



NEUROMODULATION  
Health care

# BACLOFEN PUMP

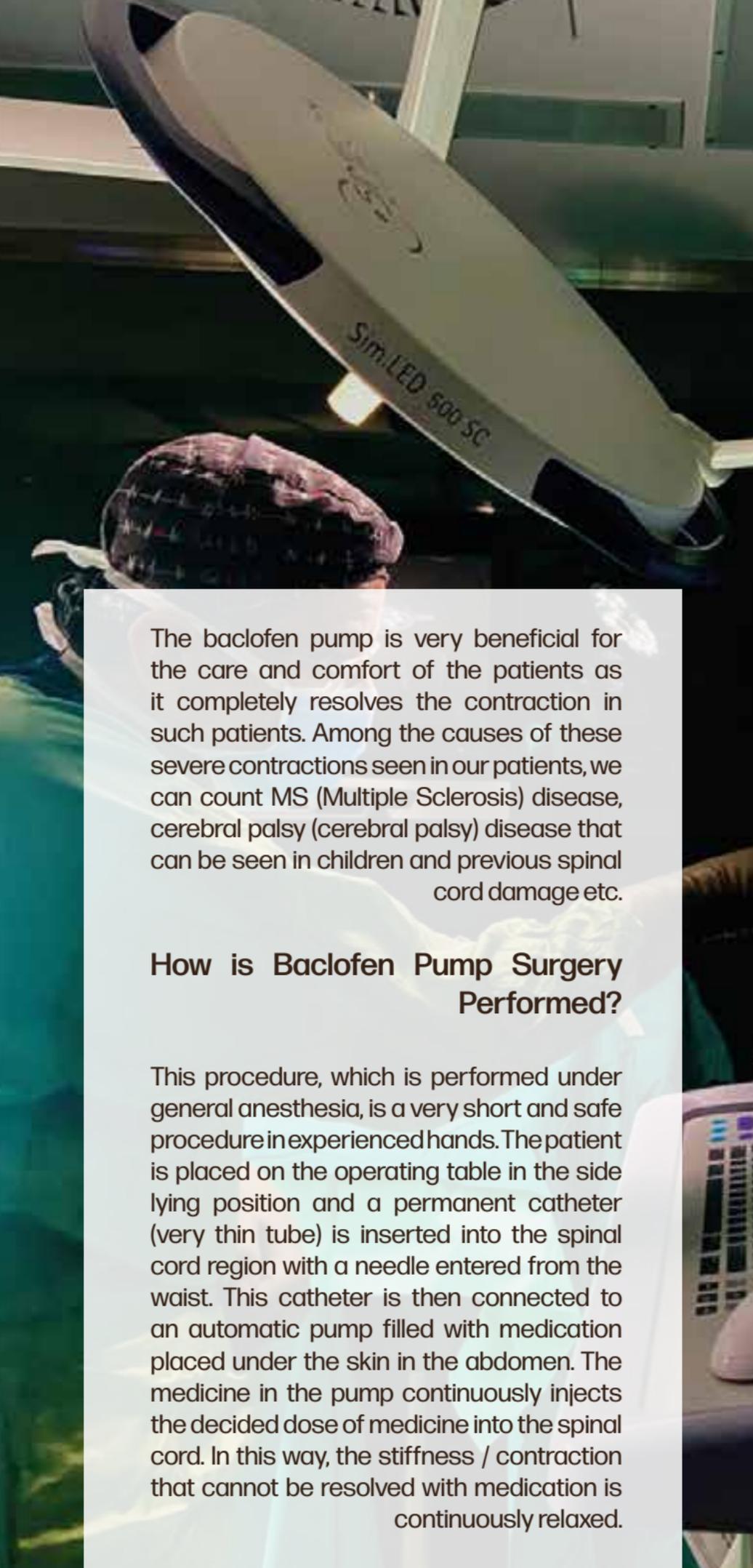
Neuromodulation Center



## What is a Baclofen Pump?

Baclofen pump it is a device that provides a kind of automatic drug release used in involuntary rigidity and contractions (spasticity) that develop in the limbs (arms, legs) and / or trunk for various reasons and do not respond to drug treatment. The device is very powerful in combating contractions and can easily resolve even very high intensity contractions.

In some of our patients, this contraction is so severe that the patient's knee, elbow and wrist are unbendable and the patient cannot sit in a wheelchair or even on a toilet seat. Unfortunately, in most patients these contractions do not respond adequately to any medication.



The baclofen pump is very beneficial for the care and comfort of the patients as it completely resolves the contraction in such patients. Among the causes of these severe contractions seen in our patients, we can count MS (Multiple Sclerosis) disease, cerebral palsy (cerebral palsy) disease that can be seen in children and previous spinal cord damage etc.

## How is Baclofen Pump Surgery Performed?

This procedure, which is performed under general anesthesia, is a very short and safe procedure in experienced hands. The patient is placed on the operating table in the side lying position and a permanent catheter (very thin tube) is inserted into the spinal cord region with a needle entered from the waist. This catheter is then connected to an automatic pump filled with medication placed under the skin in the abdomen. The medicine in the pump continuously injects the decided dose of medicine into the spinal cord. In this way, the stiffness / contraction that cannot be resolved with medication is continuously relaxed.

# Who is a candidate for Baclofen Pump surgery?



Baclofen pump surgery is a very powerful treatment option for severe convulsions caused by cerebral palsy, convulsions caused by MS disease, which stands for Multiple Sclerosis, convulsions that develop after spinal cord injury, stroke or paralysis, in short, in solving stiffness and convulsions that develop for whatever reason.

The important point to emphasize here is that this relaxation process does not prevent voluntary movements. In other words, if the person can normally move his/her foot or walk and cannot do so due to the existing contraction, the patient can use his/her limbs and walk again by correcting the contraction.



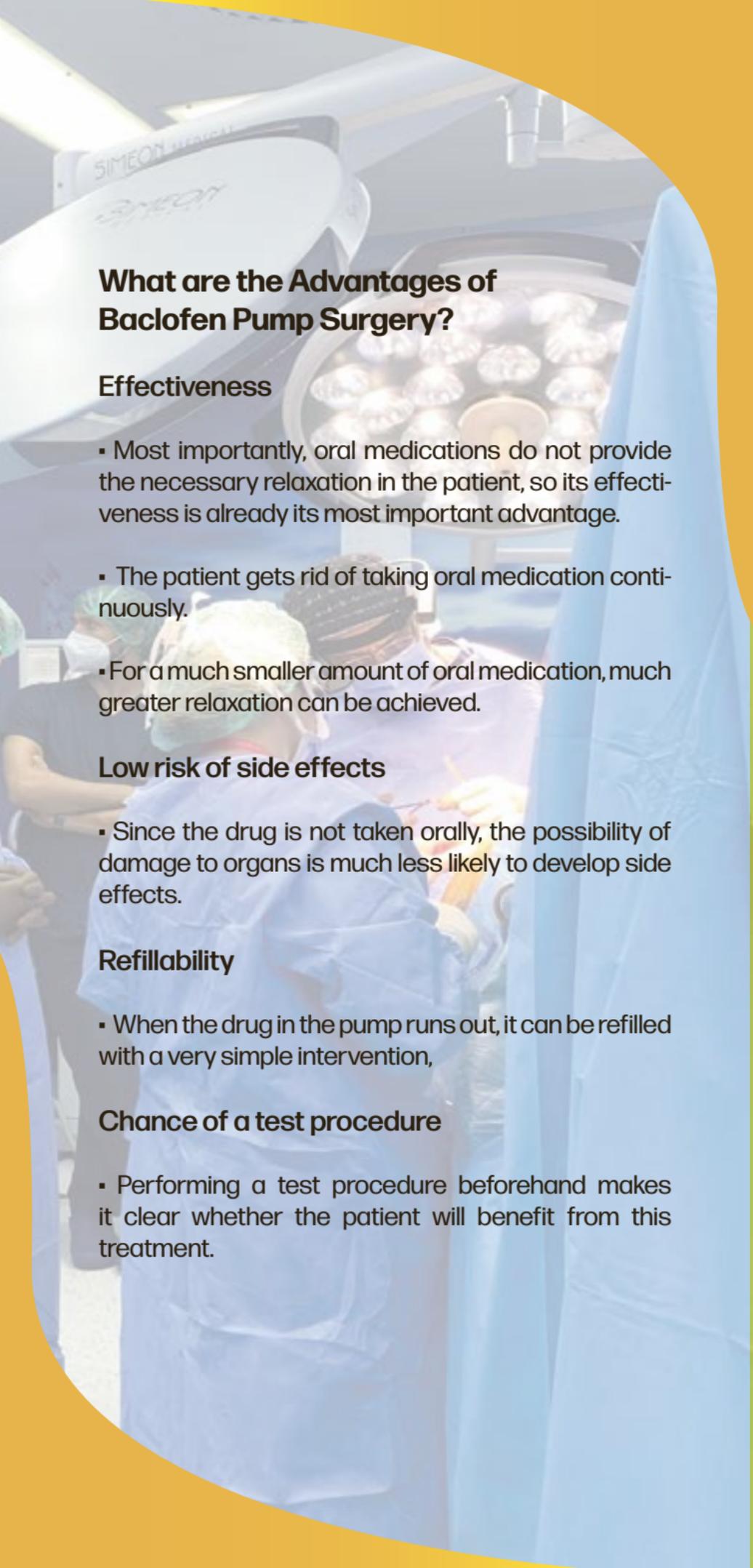


## How is Baclofen Pump Surgery Decided?

The application of the surgery is decided by a committee consisting of Neurology, Neurosurgery, Physical Therapy and Rehabilitation physicians. All members of the committee firstly evaluating the patient, and if it is observed that drug treatment is inadequate or drug use causes side effects, it is decided to perform a test attempt on the patient.

The test attempt is performed by injecting a very low dose of baclofen into the spinal canal through the waist while the patient is in bed. If loosening of the feet or hands is detected after this application, it is decided to perform baclofen pump surgery. The test application can be considered among the biggest advantages of this surgery. In this way, it is clearly understood whether the person will benefit from this surgery.





## **What are the Advantages of Baclofen Pump Surgery?**

### **Effectiveness**

- Most importantly, oral medications do not provide the necessary relaxation in the patient, so its effectiveness is already its most important advantage.
- The patient gets rid of taking oral medication continuously.
- For a much smaller amount of oral medication, much greater relaxation can be achieved.

### **Low risk of side effects**

- Since the drug is not taken orally, the possibility of damage to organs is much less likely to develop side effects.

### **Refillability**

- When the drug in the pump runs out, it can be refilled with a very simple intervention,

### **Chance of a test procedure**

- Performing a test procedure beforehand makes it clear whether the patient will benefit from this treatment.

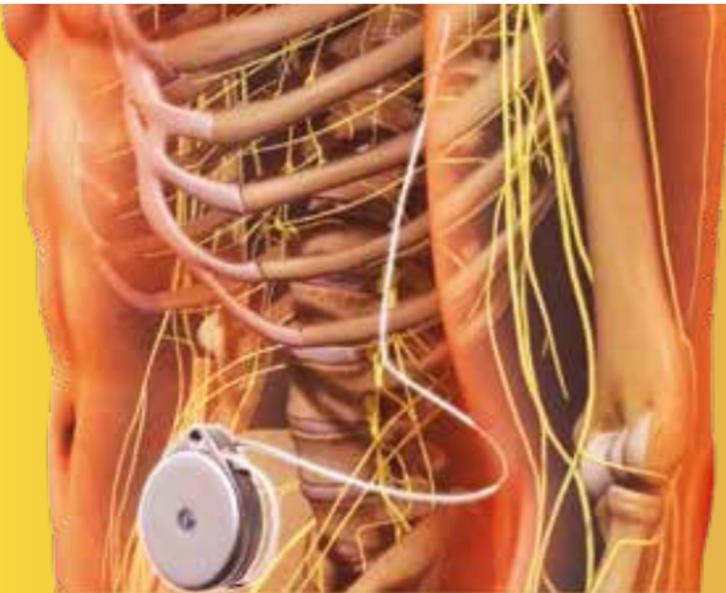
## **Adjustability**

- Since the device can be managed by means of a remote control, dose adjustment can be made easily at any time. If the necessary relaxation is not achieved, the dose is increased and relaxation is achieved.
- Since it does not prevent voluntary movement, the person continues to use his/her limbs if he/she can use them.

## **What are the Risks of Baclofen Pump Surgery?**

### **Risk of Infection**

It can be significantly reduced with the dose of antibiotics to be administered before, after and during the surgery and by paying utmost attention to sterilization conditions during surgery.





## **Damage to the Spinal Cord**

The rate of occurrence of such risks is very low and the possibility of occurrence in experienced hands is almost negligible.

## **Under which conditions should it not be applied?**

Baclofen pump surgery is not applied in the following cases:

- If the response to medication is adequate
- If there is no response to the test dose,
- If the patient has an active infection.
- In children younger than 4 years or weighing less than 14 kg.





# Our Services

You can be sure that you will receive the best service during your treatment. If you decide to visit our center, we are offering a complete treatment package.

The package includes:

▪ **Full examination of the patient by all necessary specialists;**

- \*Neurologist,
- \*Neurosurgeon
- \*Psychologist
- \*Anesthesiologist
- \*Nutritionist
- \*Cardiologist
- \*Physical Therapy and rehabilitation specialist.



▪ **Establishing the correct diagnosis before the surgery.**

▪ **Discussion the expectation with the patient and patient's relatives**

▪ **All laboratory and Radiological examinations;**

- Serological evaluations
- Chest Radiology
- Necessary blood tests
- 2 times Whole Brain Computerized Tomography (preoperative for planning and postoperative for electrode position checking) Under sedation
- Detailed Whole Brain Cranial MRI (under general anesthesia for higher quality of images).



### Deep Brain Stimulation Surgery includes:

- Necessary equipments for the surgery (FDA approved )
- All necessary medication
- The work of the medical team led by **Dr. ATILLA YILMAZ**
- Postoperatively daily DBS system check and wound care.
- Postoperatively daily DBS programming
- Post-operative rehabilitation and physiotherapy exercises.
- Walking and occupational therapy

These services are available as standard in all our service packages, service packages including extra services are also available.



## Our services also includes:

- 7 DAYS at the hospital for the patient and his/her two relatives.
- 7 DAYS accommodation at the hotel for the patient and his/her relatives during the rehabilitation and physical therapy period.
- Three meals a day for patients and his/her relatives during the stay (hospital and hotel).
- Transfer to and from the airport.
- Airport - Hospital transfer Hospital - Hotel transfer After discharging Daily Hotel - hospital transfers.
- Long-term Postoperatively online consultations (for 2 years).
- Your treatment will continue for approximately 14 DAYS. Experienced staff and translators will be with you at every stage of your treatment. They will give you all the support and attention you need.



# Transfer

When you land at the airport in Turkey, we welcome you with a V.I.P transfer vehicle. A comfortable journey awaits you from the airport to our hospital with our transfer vehicle. And after your treatment is completed, we drop you back to the airport.

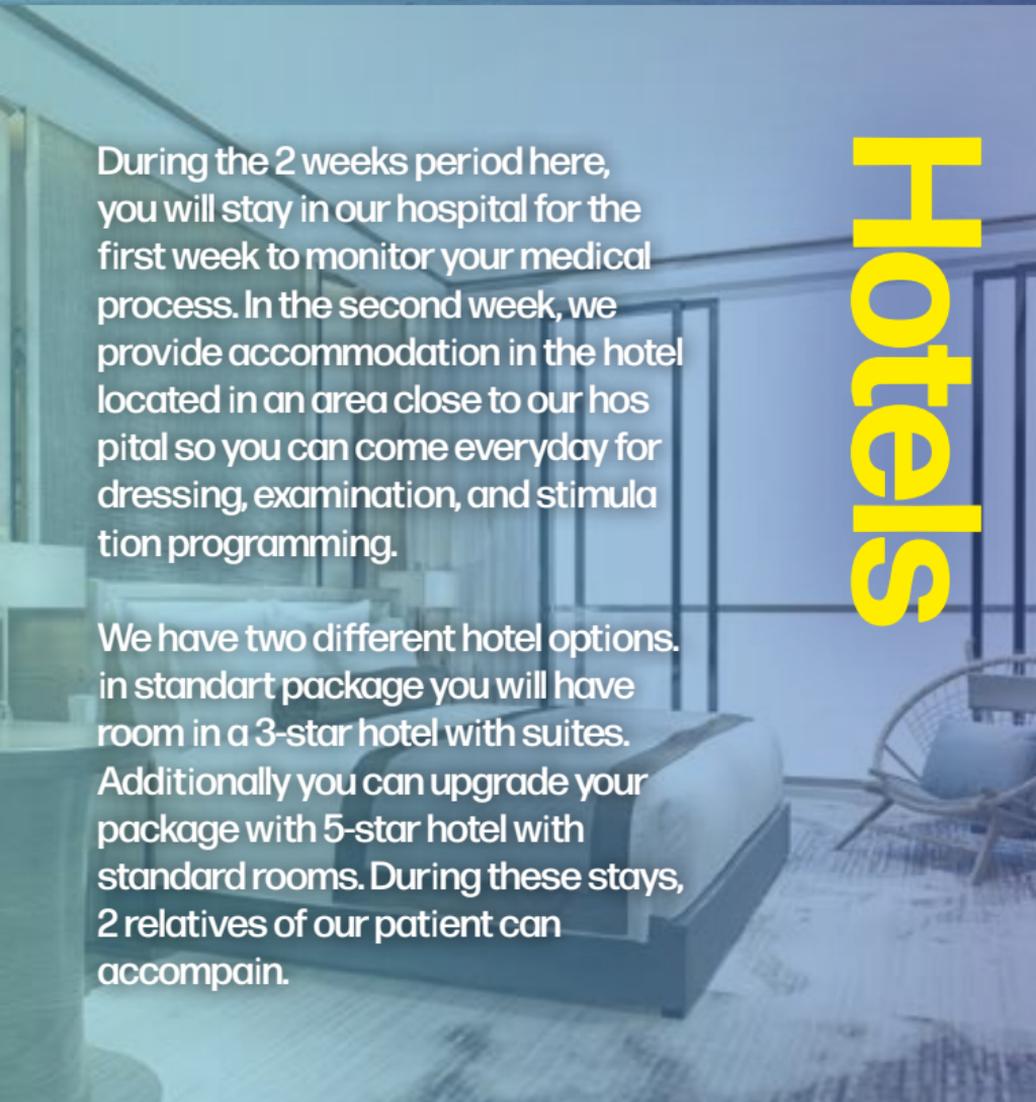
**‘We provide the best transfer and accommodation opportunities for you.’**



# Hotels

During the 2 weeks period here, you will stay in our hospital for the first week to monitor your medical process. In the second week, we provide accommodation in the hotel located in an area close to our hospital so you can come everyday for dressing, examination, and stimulation programming.

We have two different hotel options. In standard package you will have room in a 3-star hotel with suites. Additionally you can upgrade your package with 5-star hotel with standard rooms. During these stays, 2 relatives of our patient can accompany.



# Post operative Rehabilitation

For every patient we provide physical therapy and Psychological support at the hospital and hotel.

Physical therapy is very important for patients who have difficulty in walking or moving for a long time due to their illness.

Physical therapy is applied to correct posture, walking, and muscle imbalance, to increase mobility and endurance. It may include point therapy to reduce stiffness and relieve pain, in addition to strenuous therapy exercise to strengthen the joints, mobilize them, and restore soft tissue.

We also support our patients by psychological evaluation and therapy.

# Food

Our package also includes 3 times meal per day for the patient and 2 relatives, and also we prepare some traditional surprises, and welcoming snacks.

**Our center and our Professor have provided training opportunities on Neuromodulation surgeries to 25 countries named below.**

**Our professor**  
**Assoc.Prof. Dr. Atilla YILMAZ**  
**has contributed to the realization of such surgeries in all these countries.**

- Germany
- Azerbaijan
- United Arab Emirates
- Algeria
- Morocco
- South Africa
- Georgia
- Croatia
- Iraq
- Iran
- Qatar
- Kazakhstan
- Kyrgyzstan
- Libya
- Lebanon
- Egypt
- Mongolia
- Moldova
- Uzbekistan
- Pakistan
- Romania
- Russia
- Saudi Arabia
- Tajikistan
- Jordan

**Our professor**  
**Assoc.Prof. Dr. Atilla YILMAZ** has  
successfully operated more than 500  
patients from 30 different countries in  
terms of neuromodulation surgeries.

- Germany
- Austria
- Azerbaijan
- Bulgaria
- Algeria
- Palestine
- Georgia
- Netherlands
- Iran
- Iraq
- Kazakhstan
- Kyrgyzstan
- Kosovo
- Kuwait
- Turkish Republic  
of Northern Cyprus
- Libya
- Lebanon
- Mongolia
- Nigeria
- Uzbekistan
- Pakistan
- Russia
- Saudi Arabia
- Serbia
- Syria
- Tajikistan
- Tunisia
- Turkmenistan
- Ukraine
- Jordan

# NEUROMODULATION

Nerve

Regulator

Neuromodulation, which literally means regulating the nervous system, consists of 5 different surgeries applied on different diseases.

## Deep Brain Stimulation

Parkinson's  
Dystonia (involuntary movement and contraction)  
Essential Tremor Treatments



## Spinal Cord Stimulation

Diabetic Neuropathy  
Back or Neck Surgery  
Pain Due to Vascular Diseases (Bueger)  
In the treatment of pain (phantom) resulting from the amputation of a certain limb

## Sacral Stimulation (Bladder Stimulation or Hip Stimulation)

Urinary Incontinence, Failure to Urinate, Inability to Urinate, Incomplete Urine Discharge,,  
Frequent urination  
Involuntary incontinence of flatulence  
Interstitial Cystitis, Pelvic Pain, Chronic Constipation  
Neurogenic Bladder Treatments



## Vagus Nerve Stimulation (Epilepsy)

Epilepsy resistant to drug treatment

## Baclofen Pump

In the treatment of involuntary contractions (Spasticity)



**All these Neuromodulation Interventions are successfully applied in our Center.**



neuromedulationcenter



neuromedulationinturkey



NeuromedulationinTurkey



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