Department of Child Neurology
Division of Biophysiological Sciences

Unveiling developmental dynamism through clinical research on the brain and mind of children

Child Neurology studies normal function and disorders of the nervous system in children. There are many patients with pediatric neurological disorders, such as cerebral palsy, intellectual disability, epilepsy, malformations, neuromuscular disease, metabolic diseases. Attention deficit/hyperactivity disorder, autism spectrum disorder, learning disorder have recently been drawing attention. Although these disorders are not as apparent as other neurological disorders, approximately 6% of children in regular school class suffer from them, which can cause social problems. Child Neurology is the largest subspecialty in Pediatrics. Importance of research and specialists in Child Neurology has been increasing to let children grow up physically and mentally sound.

Our main research target is 1) paroxysmal disorders such as epilepsy, 2) developmental studies utilizing clinical neurophysiology, 3) autistic spectrum disorder and attention deficit/hyperactivity disorder, 4) development and disorder of cognition, 5) cerebral palsy, and 6) unveiling pathophysiology through neuroimaging.

Many patients with intractable epilepsy are referred from everywhere in Japan and admitted to our ward. We use new technologies including computerized EEG analysis, magnetoencephalography, and functional MRI to clarify pathophysiology of intractable epilepsy. We also do researches on long-term follow-up of epilepsy, treatment, clinical trials of new anti-epileptic drugs, care of intractable epilepsy, based on our long experience with many epileptic patients. We also perform epidemiological studies of epilepsy, febrile seizures, and status epilepticus. We cooperate with other departments to do molecular genetic researches. Other researches include prevention of intractable epilepsy by following up high-risk children from neonatal period, longitudinal studies on neuropsychological development of healthy children. We at times cooperate in the field of school education.

Our research is mainly clinical researches targeting patients and healthy children and fuse research and clinical practice. We aim to raise excellent researchers with high clinical skills and excellent clinicians with a great interest in research.

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