

# Department of Neurological Surgery

Open the door to the brain research !



Neurological surgery which is related to surgery of brain, spinal cord and peripheral nerve is constantly advancing field.

In particular, many new insight is accumulating in the filed of brain research. We have conducted various basic research about brain tumor, cerebrovascular disease and involuntary movement.

Our goal is applying these research progress in a clinical setting



## Tumor group

1. Angiogenesis and invasiveness glioma
2. Niche analysis of glioma stem cell
3. Search for the molecular marker of brain tumor
4. Development of molecular targeted therapy, gene therapy and oncolytic viral therapy



## Cell transplantation, neurogenesis and Stereotactic surgery group

1. Electrical stimulation, cell transplantation and pharmacotherapy in Parkinson's disease model
2. Electrical stimulation and cell transplantation on neurogenesis
3. Neuroprotective effect and mechanism of spinal cord stimulation
4. Depression and neurogenesis



## Vascular group

1. Experimental cerebral vasospasm after subarachnoid hemorrhage
2. Indirect bypass surgery for a chronic cerebral hypoperfusion model
3. Cell transplantation for cerebral ischemia model
4. Endovascular therapy with new imaging technology

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