Nervous system

- Establishment and evaluation of a novel rat model of the fourth ventricle hemorrhage
- Prevalence and antibiotic resistance of pathogens isolated from neurosurgical patients with postoperative central nervous system infections in a tertiary hospital in North China
- Optimizing outcomes in intracranial ependymoma: a contemporary review
- Global, regional, and national burden of older adults peripheral nervous system tumors (1990-2021): a systematic analysis of incidence, dalys, and deaths with projections to 2050
- Case Report: Lateral C1-C2 puncture for intrathecal baclofen therapy: an alternative effective and safe approach after spinal cord injury
- Cellular and Molecular Interactions in CNS Injury: The Role of Immune Cells and Inflammatory Responses in Damage and Repair
- A Rare Case of Cervical Solitary Fibrous Tumor in a Pediatric Patient: Case Report and Literature Review
- Applications of Advanced Imaging for Radiotherapy Planning and Response Assessment in the Central Nervous System

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Is the part of the body that coordinates its voluntary and involuntary actions and transmits signals between different parts of its body.

Neurosurgery is a surgical specialty focused on the diagnosis, treatment, and management of disorders affecting the nervous system, including the brain, spinal cord, and peripheral nerves.

The nervous system is a vital part of organisms to survive and it endows them with remarkable abilities, such as perception, recognition, regulation, learning, and decision-making, by intertwining myriad neurons. To realize such outstanding efficacies and functions, many artificial devices and systems have been investigated to emulate the operating principles of the nervous system. An artificial reflex arc (ARA) and artificial pain modulation system (APMS) are proposed to imitate the unconscious behaviors of the spinal cord. Gdx Oy - and Alx Oy -based charge-regulated field-effect transistors (CRFETs) with a monolayer graphene channel were fabricated and adopted as inhibitory and excitatory synapses, respectively, under the same pulse signals to mimic the biological reflex arc through a connection with a poly(vinylidene fluoride-co-trifluoroethylene)-based actuator. Additionally, a memristor was integrated with a CRFET as the interneuron to regulate the Dirac point by controlling the voltage drop on the graphene channel, analogous to the descending pain inhibition system in the spinal cord, to prevent excessive pain perception. The proposed ARA and APMS have provided a significant step forward to realizing the functions of the nervous system, giving promising potential for developing future intelligent alarm systems, neuroprosthetics, and neurorobotics [1].

Central nervous system

Central nervous system

Peripheral nervous system

Peripheral nervous system.

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Fu Y, Chan YT, Jiang YP, Chang KH, Wu HC, Lai CS, Wang JC. Polarity-Differentiated Dielectric Materials in Monolayer Graphene Charge-Regulated Field-Effect Transistors for an Artificial Reflex Arc and Pain Modulation System of the Spinal Cord. Adv Mater. 2022 May 26:e2202059. doi: 10.1002/adma.202202059. Epub ahead of print. PMID: 35619163.