



MONTHLY NEWSLETTER
DEPARTMENT OF PHYSIOLOGY,
AIIMS RAJKOT

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22nd July World Brain Day



World Brain Day 2022
is dedicated to

Brain Health for All





World Brain Day

“Brain Health for All ”

WORLD Brain Day 22nd July

Brain is the most amazing and complex organ in the human body.

The human brain consists of millions and millions of electrical wires which are known as axons

This distance is the equivalent of travelling around the earth four times in a row! It is thought that there are about eighty billion neurons within the human brain. There are about ten trillion connections between these neurons which help us to read, write, watch, learn, plan, think, feel, move and solve problems on a daily basis.



Diseases affecting brain such as Stroke,

Diseases affecting the brain include Stroke, Epilepsy, Depression, Tumors, Traumatic Injury, Alzheimer’s Disease, Infections, Headache, Sleep Disorder and Genetic Disorders.



Diseases affecting the brain are the single most important cause of disability in the world



It's time to act. Let's get together to promote better brain health globally.

Exercise, healthy eating, avoidance of tobacco, drugs and alcohol, reading and problem solving promotes brain health.



Our brains are at a crossroads now!



One in three of us will get dementia or stroke during our life time. This can occur at any age-any time-anywhere! Both these disorders are preventable - treatable for the most part.



What is World Brain Day?

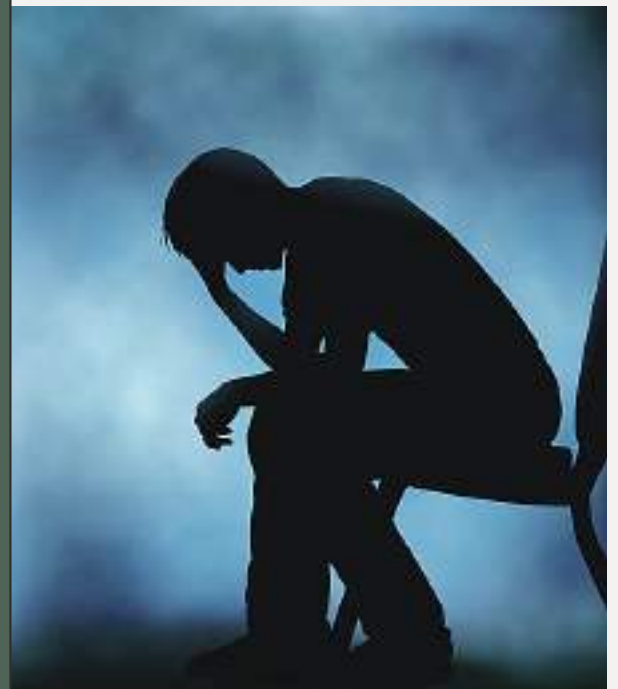


THE WORLD FEDERATION OF NEUROLOGY WAS ESTABLISHED ON JULY 22 1957. IT WAS SUGGESTED BY THE PUBLIC AWARENESS AND ADVOCACY COMMITTEE THAT 22 JULY 2014 SHOULD BE CELEBRATED AS "WORLD BRAIN DAY".

THEME FOR 2022

EACH YEAR, JULY 22 IS DEVOTED TO A DIFFERENT TOPIC IN NEUROLOGICAL HEALTH FOR WORLD BRAIN DAY.

THIS YEAR, THEME IS "**BRAIN HEALTH FOR ALL**" IN AN EFFORT TO OPTIMIZE BRAIN HEALTH AND REDUCE THE GLOBAL BURDEN OF NEUROLOGICAL DISORDERS.



Why Brain Health for All?



The brain is the most amazing and complex organ in the human body.



The human brain consists of 100 billion neurons and 10 trillion connections known as synapses which help us to read, write, watch, learn, plan, think, feel, move and solve problems on a daily basis.



Brain disorders are the number one cause of disability, number two cause of death and one in three of us have a brain disorder.

KEY MESSAGE



Awareness



Prevention



Advocacy



Education



Access

Awareness: Brain health is vital for mental, social and physical well being.



AWARENESS:

BETTER BRAIN HEALTH STARTS WITH INCREASED AWARENESS AND KNOWLEDGE OF THE IMPORTANT STEPS INVOLVED IN ACHIEVING AND MAINTAINING A HEALTHY BRAIN.

BRAIN HEALTH FOR ALL REQUIRES AN UNDERSTANDING OF THE BRAIN'S VITAL ROLE FOR HUMANITY.

PROTECTIVE FACTORS FOR EARLY BRAIN DEVELOPMENT INCLUDE SOCIAL CONNECTION AND SUPPORT.

WHAT MAKES A BRAIN HEALTHY?

- PHYSICAL ACTIVITY
- SOCIAL ENGAGEMENT
- PROPER SLEEP
- ADEQUATE NUTRITION—PLENTY OF FRUITS AND VEGETABLES
- CLEAN AIR TO BREATHE
- ACCESS TO CLEAN WATER
- IDENTIFICATION OF AT RISK INDIVIDUALS
- RIGOROUS CONTROL OF RISK FACTORS INCLUDING BLOOD PRESSURE, GLUCOSE, LIPIDS, WEIGHT, STRESS, POOR VISION AND HEARING
- RAPID ACCESS TO CARE WITH EARLY DIAGNOSIS AND TREATMENT OF BRAIN DISORDERS



Prevention: Many brain disorders are preventable

- 50 million people live with dementia or Alzheimer's disease (40% of dementia is preventable).
- 50 million people live with epilepsy (at least a third is preventable).
- 15 million people suffer a stroke each year (the vast majority are preventable).
- Preventable treatment is available for other neurological disorders such as migraine, Parkinson's Disease and multiple sclerosis.



Smoking, hypertension, depression, physical inactivity, diabetes, excessive alcohol consumption and air pollution are all risk factors

Healthy brain habits at all ages will reduce the global burden of brain disorders for all.



Advocacy: Global efforts are required for optimal brain health.



THE BRAIN CONTROLS ALL DAILY FUNCTIONS, SO PROMOTING BRAIN HEALTH ON A LARGE SCALE CAN CHANGE MILLIONS OF LIVES AROUND THE WORLD.

ONLY 28% OF LOW-INCOME COUNTRIES HAVE DEDICATED POLICIES FOR NEUROLOGICAL DISORDERS.

PEOPLE WITH NEUROLOGICAL DISORDERS OFTEN EXPERIENCE DISCRIMINATION AND STIGMA.

Education: Education is key to brain health for all

- PUBLIC EDUCATION WILL IMPROVE BRAIN HEALTH
- EDUCATION ON THE IMPORTANCE OF HEALTHY DIET, SLEEP AND PHYSICAL ACTIVITY CAN CREATE HABITS THAT OPTIMIZE BRAIN HEALTH FOR LIFE



Access: Equitable access to resources, treatment, and rehabilitation is essential for brain health

- At all levels—international, national and local—healthcare access is not equal.
- Everyone, regardless of location, age, or socioeconomic status, should have access to education, resources and care that improves brain health and prevents brain disorders.
- Of the 50 million people with epilepsy, about 80% live in low- or middle-income countries.



- Low-income countries have no neurologists or numbers as low as 0.1 neurologists per 100,000 people, compared to 7.1 per 100,000 in high-income countries.
- To combat the burden of brain disorders we must invest in and improve healthcare access.

Facts About Your Brain That Will Blow Your Mind



HUMAN BRAINS HAVE ENOUGH MEMORY TO STORE ALL OF THE INTERNET.

YOUR BRAIN PRODUCES ELECTRICITY.

Your brain can generate enough electricity to power some light bulbs, but charging your iPhone would take about 6,833 hours, which is 285 days.



INFORMATION TRAVELS TO YOUR BRAIN AT OVER 418 KMPH

YOUR BRAIN IS MADE UP OF 60 PERCENT FAT



EXERCISE IS GOOD FOR THE BRAIN

Aerobic exercise improves blood flow, reduces inflammation and lowers stress hormones—all of which supports cognitive health. Frequent physical activity may even lower your risk of dementia.

Facts About Your Brain That Will Blow Your Mind



MULTITASKING IS AN ILLUSION.

When we think we're multitasking, our brains are actually switching back and forth between tasks, not performing them at the same time. Rather than increasing efficiency, this practice generally results in tasks taking more time and having more errors.

YOUR BRAIN HAS AN AUTOPILOT SETTING.

The brain's default mode network, or DMN, allows us to perform common tasks like driving without actively thinking about them, or even while daydreaming.



YOUR BRAIN IS INCAPABLE OF FEELING PAIN.

YOUR BRAIN IS CONSIDERED FULLY FORMED AT ABOUT AGE 25.



YOU HAVE A LEFT BRAIN AND A RIGHT BRAIN

Your brain has two hemispheres, which function more or less independently. The left brain is often associated with language and logic, while the right brain is linked to emotion and creativity.

Recent Advances

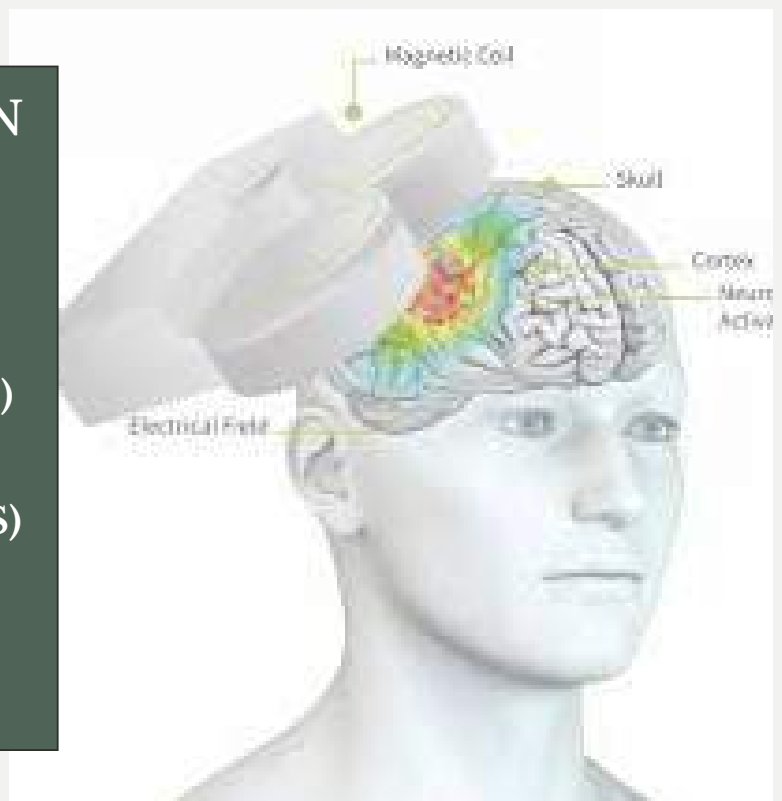


NEUROMODULATION

Neuromodulation is “technology impacting on the neural interface.” It is the process of inhibition, stimulation, modification, regulation or therapeutic alteration of activity, electrically or chemically, in the central, peripheral or autonomic nervous systems.

BRAIN STIMULATION THERAPIES

- Vagus nerve stimulation (VNS)
- Repetitive transcranial magnetic stimulation (rTMS)
- Magnetic seizure therapy (MST)
- Deep brain stimulation (DBS)
- Transcranial Focused Ultrasound (tFUS)





Messege from Executive Director

I heartily congratulate the Department of Physiology for bringing out the newsletter on World Brain Day. My best wishes to the team.

Prof. (Col.) Dr. C.D.S. Katoch
Executive Director, AIIMS Rajkot

PHYSIOLOGY TEAM

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- Dr. Rajesh Kathrotia- Addl. Professor
- Dr. Pradip Barde- Asso. Professor
- Dr. Gaurav Sharma- Asst. Professor
- Dr. Vinay Chiturri- Asst. Professor
- Dr. Naresh Parmar- Asst. Professor
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- Dr. Vivek Mendapara- Junior Resident