OUR JOB IS HEALTH, OUR STRENGTH IS SCIENCE!



Science Partner

İSTANBUL Brain Hospital

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S. 72-77


ÖZEL
NP
İSTANBUL
Beyin Hastanesi

WE ARE WITH YOU IN ALL YOUR HEALTH NEEDS.

For more than 25 years, we have been serving our clients in the fields of Psychiatry, Psychology, Neurology and Addiction by breaking many grounds. We took our multidisciplinary approach one step further and took inspiration from the brain to achieve excellence. Thus, we continue our journey as a specialty hospital in Neuropsychiatry with more comprehensive service and technology equipment, general hospital facilities focused on the brain area and additional 15 branches in addition to our previous experience. We prioritize the needs and comfort of our clients and offer our hospital management approach in the methods and conditions envisaged by modern science. As Europe's 2nd Brain Hospital, we offer a full-fledged diagnosis and treatment center service with our technological infrastructure and expert staff.

Our hospital has superior technological infrastructure facilities that can assist surgical operations in all branches with Türkiye's first and only 1A Ultra Clean Operating Room equipment approved by an independent accredited organization.

There are 2 digital operating rooms with laminar flow units, one of which is 1A, and an intensive care unit with a capacity of 15 beds, where services are provided in many areas ranging from robotic surgery, tumor, spinal cord and aneurysm surgery, to pacemaker surgeries applied in Parkinson's, OKB, depression and epilepsy. The intensive care unit can provide full-fledged service to intensive care patients at all levels up to Level 3.



Our Neuromodulation Center and the Child and Adolescent Development & Autism Center (ÇEGOMER) are exemplary practices in their fields. You will be interested in our 'Sensory Integration Clinic' for the treatment of autism. We are working to offer you better service in more branches, with more bed capacity, an expanding team and state-of-the-art technology.

We aim to contribute to the oral and dental health of the society with Üsküdar University Dental Hospital, which we opened in May 2023. In our hospital, where we serve with Üsküdar University academic staff; we provide all kinds of dental, gum and prosthetic treatment services to adult and pediatric patients.

We are at your side for all your health needs..

Prof. Dr. Nevzat TARHAN
Chairman of the Board of Directors

MISSION & VISION



“One form of patient harm is to leave the patient untreated.”

Prof. Dr. Nevzat Tarhan

OUR VISION

NP Health Group aims to be a reliable, excellence-oriented academic health institution that aims to ensure the satisfaction of patients and their relatives and is a reference in the services it offers.

OUR MISSION

NP Health Group’s mission is to protect the mental health of the community and to improve the quality of life of the individual;

- To provide personalized medical practices in international standards, in the light of contemporary science, with a multidisciplinary approach,
- To adopt preventive medicine as well as therapeutic practices in appropriate economic conditions, respecting patient rights and adhering to ethical values,
- To support the development of new knowledge and practices by enabling academic studies and scientific research through university collaborations.







WHY NPİSTANBUL BRAIN HOSPITAL?



1. NPİSTANBUL Brain Hospital is the first private neuropsychiatry hospital in Türkiye and the second brain hospital in Europe, established with the aim of providing effective treatment services for diseases related to mental/brain health with most advanced treatment facilities enabled by modern medicine.

2. NPİSTANBUL Brain Hospital has **JCI (Joint Commission International)** accreditation, the world's largest and most prestigious health accreditor. This accreditation is a special document that only three hospitals in the world, including ours, outside the United States are entitled to receive.

3. In addition to the existing services in the field of brain, it also provides services in neurosurgery, general surgery, ENT, internal medicine, pediatrics, etc.

4. It is the first private hospital in the field of psychiatry that responds to all the needs of its clients with its 24/7 Emergency Psychiatry service with private ambulance.

5. It has class A operating theater and intensive care services for neurosurgery. It has Türkiye's first and only 1A Ultra Clean operating room equipment approved by an independent accredited organization and has a superior technological infrastructure that assists surgical operations.

6. NPİSTANBUL Brain Hospital is the pioneer of new approaches such as "Treatment by measuring brain functions" and "Thought-Oriented Medicine" in Türkiye.

7. NPİSTANBUL Brain Hospital is the first and only hospital in Türkiye to adopt the Pharmacogenetics approach (therapeutic drug blood level monitoring (TDM), Phenotyping and Genotyping) in diagnosis and treatment processes.

8. NPİSTANBUL Brain Hospital is the scientific partner of Üsküdar University. It cooperates with the University in various technological, academic and scientific fields.

9. NPİSTANBUL Brain Hospital offers Neuromodulation treatments, the first of its kind in Türkiye. This center aims to treat by measuring brain functions with brain stimulation.

10. It provides telepsychiatry (online therapy) services for out-of-town and overseas clients.

11. NPİSTANBUL Brain Hospital is a hospital focused on excellence in health, taking into account the "comfort of treatment" that will positively affect the treatment processes in addition to being scientific.

12. As Addiction Clinic (NPAMATEM), Advanced Toxicology Verification Laboratory service is provided.

13. Evidence Based Treatment is one of our basic principles.

a) Conducting pre- and post-tests

b) Use of biomarkers such as brain mapping

c) Reporting the outcome

TECHNICAL FACILITIES

“Brain-centered inter-disciplinary approach increases treatment effectiveness.”

Prof. Dr. Nevzat Tarhan



Technical Facilities

• With a total area of 30,000 square meters and a capacity of 149 beds, our hospital aims to create a sense of home for patients and their relatives.

• NPİSTANBUL Brain Hospital, where the comfort of patients and their relatives is prioritized, has two types of room options designed for different needs. There are standard and type A suite rooms. Type A suite rooms and corner suite rooms aim to provide high comfort without compromising security.

• In order to ensure the comfort and safety of our clients in each room, all furniture has been selected and specially designed accordingly

• In all our rooms, VIP services are offered to patients and their relatives to increase their comfort, from televisions with local and foreign channels to safes, resting, including a la carte meals, and newspaper service.

30 thousand m² of area in total with 149 bed capacity

• In our hospital, there are interview rooms that aim to protect the privacy of patients and their relatives during physician interviews, waiting areas in each clinic, and day lounges and winter gardens on the patient floors to make patients feel comfortable and at home.

• Our cafeteria in NPİSTANBUL Brain Hospital has a rich variety of Turkish and World cuisine with our renewed dining hall. It serves with its large and spacious seating area, design, service quality and friendly staff. Our place of worship in our hospital is located on the -1st floor.

Each clinic has waiting areas and patient floors with day lounges and winter gardens designed to make patients feel comfortable and at home.

MEDICAL UNITS

- Adult Psychiatry Service
- NPAMATEM (Addiction Unit)
- Psychotherapy Services
- Child and Adolescent Psychiatry
- Geriatric Psychiatry
- Neurology and Child Neurology
- Brain, Nerve and Spinal Cord Surgery
- General Surgery
- Orthopedics and Traumatology
- Ear Nose Throat



- Internal Medicine Service
- Gastroenterology
- Infectious Diseases
- Cardiology
- Physical Therapy and Rehabilitation
- Center for Traditional and Complementary Medicine (GETAT)

Diagnostic Methods

- Brain Examination Techniques and Brain “Check Up”
- Computed Tomography/Angio 128 slice/ X-Ray
- Digital X-ray, Mobile X-ray
- MR Imaging (3 TESLA)
- intraoperative USG
- Neurocognitive Tests (TOVA, Vienna-Scufried, MOXO)
- QEEG/ EMG
- O/C Arm Scopy (30 views)
- Clinical Pharmacogenetics Laboratory
- Advanced Toxicology Validation Laboratory
- Psychiatric Genetic Counseling
- Biochemistry Laboratory
- Sleep Laboratory
- Neuropsychology Laboratory
- Endoscopy and Colonoscopy

ADULT PSYCHIATRY



Türkiye’s First Private Neuropsychiatry Hospital

In NPİSTANBUL Brain Hospital; Effective treatment services are provided for diseases related to mental/brain health with the most advanced treatment facilities of modern medicine. In our hospital; diagnosis and treatment services are provided in the branches of psychology, psychiatry and neurology.

Psychiatry Treatment Methods

- ECT (Electroconvulsive Therapy)
- TMS (Transcranial Magnetic Stimulation Therapy)
- Neuronavigated TMU, Deep TMS
- Direct Current Stimulation (tDCS)
- Neurobiofeedback
- Microstimulation Therapies (CES/KET)
- Personalized Treatment (Clinical Pharmacogenetics)
- COGBAT, Play Attention, Rehabil
- Occupational Therapy, Sensory Integration Clinic
- Social Functioning Program
- Psychotherapy and Positive Psychology Applications
- Virtual Reality Therapy
- Family/Marriage Therapies (Couple Therapy)
- Hypnotherapy
- Computerized Attention Training
- Bright Light Treatment (Phototherapy)
- School Readiness Studies
- 24/7 Emergency Service
- EMDR Therapy



Diseases for which we provide treatment services

- Psychosis
- Obsessive-Compulsive Disorder (OCD)
- Symptoms of psychiatric disorders that manifest themselves physically
- Depression
- Bipolar Disorder (Manic Depressive Disorder)
- Eating disorders (Anorexia nervosa, Bulimia nervosa)
- Schizophrenia
- Addiction
- Post-traumatic stress disorder
- Sleep and Sleep Disorders
- Personality disorder
- Social phobia
- Sexual Dysfunctions

“Brain-centered interdisciplinary approach increases treatment effectiveness.”

Prof. Dr. Nevzat Tarhan

We provide diagnosis and treatment of all psychiatric diseases, especially psychiatric disorders.

Our hospital is the pioneer in Türkiye of new approaches such as “Treatment by measuring brain functions” and “Thought-Centered Medicine”, which are among our treatment possibilities. It is the first hospital in Türkiye to adopt the Pharmacogenetic approach (therapeutic drug blood level monitoring (TDM), Phenotyping and Genotyping in diagnosis and treatment processes and to apply it in the clinic. It is the first hospital to adopt new treatment approaches such as DNA Analysis.





In the protection and improvement of individuals' mental health and in the treatment of all brain-centered diseases; respecting patient rights and adhering to ethical values, adopting preventive medicine as well as therapeutic practices, closely following the developments in the international arena with university collaborations and international accreditation standards as a health institution, we always aim to take behavioral health treatments one step further. By using technology in therapeutic medicine, with the "Check Up" program in early diagnosis medicine and with social activities in preventive mental health medicine, we have been providing our clients with the standards of a center of excellence in all brain-centered diseases and their treatments for more than 25 years, we provide services.

SPECIAL TESTS APPLIED IN OUR INSTITUTION

In NPİSTANBUL Brain Hospital Adult Psychiatry Unit, all tests that should be applied in adult psychiatric diseases and treatment are applied. Apart from these tests, there are special tests applied in our institution.

COGBAT Test

COGBAT (Cognitive Basic Assessment);

COGBAT (Cognitive Basic Assessment) is a part of the Vienna Test System. The COGBAT test set is a computerized test battery used to determine the cognitive status of individuals with neurological and/or mental disorders.

The COGBAT test set provides assessment of the following three cognitive dimensions.

- Caution
- Memory
- Executive Functions

COGBAT (Cognitive Basic Assessment):
The cognitive test battery includes the following subtests.

- TMT - L BTA - Information processing speed
- WAF intrinsic - Alertness
- WAF cross-modal - Divided attention
- FGT RLVA - Figural long-term memory
- FGT RKVA - Figural short-term memory
- FGT LS - Total learning, formal (Learning total)
- FGT RW - Recognition, formal (Correct recognition)
- TMT-L BTB - Cognitive flexibility
- NBV - Verbal working memory
- TOL-F - Planning ability
- INHIB - Response Inhibition

The COGNIPLUS cognitive rehabilitation system, which includes a training module corresponding to each dimension measured in the COGBAT test set, is used for cognitive rehabilitation of difficulties detected as a result of test administration.

COGNIPLUS Rehabilitation System is

a computerized training battery for the training of cognitive functions. Attentional functions,

includes training modules for functions such as cognitive functions, memory, spatial processing and visual motor.

Before starting the training, a careful assessment enables us to identify strengths and areas in need of improvement. Accurate identification of areas in need of training makes training effective and efficient. Progress in training is also assessed not on the basis of subjective observations, but by using the parallel forms of the initial tests in COGBAT.

ALERT: Attention/Warning

CODING: Working Memory-Spatial coding
DATEUP: Working Memory-Update operation
DIVID: Attention/Split attention

FOCUS: Attention/Focus

HIBIT-R Houses of Executive Work/Response inhibition

NAMES Long Term Memory

NBACK Working skills-Monitoring skills

PLAND Executive Functions/Planning and Action Skills

ROTATE Spatial Work

SELECT: Attention/ Selective Attention

SPACE Attention/ Visual-Spatial attentiveness

SPEED Information Processing Speed

VIG: Attention/ Vigilance Sustained Attention
VISMO: Visual Motor Coordination
VISP: Working Memory-Recall



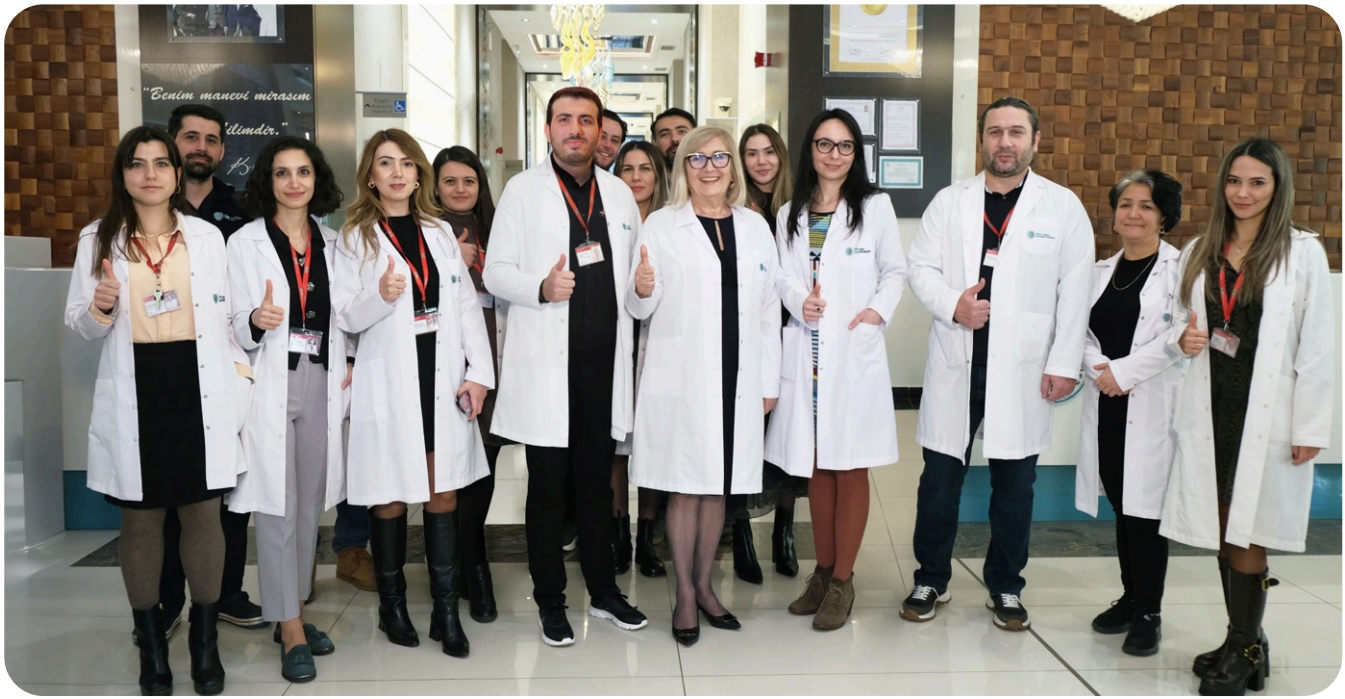
In which centers can this test be performed?

Although there are other institutions in our country that use the Vienna Test system mostly for psychotechnical evaluations or clinical purposes, the COGBAT test set is the most up-to-date version of this system and I can say that we are the first institution to use it. What is important is not the scores obtained with the measurement of any test, but the clinical evaluation of the needs of the person by a team of experts from neurology/psychiatry/psychology disciplines within a multidisciplinary approach. This approach is applied in our hospital and polyclinics.

- SPM - Raven's Standard Progressive Matrices (Logical Reasoning Test)
- CPM - Raven's Colored Progressive Matrices (Logical Reasoning Test)
- COG - Cognitrone

(Attention & Concentration Test)

- DAUF - Sustained Attention Test
- NVLT - Non-Verbal Learning Test



NPAMATEM (ADDICTION CENTER)

NPAMATEM ADDICTION CENTER offers inpatient and outpatient services with advanced treatment facilities.

• Long-acting medications (implants/chips) are used in addiction treatment to increase patient compliance with treatment.



• Treatment is carried out in collaboration with psychiatry, psychology and social services specialists.

• In Türkiye, we provide services with a treatment staff that brings together experts in the field of addiction.

• Preventive services and rehabilitation are as important as treatment.

• Each patient is treated with medication, individual and group therapies, as well as family and marital therapy.

• It is the only center in Türkiye where addiction and co-morbidity psychiatric disorders are treated simultaneously in a separate service.

• In the Advanced Toxicology Laboratory, the world's most advanced technologies are used in the follow-up of the patient's treatment in order to determine whether the patient is using substances or not. Different treatment options are also applied in treatment.

Ketamine treatment is one of them.





-Inpatient treatment is offered for behavioral addictions.

• We contribute to the national and international medical literature in the field of addiction with publications and articles through clinical and preclinical research.

• We cooperate with many international organizations in the field of addiction in terms of training and treatment.



• The Advanced Toxicology Laboratory is recognized as a reference institution in Türkiye.

• After inpatient treatment, treatment plans are drawn up, followed up, and structured, individualized drug therapies as well as psychosocial treatment and rehabilitation continue.

• Depending on the genetic status of the patient, drug treatment, drug selection and dosage are adjusted.

• 24/7 patient follow-up is provided and immediate intervention and hospitalization is ensured.

• Within the framework of evidence-based medicine, neuromodulation treatments Transcranial Magnetic Stimulation (TMS) and Deep TMU (Dtms) techniques are used for the first time in Türkiye in behavioral addictions such as substance addiction and/or gambling addiction.



CHILDREN AND ADOLESCENT PSYCHIATRY

NPİSTANBUL Brain Hospital Child and Adolescent Psychiatry provides services for the diagnosis and treatment of developmental, psychological, cognitive, academic and social difficulties of children and adolescents aged 0-18. Our diagnostic possibilities by measuring brain functions: Personality, Attention, Memory, Psychosocial tests and screening.

Our expert staff in the field of Child and Adolescent Psychiatry works to ensure healthy development and diagnosis and treatment of existing disorders from birth to the end of adolescence.

Among the diseases we treat are the following:

- Pervasive Developmental Disorder,
- Childhood Depression,
- Behavior Disorders,
- Autism, Special Learning Difficulties,
- School Failure,
- Test Anxiety,
- Tics and Obsessions in Children,
- Phonological Disorders,
- Stuttering
- Aphasia
- Attention Deficit,
- Hyperactivity

DIAGNOSIS AND TREATMENT METHODS IN CHILD ADOLESCENT PSYCHIATRY

QEEG

- It is a technique that analyzes the brain electrical activity recording taken from the scalp and shows the distribution of waves of different frequencies on the brain, thus providing indirect information about the functioning of the brain.

When QEEG is repeated after the treatment, it can show the positive change provided by the treatment. As can be seen from the pre-treatment and post-treatment profiles in the examples, it can be observed with bioelectrical activity recordings that the treatment eliminates the disorder in brain chemistry.

CAS (Cognitive Assesment System)

The CAS test is an intelligence and ability battery that evaluates the competence of children aged 5-17 years in cognitive processes. It consists of 4 scales and 12 subtests. Planning, attention, simultaneity and sequential cognitive processes are evaluated in the tested individual. CAS is organized in two separate forms as 5-7 and 8-17 years old. Application lasts between one and two hours.

CAS application areas:

• Evaluation of children with attention deficit and hyperactivity disorder,

• Assessment of those with learning disabilities,

• Predicting success,

• Assessment of those with intellectual disabilities,

• Evaluation of those with traumatic brain injury,

• Assessment of gifted children,

• Identifying those with planning problems.

MOXO CONTINUOUS PERFORMANCE TEST

MOXO Continuous Performance Test; children (6-12 years old) and adults and is an “online” computerized attention measurement test that helps in the diagnosis of ADHD (Attention Deficit and Hyperactivity Disorder). The MOXO test measures attention, timing, hyperactivity and impulsivity. The child form of the MOXO Continuous Performance Test takes 15 minutes, while the youth and adult form takes 18.5 minutes.

WHO CAN BENEFIT FROM THE MOXO CONTINUOUS PERFORMANCE TEST?

For children

• Failing to succeed in studies despite wanting to and making an effort,

• Always on the move since childhood, subject to frequent injuries and disappearances,

• Those who have timing problems in exams and daily life (leaving home late, not completing questions within the exam period),

• Always leaving their homework until the last minute, unable to work on a schedule, unable to put things in order,

• Reacting to events and people suddenly and overreacting.



• Although seen as calm-hypoactive by the teacher or parents individuals who have difficulty sustaining attention

For adults:

• Changing home, job, lover-partner more often than usual,

• Shows forgetfulness and has difficulty maintaining attention in meetings or classes,

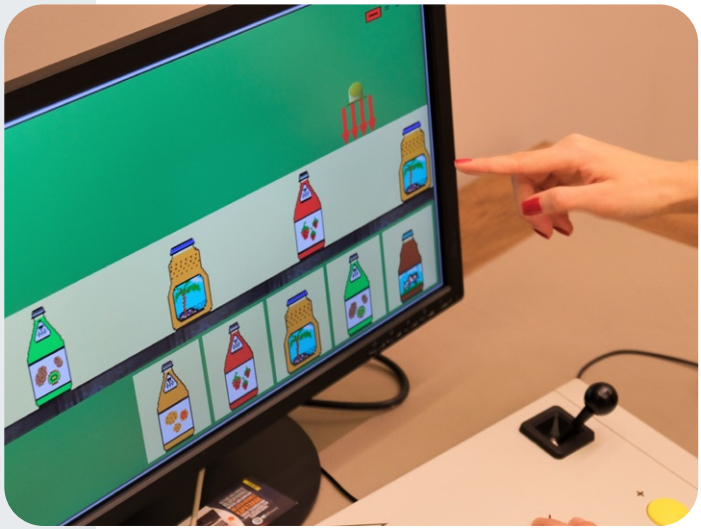
• Frequent traffic accidents,

• Failing to perform as expected in business life,

• The MOXO Continuous Performance Test is very useful for individuals working in jobs that require intense attention.

T.O.V.A: (Test Of Variables Of Attention Continuous Performance Test)

It is a computerized, continuous performance test measuring attention and impulsivity. It is not affected by language. It has two parts of 10.3 minutes, lasting 21.6 minutes in total. It has a normative database for ages 4-80. It can be administered to patients of all ages with attention deficit and impulse control disorders.



ATTENTION DEFICIT and LEARNING BATTERY

Attention Deficit Hyperactivity Disorder (ADHD),

It is a disease that can cause significant academic, social and psychiatric problems and its negative effects can last a lifetime. Medication plays an important role in the treatment of the disease.

DATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) TREATMENT TOOLS

ATTENTION TRAINING (PLAY ATTENTION)

Edufeedback (Play Attention: Dikkat Oyunu) çocuklarda kullanılmaktadır. Çocuklarda; hiperaktivite, dikkat eksikliği, öğrenme güçlükleri, dürtü kontrol bozuklukları, depresyon, duygu durum bozuklukları, davranım bozukluğu gibi psikiyatrik rahatsızlıklarda çocuğun dürtü kontrolünü sağlaması ve dikkat süresini uzatmayı öğrenmesine yönelik geri bildirim tedavisidir.

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- TMT-L BTB - Cognitive flexibi lity
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- TOL-F - Planning ability
- INHIB - Response Inhibition

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COGNIPLUS Rehabilitation System; cognitive exercises.

It is a computerized training battery used for training functions. It includes training modules for attention functions, executive functions,

memory, spatial processing and visual motor functions.

Before starting the training, a careful assessment enables us to identify strengths and areas in need of improvement. Accurate identification of areas in need of training makes training effective and efficient. Progress in training is also assessed not on the basis of subjective observations, but by using the parallel forms of the initial tests in COGBAT.

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SPACE: Attention/Visual-Spatial attentiveness
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VIG: Attention/ Vigilance Sustained Attention
VISMO: Visual Motor Coordination VISP: Working Memory-Recall

REHABIL

The aim of “Rehabil”, one of the Cognitive Repair Therapies, is to repair the targeted area and make it usable again within its own systematics. The improvement in the targeted areas can be achieved by using some computer or paper and pencil by repeated application. It is used in psychiatric disorders such as schizophrenia, autism, developmental disorders and other cognitive disorders.

tDCS ADMINISTRATION IN CONJUNCTION WITH REHABIL OR REHACOM TESTS

Patients with attention deficit hyperactivity disorder, pervasive developmental disorder and autism spectrum disorder in children have been found to have impairments at different levels in areas such as attention, memory and reasoning, which are generally referred to as cognitive domain skills.

Today, it is possible to treat and improve cognitive disorders in children with computer-assisted cognitive rehabilitation programs.

In children whose cognitive impairments have been identified by neuropsychological tests, it has been found in clinical studies that when this application alone is applied for an average of 20 sessions lasting 30 to 40 minutes, cognitive skills increase by 30%. Cognitive impairments in children and adolescents have been associated with a decrease in the activity of brain cells called neurons in the frontal region of the brain.

In this context, there are brain stimulation therapies that can be used to increase the firing of cells in the frontal part of the brain at the same time as practicing cognitive rehabilitation exercises. This stimulation of the brain cells increases the efficiency of the cognitive rehabilitation method in a positive way. Direct current therapy (tDCS) works on the principle of low-intensity direct current stimulation of the brain through two electrodes on the forehead, which does not harm human health. Recent scientific studies have shown that the use of direct current therapies during cognitive rehabilitation exercises in children and adolescents facilitates cognitive development and improves memory, attention and executive functionshas been proven to increase the success rate.

In the light of this scientific information, the simultaneous use of rDCS treatment with com-



puterized cognitive rehabilitation exercises in all children and adolescents older than 6 years of age is becoming increasingly widespread all over the world and is among the treatments of the future. In the light of the scientific researc-hes conducted, rDCS therapy is used in an ave-rage of 20 sessions in children and adolescents between the ages of 6-15.

direct current therapy (rDCS) received concur-rently with computerized cognitive rehabilitation improves the cognitive capacity of children and adolescents.



ADVANCED BLOOD TESTS

Tests other than routine blood tests:

- Neuroinflammatory panel
- Neuroimmune panel
- TDM Treatment monitoring by drug blood level
- Pharmacogenetic investigation: diagnosis and treatment monitoring with ONA analysis
- Advanced Toxicology Analysis: Blood, urine or hair when substance use is suspected.
- Blood and urine amino acid profile: It is per-formed in suspicion of congenital metabolic disease.
- Urgent carnitine profile: Performed in suspici-on of congenital metabolic disease.
- Genetic tests: It is performed in cases where a congenital genetic disease is suspected.

ERGOTHERAPY AND SENSORY INTEGRATION CENTER

Occupational therapy activities including music, art therapies, sports and marbling are carried out in order to reduce the pathologies of clients with psychiatric illnesses, to help them maintain their health and socialize, to help them develop their self-confidence, various skills and abilities, to encourage them to use these skills and abi-lities in daily life, and to raise their awareness that making productive use of their free time will improve their quality of life.

The Child and Adolescent Development & Autism Center (ÇEGOMER), which serves at Np Feneryolu, is a center where rehabilitation prog-rams that support daily life, academic and social skills for Autism Spectrum Disorder, Attention Deficit and Hyperactivity Disorder, Specific Lear-ning Disorder, Communication Disorders, Men-tal Disability, Motor and Tic Disorders, which are included under neurodevelopmental disorders, are created and developmental follow-up is carried out and put into practice.

OUR PSYCHIATRY OPPORTUNITIES



1. Operating rooms with the latest technological features and intensive care services have an infrastructure suitable not only for neurosurgery but also for all surgical services.

2. Imaging systems have a wide range including MRI, Angio CT, intraoperative applications, mobile X-ray USG.

3. In the Neuromodulation Center, brain stimulation treatments are applied with the latest methods.

4. Psychotherapies: The aim is to eliminate deficiencies and losses, provide emotional support, gain applicable knowledge and skills for life events, and replace maladaptive behaviors with adaptive behaviors. Neurobiofeedback, EMDR, psychoanalytic psychotherapy, cognitive behavioral therapy, hypnotherapy, are some forms of therapy which NPGRUP offers.

5. Inpatient Treatments: Inpatient treatment is an effective option in cases where the person puts the safety of himself/herself and his/her environment at risk, where there is a life-threatening situation, and where there is resistance to treatment.

6. General Medical Process: In connection with general medical services, we offer our infrastructure as a “brain-centered” hospital.

7. Implant Applications: Naltrexone Implant and Disulfiram Implant applications are performed in our hospital.

The implants applied vary according to the type of substance used.

8. Family Information Trainings: Addiction and all other chronic mental illnesses affect not only the individual but the whole family. Therefore, the treatment aims to change the family as well as the individual. For this reason, families should be informed about the disease, as well as the individual experiencing the symptoms of the disease.

Trainings are organized for them to learn appropriate behaviors and attitudes to support them.

9. Clinical Pharmacogenetics Laboratory (Medicine Blood Levels and DNA Analysis): In patients taking medication, medicine blood levels may exceed therapeutic values or drug interactions may lead to impaired brain function. To detect this, the blood levels of the drugs used (TDM) are measured. The chance of success of treatment is increased by determining the medication according to the genetic profile and monitoring the blood levels of the drugs used. The person will be treated with drugs that may be unnecessary or have high side effects are identified in advance and treatment is shaped rationally. “DNA analysis” is performed if necessary.

10. Electroconvulsive Therapy: ECT with anesthesia can be administered in the hospital during flare-ups. Very low electric pulses are given to the brain to induce a shock and regulate the brain’s disturbed electrochemical processes.

11. Transcranial Magnetic Stimulation Therapy (TMS): It is a new treatment method used in psychiatric and neurological diseases. The electrical activity of the brain is regulated by means of a magnetic field applied at short intervals to areas of the brain thought to be affected by diseases. It provides faster and stronger treatment than medication. It is used in our clinics in cases of depression resistant to drug treatment. Some cases where electroconvulsive therapy cannot be applied

In cases (patient and family preference, anesthesia risk), it is applied at low frequencies in manic episodes.

12. EMDR One of the specific psychotherapy techniques developed in recent years is a method called EMDR, which is based on mental reprocessing of generally negative emotions and thoughts related to traumatic experiences.

13. Hypnotherapy: During hypnosis, interaction with the person's subconscious mind is realized and positive and important changes in life are realized for the purpose of treatment and permanent changes can be achieved.

14. Neurofeedback: In neurofeedback training, information about brain waves from the person's current EEG is communicated to the person with visual and/or auditory signals and the person is asked to control certain aspects of it. Depending on the problem or need of the person, a learning environment is created by organizing a treatment protocol according to which region of the brain needs to increase/decrease the waves in which frequency. The person sees the connection between his/her current thoughts and brain waves and learns to control them in the desired direction.

15. Biofeedback: Measuring body temperature, skin resistance, respiratory rate, muscle tension and heart rate with special electrodes.

is a system that visualizes the relationships between bodily sensations and thoughts.

Biofeedback supported Virtual Reality therapy was started in psychotherapy.

16. Biofeedback Supported Virtual Reality Therapy: With biofeedback-assisted virtual reality therapy in psychotherapy, stimuli that cause anxiety in the outside world are brought into the therapy room. While the person experiences the anxiety-provoking situation with virtual reality goggles, changes in the autonomic nervous system are monitored by the biofeedback method thanks to the new technology.

Thus, they are helped to face and cope with their



fears, anxieties and obsessions. The person is fitted with a pair of glasses.

The person can experience themselves in three dimensions as if they were in an environment. The therapist observes what the person is seeing in two dimensions on the computer screen. By monitoring the signals from the biofeedback, the therapist can track increases and decreases in the client's anxiety.

17. Rehacom (computerized training modules): An individualized attention training program can be developed to regain cognitive skills or to improve existing skills. Rehabilitation of cognitive skills such as planning, organization, attention management is done using computerized training modules.

18. Sleep Laboratory: A sleep laboratory was established with a sleep room, phototherapy room, sleep deprivation room and central digital examination system. Sleep laboratories are an activity that requires a joint disciplinary approach of neurology, ENT, chest and psychiatry specialists. A psychiatric approach is often required in treatment. Laboratory responsibility is carried out with this awareness.

19. The Advanced Toxicology Verification Laboratory provides significant advantages in the treatment of addiction patients.

20. Social Functioning Program: Social functioning is defined as the ability to work, maintain interpersonal relationships and take care of oneself. The main goal of the social functioning program is to provide a supportive environment for people whose functionality and contact with the external environment have decreased due to various mental health problems. The program includes activities to improve the physical and mental health of the individual as well as psychoeducational activities for families.

NEUROMODULATION CENTER



TOPOGRAPHIC BRAIN MAPPING (QEEG)



CHILD QEEG



ECT UNDER ANESTHESIA



FUNCTIONAL NEUROSURGERY (BRAIN PACEMAKER)



DEEP TMS



tDCS, CES BRAIN STIMULATION THERAPIES



NEUROBIOFEEDBACK AND NEUROPSYCHOTHERAPY



NEURONAVIGATED RTMS



TRANSCRANIAL BRAIN PHOTOBIOMODULATION (T-FNS)

NPİSTANBUL BRAIN HOSPITAL NEUROMODULATION CENTER FACILITIES

ADVANCED TECHNOLOGY IN NEUROPSYCHIATRY

1. Topographic Brain Mapping (QEEG): It is used as a biomarker in psychiatric disorders. FDA (USA) officially approved its diagnostic value in attention deficits in 2013.

2. Deep TMS (Deep): This system, is also a first in Türkiye, TMS can affect the deep structures of the brain can be applied. Thanks to the features of the head, more stimulation can be given to different brain regions in different diseases.

3. Neuronavigated rTMS: As the first private hospital in Türkiye to have this system, we are able to apply TMS in different diseases by focusing on different parts of the brain and the exact desired point and thus significantly increases the effectiveness of the treatment.

4. ECT Treatment with Anesthesia: Electroconvulsive Therapy (ECT) is a safe and effective medical treatment for certain psychiatric disorders. ECT is also called “electrical stimulation of the brain”, “electroshock therapy” or “shock therapy”. It is administered in our hospital under anesthesia and with the safest “ultra brief” method.

5. Neurobiofeedback: In neurofeedback training, information about brain waves from the person’s current EEG is communicated to the person with visual and/or auditory signals and the person is asked to control certain aspects of it. Depending on the problem or need of the person, a learning environment is created by organizing a treatment protocol according to which region of the brain needs to increase/decrease the waves in which frequency. The person sees the connection between his/her thoughts and brain waves at that moment and learn how to control it.

6. rDCS, CES Brain Stimulation Therapies: rDCS is one of the neuromodulation techniques used for therapeutic purposes in neuropsychiatry. It is also known as microstimulation therapy. It is applied only at the physician’s request in treatment-resistant neuropsychiatric cases. It works on the principle of stimulating the brain with low-intensity direct current through two electrodes, usually in the forehead area. It is aimed to stimulate some brain electrical activities and suppress some activities in the outer shell of the brain stimulated by direct current. Many studies have shown neuropsychological and psychophysiological changes in brain areas targeted with this method. CES (Cranial Electrotherapy Stimulation) therapy is one of the latest treatment methods developed within the scope of medicine. CES Stimulation therapy aims to apply specially produced microcurrent applied with electrodes placed in the ear to target brain regions.

7. Functional Neurosurgery (Brain Pacing): In Parkinson’s patients who do not respond to medication and have severe tremor seizures,

“brain pacemaker” is the most advantageous option as it is a controllable, programmable and adjustable treatment method. It can also be used in the treatment of depression, memory diseases, ADHD, Alzheimer’s, epilepsy.

8. Ketamine Infusion Therapy (KIT): Medication and psychotherapy are the first-line treatment modalities for depression. Among biological therapies, the group of drugs known as ‘antidepressants’ has an important place in treatment. They are used in the treatment of psychiatric disorders such as major depression, bipolar disorder-depressive episode, postpartum depression, Post Traumatic Stress Disorder (PTSD), Obsessive Compulsive Disorder (OCD), anxiety disorders and fibromyalgia.

9. Electromyography (EMG) is the process of measuring the responses of muscles to electrical signals sent by nerves. This test is used to help detect abnormalities in the neuromuscular (muscle and nerve) system. During an EMG, one or more thin needle electrodes are inserted into muscle tissue. The electrical activity collected by the electrodes is then displayed on an oscilloscope screen. Normally, muscles do not produce electrical signals while at rest, but activity may be observed for a short time after the electrodes are inserted. Electrical activity is measured and evaluated during rest, light contraction, and strong contraction of the muscles.

10. Transcranial Brain Photobiomodulation (t-FNS): A method that uses light therapy to improve brain function and treat various neurological disorders. Low-level light waves are applied to specific regions of the brain using laser or LED light sources. This light energy is absorbed by the mitochondria in cells, triggering biochemical reactions and improving cellular metabolism. t-FNS is a safe, effective, and easy-to-use brain stimulation device and is currently being used in Turkey with the consent of patients and their families.

11. Transcranial Pulse Stimulation (TPS): An innovative brain stimulation method that aims to increase the activity of nerve cells by applying ultrasound pulses focused on specific regions of the brain; it is radiation-free and does not require surgery. TPS supports cerebral blood flow and neural connections, with the goal of improving cognitive functions. It is used as a supportive treatment option, particularly for conditions such as Alzheimer's disease, memory disorders, and attention deficit disorders. TPS is a safe, painless, and quickly administered neuromodulation technique and is performed at NPİSTANBUL Hospital in accordance with scientific protocols.

PRECISION MEDICINE AND TDM RULE



WHAT ARE THE LATEST METHODS FOR EFFECTIVE TREATMENT AS PART OF PRECISION MEDICINE IN PSYCHIATRY?

In treatment-resistant cases, the first step is to confirm the diagnosis, then to formulate a treatment plan and determine a clinical roadmap for follow-up.

DIAGNOSIS, TREATMENT AND FOLLOW-UP

1- A neuropsychological 'check-up' is performed on the patient. Brain anatomy and functions are checked, attention-memory tests and personality analyzes are performed, routine biochemistry tests are performed. This usually takes 5-6 hours. The doctor reassesses the results.

2- According to the principle of "personalized treatment", in resistant cases it is possible to determine whether the patient's body is using the administered drug, or not, through therapeutic drug monitoring (TDM).

In line with the principles of pharmacological medicine, DNA analysis is performed, drug sensitivity is measured and potential side effects are determined, preliminary information about Serotonin and Dopamine enzyme activities is obtained and the correct drug, dose, duration and method are determined from this information.

3- According to the principle of “holistic treatment”, it is determined which types of medication, brain stimulation therapy and psychotherapy the patient is suitable for.

4- According to the quality management principle, the aim of the treatment is determined and treatment is initiated according to the clinical roadmap.

“The doctor is responsible not only for the treatment given, but also for what is not given.”

Prof. Dr. Nevzat Tarhan



PERSONALIZED TREATMENT, CLINICAL PHARMACOGENETICS LABORATORY



DNA / RNA isolation is carried out from blood or any tissue sample taken from patients for genotyping in our laboratory.

Studies are then initiated to determine genotyping or expression levels from these samples. For genotyping studies, conventional PCR (polymerase chain reaction, PCR), restriction enzyme fragment analysis (RFLP), sequence analysis studies are carried out. In addition, more sensitive analyzes are performed with Real-time PCR in our laboratory.

Genotyping studies can be used for phenotypic studies in some cases complementary, and in some cases pioneering. By ensuring genotype-phenotype correlation, patients receive a treatment program that is more effective, in a shorter time and with minimized side effects. Genotypically classified into CYP2A, CYP2C, CYP2D6, CYP3A4 groups' analysis, 5HTT polymorphism are the main genotyped genes.

- Personalized Treatment
- Genetic Profile in Neuropsychiatry
- Therapeutic Drug Blood Level (Therapeutic Drug Monitoring, TDM)
- Clinical pharmacogenomics
- Farmako EEG



1- BLOOD LEVEL OF MEDICATION IN PERSONALIZED TREATMENT (TDM)

In patients taking medication, treatment is affected if drug blood levels exceed therapeutic values or do not reach effective levels.

Drug interactions can lead to impaired brain function or the drug may not work for the person.

To determine this, the blood levels of the medicines used are measured (TDM).

Clinical Pharmacogenetics Laboratory was established at Üsküdar University for therapeutic drug blood level monitoring (TDM) (Therapeutic Drug Monitoring) and to determine the genetic profile for preliminary diagnosis for the drugs used. As a result of intensive studies carried out in the laboratory, 'risperidone, escitalopram, fluoxetine, paroxetine, mirtazapine, quetiapine, venlafaxine' were detected in citrated human plasma, desipramine for the quantitative determination of amisulpride, olanzapine, carbamazepine and many other drugs routinely by LC-MS/MS using an internal standard in accordance with the limits of accuracy and precision specified in FDA Guidance 2001.

The method was developed and updated for use in clinical studies.





The developed method also works as a phenotyping tool for monitoring unexpected side effects at the normal therapeutic dose. It also prevents unnecessary drug use by immediately detecting fast and slow metabolized drugs. In other words, it allows us to take early measures by detecting drug blood concentration differences in patients with gene polymorphism problems in pharmacogenetic evaluation. It reduces the need for genotyping, which is a long-term examination.

Today, drug blood level measurement is already mandatory for drugs with a narrow therapeutic index range.

Drug blood level measurement (TDM) is of great importance in psycho-pharmacology; healthy and cost-effective treatment. It is promising as a method that will shorten the patient's long hospital stays and minimize the use of drugs through trial and error.

The other benefit of patient follow-up with TDM is for patients who are on maximal doses of medication but have an inadequate response to treatment (diminished effect).

Patients who are found to have rapid medicine metabolization are given the chance to use medication by adhering to the principles of "Right Drug, Right Dose, Right Route, Right Duration".

Another benefit of TDM is that it helps us to identify slowly metabolized drugs in patients who receive minimal doses of medication but experience toxic effects.

It helps us to identify toxicity that is not expected at the normal therapeutic dose and prevents overdose and misuse of drugs.

TDM in treatment-resistant cases is expected to become a routine practice in the future.

If drug blood levels can be monitored in the same way as fasting blood glucose, every clinician will be able to use the TDM test routinely.

Therapeutic drug blood level monitoring (TDM) is the most valid way to optimize pharmacotherapy. TDM allows the clinician to adjust the drug dose according to the patient's individual characteristics.

Despite its many proven benefits, its use in daily clinical practice is still not ideal.

What is an LC-MS/MS Device? (High-performance liquid chromatography coupled with tandem mass spectrometry)

- It is a device that enables the measurement of drugs and their metabolites even at small concentrations according to their ionic charge.
- It is a product of advanced technology.
- It makes quantitative determination.

In LC-MS/MS (High-performance liquid chromatography coupled with tandem mass spectrometry) technique, molecules separated according to their physicochemical properties in high-pressure liquid chromatography are analyzed with a mass detector. The molecules separated by m/z (mass/charge) ratio in the first quadrupole filter are subjected to fragmentation with a special high purity gas called Collision Gas. In the second quadrupole filter, the ions (Daughter or production) formed as a result of fragmentation are used for identification and quantification. Although there are many molecules with the same m/z ratio, the number of molecules with the same fragmentation ions is 1/10000 in nature. Therefore, the LC-MS/MS technique is almost as specific as a paternity test and allows for the quantification of very low concentrations of substances. In addition, there is no need for verification of the results.

In the standard HPLC technique, the substance is identified only by retention time

With LC-MS/MS technology, “precursor and product” ions are evaluated in addition to retention time.

In our country, only newborn screening is performed with this technique in hospitals. This high-tech system has been used for the first time in Üsküdar University Hospitals and Medical Centers for routine quantitative analysis in the clinic.

It is a fact that in patients receiving drug treatment, there are significant differences between individuals in the patient’s response to the drug has been known for centuries. The saying “The good doctor treats the disease, the better doctor treats the patient”, which is accepted by medical circles all over the world, is intended to draw attention to the individual differences that can be observed during the disease process or treatment.





Individual differences in response to medication is one of the most important problems in the clinic. The fact that patients with the same diagnosis and similar biological and environmental factors respond differently to treatment despite taking the same medications has led scientists to ask themselves “What is the problem?

What are we doing wrong?”, “What do we need to learn?”. Although many factors (age, sex, eating habits, smoking, infections, stress, etc.) have been found to modify drug effects in studies conducted to answer these questions, the most important of these is genetic differences between individuals.

For example, let’s consider three different patients diagnosed with depression. One of them may recover completely with the medication given, while the other may not benefit from the treatment at all, or even the third patient may complain of severe side effects.

2- GENETIC TESTS

What is pharmacogenetics?

It is the branch of science that investigates interindividual variations in drug response as a result of genetic differences. Pharmacogenetics can also be defined as the branch of science that studies the interactions between genes and medicines.

What is the purpose of pharmacogenetics?

Comparison of the drugs that can be used in the treatment of the disease carried by the genetic structure of the individual, the most effective and side effects

is to administer the least amount of medicine to the patient at the correct dose.

From the time drugs are taken into the body until they are excreted, they interact with a number of proteins in the organism. Individual differences in drug response are due to individual differences in the structure of the proteins with which the drug molecule interacts.

Polymorphisms in genes that synthesize proteins that drugs interact with may cause interindividual variability in drug response.

As a result, patients with the same diagnosis and similar characteristics may respond differently to medication. Some of these patients may recover, others may not benefit from the treatment, and some may experience side effects.

Pharmacogenetic studies are of particular importance in polygenic complex diseases, such as psychiatric disorders, when pharmacotherapy is inadequate and/or expensive. In

psychiatric disorders, pharmacotherapy to date has often been inadequate.

ccording to studies, psychiatric patients

While 35-45% respond to treatment and return to their daily lives, 30-50% either do not respond to treatment or suffer from severe side effects that disrupt the flow of their daily lives. In psychiatric disorders, genetic differences are very important in the response to treatment.

What is the benefit of pharmacogenetic testing?

In the treatment of psychiatric disorders, pharmacogenetic testing is very useful both in selecting the patient's treatment and in minimizing side effects.

Pharmacogenetic testing allows us to optimize, i.e. individualize, treatment for each patient in light of genetic information.

After the patient is diagnosed, it is possible to start the most ideal treatment with pharmacogenetic tests based on scientific facts, not groping. With personalized, individualized treatment approaches, it is possible to apply the most effective treatments with the most appropriate dosage and the least side effects.

3- PHENOTYPING

Polymorphisms are one of the most important reasons for individual differences in drug response.

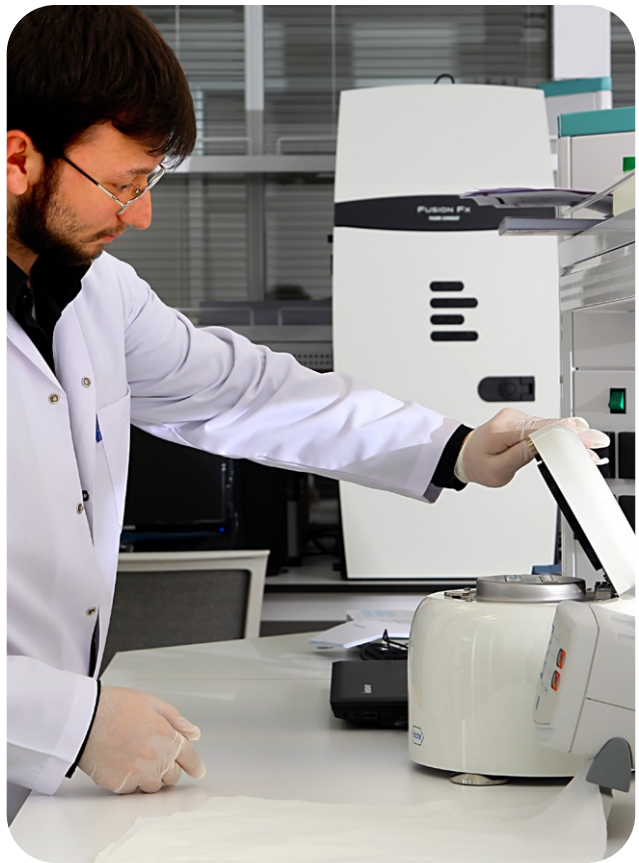
Polymorphism is a gene change found in more than 1% of the population, a type of mutation that expresses a small genetic difference.

Polymorphisms cause differences in drug response by causing changes in the structure and synthesis of proteins (such as receptors, transporter proteins) involved in absorption, distribution, metabolism, clearance, excretion and target structures. Identification of polymorphisms that cause differences in pharmacologic response can provide many benefits such as effective treatment and dosage regimen, predictive responses of individuals to diseases and drugs, diagnosis of some diseases, development of effective and safe drugs, and conducting clinical trials and studies on appropriate individuals.

Genotyping detects polymorphisms resulting from changes in an individual's genetic makeup. Although this genotypic information remains constant throughout life, it does not evaluate the effects of diet, exercise, tea, coffee, alcohol, alcohol, cigarette consumption and other medications used in treatment, also called lifestyle.

In phenotyping, all the factors mentioned above are evaluated in addition to the genetic makeup of the individual.

Nowadays, indirect assays with probe drug ap-



plications are the most widely used method for determining the phenotype of enzymes responsible for drug metabolism. Probe drugs, which are used to measure the activities of CYP and other enzymes, are widely used to determine genetic, environmental, racial and individual differences in the in vivo metabolism of drugs and environmental compounds.

Enzyme activity with probe drugs is determined by measuring drug concentrations and levels of certain endogenous substances (such as 6-hydroxycortisol) in biological fluids after drug administration. For phenotyping with probe drugs, there are two methods called single probe and mixed (cocktail) administration. Mixed administration is based on the simultaneous administration of two or more probe drugs and has been widely used in recent years due to its favorable aspects. The FDA has included CYP2D6 phenotyping in routine testing.

In the Pharmacogenetics Laboratory of our university, for the first time in our country, enzyme activities of individuals are routinely measured in the clinic with probe drug application and treatments are optimized and performed. According to the values measured during the Blood Drug Level Monitoring of the individual, phenotyping is decided in necessary cases and the activity of which enzyme will be measured is determined by taking into account the drugs used by the individual. For this purpose, the patient as a probe drug, the following drugs are administered individually or as a cocktail mixture and the pharmacokinetic phenotype of the patient is determined by measuring the enzyme activity in the biological fluids taken from the patient and the patient is given the right drug, the right amount and the right time to maximize the benefit of the treatment.





PSYCHIATRIC MEDICINE COUNSELING OUTPATIENT CLINIC (PMC)

Medicines are prepared and sold in standard doses. Although most of the population complies with these standard doses, some patients do not benefit sufficiently from these standard treatments and may often show severe side effects or toxic reactions.

According to studies, While 35-45% of psychiatric patients respond to treatment and can return to their daily lives, 30-50% either do not respond to treatment or exposed to severe side effects that disrupt the flow of their daily lives (1,2,3).

It is an outpatient clinic where the causes of medicines problems are investigated. It is used when treatment, have severe side effects or when patients do not respond to treatment, and so more useful medicine is investigated.

When choosing the treatment to be administered to a patient, the clinician, after examining the patient, estimates the most appropriate medication in the light of his/her medical knowledge and reaches the right medication by trial and error. Patients who apply to PMC, on the other hand, have the chance to start treatment with the right medication, not by trial and error. In addition, instead of the standard doses used to determine the doses of drugs, the doctor determines a personalized dose according to the rate at which the patient metabolizes the drug.

Who can apply to the Psychiatric Medication Counseling Outpatient Clinic (PMC)?

“Guided by Neurology and Psychiatry Specialist”

• Patients who do not respond to psychiatric treatment

• Patients with exacerbated side effects during psychiatric treatment

• Patients showing toxic symptoms during psychiatric treatment



• Patients over 65 years of age receiving psychiatric medication

How does the Psychiatric Medication Counseling Outpatient Clinic work?

After the medical history of the patient referred to the PMC by the relevant specialist is taken by the medical pharmacologist, further tests are requested in relation to the patient's complaints.

5- CLINICAL PHARMACOGENETICS LABORATORY!

20. century has witnessed important developments in terms of the development of science and the introduction of new scientific applications. These developments have continued rapidly in the fields of biology and medicine as in every field. In particular, molecular biology and genetics have accelerated rapidly with the use of the outputs of the human genome project. What happens in cells are

The understanding of metabolic events taking place in cells, the genes that encode them, and the advancement of technologies that analyze these genes have led to a shift from the phrase "general" to "personal" in the field of health. Nowadays, concepts such as personalized treatment and personalized medicine have become applicable.

Üsküdar University molecular biology and genetics laboratories are also designed according to today's developing technologies.

Especially in our country, genetic counseling and genetic profile-appropriate drug treatment in psychiatric diseases have started for the first time at Üsküdar University and NPISTANBUL Neuropsychiatric Hospital. Genetic profiling of individuals is carried out in the pharmacogenetics laboratories of Üsküdar University molecular biology and genetics department.

In our laboratory, CYP group genes that are effective in antidepressant drug metabolism are analyzed. According to the variations detected according to the analyzes, the loss of time and the damage caused by the side effects of the drugs are minimized with the appropriate dose treatment for individuals. At the same time, drug-blood levels are also determined and appropriate drug dose determinations are made for individuals. Methods such as PCR, real time PCR, electrophoresis and sequencing are used in genotyping processes.

Not only pharmacogenetic, but also cell culture, bacterial, plant and animal biotechnology and biochemical studies are carried out. In addition to TUBITAK projects on related topics, we are also conducting research in collaboration with other universities.

The studies are carried out in the laboratories of the Department of Molecular Biology and Genetics.

NEUROLOGY

Symptoms of neurological diseases may differ depending on the diagnosis of the disease. Some neurological diseases may show similar symptoms, but when examined in detail by a specialist, the current disease is determined and diagnosed.

In the treatment of neurological diseases, a plan is made according to the diagnosis. The treatment plan includes medication as well as existing additional treatments to support the condition and promote recovery or delay deterioration.

In the treatment of neurological diseases, an individualized treatment plan should be determined, and unfortunately, the current situation may change if the patient stops treatment. Therefore, the patient and the doc-

tor relationship is very important. In order for the treatment to proceed in a healthy way, the patient, the patient's family and the doctor should maintain a healthy communication.

Neurology is a specialty that manages the diagnosis and treatment of diseases of the peripheral nervous system, including cerebrospinal and muscular diseases. Neurological diseases constitute a significant proportion of the complaints presented to hospitals. Neurology is one of the branches of medicine that progresses rapidly in diagnosis and treatment with the new possibilities of science. Especially in the the recent

last 20 years, diagnostic imaging (PET, MRI, fMRI, DWI, PWI, tractography, neurography, , QEEG, EMG, brain mapping, etc.) and genetic research have made it easier to diagnose diseases, which has had revolutionary effects on treatments.



With these diagnostic processes, new approaches and opportunities are emerging almost every day in the treatment of neurological diseases. Therefore, neurology is a dynamic branch of medicine. Today, new drugs in neurology and the development of intensive care facilities have led to more favorable responses in the treatment of diseases. Neurologists administer medical. For conditions requiring surgery, they receive support from Neurosurgery. NPİSTANBUL Brain Hospital closely follows today's technologies and developments and provides a fully equipped service in the field of neurology.



Diseases of Neurology

• Headaches (Migraine and Tension Pain, Cluster Pain, Chronic Headaches),

• Epilepsy (Small or Large Seizures, Epileptic Seizures Requiring Surgery),

• Strokes or cerebrovascular diseases (caused by blood vessel blockages, hemorrhages and vascular anomalies),

• Forgetfulness (Alzheimer's and other dementias, dementias due to vitamin and hormone deficiencies, dementias due to increased brain water pressure),

• Muscle Diseases (Myasthenia Gravis, Myopathies),

• Multiple Sclerosis (MS) and Other Inflammatory Diseases of the Brain,

• Brain Infections (Encephalitis),

• Dizziness (Vertigo),

• Facial Paralysis,

• Spinal Cord Diseases,

• Peripheral Nerve Involvement Diseases (Neuropathies, Neuropathies Caused by Diabetes or Other Diseases),

• Nerve Impingements (Carpal, Tarsal, Cubital and Other Nerve Impingements) and Induced Numbness,

• Sudden Severe Pain (Trigeminal and Glossopharyngeal, Occipital Neuralgia),

• Movement Disorders (Parkinson's, Dystonia or Tremors),

• involuntary movements (twitching, cramps),

• Sleep Related Disorders (Bouncing, Walking, Restless Legs Syndrome, Sleep Paralysis),

• Diseases of Early Degeneration of Nerve Cells (ALS, Motor Neuron Diseases),

• Neck, Waist Pains and Hernias.

Sleep Laboratory

The sleep laboratory is an activity that requires a multidisciplinary approach from neurology, ENT, chest and psychiatry specialists.

In the sleep laboratory, the patient is put into normal sleep, recorded and examined. After the patient wakes up, these records are evaluated by a neurologist.

Who should receive services from the sleep laboratory?

• People who have no sleep at all,

• The one who sleeps too much,

• Those who keep waking up at night,

• If you sleep even while sitting,

• Those who sleep a lot but are tired,

• People who wake up bouncing out of bed,

• People who have nightmares all the time.

It can be treated in a sleep center.



CHILD NEUROLOGY

Child Neurology investigates and treats the causes that negatively affect the brain development process of the child and aims to ensure that children live better. Childhood (O - 18 years of age); deals with neurological diseases involving the brain, muscle and nervous system. Pediatric neurology provides services with a multidisciplinary approach to investigate, diagnose and, if possible, treat the causes that negatively affect the brain development process of the child until adulthood and to ensure that children with neurological problems live better.

Diseases of Child Neurology:

- Neurologic Monitoring of Risky Infants,
- Developmental Delays,
- Loose Baby (Hypotonia),
- Headache
- Febrile convulsion,
- Convulsion with breath holding,
- Feverless convulsion (Afebrile Convulsion),
- Epilepsy,
- Cerebral Palsy (Brain Paralysis),
- Mental Retardation and Comorbid Conditions,
- Speech and Developmental Language Disorders,
- Muscle and Musculo-Nervous Diseases,
- Neurometabolic Diseases,
- Movement Disorders and Tics,
- Syncope Fainting
- Dizziness



- Congenital or acquired paralysis,
- Sleep Disorders,
- Learning Disabilities,
- Neurodegenerative Diseases,
- Autism - Pervasive Developmental Disorder,
- Neurogenetic Diseases,
- Seizure Mimicking Conditions.

In Which Situations Is It Necessary to Seek Expert Opinion?

Some infections experienced by the mother during pregnancy, preterm birth (prematurity), history of difficult delivery, history of intensive care unit stay in the neonatal period, previous central border system infections, developmental stages

Patients should be evaluated by a pediatric neurologist if they do not appear in the expected time interval (intellectual, motor, language, social and emotional).

The main goal in the follow-up of high-ris k babies is to detect neurological problems at the earliest possible period, to take precautions and to ensure a normal neurological development of that baby.

The main goal in the follow-up of high-risk babi-



es is to detect neurological problems at the earliest possible period, to take precautions and to monitor the baby.

The main goal in the follow-up of high-risk babies is to detect neurological problems at the earliest possible period, to take precautions and to monitor the baby.



PHYSICAL THERAPY AND REHABILITATION



Physical Therapy and Rehabilitation; aims to enable individuals who experience and are likely to experience disability to interact and maintain their interaction with the environment. Neurorehabilitation; new method TMS is used in post-stroke treatment. Medical evaluation to determine the diagnosis, assessment of functional capacity and ability to change, assessment of activity, participation and personal capacity, creation of a rehabilitation plan, knowledge, experience and application of medical and physical therapies, prevention and treatment of complications, determination of disease/health status and rehabilitation outcomes, knowledge of rehabilitation technologies, collaboration of nearby medical specialties, education, knowledge of the social system and legislation on disability are among the areas of study.





PRACTICE AREAS OF PHYSICAL MEDICINE AND REHABILITATION SPECIALISTS

1-MEDICAL PROCEDURES

• Drug therapy (pain management, treatment of inflammation, restoration of muscle tone, improvement of physical performance),

• Injections and practical applications,

• Evaluating and reviewing the results of interventions,

• Determination of prognosis.

2-PHYSICAL THERAPY

• Electrotherapy (treatments using electric currents),

• Other treatments include ultrasound, hot and cold applications, interference, diathermy (deep heaters), massage therapy and lymphatic therapy (manual lymphatic drainage),

• Kinesiotherapy (movement therapy) and exercise therapy.

3- REHABILITATION

• Neurological Rehabilitation

Stroke, Multiple Sclerosis, Spinal Cord Injury are our medical practices that enable individuals who have suffered from diseases such as stroke, multiple sclerosis and spinal cord injury to achieve the highest level of physical, psychological, social and professional independence.

• Orthopedic Rehabilitation

In diseases of the musculoskeletal system that require medical or surgical treatment, it is the physical medicine applications performed to eliminate the patient's muscle and joint stiffness after the treatment and to return the patient to his/her former state. It is the treatment of stiffness and rigidity that may occur in the joints of patients after orthopedic surgeries, plaster applications, splint applications.

• Cerebral Palsy Rehabilitation

Cerebral palsy in children; It is a movement system disease that develops due to damage or developmental disorder of the developing brain for various reasons, usually before the age of 5. Depending on the degree of damage to the brain, there are involuntary contraction, weakness, coordination and control disorders in the muscles; It is a disease ranging from very mild findings such as mild contraction and weakness to more severe forms such as inability to walk and use their hands.

Each child is given a separate program according to the degree and type of disease. Our goal is to support the child's developmental stages, to ensure the child's best development and maximum utilization of his/her existing potential, and to ensure independence in daily life.

During treatment, the patient is re-evaluated at regular intervals and the rehabilitation program is reviewed.

• **Ampute Rehabilitation**
Amputation is the surgical removal of part or all of an arm or leg together with the bone. Amputation is performed to remove diseased tissues, to provide circulation to the remaining limb, to relieve pain, and to create a good stump that will allow the use of prosthesis.

The main goal in the rehabilitation of patients with amputation is to make and apply a comfortable, functional and aesthetic prosthesis so that the patient can return to his/her former social life and work or gain economic independence by being able to do another job.

Amputee rehabilitation starts before surgery. In the acute period after surgery, the intact muscles are strengthened and the patient is given psychological support. In the pre-prosthesis period, the shape and shrinkage of the stump is directed and muscle strength is increased. In the later period, the patient is given the appropriate prosthesis and prosthesis training is performed.

4- OCCUPATIONAL THERAPY

• Analyzing activities of daily living and activities such as occupation and supporting impaired body structures (such as the use of splints)

• Teaching the patient skills to overcome barriers in activities of daily living

(e.g. setting up special activities)

• Training impaired function and cognitive activities

• Increase motivation



5- ERGOTHERAPY

6- SPEECH THERAPY AND LANGUAGE TREATMENTS WITHIN SPECIAL REHABILITATION PROGRAMS!

7- DISABILITY EQUIPMENT, ASSISTIVE TECHNOLOGY, PROSTHESES, ORTHOSES, TECHNICAL AIDS, AND AIDS

8- EDUCATION AND DISEASE PREVENTION; ENABLING PEOPLE WITH DISABILITIES TO ACHIEVE THEIR BEST FUNCTIONAL STATUS

CENTER FOR TRADITIONAL AND COMPLEMENTARY MEDICINE (GETAT)

Traditional and Complementary Medicine (GETAT) is a health approach that encompasses specific methods and practices aimed at supporting an individual's physical, mental, and social well-being. Today, health care services focus not only on treating diseases but also on maintaining quality of life, promoting healthy lifestyle habits, and assessing the individual holistically. In line with this approach, GETAT practices are among the complementary health services that are evaluated alongside modern medical methods.

In Turkey, GETAT treatments are administered in accordance with regulations published by the Ministry of Health and within the framework of established standards. While various methods fall under the scope of traditional and complementary medicine, the treatments offered may vary from one healthcare facility to another.

At the NPİSTANBUL Hospital GETAT Center, ozone therapy, mesotherapy, cupping therapy, acupuncture, prolotherapy, and hypnosis are planned following an evaluation by a specialist physician.

Treatments are planned following an evaluation by a specialist physician, taking into account the individual's health status, existing medical conditions, and needs. The goal is to support the individual's health journey from a holistic perspective and to utilize complementary approaches when appropriate.



INTERNAL MEDICINE

Although psychiatric and neurological diseases are diseases of the brain, the brain works in interaction with all other systems of the body.

Metabolic diseases, circulatory system diseases and endocrine system diseases affect brain functioning. For this reason, our hospital, which started to work with the combination of neurology-psychiatry-psychology, has also been providing services in the field of Internal Medicine since its establishment.

In this way, like our counterparts around the world, which provide services at the highest service standards, our patients are comprehensively evaluated before and during treatment.

In addition to the differentiation of pathologies that contribute to the formation of the psychiatric picture by affecting brain functioning, the early detection and treatment of systemic pathologies that may affect the choice of treatment and the course of treatment was continued under the responsibility of the Internal Medicine specialty





GASTROENTEROLOGY

Gastroenterology is the branch of science that deals with the diagnosis and treatment of the digestive system and its diseases. The gastroenterology department diagnoses and treats a wide range of diseases, including diseases of the pharynx, stomach, intestines, black lung, gallbladder and pancreas, which may appear different from each other but may be related to each other.

Specialists working in the field of gastroenterology are called gastroenterologists. Gastroenterologists diagnose and treat disorders and diseases of the esophagus, stomach, small intestine, large intestine, liver, biliary tract and pancreas.



CARDIOLOGY

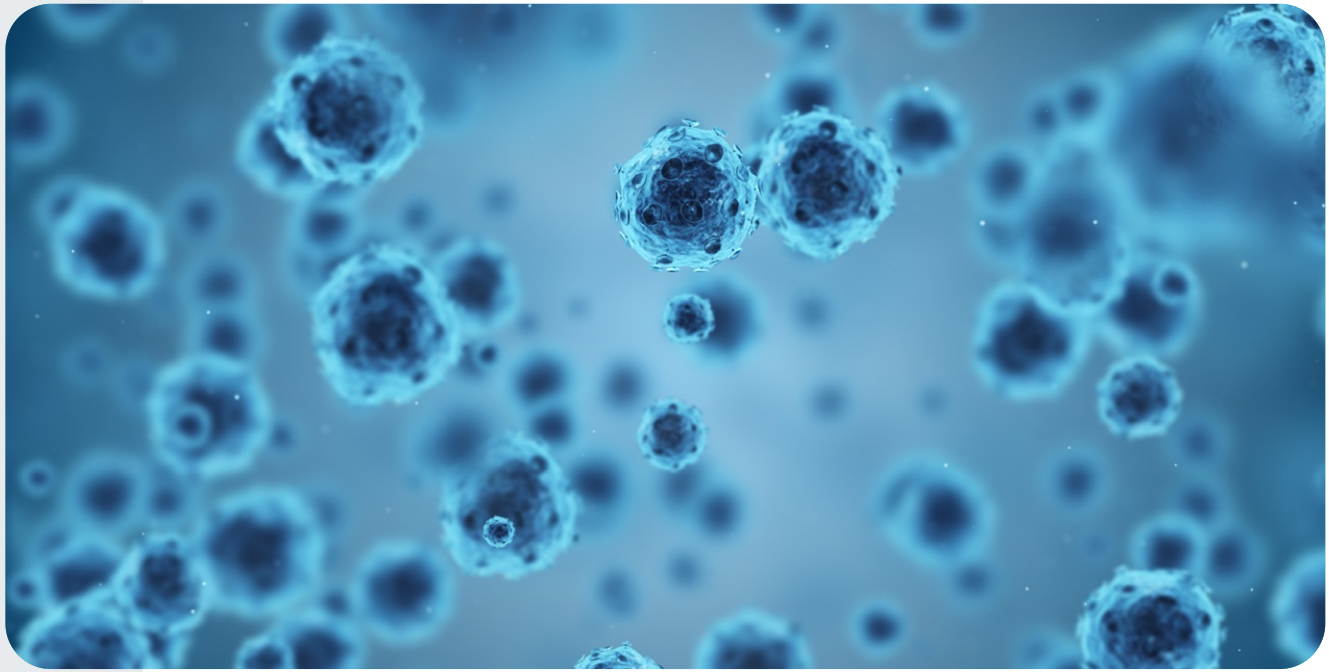
Heart disease is one of the most common causes of death. It is especially valuable for people with risk factors to have a health check-up even if they have no complaints in terms of early diagnosis. The leading risk factors for cardiovascular diseases

Factors include alcohol and smoking, diabetes, hypertension, hypertension, impaired lipid levels, sedentary lifestyle and intense stress. Especially people with first-degree relatives with cardiovascular disease after the age of 40 if they have one or more of these risk factors

are at high risk. For the diagnosis of cardiovascular diseases (Echocardiography, Effort test, Holter) as well as Coronary CT Angiography can be performed in our hospital.



INFECTION DISEASES



It deals with the diagnosis and treatment of diseases that can occur in any part of our body, caused by bacteria, viruses or parasites, some of which can be contagious.

With advances in diagnostic methods and the use of new antimicrobial drugs, many infectious diseases can be diagnosed and treated.

The microorganisms causing these diseases can be demonstrated by culture methods, serological tests or direct examinations.

Infectious disease specialists, especially in intensive care units

the Infection Control Committee plans and implements teamwork to monitor and prevent nosocomial infections caused by microorganisms. The infection control committee established for this purpose carries out the tasks of preventing the inappropriate use of antibiotics, continuously training staff for infection control, and supervising the proper and effective cleaning of all units of the hospital.

Infectious disease specialists advise on the vaccination needs and vaccination of adults.

EARS.NOSE. THROAT (ENT)

As the Department of Otorhinolaryngology Head and Neck Surgery, our aim is to help our patients by using modern diagnostic and treatment methods related to our surgical field, respecting patient rights and working within ethical rules. In our Department of Otolaryngology, we perform diagnosis and treatment of hearing and speech, nose and sinus, balance disorders, throat diseases, as well as surgery of head and neck cancers and tumoral structures in this region.

The main diseases we treat; Ear Diseases and Surgery, Nose, Sinus (Rhinology) Diseases and Surgery, Oral and Throat Diseases and Surgery, Treatment of Congenital Cysts and Fistulas, Salivary Glands Diseases and Surgery, Treatment of Fractures of the Jaw and Facial Bones. All treatments within the scope of Otorhinolaryngology are carried out in our hospital.





BRAIN SURGERY

Neurosurgery (Neurosurgery) is a surgery of the nervous system. Neurosurgery is the most complex, difficult and specialized department because of the organ it deals with.

Neurosurgery (Neurosurgery) is the treatment of tumors in the brain or spinal cord tissue or tumors affecting these tissues' treatments. However, the neurosurgery department can also treat brain aneurysms, herniated discs diseases of the spine, congenital diseases of the nervous system, vascular occlusions,



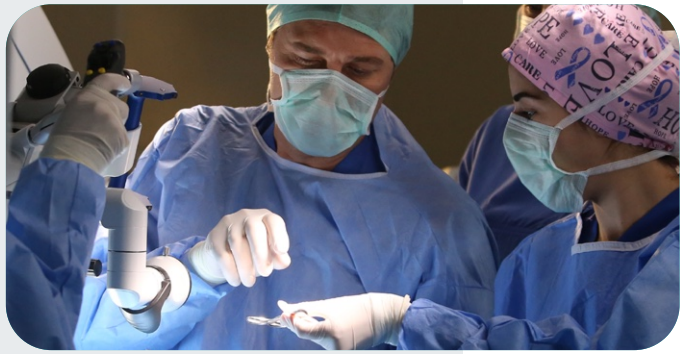
is the surgical treatment of diseases such as brain hemorrhage. Because of this breadth, neurosurgery is divided into different categories.

These are:

- General Neurosurgery,
- Vascular and Endovascular Neurosurgery,
- Spine Neurosurgery,
- Peripheral Nerve Surgery,
- Stereotactic, Functional and Epilepsy Neurosurgery,
- Oncology Neurosurgery,
- Skull Base Surgery,
- Pediatric Neurosurgery

What diseases does neurosurgery (neurosurgery) treat?

- General Neurosurgery,
- Vascular and Endovascular Neurosurgery,
- Spine Neurosurgery,
- Peripheral Nerve Surgery,
- Stereotactic, Functional and Epilepsy Neurosurgery,
- Oncology Neurosurgery,
- Skull Base Surgery,
- Pediatric Neurosurgery



In diseases that reduce the quality of life, such as Parkinson's and similar involuntary movement disorders, brain pacemaker application is performed. Epilepsy surgery operations are planned in cases of epilepsy, i.e. epilepsy that cannot be treated successfully with medication. For all functional diseases, the patient is evaluated with a multidisciplinary approach to determine whether surgical treatment is necessary or beneficial.

Spine Diseases

Surgical intervention is performed for traumatic problems of the spine such as accidents and injuries, problems that occur in old age such as narrowing of the spinal canal and slipping in the waist, as well as congenital diseases. In addition to this; Diseases such as lumbar and cervical herniated discs are treated by neurosurgeons.

Cerebral vascular diseases

There is a working group for endovascular, i.e. interventional neuroradiology and surgery (microsurgical) for the treatment of cerebrovascular diseases.

Lumbar Hernia Treatment

BIn the treatment of a herniated disc, it is important how much of the patient's symptoms and complaints are observed. If the patient shows mild symptoms, the pain caused by the herniated disc can be relieved with the use of medication can be reduced. These medications include painkillers and muscle relaxants. If the symptoms of a herniated disc are very severe, surgery may be necessary to treat the herniated disc. Physical therapy is often used and aims to strengthen the muscles.

Brain and Spinal Cord Tumors

Microsurgical and endoscopic techniques are used in both adult and pediatric brain and nerve tumors.

Pediatric Neurosurgery

With our expert team in Pediatric Neurosurgery, all surgeries, including very comprehensive operations, can be successfully performed at our hospital.

Congenital or acquired problems are treated.

o Hydrocephalus

o Meningomyelocele

o Diastematomyelia

o Craniosynostosis



BRAIN, NERVE AND SPINAL CORD SURGERY
DIAGNOSTIC PROCEDURES



TREATMENT METHODS IN BRAIN, NERVE AND SPINAL SURGERY

It offers its clients a full-fledged diagnosis and treatment center with its technological infrastructure and expert staff. We are on our way to becoming Türkiye's neurosurgery center in the field of neurosurgery, especially brain surgery, vertebral surgery, Parkinson's and movement disorders surgery and peripheral nerve surgery.





ADVANCED TECHNOLOGY IN BRAIN SURGERY

Thanks to advanced technology systems, the risks of surgery are minimized.

• Pediatric neurosurgery, tumor and aneurysm operations are performed in our hospital. 0-Arm MR CT navigation, frame technologies are applied for such surgeries.

• Thanks to our digital x-ray that can take automatic scoliosis images, the entire spine can be visualized in a short time.

• Vascular / oncologic surgery can be performed under sodium fluorescence guidance with neuronavigation-supported high-end neurosurgical microscope.

• The advanced imaging quality, calculation, measurement and reporting capability of the high-end intra-operative color Doppler ultrasonography device with neuronavigation support ensures controlled progress of the surgical operation. This system is also known as the flagship of neurosurgical imaging.

• With the neuronavigation-supported 3D imaging system, preoperative and intraoperative images can be fused together and thus the target can be reached in the shortest and fastest way with minimum incision.

• Intraoperative 3D imaging: We offer the advantage of minimizing the need for a second surgery by confirming the success of the surgery with our multidimensional CT imaging devices that we use in the operating room.

• Surgical success: During surgical interventions using computer-aided navigation systems, the boundaries of the mass and its relationship



with neighboring tissues are determined in 3 dimensions and the surgical incision is made in the most accurate location, the targeted lesion is approached with a high degree of accuracy (with a precision of 1 mm) and damage to healthy tissue during surgery is minimized. If a surgical intervention is to be performed for biopsy, our navigation system makes the necessary calculations to enter the center of the mass and allows us to reach the mass with the shortest and least damage.

ORTHOPEDIA AND TRAUMATOLOGY

Department of Orthopedics and Traumatology; It provides services related to traumatic, congenital or acquired deformities of the musculoskeletal system. Diseases we treat in our hospital; Arthroplasty Surgery (Joint Prostheses), Arthrosis (Calcification), Foot Deformities, Lengthening and Leg Inequalities, Pediatric Orthopedics and Traumatology, Scoliosis, Hand Surgery and Microsurgery, Trauma, Sports Traumatology, Knee Surgery and Arthroscopic Surgery, Orthopedic Oncology, Bone Inflammations (Osteomyelitis) Treatment is performed.



GENERAL SURGERY



At NPİSTANBUL Brain Hospital, operations are performed using laparoscopic (videoendoscopic) and open surgery methods in operating rooms equipped with the latest technology. Depending on the type and degree of the patient's disease, the most appropriate open or closed method for the patient is decided jointly in consultation with the patient. Laparoscopy operations are successfully applied in many general surgery operations, especially gallbladder, inguinal hernia, appendicitis, reflux and stomach hernia.

We serve in a hospital that has been registered with the JC accreditation certificate with its expert staff and infrastructure equipped with the latest technological facilities. Today's modern general surgery operations can be performed in our hospital with open and closed methods. Thyroid, breast, stomach, liver, pancreas, spleen, intestines, intra-abdominal mass, stomach, abdominal and inguinal hernias are the first ones that come to mind.

"SURGICAL" CAPACITY

1- NPİSTANBUL Brain Hospital is the first private neuropsychiatric hospital in Türkiye and the second brain hospital in Europe, established with the aim of providing effective treatment services for diseases related to mental/brain health with the most advanced treatment facilities enabled by modern medicine.

Our hospital offers services in the general branches you need, together with its scientific partner Üsküdar University Faculty of Medicine.

2- NPİSTANBUL Brain Hospital; the world's largest and most prestigious health accreditor, has the JCI (Joint Com mission International) accreditation certificate with a 99% success rate, with advances in diagnostic methods and the use of new antimicrobial drugs, many infectious diseases can be diagnosed and treated.

3- In our hospital with brain-oriented general hospital facilities; Psychiatry, Child Adolescent Psychiatry, Neurology, Neurosurgery, General Surgery, Internal Medicine, Cardiology, Otorhinolaryngology, Orthopedics and Traumatology, Physical Therapy and Rehabilitation, Infectious Diseases.

4-It is the first private hospital in the field of psychiatry to respond to all the needs of its clients with its 24/7 Emergency Psychiatry service with private ambulance.

5-Our neurology patients are referred to our Radiology Clinic (MRI, fMRI, DWI, PWI, Tractography, Neurography) can be performed. Genetic tests are also used to easily diagnose diseases.

6-Thanks to QEEG, EMG and Sleep Laboratory examinations, which we use in research on the cause and treatment of neuropsychiatric disorders, satisfactory results are obtained.

7-Our hospital has Class A operating rooms and intensive care units for all surgical branches. With Türkiye's first 1A Ultra Clean operating room equipment approved by an independent accredited organization, there is a technological infrastructure that can minimize the possibility of infection in all orthopedic surgical operations, especially orthopedic joint prosthesis surgery.

8-In operating rooms; Thanks to Advanced Technology Systems, the risks of surgery are minimized. There is the most advanced microscopic surgical facility that can perform tumor surgery with fluorescent staining. In neurosurgery; pediatric neurosurgery, tumor and aneurysm operations are performed. For such operations, 0-Arm, MR, CT, navigation and ICG, frame technologies are applied for the first time in our hospital.

Improved imaging quality of a high-end intraoperative color Doppler ultrasonography device with neuronavigation support,

The ability to calculate, measure and report ensures that the surgical operation proceeds in a controlled manner. This system is also known as the flagship of neurosurgical imaging.

9- Before brain nerve and spinal cord surgery operations; diagnosis is made using advanced diagnostic facilities and the patient is informed. All operations of neurosurgery can be performed successfully with advanced technology facilities and our expert staff. With our expert staff, postoperative intensive care units, we strive to



provide the best service with our facilities, qualified postoperative care and long-term patient follow-up system.

10- In our Orthopedic Center; thanks to high-level endoscopy equipment for all closed (arthroscopic surgery) joint surgeries (knee, shoulder, hip, elbow, ankle), C-coil fluoroscopy device, especially fracture and deformity surgery and prosthesis surgeries of all joints (hip-knee-shoulder-elbow, etc.), fracture surgeries are successfully performed in our laminar flow operating room.

11- In operations requiring manual and micro-surgery, successful results are achieved with a high-level surgical microscope.

12- All spine surgeries, especially scoliosis, can be successfully performed with the new generation neuronavigation system and the O-Arm device, which provides 3D imaging during surgery.

13- We provide services in general surgery operations with our expert team and technological facilities. Thanks to our endoscopy and colonoscopy unit, diagnosis has become easier.

14- Our radiology facilities include MRI, 128-slice CT angio imaging, MR (Volumetric, Functional) imaging. In addition to our MRI and CT devices, color doppler / ultrasonography, echocardiography technology is also available.

15- Thanks to our digital x-ray that can perform automatic scoliosis imaging, the entire spine can be visualized in a short time.

16- In our Physical Therapy Center, neuro-rehabilitation is applied in diseases such as Parkinson's and all movement disorders, neurological swallowing disorders, and a multidisciplinary approach is adopted with the Sensory Integration Center.

17- In our ENT outpatient clinic, detailed ear, nose, throat, head and neck examinations are performed with sufficient time and Otomicroscopes, Endoscopes and Flexibl Nasopharyngoscopes are used. Necessary tests are performed in our hospital and Üsküdar University Audiovestibular Laboratory for the differential diagnosis of vertigo, and pure tone audiometry is performed in our hospital's Audiology Laboratory for the evaluation of hearing loss, tympanometry is performed. Surgical interventions related to our branch are performed in our modern operating room. Ear surgeries, endoscopic sinus surgery applications, head and neck salivary gland tumor surgeries are performed with an advanced surgical microscope.

18- Advanced diagnosis in our internal medicine service early diagnosis and treatment of diseases with the support of our laboratory and imaging center Coordinated services are provided with different branches in the treatment.

19- In our cardiology service, we have early diagnosis and treatment opportunities with Effort, Echocardiography, Halter technology.

20- Coronary CT angiography process It is an imaging method that can be performed in only 3 minutes if optimal conditions are provided for the step and shoot technique by reducing the patient's pulse rate to 70 and below with our Cardiology unit.

3D reconstruction and reporting can be done in a short time.

21- Many biochemistry, hormone, hematology, toxicology, drug level and advanced diagnostic tests for the diagnosis and treatment of diseases are performed in our Central Laboratory.

22- At our Check-up Unit, as part of our Brain Health and Neurological Check-Up Packages, we offer Brain Health Check-Up, Advanced Brain Check-Up, Stroke Check-Up, and MS (Multiple Sclerosis) Check-up; and under our General Health Check-up Packages, we offer Internal Medicine General Check-up, Diabetes Check-up, Internal Medicine Blood Pressure Check-up, and Cardiology Check-up services.



OPERATING ROOM AND INTENSIVE CARE UNITS



As NPİSTANBUL Brain Hospital, we provide services in all departments with modern medical competence, protecting patient and employee safety.

We have increased the number of operating rooms to 4 by adding 2 more operating rooms to our operating rooms within the framework of our investments made with our latest technological devices.

Our 1A (Ultra Clean) air quality operating room, which we first established in 2015, is still the first and only one in Türkiye. 1A (Ultra Clean) air quality operating room is the gold standard for neurosurgery, orthopedics and organ transplantation surgeries.

There are 2 operating rooms, one with 18 laminar flow units and the other with 2 laminar flow units, and an intensive care unit with a capacity of 15 beds. In the intensive care unit, full-fledged service can be provided to intensive care patients at all levels up to Level 3.

We are ready to serve you with Türkiye's first and only 1A Ultra Clean operating room equipment approved by an independent accredited organization and our superior technological infrastructure that assists surgical operations. As NPİSTANBUL Brain Hospital, we have 4 operating rooms on active duty.

Türkiye's First Ultra Clean Operation Room

A full-fledged brain hospital where our clients and physicians can benefit from the most advanced technologies in medicine

we offer. Türkiye's First and Only 1A Ultra Clean Operating Room equipment approved by an independent accredited organization and we are ready to serve you with our superior technological infrastructure that assists surgical operations.

OUR FEATURED MEDICAL DEVICES:

Philips / Ingenuity Elite, Medtronic / O-Arm 2, Medtronic / S7, Zeiss / Pentero 900,

Hitachi-Aloka / Alpha 7, S-Cape / Multiconsol,

Ultra Clean, Surgical Instrument Tracking System, Philips / TC 20, Philips / vsi 2, GE / R 860, GE / B 650, Linet Multicare.

Infection Tracking System: Our hospital has a hardware and monitoring system that can minimize the risk of infection in neurosurgery operations.

Brain Mapping: The most important issue when resecting brain tumors is to proceed without damaging the adjacent tissues. In many patients, damage may occur in the tissues that are passed until the tumor is removed. When the operation is continued with brain mapping, the tumor can be reached without touching areas that have important functions in the brain. It has

the infrastructure that allows brain mapping in the operating room.

Robotic Surgery: Another critical issue in tumor surgeries is determining the boundary of the tumor.

Preoperative measurements can be misleading due to the edema that occurs during the operation. To prevent this, we offer a computerized navigation system (a kind of robotic system) that can guide the surgeon about the tumor throughout the operation. In this way, the operation continues by comparing the images taken before the operation with the images taken during the operation. Thus, the patient leaves the surgery knowing whether the tumor has been completely removed or not.

Interventional Radiology: The patient has the chance to get rid of the vascular anomalies in the brain thanks to the method that enters the vein and closes the aneurysm without surgery. Our hospital has the radiology infrastructure used in this method.

Intraoperative O-Arm and MR Imaging: Imaging that can measure the success of the surgery can be performed inside the operating room and while the surgery is in progress, before the surgical field is closed, that is, before the patient wakes up and has to undergo surgery again the next day. Intraoperative O-Arm and MR imaging allows for battery implantation surgery and stimulation in Parkinson's disease, gait disorders and some psychiatric disorders, which allows the brain to stimulate the patient at any time and to continue its normal life.

to perform these surgeries. Our hospital has the necessary equipment for these operations.

3 Tesla MR One of the most advanced and advanced radiological methods used in medical diagnosis MRI (Magnetic Resonance Imaging) uses the natural parameters of the human body

creates an image. MR devices consist of devices with a magnetic field strength between 0.2 and 3 Tesla MR.

NPİSTANBUL Brain Hospital offers high quality image and patient comfort with its large magnet (70 cm) 3 Tesla MRI device, which is available in fewer than a few times in our country. Thus, detailed images are obtained.

3 Tesla Technology is designed to produce images with high resolution and precision. The magnet is the foundation of the MRI system, and systems with 3 Tesla magnetic field strength increase the diagnostic capabilities of physicians and allow patients to experience a faster and more detailed examination.

Advantages of 3 Tesla MRI

1) The spaciousness of the device increases the patient's comfort and adaptability to MRI. It also makes it possible for patients who have a fear of confined spaces and are overweight to undergo MRI.

2) One of the most important factors affecting





patient comfort with 3T devices is the high noise level during the examination. Some patients may be very uncomfortable with this. The 3T device has a sound reduction technique that can reduce the sound heard by the patient by up to 40 percent.

3) There is also a music system and video broadcast for patients to have a pleasant time during the examination.

4) Image quality is high in all shots thanks to a program that prevents image distortion caused by movement, MR-compatible metal prosthesis and implants in the body.

5) It represents a special approach to help pediatric patients feel more comfortable and relaxed during a Magnetic Resonance (MR) scan. This experience aims to make the scanning process easier for children with indoor phobias or anxiety. This special design aims to calm and relax children by distracting them with factors such as external and internal ambient effects, special images and music. For example, colored lights or pleasant scenery can be used to distract the child from the screening process. Also, scanning accompanied by soft music can help children to calm down.

6) Among the application methods for individuals with special needs, shots are performed safely under sedation anesthesia.

What is the Application Process of 3 Tesla MRI?

• Before the procedure, the patient should not be wearing any metal such as necklace, earrings, watch, ring. The patient is first asked by the team to remove all metals.

• The patient lies down on the MRI machine and the patient is shown the lying position according to the area to be imaged by the team.

• The patient hears and realizes the necessary warnings during the procedure through the earphones worn in the ear. The earphones also allow the patient to be less affected by the sound of the device.

• The patient has a button in his/her hand to quickly call the team in case of any problem.

• The duration of the scan varies depending on the area to be imaged and the type of disease.

What are the Application Areas of 3 Tesla MR?

3 Tesla MRI can be used for imaging organs and systems in different parts of the body. In addition to neurological disorders such as brain tumors, epilepsy, spinal cord diseases, migraine, ear disorders, jaw problems, spine diseases, prostate diseases, breast diseases, joint and connective tissue imaging such as shoulder and knee

3 Tesla MRI is used to detect many problems with bones, to visualize the coronary vessels feeding the heart and for whole body imaging.

When and why is it requested?

In cases where other radiologic modalities are insufficient in diagnosis or in the presence of findings that cannot be explained by the patient's clinical condition, MRI, one of the advanced radiologic examinations that play a leading role in the diagnosis of diseases, is requested.

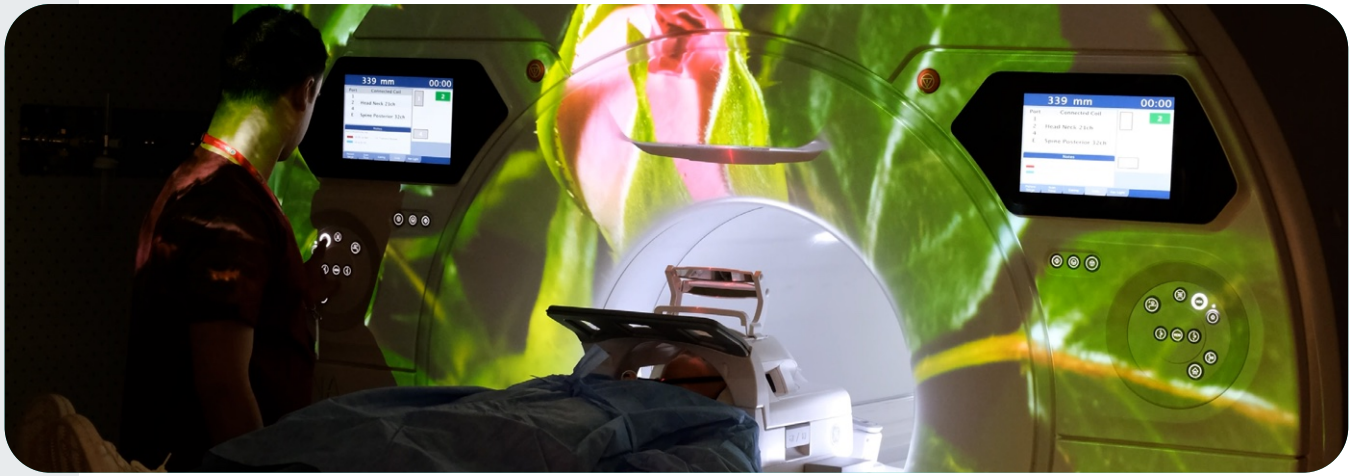
MRI is among the first tests requested for the evaluation of many organs, such as the brain, which cannot be shown on direct radiographs. Computed Tomography is more successful in evaluating bone structures, while MRI is more successful in showing soft tissues.

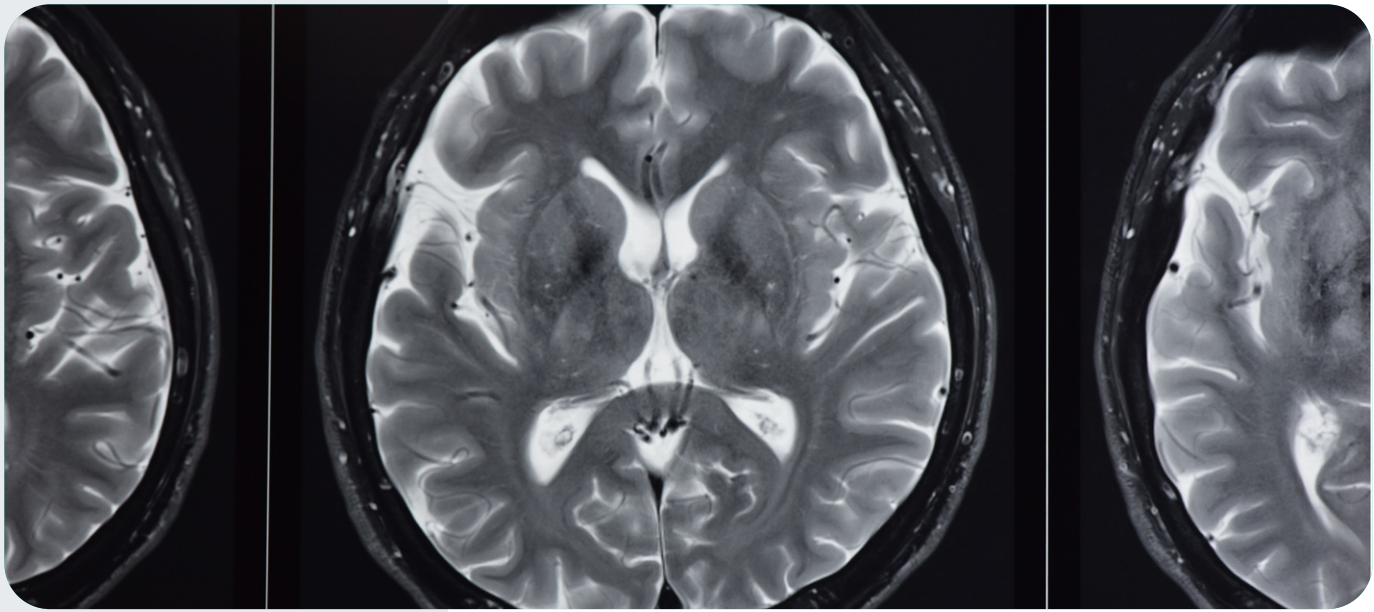
- Advanced image techniques
- Advanced MR imaging
- Virtual colonoscopy
- MRI-enterography
- Multiparametric prostate MRI
- MR-fistulography
- Functional MR
- MR spectroscopy (Multivoxel, single voxel and 3d voxel)
- Diffusion tensor imaging (DTI)
- MR perfusion
- MR cisternography
- MR arthroscopy,
- Cartilage T2 mapping imaging studies

NPİSTANBUL Brain Hospital Radiology Clinic can also perform color mapping and examination from different angles thanks to the latest technological computer programs.

Frequently Asked Questions About 3 Tesla MRI Who Cannot Have 3 Tesla MRI?

3 Tesla MRI is not suitable for patients with pacemakers and some special prostheses because it creates a high magnetic field effect. However, it is not a problem for patients with MR compatible prostheses.





Is There Radiation in 3 Tesla MRI?

No, it doesn't. In this way, it can also be used in cancer staging.

Is the 3 Tesla MRI on?

No, the 3 Tesla MRI is a closed device, but with sufficient width and comfort, patients can easily enter this device.

Anesthesia Safety: In our hospital, you do not have to worry about whether anesthesia is administered safely. Because with the arrangements made in the operating room of NPISTANBULHospital, anesthesia and pain depth can be seen and monitored from the devices at every deviation of the patient.

Automated Recording System: Thanks to the automated recording system we have developed, there is no need to keep manual records in the operating room. With the system we installed, all records of the monitor are automatically

patient files and our authorized personnel and doctors can access the records obtained from the monitors.

Operating Room Teleconferencing System: Teleconferencing is possible from our operating room. Thus, operations can be opened to any physician or a conference room around the world, and can also be transferred to the classrooms of students at our university.

Smart Operating Room System

The monitors and devices in our operating room are integrated with each other to facilitate the surgeon's mobility and work.

At the same time, all our surgeries are recorded.

Surgical Instrument Tracking System: Our hospital uses a tracking system that controls the sterilization of surgical instruments leaving the operating room.

Vital Data Filing System: ECG data of our inpatients and outpatients and vital data (blood pressure, blood oxygen level, fever, etc.) are measured by a software method and automatically transferred to a file.

Information Processing: Our hospital has a central system that can be changed from the air conditioning of the building to the electrical components and the pressure of the operating room according to the living conditions inside. The air conditioning and pressure in the operating room can be changed according to the needs of the operation.

Therapy Beds: All beds in NPISTANBUL Has tanesi intensive care unit are automatic and therapy beds. In this way, these beds can fulfill many tasks of nurses in patient care.

Information Security: A technology that is accepted in terms of patient privacy and that protects patient information with software and hardware is used.

Once in the system, all information can be accessed by anyone authorized. However, unauthorized access to the operating room is impossible.

Smart Building Concept: Entrance and exit, iron head controls, fire detection system are designed with smart building concept. No keys are used on psychiatric floors. Card system is applied in all rooms and rooms can be entered with authorization. There is an iP TV system in the whole building and a security system with HD cameras has been installed.

Medication Management System: Thanks to the medication management system we are implementing, no unauthorized person can obtain medication from the ward. This system ensures that medicines are administered on time and accurately.

ilaç yönetimi sistemi sayesinde yetkilendirilmemiş hiç kimse servisten ilaç temin edemez. Bu sistemle ilaçların tam zamanında ve doğru olarak verilmesi sağlanmaktadır.



PAIN CENTER (ALGOLOGY)



A pain center is a center that should be consulted for chronic pain. Chronic pain is pain that lasts longer than 3 months.

In pain centers, the cause of pain is investigated and treatment is applied. Pain is an unpleasant subjective feeling that arises from any part of the body, which may or may not be due to an organic cause, and covers all past experiences of human beings. The department dealing with pain is called Algology. Algology is a specialty in which diagnosis, treatment and follow-up of pain lasting 3 months or longer are performed.

is the field of medicine.

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In the pain center; chronic pain; cancer pain, headaches, pain due to nerve damage, i.e. neuralgia, musculoskeletal system pain; neck pain, shoulder-arm pain, back pain, waist-leg pain, pain due to vascular occlusion, pain of unknown cause are treated in the algology department. Anyone with chronic pain, such as headaches or cancer pain, can apply to pain centers. People with acute pain can also benefit from our center, but acute pain is a defense mechanism of the body, a stimulus. It is a message that the person should take seriously to go to the doctor. The aim of algology is to restore the quality of life lost due to chronic pain.

Pain Center Services

Pain Center; It is a center that can provide easier diagnosis and treatment services to patients with a wide range of chronic pain.

The intensity felt by the patient is very important in the treatment in the pain center, rather than the level of pain. Pain is a subjective feeling. It varies from person to person, culture to culture, and comorbidity to comorbidity. Whatever intensity the person feels, that is the intensity for us.

For example, when assessing the severity of pain, if the patient feels the pain as 9 out of 10, we consider the patient's pain as 9. The approach is never "this patient has this does not cause as severe pain".

On the other hand, pain is important, albeit of low intensity.

What is the Pain Threshold?

The pain threshold is usually the same for all people, but there may be differences in pain tolerance. If there is a problem affecting the pain threshold, such as a tumor or a disease affecting the nervous system, there may be a problem with the pain reaching our brain.

In the pain center, pain is treated with different treatment protocols specific to the condition and type of pain. The pain sensation in the definition of pain may differ depending on the person, the





society in which they were raised and their education. Since pain is a subjective feeling, it is always individualized. Therefore, it varies greatly from person to person.

Why Does Pain Remain Unresolved?

Teamwork is very important in a pain center. Doctors can help relieve some of the pain, but chronic pain treatment is a team effort. If this team is present, pain treatment is successful.

For this reason, experienced pain specialists are being trained in this field in our country. Pain specialists offer the best and fastest treatment service to the patient with this multidisciplinary approach.

What kind of psychology does chronic pain cause in the patient?

Chronic painful conditions are treated in the pain center. Chronic pain reduces the quality of life. People stop doing the things they used to be happy to do, start taking medication all the time, experience tension, sleep disorders, burnout,



withdrawal from society, and disrupt their work if they are working. In fact, pain is a source of great unhappiness. Naturally, it affects the psychology of the person and even the psychology of his/her close environment and family. As a result, chronic pain can cause psychological disorders, and some psychiatric conditions also play an important role among the causes of pain. Patients with chronic pain should definitely be evaluated psychiatrically. Therefore, it is very important to include a psychiatrist in the Pain Center team.

Will Painkiller Use Decrease with Pain Treatment?

The main aim of the pain center is to apply a treatment plan appropriate to the clinical picture of the person. Painkillers and anti-depressants are widely used all over the world. As Pain Centers increase, the right painkiller will be used in the right patient, so that unconscious the use of painkillers will also decrease.

OUR CHECK UP OPPORTUNITIES

For detailed information about our Check Up services: +90 216 633 0 633



Brain Health and Neurological Check-Up Packages

- Brain Health Check-Up
- Advanced Brain Check-Up
- Stroke Check-Up
- MS (Multiple Sclerosis) Check-Up

General Health Check-Up Packages

- Internal Medicine General Check-Up
- Diabetes Check-Up
- Internal Medicine Blood Pressure Check-Up
- Cardiology Check-Up

What Is a Check-Up?

A check-up is a comprehensive health screening that helps identify potential health risks at an early stage, before any symptoms of disease appear.

Early evaluations can help monitor your health and plan further tests when necessary.

A Holistic and Multidisciplinary Approach

At NPİSTANBUL Hospital, check-up processes are conducted using a multidisciplinary approach that includes medical evaluations by our specialists in neurology, psychiatry, internal medicine, and cardiology, as well as radiological imaging and comprehensive laboratory tests.

Unlike standard check-up programs, a holistic evaluation is performed that addresses not only physical health but also brain function and cognitive performance.

Brain Health and Neurological Check-Up Packages

These are check-up programs designed to assess brain function, cognitive performance, and neurological risks at an early stage.

Brain Health Check-Up

What is a brain health check-up?

It is a structured check-up program designed to assess the structural and functional status of the brain. Structural evaluations are performed using imaging methods such as magnetic resonance imaging (MRI) or computed tomography (CT), while cognitive processes are analyzed through neuropsychological tests.

As part of the brain health check-up program, measurements of attention, memory, and cognitive performance are taken. Additionally, a comprehensive evaluation is conducted by considering the individual's psychosocial status alongside certain biological parameters related to brain function.

Why should we get a brain health check-up?

- To assist in the assessment of cognitive functions
- To analyze issues related to forgetfulness and attention problems
- To address psychological and biological processes together
- To evaluate intense stress and changes in mental performance
- To help identify risk factors related to brain health

Advanced Brain Check-Up

What is an Advanced Brain Check-Up?

The Advanced Brain Check-Up is a comprehensive health screening designed to provide a multifaceted assessment of the brain's structural, functional, and biochemical processes.

In addition to standard brain check-up programs, it examines advanced parameters such as genetic predispositions, neuroinflammation, toxic exposures, and hormonal balance.



These evaluations can help provide detailed information about an individual's current condition and contribute to the assessment of neurological risk factors.

Why should we get an advanced brain check-up?

- To assess risk factors for neurodegenerative diseases
- To conduct analyses of genetic predispositions
- To comprehensively examine memory, attention, and cognitive performance
- To assess intense stress, burnout, and changes in mental performance
- To analyze biochemical processes that may affect brain health
- To support the planning of personalized preventive health approaches

Stroke Check-Up

What is a Stroke Check-Up?

The stroke check-up program is a scheduled health screening designed to assess the condition of the nervous system's vascular structure and analyze stroke-related risk factors.

Stroke Symptoms

The following symptoms are shared to raise awareness about conditions that may be associated with stroke:

- Sudden loss of vision
- Sudden difficulty speaking
- Brief weakness or numbness in the body
- Loss of balance or dizziness
- Brief changes in consciousness or perception
- Sudden loss of consciousness
- New-onset severe headache

MS (Multiple Sclerosis) Check-Up

What is an MS (multiple sclerosis) check-up?

The MS check-up program is a scheduled health screening designed to assess conditions associated with multiple sclerosis and certain rheumatological diseases that affect the brain. Although MS typically occurs in young adults, it can also develop in people of other age groups.

Symptoms That May Be Associated with MS

The following symptoms are shared to raise awareness about conditions that may be associated with MS:

- Double vision
- New-onset loss of balance or dizziness
- Intermittent or persistent vision problems
- Numbness, tingling, or weakness in the body
- Changes in bladder control
- New-onset pain or muscle spasms
- Persistent fatigue



GENERAL HEALTH CHECK-UP PACKAGES

Designed to provide a comprehensive assessment of overall health, these check-up programs help analyze metabolic and cardiovascular risk factors.

Regular check-ups can contribute to the early detection of risks associated with chronic diseases and the long-term monitoring of health.

Internal Medicine Check-Up

What is an internal medicine check-up?

Internal medicine check-up programs are screening programs designed to assess the general health status of individuals without any specific symptoms and to help identify risks for potential diseases at an early stage.

Why should we get an internal medicine check-up?

- To assess risks associated with diseases that can progress without symptoms
- To monitor overall health on a regular basis
- To help detect potential health issues at an early stage
- To facilitate the planning of further tests when necessary



CARDIOLOGY CHECK-UP

What is a cardiology check-up?

A cardiology check-up program consists of scheduled examinations and tests designed to assess risk factors related to heart and vascular health. These programs help provide information about an individual's cardiovascular health and monitor their current condition.

Why should we get a cardiology check-up?

- For the early diagnosis and treatment of heart and vascular diseases
- To increase life expectancy and quality of life through early diagnosis
- To combat preventable risk factors such as smoking, alcohol, and hypertension
- To reduce the risk of developing heart and vascular diseases



NP GROUP
HEALTH SERVICE CENTERS

As NP Healthcare Group, we are a group that progresses with international standards, in the light of contemporary science, with a collaborative approach of different disciplines, and makes a difference in the lives of our clients with the focus of a center of excellence in health. With the strength we receive from Üsküdar University, our scientific partnership, we work to raise the mental health level of the society and prioritize preventive mental health studies. With more than 25 years of knowledge in the fields of psychiatry, psychology, neurology and addiction, we serve thousands of clients at NPİSTANBUL Brain Hospital and Üsküdar University Dental Hospital.

HEALTH UNITS

NPİSTANBUL Brain Hospital

It is Turkey's first private neuropsychiatric hospital, established with the aim of providing effective treatment services for diseases related to mental/brain health, with the most advanced treatment facilities of contemporary medicine.



ÜSKÜDAR UNIVERSITY

Science Partner



Üsküdar University, which determines its basic principles as criticism, libertarianism, pluralism and participation, develops research and application programs with an innovative, future-oriented education and training approach in order to produce academic production above world standards, to train highly qualified people and to produce knowledge, Uskudar University is an educational institution that has adopted a multidisciplinary approach in Medicine, Dentistry, Communication, Human and Society, Health, Engineering and Natural Sciences with departments and programs for the future by understanding today's people and setting out with the vision of becoming a pioneering and universal brain base that produces value for social development. Üsküdar University represents our country in the best way abroad by being included in the TURQUALITY® support program as well as the high rankings it has obtained from globally respected organizations such as THE (Times Higher Educati on), Scimago Rankings, Brain Park Technology Transfer Office, 93 laboratories for different fields, R&D focuses, Brain Park Techno loogy Transfer Office.

Üsküdar University added a new one to its national achievements by ranking second among universities applying for patents and utility models across Türkiye in 2022. Uskudar University, which integrates academic and clinical educati-on with the "University-Hospital Collaboration" model and adopts the ideal of an institutional culture with ethical values at professional standards, observing equal opportunities, offering personalized education options, has aimed for a scientific, quality and contemporary education since its establishment with the aim of becoming an exemplary universal university that



provides world-class education and training. Our university, which grows by increasing its experience and equipment every year, especially in the fields of behavioral sciences, engineering and health, has become an institution that raises competent and dynamic health professionals for our country. The Faculty of Medicine, which was established in 2018 under the umbrella of Üsküdar University with the goals of quality and universality, educates future physicians equipped with the necessary competencies for both science and medical practice.

Üsküdar University Faculty of Medicine was established on an area of 7 thousand square meters with a large physical infrastructure that can meet all needs. With the approval of the Council of Higher Education, a full-fledged, 149-bed NPİSTANBUL Brain Hospital was established with the approval of the Council of Higher Education in order to benefit from practical trainings.

In addition, the Faculty of Medicine has an affinity hospital collaboration with Istanbul Ataşehir Memorial Hospital, which is also fully-fledged and has a capacity of 143 beds. With these facilities, the Faculty of Medicine has reached universal quality standards in both medical education and health services. Üsküdar University Faculty of Dentistry, which started education in the 2021-2022 academic year, aims to add new dimensions to the classical definition of the profession of dentistry with its unique perspective, approaches and educational programs and to train not only contemporary dentists but also dentists of the future. The Faculty of Dentistry, which builds the balance between “being human, being a good doctor and being happy” with the support of the rich accumulation of our university, has 13 thousand square meters of usage area and 2600 square meters of open area, Simulation (Phantom) Laboratory, Art and Visual

Education Laboratory, Preclinical Laboratory and Plaster and Acrylic Laboratory continue education and clinical applications.





Üsküdar University laboratories provide applied training in many different subjects on behavioral sciences such as brain stimulation, neuroimaging, health physics, software psychology, while there is a clinical infrastructure equipped with the latest technology for studies such as “Brain Computer Interface (BCI)” and artificial intelligence in the field of computational engineering. In addition to the trainings offered in Üsküdar University laboratories, accompanied by a large academic staff specialized in their fields Practical training is offered and more than 90 laboratories in an area of 14,000 square meters. Üsküdar University students will be able to learn the unknown secrets of the brain and important diseases such as Autism, Schizophrenia, Parkinson’s, Alzheimer’s, etc. Representing Türkiye in the Brain Initiative Project initiated by 44th President Barack Obama in 2013 and participatin

We are proud to be the only university from Türkiye participating in the Scientific Summit on Therapies. Üsküdar University, whose main purpose is to provide education and training services for a better future and a more livable world, to make scientific production, and to transform knowledge into life, has professional standards that can integrate the “University-Hospital cooperation” model with academic and clinical education, an institutional culture that observes equal opportunities, offers personalized education options, and has ethical values.

With the ideal of raising quality manpower that will contribute to the development and progress of our country and the world, Üsküdar University serves humanity with the production of scientific knowledge. Üsküdar University, which aims for excellence in education and visionary understanding in scientific production, says “Life is Choice” with more than 24 thousand students and more than 35 thousand graduates because it has succeeded in touching all sections of life with its education and training programs.

ÇEGOMER

(Child and Adolescent Development & Autism Center):

In children; We treat swallowing problems, stuttering, voice disorders, articulation disorders, vocal health, swallowing disorders, child language, hearing loss and other diseases. In ÇEGOMER, education programs developed to meet the educational and social needs of individuals with autism who differ significantly from their peers in terms of their developmental characteristics and educational qualifications are implemented. Child and adolescent psychiatry specialists, specialist clinical psychologists, occupational therapy specialists, and occupational psychiatrists work at ÇEGOMER, which aims to identify and support the needs of individuals with special needs and sports trainers provide treatment services in areas of need and implement therapy plans.





SMILING QUALITY

ÜSKÜDAR UNIVERSITY DENTAL HOSPITAL...

Launched in 2023, Üsküdar University Dental Hospital, with its patient-oriented, preventive medicine approach, works to ensure that you have strong and healthy teeth not only today but also in your 80s. We depend on the academic strength of Üsküdar University Dental Hospital, which takes its name from the experienced staff of the University Faculty of Dentistry, offers personalized oral and dental health services with dentists who are experts in their field.

Üsküdar University Dental Hospital, which brings together interest, knowledge and experience under the same roof, offers full-fledged services in many different branches such as prosthetics, gum diseases, jaw surgery, pediatric dentistry, endodontics, orthodontics.



Dental treatments of special patient groups such as autism and developmental delay are performed under general anesthesia in fully equipped operating rooms.

In the pediatric dentistry department, which works with the philosophy of “Healthy teeth, healthy future”, oral and dental health awareness is instilled in children; a treatment process where love and happiness are, not fear and prevail. In addition to all these, Üsküdar University Dental Hospital also provides services in cleft lip and palate, speech disorders and dental aesthetics clinics for old people.




T.C. ÜSKÜDAR ÜNİVERSİTESİ
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Türkiye'nin Beyin Üssü
T.C.
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Neurosurgery

Full-Fledged General Hospital

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Neuromodulation Center

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Private 7 / 24 Psychiatric Intensive Care Unit

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