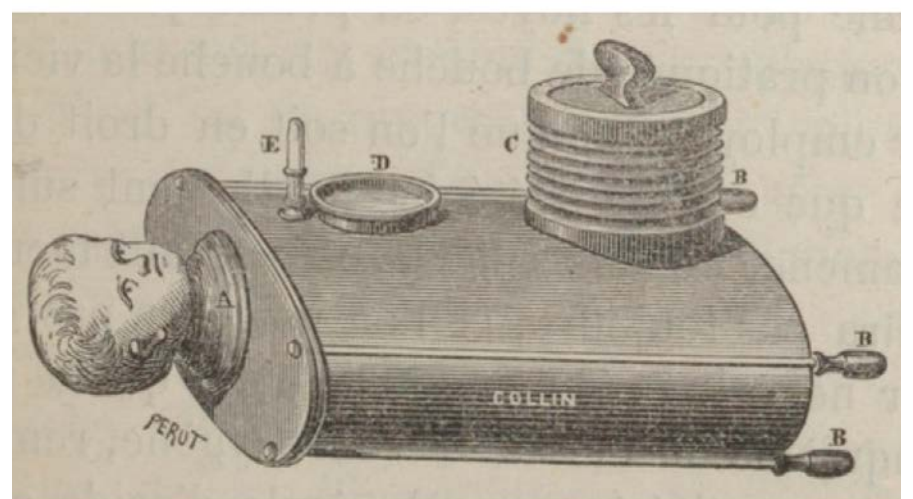


Figure 2. Eugène-Joseph Woillez's design: "The adult spirophore is far too large for use in newborns; a small apparatus, of which we provide a drawing, is sufficient to treat their asphyxia."¹⁸

HISTORY

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vaccines. The first, “salkvaccin,” was an inactivated preparation developed by Jonas E. Salk (1914-1995) and his co-workers. The live, attenuated virus preparations were developed by several people, including Albert B. Sabin (1906-1993), whose vaccine preparation can be taken orally. These vaccines have dramatically changed the lives of millions of children and proved extraordinarily effective.²²

In 1988, the World Health Assembly, the decision-making body of the World Health Organization (WHO), adopted a resolution for the worldwide eradication of polio, marking the launch of the Global Polio Eradication Initiative. Wild poliovirus cases have decreased by more than 99% since 1988, from an estimated 350,000 cases in more than 125 endemic countries to six reported cases in 2021.²³ •

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Children in an iron lung ventilator before the advent of the polio vaccination, 1937. The children's heads poked through a hole at the back of the room so they could communicate with each other. (Permission was not obtained for the more familiar photo taken from the other side, with the faces of the children and nurse recognizable.) © Boston Children's Hospital. A short film (1939) on the iron lung ventilator can be found on Wikipedia. © Netherlands Institute of Sound and Vision.



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