Paris Brain Institute

ICM

Synapse

The newsletter designed to connect with you

No.37 - June 2024

Special Report

Brain and sport, a winning team!

As July comes around, many of us will be present to admire and cheer on the performances of athletes, the precision of their movements, their concentration, motivation and team spirit.

These extraordinary capacities are not only driven by well-honed muscles but also and above all by the brain, the orchestra conductor that guides our movements, our memory, our emotions, our moods. These high-profile athletes perform actions with extreme precision, make the right decision at the right time, remain motivated in spite of defeats and train even when they're in pain or tired, thanks to the plasticity of their brain.

Among the host of research projects conducted at Paris Brain Institute on neurological and psychiatric diseases, as well as the after-effects of stroke or trauma, in this issue you will discover a promising study on individually-tailored motor recovery.

Paris Brain Institute researchers are as committed as ever to reaching their goals. They need your support to do this.

I know I can count on your generosity and loyalty.

Sportively yours,

Jean Todt
Co-Founder and Vice-President of Paris Brain Institute

Honorary distinctions

Prof. Alexis Brice, Director General of Paris Brain Institute, will be welcomed as a member of the French Academy of Sciences in June. Prof. Isabelle Arnulf, a Paris Brain Institute researcher, was appointed Knight of the Legion of Honor last December. Congratulations to the two honorees.

Stéphane Charpier invited to Paris Saclay Summit

Stéphane Charpier, neurophysiologist and team leader at Paris Brain Institute, was invited on March 1st this year to the Paris Saclay Summit – Choose Science, an event that gathered French and international scientists together to discuss the topic of *"How can major scientific breakthroughs tackle social challenges"*, to present his work on the "death wave" and resuscitation.
Scan the QR Code to watch on replay (in French).

A must-listen: "Le Langage" *podcast (in French) with Laurent Cohen*

Prof. Laurent Cohen, neurologist and researcher at Paris Brain Institute, unraveled the brain's reading and language workings in France Culture Radio's latest season of their "Votre cerveau" (Your brain) podcasts. You can find the six 10-minute episodes in French here:www.radiofrance.fr/franceculture/podcasts/serie-le-langage-avec-laurent-cohen

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FRENCH MINISTERS ON A VISIT TO PARIS BRAIN INSTITUTE

To inaugurate Brain Week on Monday March 11, 2024, Paris Brain Institute had the honor of welcoming three French Ministers: Sylvie Retailleau, Minister for Higher Education, Roland Lescure, Minister Delegate responsible for Industry, and Frédéric Valletoux, Minister Delegate responsible for Health and Prevention. This visit marked an opportunity for Paris Brain Institute to showcase its innovative model, which brings together researchers, researcher-clinicians, engineers and neuro-entrepreneurs in a single place, for the benefit of patients' health. It was also an opportunity to illustrate the drive for innovation led by the Carnot and IHU (UHI) labels.

France Brain Bee 2024, the neuroscience competition for under 19s

The 2024 edition of France Brain Bee took place at Paris Brain Institute on March 25. It encourages young people to take an interest in neuroscience and to pursue careers in research. Around sixty students competed in a variety of high-level challenges (quizzes, diagnosing brain diseases, etc.). The winner, Ayda Durubal (from the Louis-le-Grand Senior School in Paris), earned the opportunity to represent France at the international Brain Bee competition next October.

Key figure

In 2023, 26% of donations from major donors and partners of the Circle are international.

Follow us

agenda

June 21: Global Amyotrophic Lateral Sclerosis (ALS) Awareness Day

at the Institute

June 26: 'Matinale' (Morning conference) on "What breakthroughs in multiple sclerosis?" (in French). Registration required. Send an email to invitationcercle@icm-institute.org or call +33 (0)1 57 27 42 51.

From September 10 to 21: First edition of Paris Brain Institute's "Foulées du Cortex" connected challenge to support brain disease research. The idea? 1 km covered = €1 to finance brain research.

Find out more on: https://institutducerveau-icm.org/fr/les-foulees-du-cortex/

seen on the web

Find out more in the "News" section of our website.

- A new model to predict brain development
- Mutations that cause meningiomas are widespread in healthy tissues

videos

- Latest 'Matinale' (Morning conference): "Research and rare diseases: focus on ataxias" (in French)
- "Science, Art and Culture" conference from February 15, 2024: "Paris Brain Institute's scientific path" (in French) with Profs. Alexis Brice and Bassem Hassan
- Just Published: "Multiple sclerosis: new study highlights 5 warning signs of the disease"
- 2 minutes to understand: "Les Ajités" (EN subtitles)

The mutual benefits of sport and motivation

Prof. Gérard Saillant and Hugo Grau

A joint portrait of Prof. Gérard Saillant, President of Paris Brain Institute and Hugo Grau, French elite boxing multi-champion.

G. S. During my career as an orthopedic surgeon, I operated several sportspeople at the top of their game, from Formula 1 drivers to footballers. I was always incredibly impressed by their ability to get back to a really high level of performance really quickly. I believe that this can be explained by their remarkable motivation, what we call "the mindset". This desire to show themselves, as well as their coach, their team and their fans that they're capable of winning once again.

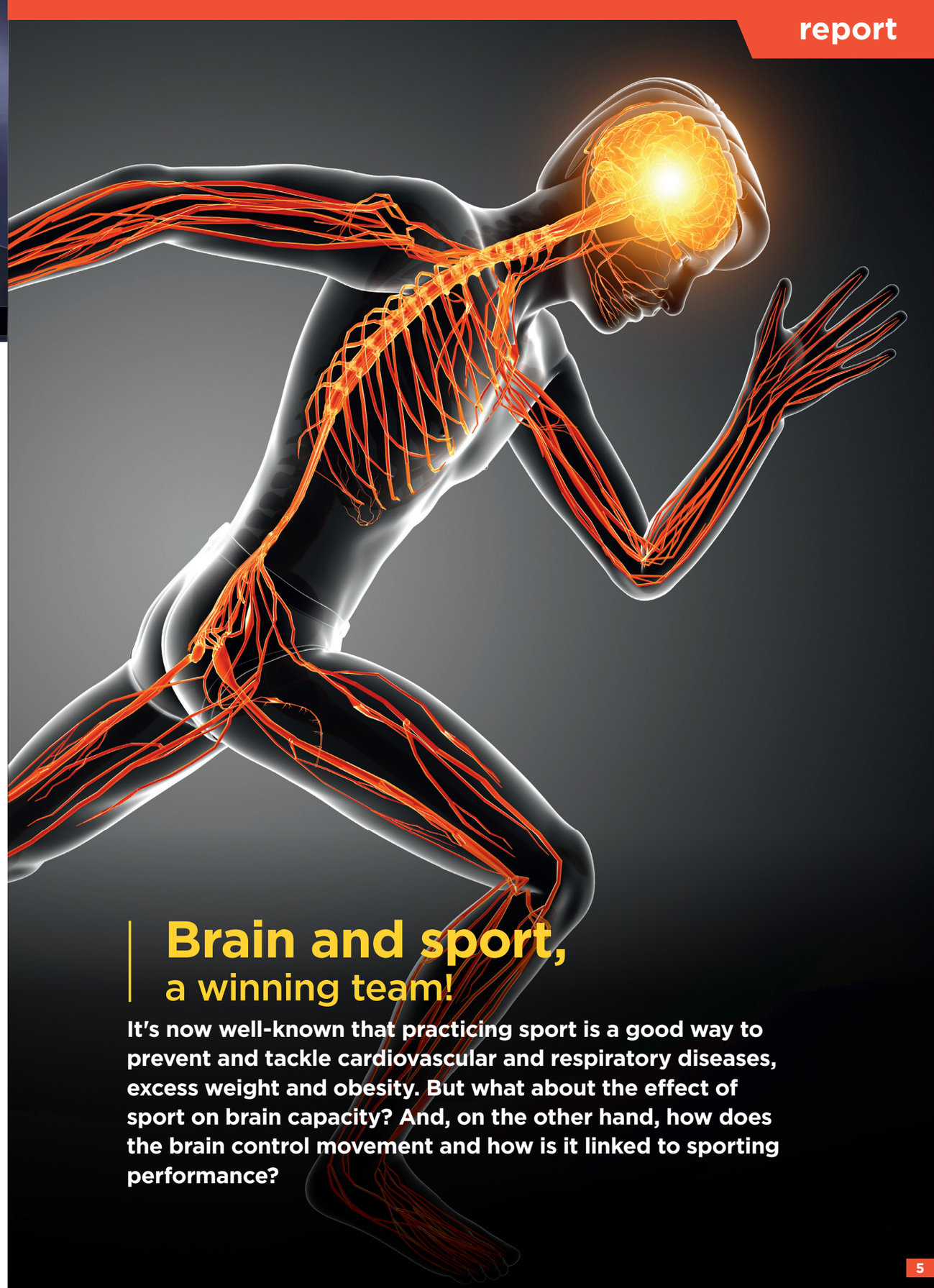
H. G. I was recently driven by this desire to prove, as quickly as possible, that I could win. I'd actually lost my Olympic Games selection fight against an opponent whom I'd beaten a host of times before then. I lost a tenth of a second before the gong by knockout. After brain concussion, some boxers are reluctant to get back in the ring, especially as there's a wait period between the knockout and the doctor's permission to fight again. For me, the motivation to win again was stronger than the fear.

G. S. This imposed "break" in their career seems to boost high-profile sportspeople's motivation to get back to the highest level of competition. At Paris Brain Institute, several research projects focus on the brain's motivation mechanisms. Some neurological and psychiatric diseases, like depression for example, can significantly reduce motivation. What's more, after a stroke or when a chronic illness deprives you of your movements, it can be difficult to find the will to follow a rehabilitation program.

As such, researchers of the Institute are keen to develop applications that will be able to "train" the motivation required to overcome disease and disability. In these research projects and others that focus on motor learning and decision-making, high-profile sportspeople are really good study subjects.

“I recently took part in a motor learning project at Paris Brain Institute as a volunteer and I'm delighted to have been able to play a role in this research that's really important for everyone.”

Hugo Grau



Brain and sport, a winning team!

It's now well-known that practicing sport is a good way to prevent and tackle cardiovascular and respiratory diseases, excess weight and obesity. But what about the effect of sport on brain capacity? And, on the other hand, how does the brain control movement and how is it linked to sporting performance?

Plasticity, morphology, brain capacity and physical activity

Walking, running, driving, throwing and catching a ball, are activities that can't be done without brain control. These motor commands follow one another in a specific time-based sequence and are behind muscle contraction.

Voluntary movements are produced by the sequential or simultaneous activation of various regions of the brain *(diagram 1)*:

- the **prefrontal cortex** and the**parietal cortex** integrate information to plan the movement based on the environment,
- the **premotor cortex** and the **supplementary motor cortex** organize the sequence and coordination of complex movements,
- the **motor cortex** sends the order to the muscles to perform the action,
- the **basal ganglia** and the **cerebellum** modulate the activity of motor cortex areas to regulate the movement.

These areas of the brain are interconnected by neural networks which enable them to communicate; this dialog varies based on the movement made.

Communicating and synchronizing the activity in the different regions, based on their level of importance in the programmed movement, results in an action that fits with the environment. Differences can be perceived between physical activities performed in reproducible settings, such as running, and in unstable settings, such as team sports, where the location and movements of every player need to be integrated.

The neural networks that enable the various regions of the brain to communicate are plastic. Learning and practicing a physical activity, i.e. specific motor sequences, leads to morphological and functional changes in the brain.

Communication between brain areas is mediated by electrical signals, the action potentials, which pass through and are integrated in neurons, and then are propagated from one neuron to another by synapses *(diagram 2)*.

Synapses enable the action potential – also known as nerve impulse – to move from one neuron to another as neurotransmitters are released. Each neuron can create synapses with several thousand other neurons.

Learning a motor activity like playing the piano or hitting a golf ball brings the brain's plasticity into play and leads to structural and functional changes.

It has been shown that in brain areas dedicated to the parts of the body used during essential activity actions, such as hands for a pianist, arms for a golfer, and legs for a footballer, researchers observed:

- **thickening of the myelin sheath**, whose role is to convey nerve impulses more efficiently along the axon. This thickening increases the speed of electrical signal propagation significantly in the neuron,
- **an increase in the number of synapses** which enable a neuron to transmit the signal to more neighboring neurons and, as such, to increase the dissemination of the nerve impulse between brain regions,
- **optimization of the connection between activated brain regions** during the movement with the creation of preferential neural networks that ensure only those muscles required for the movement are used.

Once the action has been learned, regular practice of the activity produces motor automatisms which, in turn, lead to reducing the attention required for performing the movement.

Diagram 1: brain-muscle connection

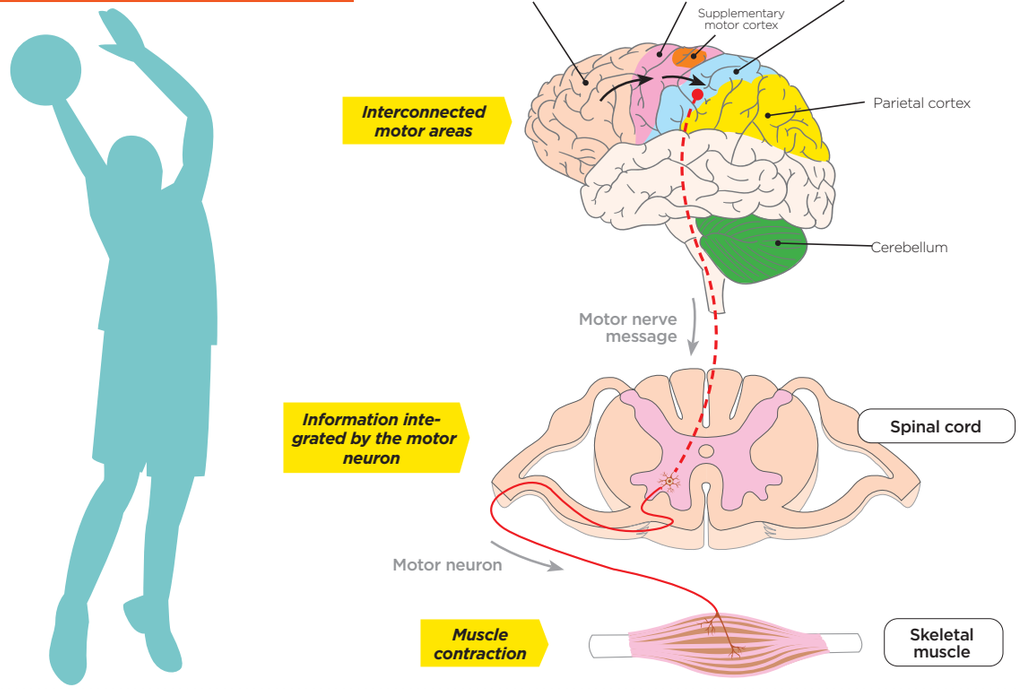
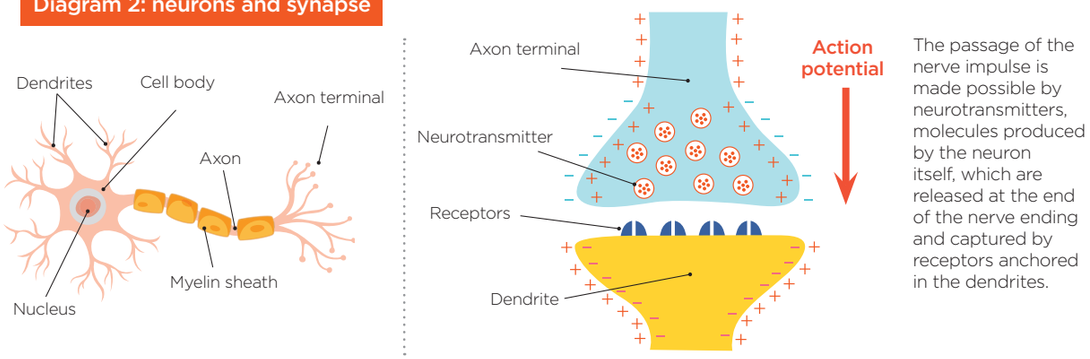


Diagram 2: neurons and synapse



"Automatisms enable attentional ability to open up to something other than controlling the movement, in particular to what is happening around. They explain the performances of high-profile sportspeople who no longer think about the movement they are making and, as such, are more receptive to the environment, for example the position of other players or an area where the snow is harder. This means they can anticipate and correct their action very quickly and in a suitable way."

Cécile Gallea
Researcher (CNRS) at Paris Brain Institute in the "Mov'It: Movement, Investigations, Therapeutics. Normal and abnormal motor control: movement disorders and experimental therapeutics" team.

The effects of physical activity on the brain: benefits and limitations

In recent years, many neuroscientific studies have focused on the relationship between sport and cognitive ability in different populations, from the youngest to the oldest.

What benefits are to be gained from practicing physical activity?

Brain plasticity induced by physical activity depends on for how long and how often the activity is done. These variables make up a value that we could call "a dose" which, like with a pharmaceutical drug, would have beneficial effects based on the individual's baseline condition. It has been shown that in sedentary individuals, a little dose of regular physical activity influences cognitive ability whereas the dose required to observe an effect in actively-exercising subjects must be higher. Secondly, the type of physical activity plays a key role in obtaining beneficial effects on brain capacities such as learning, attention and memory. Finally, we need to make a difference between the transitory effects of intense exercise and the longer-lasting effects of less intense but regular activity.

A recent analysis of several scientific articles comparing the effects of different types of physical activity in children and teens on their cognitive ability shows that activities performed in teams are optimal for learning, concentration, precision of actions and reduced reaction time. This physical activity demands complex movements, the continual integration of visual information such as the positions of the other players, and fast decision-making. Dance also promotes brain plasticity through complex choreographic and rhythmic elements that stimulate areas of the brain crucial for memory and control.

Activities like running and walking, which are important in preventing cardiovascular and respiratory diseases, appear to have less of an effect on brain capacity.

From sport to motor rehabilitation

As we age, our cognitive performances decline in particular due to a reduction in our brain's volume and loss of connectivity. As mentioned previously, physical activity leads to the thickening of the myelin sheath, to the increase in the number of synapses between neurons, and to a boosting of functional connections between areas of the brain, just like creative hobbies, such as reading, gardening and social engagement do.

As in young children, activities that require the coordination of several limbs and/or the processing of environmental information are the most beneficial.

Although the effect of physical activity on the capacities of the aging brain appears beneficial, the mechanisms underlying the preservation or restoration of brain capacities are still poorly understood.

The aim of the collaborative FORT[É] Project at Paris Brain Institute is to identify and characterize the brain circuits that come into play when learning complex movements. Researchers aim to establish a causal link between the acquisition of fine motor skills and connectivity between the cerebellum and motor areas, using electroencephalography (EEG) recordings and functional MRI.

Team ball sports, dance, etc. promote brain plasticity in children and teens.

The results of this project could help optimize rehabilitation programs for patients suffering from brain damage after a stroke or a head injury by modulating the neuronal circuits involved in movement using transcranial magnetic stimulation (TMS). Methodological and theoretical breakthroughs stemming from this research could also be applied to patients suffering from dystonia, Parkinson's disease or epilepsy following surgery of the epileptogenic focus.

To fully understand the dynamics and outcomes of motor recovery, it is vital to take the physiological processes of motor learning into account when planning tailored training programs for patients with neurological disorders.

Share your experience

Does physical activity have beneficial effects on depressive syndromes?

Symptoms of depression increase the patient's risk of becoming sedentary and physically inactive and, the more severe they are, the more pronounced the physical inactivity is.

In depressed patients, physical activity reduces negative thoughts and promotes positive feelings. It increases self-esteem and reassures patients of their ability to carry out a task, to cope, and leads to greater social interaction.

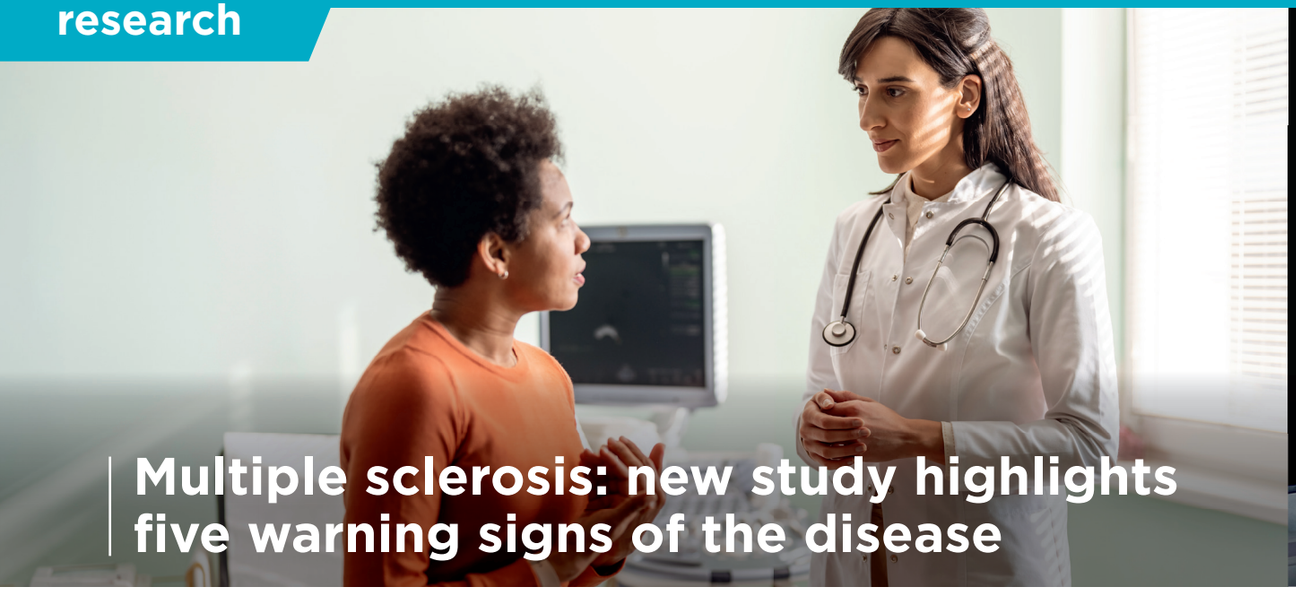
In patients with mild to moderate depression, a tailored physical activity program, combined with drug therapy, reduces the risk of recurrence and improves quality of life.

Depressive syndromes lead to reduced secretion from the noradrenalin, serotonin, dopamine and endorphin neurotransmitters. Physical activity triggers an increase in neurotransmitter rates and reactivates areas of the brain, which may be atrophied in depressed patients.

What subjects or conditions would you like to read about in future issues of *Synapse*?

Email us your suggestions. Your subject may be covered in a special report in one of our upcoming issues.

contact@icm-institute.org



Multiple sclerosis: new study highlights five warning signs of the disease

What if the biological mechanisms behind multiple sclerosis were actually triggered years before clinical diagnosis? This is what a new Paris Brain Institute study suggests.

Multiple sclerosis (MS) is a neurological disease where the immune system attacks the myelin, the protective nerve fiber sheath which plays a vital role in nerve impulse propagation between the brain and peripheral organs. It is estimated that over 2 million people have MS worldwide. There is still no viable curative treatment for the disease.

One of the great difficulties encountered by researchers is that no strict correspondence exists between the severity of the lesions present on the nerve fibers and the intensity of patients' symptoms... This reduces doctors' ability to anticipate and slow down the development of the disease considerably.

"The challenge today is to detect the disease as early as possible, well before lesions are visible on MRI, with the hope of delaying the onset of the disability as long as possible", explains Prof. Céline Louapre (Sorbonne University, AP-HP), head of Paris Brain Institute's Clinical Investigation Center.

In a new study, the researcher and her team analyzed the health data of some 20,174 patients with multiple sclerosis, 54,790 patients without multiple sclerosis, and 37,814 patients suffering from lupus or Crohn's disease – autoimmune diseases which, like MS, mainly affect women and young adults. The researchers then compared the condition of these patients over a ten-year period.

> **“ The challenge today is to detect the disease as early as possible, well before lesions are visible on MRI... „**

The team showed that, in this population, the onset of five symptoms was significantly related to a subsequent diagnosis of multiple sclerosis: depression, sexual disorders, constipation, cystitis, and other urinary tract infections.

Of course, these symptoms are common and benign in most cases, so they wouldn't lead to an early diagnosis of multiple sclerosis. However, for the researchers, these results mean that, in people who develop multiple sclerosis, the disease mechanisms are triggered at least five years before the diagnosis and appear as discrete disorders – long before the onset of neurological symptoms of the disease, such as walking difficulties and impaired vision.

Notwithstanding, in populations with a specific risk – in some familial forms of multiple sclerosis, for example – these five warning signs provide an early alarm signal and may even enable therapeutical action.

Mutations that cause meningiomas are widespread in healthy tissues

We occasionally observe mutated cells in healthy tissue, which may or may not become malignant tumors. This phenomenon has already been described in the endometrium, esophagus, and epidermis. Paris Brain Institute researchers set out to quantify this phenomenon in the meninges.

Meningiomas are the most common central nervous system tumors in adults over the age of 35. They form in the meninges – the three membranes that surround the brain and spinal cord and protect the nervous system from shocks – and are benign in 80% of cases. Meningiomas, which develop slowly and can generally be treated by simple surgical removal, are of little concern and normally attract less research interest than highly-aggressive tumors such as glioblastomas.

Yet, *"15 to 20% of meningiomas are grade II with a risk of recurrence, and 1 to 3% are grade III, which makes them malignant tumors"*, explains Matthieu Peyre, neurosurgeon and researcher at Paris Brain Institute. *"Grade II and III meningiomas, which concern some 150 people per year in France – around 0.0003% of the worldwide population – are often detected at a rather late stage. Although there are few patients in this case, they are however in a therapeutic predicament."*

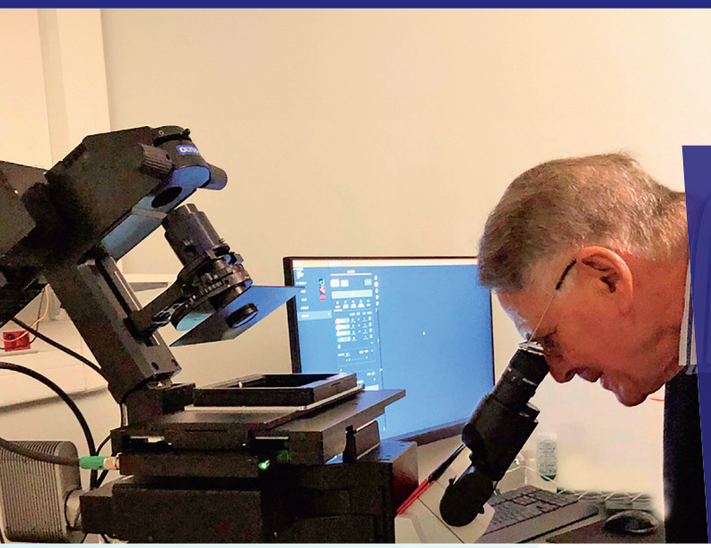
Over the past few years, researchers have suspected that mutations in the NF2 or TRAF7 genes were involved in the development of meningiomas. What if, long before the abnormal proliferation of cells that characterizes tumors appeared, these mutations were already present in healthy tissue?

Thanks to state-of-the-art sequencing techniques, mutations can now be detected at a very low frequency in normal tissues, in healthy individuals. Matthieu Peyre and his colleagues took advantage of these breakthroughs to analyze 90 samples of meninges obtained post-mortem from donors who had never had a brain tumor.

Surprisingly, the researchers found 4 different mutations in just 5 patients: almost all had at least one portion of meningeal tissue with a mutation. Moreover, these mutations were mainly pathogenic and concerned NF2 and TRAF7. *"These new results indicate that deleterious mutations are very common in normal meninges"*, explains the researcher. *"They also confirm the high frequency of meningiomas in the general population as they are found in 1% of people undergoing autopsy. It's a common phenomenon!"*

All that remains now is to very precisely map the cell populations in which these mutations are frequent. The aim? To guide researchers towards "the original mutated cell" of tumors. Meningiomas have a surprising characteristic in that malignant forms have virtually the same genetic profile as benign ones.

"We believe that the characteristics of the cell in which the tumorigenic mutation occurs will induce the tumor's capacity to become benign or malignant", concludes the researcher. *"Thus the interest, over the long term, in compiling an atlas of the meninges, which would enable us to describe all the cells comprised within and help us better understand the relationships between the meninges and the brain".*



Seeing the invisible through a new microscope that lights up the brain

MRI, SO HOW DOES IT WORK?

A main magnet, usually 3 teslas, i.e. 100,000 times more powerful than the Earth's magnetic field, is used to align all the hydrogen atoms contained in the brain, which is mainly made up of water and, as such, hydrogen atoms. Magnetic impulses called radiofrequencies, transverse to the main field, change the alignment of the hydrogen atoms and, in turn, create a short electric current.

These electric currents, of different intensities in each region of the brain, are then recorded by MRI and transposed in images.

By comparing the image obtained with those of a healthy brain, it becomes possible to quickly identify the presence of an anomaly such as a lesion or tumor.

Thanks to financing from NRJ Foundation – Institut de France, Paris Brain Institute has just acquired a STED microscope.

FONDATION NRJ POUR LES NEUROSCIENCES SOUS L'ÉGIDE DE L'INSTITUT DE FRANCE

The configuration of this new microscope integrates two depletion lasers, an adaptive optics module and a Matrix detector, and is a first-ever for France.

To push back the boundaries of understanding the brain and of identifying cell mechanisms behind diseases, researchers will benefit from cutting-edge brain diseases technology, derived from astronomy, that lights up the inside of the tissue observed.

This microscope will be used for studying the cells that make up the brain, in particular for viewing the different structures that form them, such as mitochondria. These organelles, indispensable for cells to survive, measure less than 1 micrometer, i.e. a thousand times less than a millimeter.

Tthe STED microscope can be used to view structures which measure 20 nanometers, i.e. 1 million times smaller than 1 millimeter. Thanks to this resolution, for the first time ever, researchers will be able to analyze what goes on inside mitochondria and, as such, better understand how these organelles work.

Research is carried out at Paris Brain Institute on the role mitochondria play in Parkinson's disease and in spastic paraplegia, as well as in transmitting information between neurons at synapse level under normal conditions.

Passing on knowledge to the younger generation: a key societal mission

As a pivotal player and benchmark in the neuroscience landscape, Paris Brain Institute is actively involved in a mission to pass on knowledge to the general public and, in particular, to children.

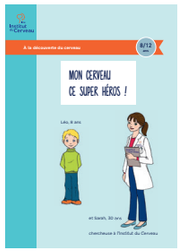
A junior space on the Institute website

Podcasts, booklets, etc. a whole range of reliable, accessible information tools about the brain, how it works and its diseases is available for free on the junior space of the Institute's website.

"Dans le coin du ciboulot !"

Why do I dream? How do I learn to read? To answer these questions that children ask and that invoke neuroscience, Paris Brain Institute decided to create a podcast *"Dans le coin du ciboulot !" (In our mind's eye! - podcast in French)*. Our researchers provide straightforward answers with a fun-filled twist so knowledge can be shared by the whole family. Good news, season 2 is available now!

"À la découverte du cerveau" booklets



Even if our brain still has a host of mysteries in store, we're now able to identify most of its components and understand how they work together. All this can be discovered in these 2 booklets: *"Mon Cerveau ce super héros !" (My brain's a superhero! - in French only)* for 8/12 year olds, and *"Mon cerveau un réseau hyperconnecté !"* ("My brain's a superconnected network!" - in French only) for 13/16 year olds. Download for free!

Visit our junior space (in French): **www.institutducerveau-icm.org/juniors**

Events to discover research and its jobs

Paris Brain Institute organizes special events on a regular basis for young and old alike to present all aspects of research in a practical, fun-filled, tailored way. A prime example of this was seen during the 26th edition of Brain Week, when the Institute opened its doors to the general public.

Partnership with Arte Education

In 2021, Paris Brain Institute and Arte Education signed an educational partnership to raise high school students' awareness to neuroscience. Throughout the academic year, several initiatives are rolled out on Educ'ARTE, the video on demand platform for teachers and their students.

Making neuroscience accessible to everyone and, more particularly, to the younger generation, is a core commitment that the Institute and its teams wish to pursue given the growing importance of neuroscience in society and the need to inspire scientific vocations.

France Brain Bee

France Brain Bee is a neuroscience competition intended for French middle and senior high school students and which is part of the International Brain Bee (IBB), a competition created in 1998 where students from around the world compete with each other. Paris Brain Institute has been the official organizer of the French edition of this event since 2019.

Information on **https://openbrainschool.com/en/program/france-brain-bee-en/**

The "Foulées du Cortex": motivate your employees and help advance brain research

From September 10 to 21, 2024, Paris Brain Institute will be leading an innovative, 100% connected sporting challenge in support of research on the brain and the diseases that affect it. As the head of a business, this is a one-of-a-kind opportunity to rally your employees and to promote your commitment to Paris Brain Institute's work.

A unifying concept that's easy to roll out

The **"Foulées du Cortex"** connected challenge is an online event that's open to everyone who wishes to become involved at their own level to accelerate the fight against brain diseases. Whether you're a seasoned athlete or just enjoy walking, everyone has the power to generate donations for Paris Brain Institute and its research. The intentionally-inclusive **"Foulées du Cortex"** transforms the kilometers covered into cash: a stroll through the forest, a wander around town, a gardening session, etc.

A connected challenge combining physical activity and fundraising

By creating a team with your employees, your business commits to donate €1 per kilometer covered to Paris Brain Institute to support research and medical innovation. These kilometers are recorded around the world via the dedicated app, available in French and in English. The app also enables you to encourage your team through an in-house ranking, a chat, a social wall, as well as missions that offer you an extra challenge and a new goal to reach within a given time.

1 km COVERED

=

€1 FOR BRAIN RESEARCH

Create your company team today!

Before the event

You'll buy virtual numbered bibs for your employees and you'll agree to donate the amount corresponding to the number of kilometers covered to Paris Brain Institute.

After the event

Paris Brain Institute will tally up the number of kilometers and will send you a call for donation. Once you've paid, we'll send you a tax receipt where 60% of the amount of your donation is deductible from your corporate tax in France, within the limit of €20,000 or 0.5% of company revenue, if your company makes less than 2 million euro of donations per year.
For amounts above this, the reduction is 40%.

Get in touch with us at the following email address: foulees.entreprises@icm-institute.org

If you'd like to join the challenge as an individual participant, you can register directly by scanning this QR Code.

A major technological breakthrough

Paris Brain Institute ushers in a new era of discoveries with the arrival of a 7T MRI thanks to the support of watch brand Richard Mille, which has been a strategic partner of the Institute for many years now.

Following the installation of a latest-generation 3 Tesla MRI in March 2024, Paris Brain Institute will install a new 7 Tesla MRI in its Neuroimaging Core Facility (CENIR), in June this year. The 7T MRI can acquire very high quality images at sub-millimeter scale, enabling researchers to explore the mechanisms underlying neurodegenerative diseases such as Parkinson's, Alzheimer's and Huntington's, as well as pathologies such as multiple sclerosis and brain tumors.

This groundbreaking technology paves the way for more precise diagnosis and for more effective treatments. The simultaneous setup of these two pieces of equipment provides translational research opportunities across all Paris Brain Institute fields of expertise and the possibility to easily switch between research and clinical applications. As such, it confirms the Institute's commitment to cutting-edge research and medical breakthroughs for the benefit of as many people as possible.

Follow the arrival of the 7T MRI at Paris Brain Institute on our social media and our website.

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YOUR CONTACT at the Circle of Friends Office

Ms. Emma Kavcic Mondoloni
+33 (0)1 57 27 40 32
cercle@icm-institute.org

F.A.Q.?

I am considering making a bequest to Paris Brain Institute. What is the FCDDV?

The FCDDV is the French Central File of the Dispositions of Last Wills, also called the "file of wills". After death, this file is systematically queried to find out whether the deceased had filed a will and which notary had filed the deceased's civil status.

Do I still own my apartment even if I leave it to the Institute?

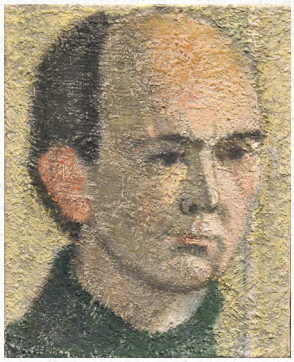
Yes, of course, you still own all the property you plan to donate; the will only becomes effective on your demise.

If I make a bequest to Paris Brain Institute, will you pay inheritance tax?

No. As a foundation recognized as a public utility, Paris Brain Institute is totally exempt from French inheritance tax: 100% of your bequest will go to research, without any State levy.

It can take us a lifetime to discover who we really are, and just a few years to forget.

The evolving self-portraits of artist and Alzheimer's patient William Utermohlen



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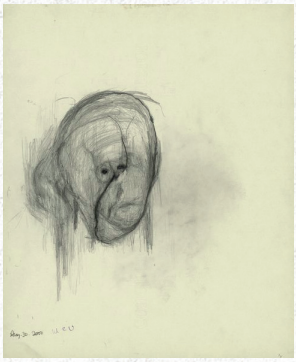

2000

Alzheimer's - Parkinson's - ALS - Multiple sclerosis
By making a bequest to brain research, you will be leaving a legacy that will benefit millions of sufferers and their loved ones.
+33 (0)1 57 27 41 41 or legs.institutducerveau.fr

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William Utermohlen (1933-2007), Oil-on-board self-portrait, Self-portrait with saw, Self-portrait (with easel), Head I (August 30, 2000).
With permission from Chris Boïcos Fine Arts, Paris, and with support from Bridgeman Images.

DONATION FORM

Please make your check payable to Institut du Cerveau and send it with this form to Institut du Cerveau - Bureau du Cercle des Amis Hôpital Pitié-Salpêtrière - CS 21414 - 75646 Paris Cedex 13 – France.

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