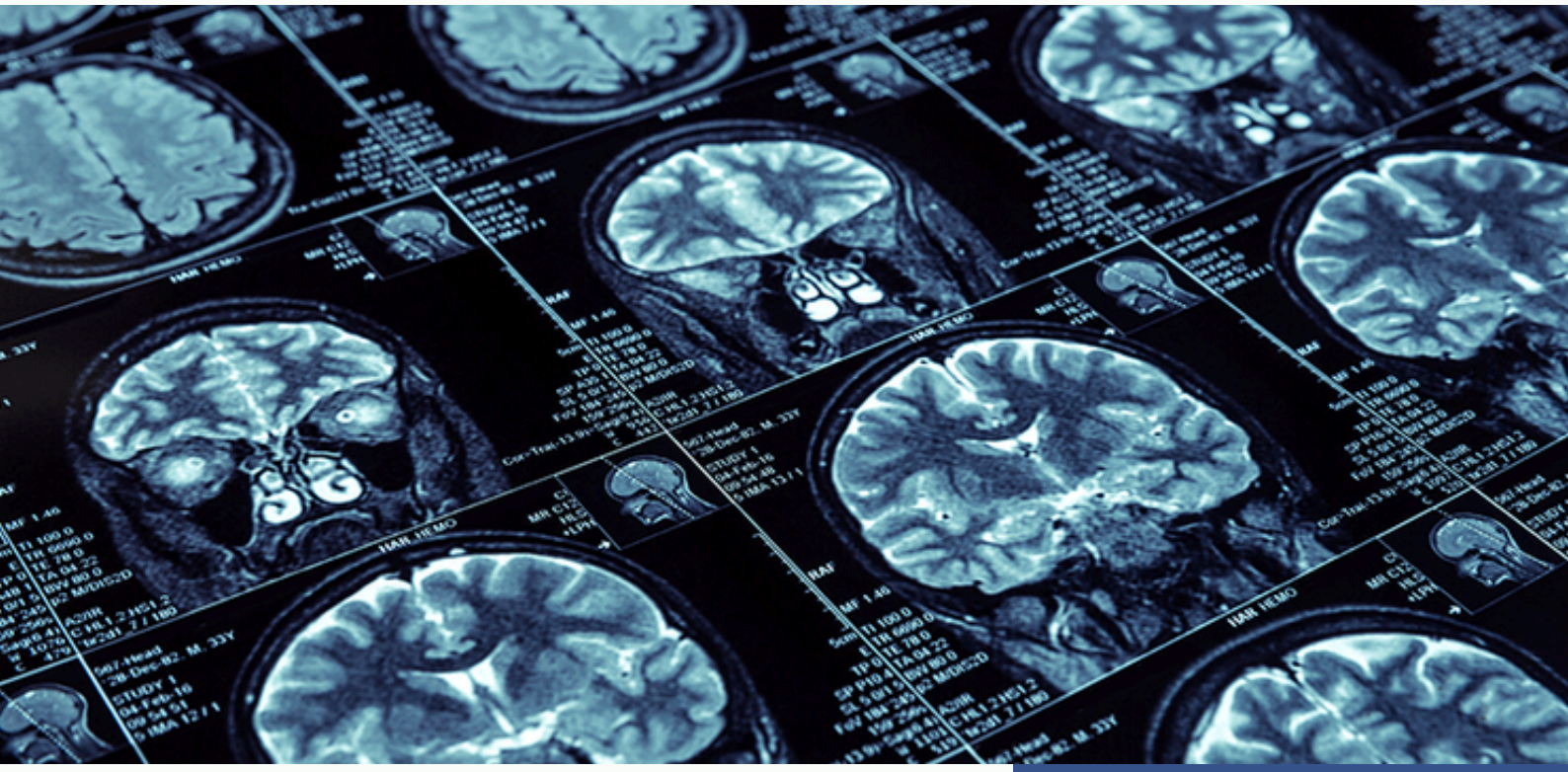
Neurobulletin

SUMMER 2025

Dandy Netherlands Neurosurgical Club



Summer Case

Wesley, a 34 year old man, struggles since adolescence with morbid **OCD**. His OCD (Obsessive Compulsive Disorder) occupies 10 hours of his day, including all obsessive behaviour around cleaning, repetitive actions, et cetera. After years of medical treatment with SSRI's and cognitive behavioural therapy (CBT), Wesley is desperate for an effective treatment that'll take all his symptoms away. His life is being controlled by his psychiatric disorder and he is considering ending his life through euthanization.

After careful examination, Wesley is introduced to the option of **bilateral cingulotomy**: a neurosurgical procedure where a small part of the anterior cingular cortex will be ablated via stereotactic neurosurgery. The underlying mechanism of this procedure is connected to the function of these locations: emotional regulation and error monitoring, which are thought to play a key role in the pathology of OCD.

Preceding the procedure, the 3 lesion locations were personalized after T1-weighted MRI scans and anatomical registration matrix generated by software. The ablation was done with a 10-mm tip, first placed 10 mm posterior to the anterior extent of the frontal horn of the lateral ventricles, 5-7 mm off the midline and 5 mm above the corpus callosum. The following 2 lesions were respectively 7 mm anterior and 1.5 mm inferior to the first lesion.

A couple weeks later, Wesley recovered according to schedule and was evaluated by using the YBOCS score for OCD. His YBOCS score was lowered by almost 40%, which translates to great improvement for his daily living. Tasks like traveling with public transport, grocery shopping and getting out of the house for social activities became much more manageable which was more than he could dream of beforehand.

Source:

Starkweather, C. K., Bick, S. K., McHugh, J. M., Dougherty, D. D., & Williams, Z. M. (2021). Lesion location and outcome following cingulotomy for obsessive-compulsive disorder. Journal Of Neurosurgery, 136(1), 221–230. https://doi.org/10.3171/2020.11.jns202211

IN THIS ISSUE:

IN MEMORIAM PROFESSOR MAHMUT GAZI YAŞARGIL: THE FATHER OF MODERN MICRONEUROSURGERY (1925-2025)

Few neurosurgeons have shaped the neurosurgical field as profoundly as Professor Dr. Mahmut Gazi Yaşargil. Universally regarded as the father of modern microneurosurgery, he transformed how neurosurgeons approach the most vulnerable parts of the brain. His life spanned nearly a century, from his beginnings in Turkey to his groundbreaking work in Switzerland, the United States, and later back in his home country. Yaşargil's contributions were not limited to surgical innovation; he also trained generations of neurosurgeons through his teaching, research, and philosophy of patient-centered care.

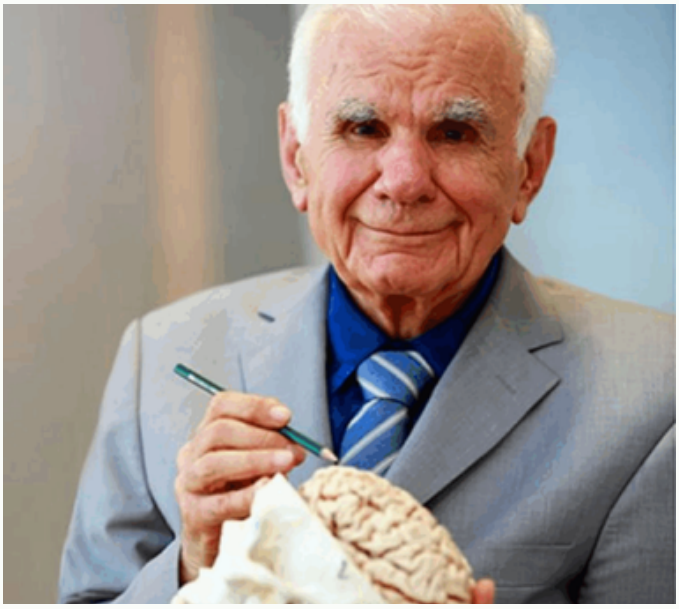
Early Life and Education

Yaşargil was born on 6 July 1925 in Lice, Diyarbakır, Turkey, although his family soon relocated to Ankara. From an early age, he was said to show curiosity and determination, qualities that would serve him well throughout his career. After finishing secondary school in Ankara in 1943, he began his medical study in Jena, Germany. His training was interrupted by World War II, forcing him to move to Switzerland, where he completed his degree at the University of Basel in 1950.

During these years, Yaşargil explored different branches of medicine, including psychiatry, internal medicine, and general surgery, while also conducting neuroanatomical research under Josef Klingler. This early immersion in anatomy, especially Klingler's method of fiber dissection, deeply influenced his later understanding of the brain's composition.

Neurosurgical Training and Early Career

In 1953, Yaşargil began his neurosurgical training at the University of Zurich under Professor Hugo Krayenbühl, one of Europe's leading neurosurgeons at the time. He quickly stood out, not only for his technical skills but also for his willingness to innovate. In the 1950s, he introduced stereotactic techniques for movement disorders and helped develop cerebral angiography in Switzerland. He even designed an early telescoping screw device for spinal fusion, a forerunner of modern expandable spinal implants. Between 1965 and 1967, he spent time in Burlington, Vermont, with Professor R. M. P. Donaghy, where he learned to apply microvascular techniques on vessels as small as 0.5–1.0 mm in diameter. This experience gave him the foundation to adapt microsurgery to neurosurgical practice, something that had never been done before. There he also developed microneurosurgical techniques to perform STA-MCA anastomoses and cerebral revascularisations.



The Microneurosurgical Revolution

In January 1967, Yaşargil returned to Zurich and immediately began applying microsurgical techniques to the brain. On 18 January of that year, he performed the first extracranial–intracranial (EC–IC) bypass in a human, marking a new era in cerebrovascular surgery. Using the microscope, he was able to treat aneurysms, arteriovenous malformations, and other complex vascular pathologies with unprecedented safety and precision.

He also introduced new operative philosophies. Rather than approaching the brain as an obstacle, he taught surgeons to follow its natural cisternal corridors, what he called a "conversation with nature." This approach minimized trauma and respected the brain's inherent structure. He paired this approach with refined bipolar coagulation, personally designed Yasargil-aneurysm clips, and the principle of "pure lesionectomy," where only the diseased tissue was removed while surrounding structures were preserved.

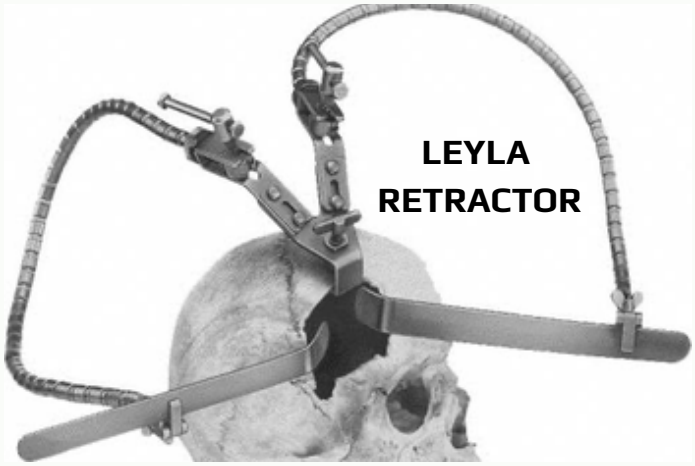
His work extended beyond vascular surgery. He developed the trans-sylvian amygdalohippocampectomy for temporal lobe epilepsy, advanced microsurgical tumor resections, and introduced techniques for deep-seated lesions. His systematic approach to cerebral aneurysms, arteriovenous malformations, and brain tumors established treatments that dramatically improved patient outcomes. Before his innovations, many cerebrovascular conditions carried prohibitive mortality and morbidity rates; his techniques transformed these into manageable surgical challenges with excellent outcomes.

Tools, Books, and Teaching

Yaşargil was also an inventor. He designed instruments still used today, including the floating microscope, self-retaining Leyla retractor (named after his daughter), and ergonomic microinstruments that became standard worldwide. These tools gave surgeons the precision and stability required for these exquisite procedures. His commitment to education was no less revolutionary. In Zurich, where he became professor and later chair of neurosurgery in 1973, he trained an entire generation of neurosurgeons. His laboratory became a global hub of innovation, attracting trainees from all continents who carried his methods back to their home countries. The so-called “Zurich School” of neurosurgery remains one of the most influential traditions in the field. In the micro-neurosurgical anatomical laboratory in Zurich, he trained around 3000 colleagues from all continents representing all surgical specialties. During this time, he produced a monumental legacy of writing: over 330 articles and 13 monographs, most notably his six-volume Microneurosurgery (1984–1996), richly illustrated and comprehensive, setting out his methods and philosophy for future generations.

Later Career and Global Recognition

After retiring from Zurich, he moved to the University of Arkansas for Medical Sciences in 1994, where he established a new microneurosurgery laboratory and continued to teach and operate until 2013. Later, he returned to Turkey, joining Yeditepe University in Istanbul as Professor of Neurosurgery, where he remained active well into his later years.



His work earned him global recognition. In 1975, he received the Marcel Benoist Prize, and in 1999, the journal Neurosurgery named him “Neurosurgeon of the Century.” an honor reflecting his unparalleled influence on the discipline. He also received honorary degrees, state medals, and accolades from neurosurgical societies across the world. Together with Harvey Cushing, he is ranked among the greatest neurosurgeons of the 20th century.

Philosophy and Legacy

While Yaşargil’s technical innovations defined his career, colleagues and students remember his compassion, humility and his view that mastery of neurosurgery required “technical brilliance” paired with sincere patient-centered care. He stressed that technical skill must always be paired with compassion, respect for anatomy, and responsibility to the patient. He often reminded his trainees: “Every millimeter matters.”

Yaşargil passed away on 10 June 2025 in Stäfa, Switzerland, just weeks before his 100th birthday. His life’s work laid the foundation of many aspects of modern neurosurgery, from aneurysm clipping to epilepsy surgery, tumor resection, and spinal operations. More importantly, through his thousands of trainees and the countless patients whose lives were changed by his techniques, his influence endures..

WRITTEN BY:
AKIN SÖNMEZDAĞ

CONTROVERSIAL NEUROSURGERY: ISSUE 1

It was a cold morning in December 1941 when the Kennedy household received a suggestion that would alter their family's history forever. In the dark corners of Boston's most prestigious hospitals, murmurs of a "miracle procedure" had begun to circulate—a surgery that could fascinate the wildest minds. For the young Rosemary Kennedy, sister to future president John F. Kennedy, the hope of that surgery was promising. Her erratic mood swings and hysterical behavior had begun to weigh heavily on the family's carefully polished image. When the infamous Dr. Walter Freeman offered the promise of a calmer, more "manageable" Rosemary, her parents —swayed by both desperation and trust in future medicine—agreed.

And thus the operation was performed. A few months later, the once-bright Rosemary could no longer speak coherently or care for herself. She would spend the rest of her life hidden away, her fate sealed by one of the most controversial chapters in neurosurgical history: the LOBOTOMY.

The lobotomy, or prefrontal leucotomy, was once regarded as an innovative neurosurgical procedure. Originating with Portuguese neurologist António Egas Moniz, it was based on the hypothesis that intractable psychiatric disorders arose from pathological connectivity within fronto-thalamic and limbic circuits. In 1935, Moniz and neurosurgeon Almeida Lima created bilateral burr holes and transected prefrontal subcortical white matter tracts to disrupt these pathways. In the United States, Walter Freeman and James Watts initially employed a craniotomy, but in 1945 Freeman developed the transorbital lobotomy. Using an orbitoclast introduced through the superior medial orbital wall and advanced into the prefrontal white matter, the surgeon would sever fronto-thalamic connections with sweeping motions. The procedure, often performed under only electroconvulsive or local anesthesia, could be completed within minutes but carried profound and irreversible neurological consequences. Actually, it was a grotesque choreography of metal, bone, and brain.

Psychosurgery

Lobotomy belonged to the broader field of psychosurgery, a term encompassing surgical interventions aimed at modifying behavior, emotion, or cognition. In the early and mid-20th century, before the rise of modern psychopharmacology, psychiatry was often a desperate specialty. Overcrowded asylums filled with patients suffering from intractable depression, schizophrenia, or obsessive-compulsive disorder. The therapeutic arsenal was meager: insulin coma therapy, electroconvulsive therapy, and hydrotherapy, among others. Against this backdrop, psychosurgery emerged as a promising beacon of possibility. To some, it was a bold step toward understanding the biological roots of mental illness. To others, it was a crude, irreversible assault on the very seat of human identity.

Lobotomy at its height

In the 1940s and early 1950s, lobotomy enjoyed a strange sort of prestige. Newspapers hailed it as a wonder cure. Families, desperate for relief of their beloved ones, signed consent forms in droves. Freeman became a traveling evangelist for his procedure, performing hundreds, sometimes in makeshift operating rooms or on live television. Perhaps the most shocking endorsement came in 1949, when António Egas Moniz received the Nobel Prize in Physiology or Medicine for his work in developing the lobotomy. For many, the prize was validation that this was not a hoax but genuine science. It is, to this day, one of the most contested Nobel decisions in history. The numbers soared: by some estimates, more than 50,000 lobotomies were performed in the United States alone. Patients ranged from the profoundly ill to those with what we would now consider "mild mood disorders".

Paradigm shift

But as the procedure spread, so did its casualties. The promised calm often came at the cost of flattened personality, emotional blunting, and loss of executive function. Some patients emerged childlike, unable to work, socialize, or live independently. Others never woke at all. Rosemary Kennedy's tragic outcome was mirrored in thousands of other, less-publicized lives. By the late 1950s, the tide began to turn. Chlorpromazine, the first antipsychotic drug, offered a non-invasive alternative, and the public's growing unease with lobotomy's side effects fueled a shift in medical opinion. The procedure, once lauded, became a symbol of medical hubris. Freeman himself was banned from operating after a patient died during her third lobotomy under his hands. The fall of the lobotomy marked more than the end of one procedure. It signaled a philosophical shift in neurosurgery and psychiatry alike. Medicine moved toward treatments grounded in rigorous clinical trials, clearer ethical oversight, and respect for patient autonomy. The chapter of the lone eccentric surgeon wielding untested tools on vulnerable patients was closing.

Modern psychosurgery still exists, but it is now an entirely different discipline: precise, targeted, and governed by strict ethical standards. Techniques like deep brain stimulation (DBS) for Parkinson's disease, obsessive-compulsive disorder, and depression rely on millimeter accuracy and adjustable electrical currents, not blunt-force severance of neural pathways.

The lessons we learned

Lobotomy's story is a cautionary tale. It is a reminder that the history of neurosurgery is not a steady march toward progress but a complex interplay of hope, ambition, and unintended harm. Even the most celebrated innovations can, under the scrutiny of time, reveal themselves as tragic missteps. In a sense, the lobotomy was both inevitable and unthinkable. Inevitable, because medicine has always pushed against the limits of knowledge, seeking solutions in the gray zones of ethics.

Unthinkable, because in hindsight, the idea of destroying healthy brain tissue to treat psychiatric illness feels brutal, almost medieval. Yet for the families of the time, faced with locked wards, screaming nights, and the absence of other options, it may have felt like a gamble worth taking. In that context, lobotomy was less a monstrous aberration than a product of its era's desperation.

The story of the lobotomy is not simply a medical history. It is a human one. It is about the fragile intersection of science and society, the seduction of easy solutions, and the irreversible cost of our mistakes. And it remains, for every medical student stepping into the world of neurosurgery, a sobering reminder: the brain is not merely an organ; it is the essence of the individual. Well actually, that last claim has been a point of discussion for ages in the philosophical mind-body problem.

Further reading warranted...

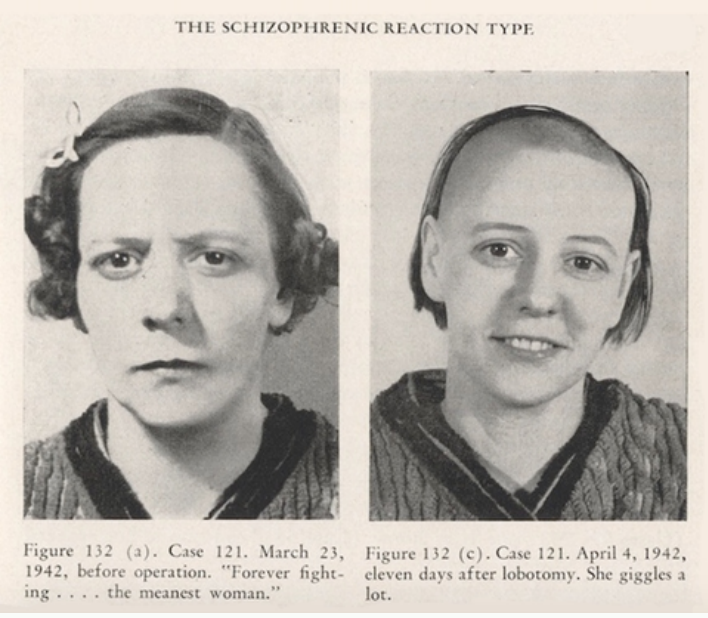


Figure 132 (a). Case 121. March 23, 1942, before operation. "Forever fighting . . . . the meanest woman."

Figure 132 (c). Case 121. April 4, 1942, eleven days after lobotomy. She giggles a lot.

WRITTEN BY:
ERIC CHEUNG

DANDY NETHERLANDS HAS A NEW BOARD!

After an extensive search, Dandy Netherlands has found its new board members for the coming year!

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VICE-PRESIDENT

SECRETARY

TREASURER

COMMISSIONER OF ACQUISITIONS

COMMISSIONER OF ACTIVITIES

COMMISSIONER OF EXTERNAL RELATIONS

COMMISSIONER OF CREATIVE IT

EXCITED TO MEET THE NEW BOARD? READ OUR INTRODUCTORY Q&A BELOW AND STAY TUNED FOR UPCOMING EVENTS!

Meet the board

1. **If you had to improve one brain structure, which would it be and why?**
2. **What is your most unique memory from your medical course so far?**
3. **What is your favourite song?**

Joost Bertens

PRESIDENT

1. The prefrontal cortex, to further develop my focus and planning, helping to prevent occasional procrastination cycles;
2. The valuable personal development sessions with specialists in various centers;
3. Podcasts are my music, including "The Spin Doctors," which is my personal favorite and highly recommended.

Eric Cheung

VICE-PRESIDENT

1. None, the brain is perfect as it is
2. Organising a medical congress
3. Family Business from Kanye West

Akın Sönmezdağ

SECRETARY

1. I would shift the optic chiasm such that it would no longer be compressed in the case of pituitary tumors, thus preserving vision.
2. During my neurosurgical rotation, I was able to extensively learn in the operating room how the electrical current is administered for tests during electrode placement in Deep Brain Stimulation and how this is subsequentially evaluated. I was then allowed to perform these tests independently.
3. I honestly can't name a song that I like best out of my favourites; there are like ten songs that take first place for me.

Serhat Çiftçi

TREASURER

1. I would like to improve my cerebellum so I can have better coordination and motor skills. This, in turn, helps enormously with sports and fine motor skills.
2. I've made lifelong friends with whom I share a passion.
3. I don't really listen to music.

Esther Goede

COMMISSIONER OF ACQUISITIONS

1. If I could improve one area, I'd choose the thalamus. Receiving and processing external stimuli and maintaining homeostasis seem like valuable aspects of brain function to improve.
2. Seeing a real brain in the dissection rooms at the AMC.
3. Mac Miller's The Spins.

Romilda Bontes

COMMISSIONER OF ACTIVITIES

1. Frankly, I believe all brain structures work together in harmony, unless there's an imbalance. The amygdala links emotions to memories and, in many cases, protects us from dangerous situations. But when it becomes overactive, people often experience fear. As long as that balance isn't disturbed, I wouldn't want to improve anything.
2. My first experience was watching the operating room at 6 a.m. for an external ventricular drainage procedure. A remarkable experience.
3. My favorite song always changes, but these days I often listen to dance/electro music, like "Sunsleeper" by Barry Can't Swim.

Ervin Figaroa

COMMISSIONER OF EXTERNAL RELATIONS

1. I would choose the brainstem because this core structure regulates vital functions such as heart rate, blood pressure, breathing, and energy balance. An improved brainstem would enable optimal homeostasis, allowing the body to regulate itself more efficiently in all kinds of situations, from physical exertion to stressful moments. This would not only improve performance but also significantly increase recovery and resilience.
2. A striking memory is that during our introduction, some instructors suddenly fainted, allowing us to observe and test what we could already apply and where we still needed to expand our knowledge. It was an unexpected, educational experience that demonstrates how practically focused and direct the medical course is.
3. The Man Who Sold the World, but specifically the Nirvana cover.

Ole de Bruin

COMMISSIONER OF CREATIVE IT

1. I would like to modify the cerebellum; many folks could use some extra dexterity. 😋
2. The first day of my medical rotations was one of the most thrilling experiences of my life, but also the moment it was confirmed: I want to be a doctor.
3. Phoenix's Lisztomania

QUIZ: DANDY-EDITION SUMMER 2025

Q1. Which Portuguese neurologist developed the technique for prefrontal lobotomy?
A) António Egas Moniz
B) Walter Freeman
C) James Watts
D) Gottlieb Burckhardt

Q2. Deep Brain Stimulation (DBS) for psychiatric conditions is most controversial when used for?
A) Parkinson's disease
B) Essential tremor
C) Treatment-resistant depression
D) Epilepsy

Q3 Which psychiatric condition has been most resistant to modern psychosurgical interventions?
A) Obsessive-compulsive disorder
B) Major depression
C) Schizophrenia
D) Bipolar disorder

Q4. The case of patient H.M. (Henry Molaison) became controversial because?
A) He died during surgery
B) His bilateral hippocampectomy caused severe anterograde amnesia
C) He was operated on without consent
D) The surgery was performed by an unlicensed physician

Q5. What percentage of lobotomies performed in the 1940s-1950s were performed on women?
A) 40%
B) 50%
C) 60%
D) 70%

Q6. The Nuremberg Code was established partly in response to?
A) Lobotomy abuses in state hospitals
B) Nazi medical experiments
C) Unethical brain tumor research
D) Experimental epilepsy surgery

Q7. Which brain region is targeted in capsulotomy for OCD?
A) Anterior limb of internal capsule
B) Posterior limb of internal capsule
C) Corpus callosum
D) Cingulate corte

Q8. Which country has mostly banned psychosurgery?
A) United States
B) United Kingdom
C) Germany
D) Japan

Q9. Which psychiatric condition led to the most lobotomies in the 1940s-1950s?
A) Depression
B) Schizophrenia
C) Anxiety disorders
D) Bipolar disorder

Q10. In which decade was the stereotactic frame used in modern psychosurgery first developed?
A) 1940s
B) 1950s
C) 1960s
D) 1970s

ANSWERS REVEALED IN NEXT ISSUE!

STAY TUNED FOR THE 2025-2026 DANDY PROGRAMME

UPCOMING EVENT

FUNCTIONAL NEUROSURGERY

Have you always been interested in Deep Brain Stimulation, Deep Brain Lesioning and Gamma Knife Procedures?
Discover more at our lecture given by Dr. Hilko Ardon!
Sign up for the online lecture and receive valuable knowledge from the comfort of your own home.

WHEN? 27 OCTOBER 2025, 19:00 - 20:00
WHO? DR H. ARDON (ETZ TILBURG)
WHERE? ONLINE

NEXT ISSUE:

- A DEEP-DIVE INTO THE HISTORY OF NEUROSURGERY
- NEW BRAINTEASER
- RECAP OF PAST EVENTS
- FUTURE EVENTS
- QUIZ ANSWERS AND MORE FROM THE NEW BOARD!

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Dandy Netherlands Neurosurgical Club

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