WELCOME TO THE
KLINIKUM KARLSBURG HOSPITAL
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Immediately after the end of World War II, a home for people affected by diabetes is created in Karlsburg Castle. The initiator is Gerhardt Katsch (1887-1961), who postulated his "Garzer Theses" for the therapy and rehabilitation of patients with diabetes mellitus already in 1937, and who is considered the founder of diabetology. Until his death, Katsch works in Karlsburg. He lays the foundation for the small town in the vicinity of Greifswald to become a renowned German treatment and research establishment for diabetic disorders.

With the beginning of the year 1994, the Hamburg GROUP OF HOSPITALS DR. GUTH takes over the facility and extends the diabetes hospital by the focus areas of heart surgery and cardiology. Already in October of 1994, the foundation stone for a new building is laid and in 1997, the new building and the complete clinical centre are dedicated.

The GROUP OF HOSPITALS DR. GUTH is a health services provider based in Northern Germany with approximately 800 employees. The company was founded in 1965 by Dr. med. Gerhard Guth. The highly respected "Captain", who always also pursued his medical tasks, developed the philosophy of the group: According to philosophy, patients may expect high medical competence and the most modern technology in a demanding environment and above all, supportive care oriented towards the needs of the patients.

Today, the KLINIKUM KARLSBURG hospital is a renowned facility for cardiovascular disorders and diabetes, as well as an important specialty hospital for diabetes patients with cardiovascular disorders and children and adolescents with diabetes. Per year, approximately 2,500 cardiac and vascular surgeries and more than 5,000 cardiological interventions are performed. At the diabetes hospital, more than 2,000 patients of all ages are treated every year.
INNOVATION

HIGH-TECH MEDICINE
On the fields of cardiovascular medicine and cardiology, scientific progress is impressive. In these disciplines, the KLINIKUM KARLSBURG hospital is among the leading institutions of Northern Germany. Within the field of heart surgery, the most modern surgical methods including minimally invasive procedures are employed. Thus, for example, drug coated stents (implants) of the most recent generation are used, patients with severe congestive heart failure after myocardial infarction are treated with stem cells and patients affected by cardiac arrhythmias are treated with electrotherapeutics and implantable defibrillators. Even with the implantation of aortic valve stents in patients at risk of advanced age, the physicians at the KLINIKUM KARLSBURG hospital achieve great successes.

MODERN SPACE CONCEPT
The KLINIKUM KARLSBURG hospital excels by modern construction and optimised room layout. This well thought-out concept benefits patients in a multitude of ways. Generous glass surfaces create a bright place, bathed in light, and provide for transparency. This ensures a continuous availability and accessibility of the entire hospital staff. Thus, a personal ambience and an atmosphere of ease are created.
Surgical interventions at the heart are a medical challenge. Owing to a comprehensive risk management, the specialised team of the KLINIKUM KARLSBURG hospital succeeds in reducing potential risks to a minimum. Thus, for example, patients receive small bracelets before surgeries, on which the most important personal data are recorded. Particularly impressing is the progress in telemedicine. The monitoring centres allow for - if necessary - recording and analysing the heart rhythms of all 100 heart patients around the clock. During the day, the electronically monitored patient can leave his room nevertheless. A small portable device delivers all the important information to the team of physicians. This way, it is possible to address potential cardiac arrhythmias immediately.

At every time, day or night, experienced anaesthesiologists and nurses are on call, in order to immediately intervene in acute situations. The entire nursing staff of the KLINIKUM KARLSBURG hospital is trained in reanimation.

No patient weakened by illness or surgery is exposed to additional risks. For example, the hygiene management of the hospital, which is developed well above average, ensures that the risk of hospital infections is minimal.
In heart surgery, the focus is on the surgical interventions in cardiac disorders. Illnesses or injuries of the chest are treated in thoracic surgery. In vascular surgery, the specialists predominantly address dilations, stenoses or occlusions, injuries or congenital abnormalities of the blood vessels.

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**HEART SURGERY**
- Coronary bypass surgery including minimally invasive interventions without heart-lung-machine
- Heart valve operations (implantation of an artificial valve or restoration of the function of the native heart valve)
- Implantation of heart valve stents in patients with very high risk for surgery in collaboration with the hospital for cardiology
- Surgical procedures for cardiac insufficiency in cases of extensive scarring of the heart muscle and bulges of the left ventricle
- Surgical and interventional treatment of diseases (laceration, rupture, chronic aneurysm) of the aorta (main body artery)
- Treatment of chronic/paroxysmal atrial fibrillation by intrasurgical atrial ablation
HYBRID SURGERY

Ever since July 2010, the KLINIKUM KARLSBURG hospital owns the most modern heart surgery theatre of Northern Germany. It unites a fully equipped operating room with a heart catheter laboratory and corresponds to highest hygiene standards as a cleanroom. With this, the conditions for the implementation of modern therapeutic procedures are given, which can be employed here by both heart surgeons and cardiologists. This interdisciplinary therapy allows for very exact and patient-friendly therapeutic procedures for the patients, as well as for optimal conditions for the specialists.

The co-ordinated technologies and imaging procedures allow for efficient and simultaneous action in the diagnostic and therapeutic realms. Thus, it becomes possible to offer modern therapies suitable for the individual situation to patients for whom therapy was not possible so far, due to high age or because of numerous concomitant diseases.

INTERVENTIONS IN HYBRID SURGERY

- Implantation of aortic valve stents
  - transapically (via the apex of the heart)
  - transfemorally (via the groin)
- Non-invasive treatment of mitral insufficiency (Mitraclip® procedure)
- Implantation of aortic stents
- Implantation of biventricular pacemakers (resynchronisation therapy)
- Performance of interventional high risk procedures
Interventional radiology is a very novel and progressive specialty. In Germany, it so far represents the therapeutic branch of general radiology. By impressive improvements in imaging procedures, a combination of diagnosis and therapy in only one treatment session is possible nowadays. With interventional radiology, therapeutic procedures are performed under visual control (ultrasound, CT, MRI and angiography of all blood vessels of the body).

Interventional radiology is an interdisciplinary specialty. A close cooperation exists with both cardiology as well as diabetology and vascular surgery.

**SCOPE OF SERVICES**
- Balloon dilation and stent therapy of pelvic and leg arteries (also lower leg arteries)
- Vascular surgery of aneurysms (bulges of the chest artery and the abdominal artery)
- Surgery of occlusions of the peripheral arteries
- Stent therapy of the aorta (main body artery) in all segments
- Creation of dialysis shunts for haemodialysis of patients with kidney failure
- Interventional therapy of vascular diseases of the arteries supplying the brain, kidney arteries, abdominal aorta and the vessels of the leg (PTA and stents)
- Partial prosthetic replacement of the main artery
- Embolisation of varicoceles
- Balloon dilation of kidney artery stenoses
- Kidney artery ablation for the treatment of high blood pressure
This specialty cares for the patients before, during and after surgical procedures. Among other things, this also includes the treatment of pain and dealing with acute situations that are or may become life-threatening. At every time, day or night, experienced anaesthesiologists and nurses are available.

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"There is hardly a surgery, in which monitoring of the patients is so comprehensive and complete as in heart surgery. This makes these complex procedures so safe nowadays. In addition, pain therapy is so far advanced that every patient, even after such large surgeries, can be guaranteed freedom from pain."

Dr. med. Bernd Müllejans

TREATMENT PROCEDURES
- Perioperative anaesthesiological care with innovative, patient-friendly anaesthetic procedures
- Sophisticated intensive care therapy
- Implantation of mechanical cardiac support systems for the short-term and medium-term support with temporary failure of the cardiac pumping function (in collaboration with our hospital for heart surgery)
- Pain therapy
- Emergency medicine
The department of cardiology offers all current diagnostic and therapeutic procedures. In this, we pay a lot of attention to radiation protection during heart catheter examinations. By using the most advanced imaging procedures, coronary stents can be placed with millimetre precision. The examinations are performed using biplane X-ray imaging, the quantity of contrast agent is halved, the kidneys are protected. After the intervention, we usually care for the arterial puncture site with an occlusion system, so that a long and unpleasant time lying down is not needed.

"In the therapy of coronary heart diseases, modern cardiology has gained enormously in competence in the last years. Whether catheter-supported stent therapy or bypass surgery has become a purely technical question."

Prof. Dr. med. Wolfgang Motz

DIAGNOSTIC AND THERAPEUTIC PROCEDURES
• Coronary angiography - imaging of the coronary arteries with contrast agent by means of cardiac catheter
• Computed tomography for the visualisation of coronary plaque
• Intravascular ultrasound (IVUS) for the analysis of the condition of the vascular walls (connective tissue, plaque, necrosis)
• Myocardial biopsy for the clarification of the cause in cardiac insufficiency, for example heart muscle inflammation
• Echocardiography with three-dimensional imaging
• Stress tests for the detection of oxygen deficiency in heart muscle and in cardiovascular performance
• Implantation of drug-coated stents
• Treatment of acute myocardial infarction in 24-hour stand-by service (Chest Pain Unit)
• Catheter treatment of defects of the cardiac septum
The diagnostics and treatment of cardiac arrhythmias is an important focus at the KLINIKUM KARLSBURG hospital. For this reason, an ultramodern electrotherapeutics laboratory with navigation system was set up. It enables a specialised team of physicians to treat patients according to the most modern standard.

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DIAGNOSTIC AND THERAPEUTIC PROCEDURES IN ELECTROTHERAPEUTICS

- Ablation therapy (obliteration therapy by electrical current and cold) of cardiac arrhythmias
- Implantation of defibrillators (ICD) in patients with severe cardiac insufficiency or life-threatening cardiac arrhythmias
- Implantation of cardiac pacemakers that stimulate the left and right ventricle at the same time
- Pacemaker treatment with slow cardiac rhythm or cardiac block
- Cardioversion, electroshock therapy with atrial fibrillation
- Monitoring and adjustment of cardiac pacemakers and ICD systems (if desired, also by telemedicine) in collaboration with a cardiology office in Mecklenburg-Vorpommern
- Preparation for heart transplantation

Dr. med. Peter Szigat
Senior Physician and Head of the Electrotherapeutics Section
It is part of the treatment goals to noticeably improve the quality of life of patients with diabetes. It is necessary to diagnose and treat the frequently occurring diseases of the heart and the blood vessels, including the diabetic foot. The complications typical for diabetes in eyes, teeth, kidneys and nerves are prevented, and a dangerous development already in progress is treated.

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DIAGNOSTIC AND TERAPEUTIC PROCEDURES
• Therapy of acutely or chronically poorly controlled type 1 and type 2 diabetes
• Consultation and support of insulin pump treatment
• Optimal control of the metabolism by dietary adjustment, medical therapy with pills and insulin
• Therapy of diabetes in childhood and adolescence
• Insulin therapy of diabetes during pregnancy
• Patient training and patient motivation
• Training by physiotherapy
• Metabolic control for patients with diabetes already requiring haemodialysis
• Treatment of diabetic neuropathy pain
• Diagnostics and therapy of the diabetic foot syndrome in interdisciplinary co-operation (first certified foot centre for patients with diabetes in Vorpommern)
• Invasive vascular therapy (PTA, stent implantation)
• Comprehensive specialty department cardiovascular diabetology
TREATMENT OF THE DIABETIC FOOT SYNDROME
The so-called diabetic foot is characterised by ulcerations of the feet. Such complications occur in patients with diabetes mellitus who have a neural lesion or blood circulation impairments of the legs. Unfortunately, these ulcers are still the reason why amputations at the legs are so frequently performed in patients with diabetes. By a correct treatment of the foot syndrome, however, the frequency of amputations can clearly be reduced.

The essential thing in diabetic foot therapy is the interdisciplinary treatment, which is warranted in Karlsburg in an exemplary manner. Involved are qualified specialists of different disciplines (angiologists, diabetologists, foot surgeons, vascular surgeons and radiologists), specially trained nurses, a podologist (caretaker of feet) as well as an orthopaedic shoemaker. For this, the specialists come to the patient; transit is avoided.

DIALYSIS PROCEDURES
Our house has five ultramodern dialysis stations available, as well as possibilities of continuous kidney replacement therapy for patients with chronic and acute kidney failure. Aside from the continuous procedures predominantly used for intensive care medicine, more than 1,500 haemodialysis treatments are performed in in-patients every year.

In Karlsburg, part of the comprehensive training programme offered to patients with diabetes (nutrition counselling, motivation class, social counselling) are also athletic activities.
“An optimal metabolic control is crucial for the later life and the future of a child or adolescent with diabetes.”

Prof. Dr. med. Wolfgang Kerner

The treatment of diabetes in children and adolescents has a very long tradition in Karlsburg. Especially for the development and the later life of a child or adolescent suffering from diabetes, optimal metabolic control is crucial. For this responsible purpose, the hospital has been recognised by the German diabetes society.

A building of modern design is specially equipped to suit the needs and the care of children. This includes bright common areas and also a comfortable play room. Since parents of young children play an essential role in the treatment of diabetes, they can accompany their youngest ones to the specialty hospital. Accommodation in two-bed rooms is possible.

Karlsburg offers optimal accommodation and care appropriate for children even outside of school holidays. Around the clock, a highly motivated team of paediatric diabetologists, diabetes counsellors, nutrition counsellors, psychologists and educators is available.

In the paediatric hospital, approximately 200 children are treated as in-patients every year. Many more children and adolescents come regularly to the paediatric diabetology outpatient ward.
RECOGNISED SPECIALTY HOSPITAL

The KLINIKUM KARLSBURG hospital has been recognised by the German diabetes society as a treatment facility for type 1 diabetes, type 2 diabetes and diabetes in children and adolescents. Moreover, the hospital has been certified as a foot care centre for patients with diabetes. These recognitions presuppose proof of a high standard of treatment.

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SMOKING CESSATION

Smoking is one of the biggest risk factors for diseases of the cardiovascular system. Especially patients with diabetes considerably increase their probability for a myocardial infarction or a stroke by nicotine consumption. However, for many people it is not easy to stop smoking on their own.

At the KLINIKUM KARLSBURG hospital, you have the chance to free yourself from your nicotine dependence with professional medical guidance and in a group of like-minded people, step by step. Together, we support you and encourage you towards a life without smokes.

By the way: The KLINIKUM KARLSBURG hospital is a member certified in silver in the German network for tobacco-free health care services and offers extensive opportunities to patients, employees, family members and guests all around smoking cessation. The smoking cessation classes are supported as preventive medicine by the health insurance companies.
Scientific and clinical research could demonstrate a close relationship between diabetes and cardiovascular diseases in the last years, especially concerning the coronary vessels. Sixty per cent of the patients examined in heart catheter laboratories have diabetes or precursors of diabetes. Diabetes mellitus (type 2), therefore, is considered a vascular disorder by now.

Thus, not only the therapy of the cardiologic problems, control of the blood fat values and the control of the blood pressure, but also the diagnostics and treatment of the sugar metabolism are essential.

Also further risk factors such as obesity, impaired kidney function, a poor diet and exercise behaviour have to be addressed. Our cardiovascular diabetology performs the diagnostics and therapy of heart diseases in patients with diabetes, including surgical procedures such as bypass surgeries. This interdisciplinary treatment concept of the KLINIKUM KARLSBURG hospital is supported by the foundation "Der herzkranke Diabetiker [the patient with diabetes and cardiovascular disease]".
 Aside from an individualised therapy, physical and emotional well-being are preconditions for a rapidly progressing recovery. Friendly and cordial manners are, therefore, cultivated by all of our co-workers. Our nursing staff is accessible to you 24 hours a day and cares about your well-being very kindly.

We would like you to feel at home with us. We thus provide you with comfortable accommodations, mostly in two-bed rooms, which are equipped with TV sets and telephones. So that you can have your dearest ones around you at any time during your hospital stay, we have beautifully furnished guest rooms ready for family members.

For our patients and their family members, our hospital chaplain Pastor Britta Bartels is available at any time.

Our care also extends to the stomach. Our culinary team spoils you with healthy, varied and good-tasting meals. Fruit and vegetables come from local farms, all meals are prepared fresh and with great care. In many cases, our kitchen is also happy to grant a special wish.
KLINIKUM KARLSBURG
Herz- und Diabeteszentrum Mecklenburg-Vorpommern
The KLINIKUM KARLSBURG hospital is located between Greifswald and Anklam along the B109. Coming from Hamburg, Lübeck and Rostock, you reach us via the A20 in the eastward direction (towards Stettin). Take the exit Gützkow/Wolgast/Usedom and drive along B111 up to the intersection with B109. Here, you turn right and reach your destination after a few kilometres. Simply follow the signs "KLINIKUM KARLSBURG". Parking lots are on the far side of the gate.

For a journey by train, you take the train to Karlsburg train station. After approximately 15 minutes on foot, you reach the hospital. In order to get from the main parking lot to the central reception area, you take the path on the right-hand side. At the reception area, you are cordially received and informed about all further steps. For emergencies, a helicopter landing pad is available on the hospital grounds. At any time, day or night, patients can be transferred by air to the KLINIKUM KARLSBURG hospital.