## Table of Contents

- Department of Neurosurgery ................................................................. 88
- Department of Nuclear Medicine ......................................................... 90
- Department of Ophthalmology .......................................................... 92
- Department of Orthopedic and Trauma Surgery .................................. 94
- Department of Orthopedic and Trauma Surgery: Division of Orthopedic Oncology and Rheumatology ...... 96
- Department of Orthopedic and Trauma Surgery: Division of Hand-, Plastic and Microsurgery ............... 98
- Department of Orthodontics ............................................................... 100
- Department of Otolaryngology, Head, and Neck Surgery ..................... 102
- Institute of Pathology .......................................................................... 104
- Institute of Pathology: Division of Hematopathology and Lymph Node Registry ................................. 106
- Department of Pediatric and Adolescent Medicine II ........................ 110
- Department of Pediatric Cardiology .................................................... 112
- Department of Prosthodontics, Propaediatrics, and Dental Materials ...... 114
- Department of Radiation Oncology ..................................................... 116
- Department of Radiology and Neuroradiology .................................. 118
- Institute of Toxicology and Pharmacology for Natural Scientists ............. 120
- Department of Urology and Pediatric Urology .................................. 122

---

## Table of Contents

<table>
<thead>
<tr>
<th>Departments and Institutes Campus Lübeck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Anesthesiology ............ 124</td>
</tr>
<tr>
<td>Department of Cardiac and Thoracic Vascular Surgery .................. 126</td>
</tr>
<tr>
<td>Department of Dermatology, Allergy, and Venereology ................. 128</td>
</tr>
<tr>
<td>Department of Ear, Nose, and Throat Medicine ......................... 130</td>
</tr>
<tr>
<td>- Division of Phoniatrics and Pediatric Audiology ...................... 132</td>
</tr>
<tr>
<td>Institute of Experimental and Clinical Pharmacology and Toxicology 134</td>
</tr>
<tr>
<td>Department of Gynecology and Obstetrics .......................... 136</td>
</tr>
<tr>
<td>- Division of Gynecological Endocrinology and Reproductive Medicine 138</td>
</tr>
<tr>
<td>Department of Hematology, Oncology, and Stem Cell Transplantation 140</td>
</tr>
<tr>
<td>Department of Infectious Diseases and Microbiology .................. 142</td>
</tr>
<tr>
<td>Department of Maxillofacial Surgery ..................... 144</td>
</tr>
<tr>
<td>Institute for Medical Biometry and Statistics ....................... 146</td>
</tr>
<tr>
<td>I. Department of Medicine – Internal Medicine .................. 148</td>
</tr>
<tr>
<td>II. Department of Medicine – Cardiology, Angiology, and Intensive Care Medicine 152</td>
</tr>
<tr>
<td>- Division of Rhythmology ............................. 154</td>
</tr>
<tr>
<td>III. Department of Medicine – Pulmonology .......................... 156</td>
</tr>
<tr>
<td>Institute of Molecular Medicine ..................... 158</td>
</tr>
<tr>
<td>Department of Neurology .................................................. 160</td>
</tr>
<tr>
<td>Institute of Neurosurgery ................................. 162</td>
</tr>
</tbody>
</table>
## Table of Contents

<table>
<thead>
<tr>
<th>Department of Neurosurgery</th>
<th>.................................................................</th>
<th>164</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute of Nutritional Medicine</td>
<td>..................................................................................</td>
<td>166</td>
</tr>
<tr>
<td>Department of Ophthalmology</td>
<td>..................................................................................</td>
<td>168</td>
</tr>
<tr>
<td>Department of Orthopedics and Trauma Surgery: Division of Orthopedics</td>
<td>.................................................................</td>
<td>170</td>
</tr>
<tr>
<td>Department of Orthopedics and Trauma Surgery: Division of Trauma Surgery</td>
<td>.................................................................</td>
<td>172</td>
</tr>
<tr>
<td>Institute of Pathology</td>
<td>..................................................................................</td>
<td>174</td>
</tr>
<tr>
<td>Department of Pediatric and Adolescent Medicine</td>
<td>.................................................................</td>
<td>176</td>
</tr>
<tr>
<td>Department of Pediatric and Adolescent Medicine: Division of Pediatric Pulmonology and Allergy</td>
<td>..................................................................................</td>
<td>178</td>
</tr>
<tr>
<td>Department of Pediatric and Adolescent Medicine: Division of Pediatric Endocrinology and Diabetes</td>
<td>.................................................................</td>
<td>180</td>
</tr>
<tr>
<td>Department of Pediatric Surgery</td>
<td>..................................................................................</td>
<td>182</td>
</tr>
<tr>
<td>Department of Plastic and Hand Surgery/Blunt Intensive Care Unit</td>
<td>..................................................................................</td>
<td>184</td>
</tr>
<tr>
<td>Department of Radiology and Nuclear Medicine</td>
<td>..................................................................................</td>
<td>186</td>
</tr>
<tr>
<td>Department of Radiation Oncology</td>
<td>..................................................................................</td>
<td>188</td>
</tr>
<tr>
<td>Department of Rheumatology and Clinical Immunology</td>
<td>.................................................................</td>
<td>190</td>
</tr>
<tr>
<td>Institute of Social Medicine</td>
<td>..................................................................................</td>
<td>192</td>
</tr>
<tr>
<td>Department of Surgery</td>
<td>..................................................................................</td>
<td>194</td>
</tr>
<tr>
<td>Institute of Systemic Inflammation Research (ISEF)</td>
<td>..................................................................................</td>
<td>198</td>
</tr>
<tr>
<td>Department of Urology</td>
<td>..................................................................................</td>
<td>200</td>
</tr>
</tbody>
</table>

## Cross Campus Centers

| Institute of Clinical Chemistry | ................................................................. | 202 |
| Central Unit State Medical Analysis Laboratory/Department for Hospital and Environmental Hygiene | ................................................................. | 204 |
| Institute of Human Genetics | .................................................................................. | 206 |
| Institute of Transfusion Medicine | .................................................................................. | 208 |
| Department of Physiotherapy (Occupational Therapy and Speech Therapy) | ................................................................. | 210 |
| Imprint | .................................................................................. | 213 |
Dear readers,

the University Medical Center of the State of Schleswig-Holstein (UKSH) with locations in Kiel and Lübeck, on the northern German Baltic Sea Coast, offers medical care of the highest standard. With more than 81 clinics and institutes, and with more than 13,500 employees, including 2,000 physicians, scientists, researchers, and a medical staff of 3,600, we treat nearly 450,000 outpatients and inpatients, annually. We ensure not only maximum medical care for our National but also for our international Patients. Our medical staff and scientists are well known internationally for their leadership in medical care as well as excellent research results.

The UKSH guarantees highly individualized as well as interdisciplinary diagnostics and therapy. Research results are passed directly to our patients. It is our responsibility to provide our patients with the utmost quality of treatment as well as providing them with new diagnostic and therapeutic options.

The UKSH is characterized by a cosmopolitan, tolerant and multicultural environment. Our colleagues and staff derive from more than 112 different countries.

This cosmopolitan environment insures our strengths in the international world of expertise. Specialisation and further training are part of their professional lives. One central focus of our maximum care is also to provide our international Patients outstanding services and medical care, which is the core mission of the International Department with its multilingual team.

With the following pages, we would like to introduce to you our wide range of excellent medical services, where superb medicine and teaching is brought more personal and faster to our International Patients.

Sincerely yours,

Prof. Dr. Jens Scholz
CEO, Universitätsklinikum Schleswig-Holstein
UKSH International Services

The UKSH International Department provides special services for international patients. A multilingual team informs patients of the wide range of medical services provided in our clinics and takes care of them. We are here to prepare the individual patient’s visit from A to Z, and upon arrival, take care of each patient in the best possible way. Our range of medical services are targeted to the needs of our patients – these include outpatient consultations, medical checkups, and inpatient admission. Your health is our concern, feel free to contact us. We are happy to answer any questions you may have.

Prior to arrival

Your inquiry – First we will need a current medical report with full details of your medical problem in English or German.

Our offer – After carefully evaluating your medical report, our medical team will prepare an individual and comprehensive proposal outlining the type of the treatment, the expected duration of the treatment, as well as the costs of the treatment.

Costs – Once you have agreed to the treatment at UKSH, the costs of your treatment as outlined in the cost estimate must be paid in full before your appointment has been arranged.

Appointment – As soon as we have received the costs of our offer, we will set up an appointment for you with the proper specialist.

Visa – We will forward a letter of acknowledgment of treatment to you for presentation when filing for a visa.

During your stay in UKSH, Germany

Arrival – If desired, the International Department staff will arrange transportation for you to and from the airport. This service is also provided for ferry or train arrivals.

Interpreters – If needed, interpreters will be available to help you to ensure smooth and accurate communication with the physicians and health care staff.

Accompanying person – We are happy to arrange accommodations and, if desired, excursions for people accompanying you.

After your departure

Invoice – Once treatment is over and approximately eight weeks after the conclusion of the treatment, we will send you or your health insurance provider an itemized invoice. Included will be the treatments and services provided during your stay. If necessary, we will arrange a follow-up appointment for you.
Facts and Figures

<table>
<thead>
<tr>
<th>Facts and Figures</th>
</tr>
</thead>
</table>

**Births/Infants**

<table>
<thead>
<tr>
<th>Campus Kiel</th>
<th>Campus Lübeck</th>
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</thead>
<tbody>
<tr>
<td>3,349/3,505</td>
<td>1,667/1,745</td>
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</tbody>
</table>

*And the UKSH had the highest birth rate in 15 years

**Emergencies**

<table>
<thead>
<tr>
<th>Campus Kiel</th>
<th>Campus Lübeck</th>
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<tbody>
<tr>
<td>4,738</td>
<td>5,432</td>
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</table>

**25% of all hospital patients in Schleswig-Holstein**

**Beds**

<table>
<thead>
<tr>
<th>Campus Kiel</th>
<th>Campus Lübeck</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,321</td>
<td>1,200</td>
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</table>

**Radiology Centre**

<table>
<thead>
<tr>
<th>Campus Kiel</th>
<th>Campus Lübeck</th>
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<tbody>
<tr>
<td>164</td>
<td>136</td>
</tr>
</tbody>
</table>

**Patients in cases in 2019**

<table>
<thead>
<tr>
<th>Treatment cases outpatient</th>
<th>Campus Kiel</th>
<th>Campus Lübeck</th>
</tr>
</thead>
<tbody>
<tr>
<td>187,164</td>
<td>150,855</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Inpatient treatment cases</th>
<th>Campus Kiel</th>
<th>Campus Lübeck</th>
<th>Radiology Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>51,366</td>
<td>53,538</td>
<td>1,835</td>
<td></td>
</tr>
</tbody>
</table>
The Medical Faculty of the Christian-Albrechts-University of Kiel and the Medical Section of the University of Lübeck are responsible for research and teaching university medicine in Schleswig-Holstein. In cooperation with the universities, the UKSH provides the clinical foundations for research and teaching. The close interaction of interdisciplinary research and patient care enables us to quickly transfer current research findings into modern diagnostic and therapeutic procedures, for the benefit of our patients.

With inflammation research, neurology and oncology, the Medical Faculty of Kiel has three established scientific profile areas, which are integrated into the overarching research vision „Digital Medicine - Recognition, Understanding, and Healing“. These have been in place since 2016. The main research areas of the Medical Section at the University of Lübeck are „Infection and Inflammation“, „Brain, Hormones, Behavior“, „Medical Genetics“, „Translational Oncology“ as well as „Population Medicine and Health Services Research. Since 2007, the Schleswig-Holstein Cluster of Excellence „Inflammation at Interfaces“ with its more than 300 members has been researching the causes of chronic inflammatory diseases of barrier organs such as skin, lungs, and intestines. At the end of September 2018, the research association received a positive vote of the German Research Foundation for a third funding period within the excellence strategy of the federal and state governments, as „Precision Medicine in Chronic Inflammation“. UKSH physicians are involved in four German Centers for Health Research funded by the Federal Ministry of Education and Research: German Centre for Cardiovascular Research (Kiel, Lübeck in cooperation with Hamburg), German Center for Lung Research (Kiel, Lübeck in cooperation with the Borstel Research Center) and German Center for Infection Research (Lübeck in cooperation with Hamburg and the Borstel Research Center). The University of Lübeck has also been a partner in the German Center for Diabetes Research since 2015. The results of interdisciplinary oncological research and therapy are also incorporated into the organ cancer centers and oncological centers of the UKSH, which are certified by the German Cancer Society. For students of human medicine, dentistry, and nursing science, the medical departments of the Universities of Kiel and Lübeck offer excellent teaching quality.
Hospital of the Future

UKSH is fit for the future. With its new central clinic buildings, opening in 2019, UKSH is one of the most modern medical centers in Europe. The impressive new buildings will meet the highest standards of top university medicine. In order to effectively diagnose and treat increasingly complex disease states, the disciplines that belong together for patient care are now located in close proximity to each other. Patients can expect a light-filled architecture that supports recovery processes - with the shortest routes to diagnostics and therapy, innovative service technologies and a high level of comfort.

Digital service technologies

UKSH plays a pioneering role in digitization in the German healthcare system. In the company study "Digital Champions 2021 - Companies with a Future", UKSH is one of the three best digitized hospitals in Germany and thus achieves the top position in the north. In the new buildings, UKSH’s digitization strategy was consistently implemented to make outpatient and inpatient patient care even more effective - in an IT network that meets the highest security standards.

In the same year, the news magazine “Focus” ranked UKSH among the top 3 hospitals in Germany.

Patients experience the digital services in a variety of ways: a UKSH navigation app for iOS and Android guides users to their appointment location at UKSH - even within the hospital building. At self-check-in terminals in the hospital’s admission areas, automatic registration via health insurance card takes just a few minutes. In the hospital room, patients have access to the UKSH infotainment system with TV, Internet, e-paper and films in many languages via a tablet PC at their bedside. Clinical staff are supported by the bedside terminals during mobile rounds to call up findings and discuss treatment with the patient. Location-based services allow patients to move freely around the hospital buildings, with permanent monitoring of vital signs. Should an emergency occur, the patient can be precisely located. UKSH is also continuously developing apps and offering video consultations for telemedical treatment from home.

Patient portal “My UKSH”

Every patient at UKSH is provided with the digital patient portal “My UKSH”. The free multilingual service makes it possible to view and securely manage documents created during the hospital stay, such as doctor’s...
letters and medication plans as well as X-ray images, from home or on a cell phone. Patients are already given access to “My UKSH” when they make an appoint- ment. The portal automatically sends them question-naires for the planned hospital stay, which patients can fill out online and send electronically to UKSH. Appointment management is also included - so pati- ents can view any follow-up appointments or request them themselves online. Those who wish can make the health data in “My UKSH” available to their doctor in private practice who will take over further treatment.

Digital medicine
The experts at UKSH use the possibilities of digital technologies to gain new insights and make precise- ly tailored diagnostic and therapeutic decisions. The examples from clinical practice are numerous: With the help of augmented reality and robotic navigation, surgi- cal techniques are improved. Digital and AI-supported endoscopic procedures make it possible to detect tissue changes even more precisely and earlier. Neurosurgeons use a mobile Computer-Tomograph with navigation software for highly precise and fast intraoperative image control. Cardiac surgeons are developing bio- bypasses from the 3D printer. In dermatology, a body scanner supports early melanoma detection. Tumor pa- tients benefit from highly focused ultrasound. Critically located tumors are treated with robotic high-precision radiation. With new application, the chances of cur- ring even rare, severe and chronic diseases grow. UKSH is pursuing the goal of expanding the digital networking of medicine in the north and bringing new methods of artificial intelligence safely into clinical application - for the benefit of patients. The experts are also working on this in large collaborative projects, funded by the Federal Ministry of Education and Research (BMBF) and the Federal Ministry for Economic Affairs and Energy (BMWi). Many digital innovations at UKSH take place in the background. The automated unit-dose system, for example, guarantees that all medicines are compiled by the hospital pharmacy for individual patients, packaged and delivered directly to the wards. The system’s con- nection to prescription software checks the medication plan for interactions. In the reprocessing unit for medi- cal devices, UKSH relies on fully automated storage in the sterilization department - a first. Operating theater instruments and materials are assembled by autonom- ously operating robots on so-called trolleys according to the specific use and subject.
Discover Schleswig-Holstein

The “State between the Oceans” is located in Northern Germany. With its capital Kiel and the old Hanseatic city Lübeck, it represents the gateway to Scandinavia and the Baltic states.

Schleswig-Holstein offers many outdoor leisure activities. There are endless beaches which are usually lined up with beach baskets (Strandkoerbe), and special beach chairs, to protect our guests from the fresh wind in the North. There are numerous high class Golf courses with fabulous views. Also available are horse riding, breeding as well as hunting, which are some of the most popular hobbies for the natives.

Schleswig-Holstein is the northernmost part of Germany and hosts the world famous “Schleswig-Holstein Music Festival”. Founded by Leonard Bernstein who conducted several concerts in Schleswig-Holstein, the festival takes place in the summer months. Internationally known artists, musicians, conductors and actors present their performing talents in picturesque surroundings like ancient barns, castles, or manor houses.
Campus Kiel

The university hospital is located in the vicinity of the old town center of Kiel on the western side of Kiel Bay on the Baltic Sea. Kiel is the host of the world’s biggest sailing event, Kiel Week (Kieler Woche). In the last week of June world famous sailors are welcomed in town.

The hospital with its breathtaking views over the quayside promenade and the Kiel Bay is surrounded by a beautiful garden and park district including the “Old Botanic Garden” with its unique exotic old trees. The city center is within walking distance of the hospital and offers a wide selection of fine restaurants and shopping facilities. From here, you can reach Norway or Sweden, with luxurious ferries, in just a few hours.
Only a few minutes from the center of Lübeck is the idyllic park where the University Hospital is located. Historical buildings surround the largest building in Schleswig-Holstein, the modern Central Clinic. Lübeck, an old Hanseatic city, is a beautiful and picturesque historical place. It is the home of famous German Nobel Prize winners Thomas Mann and Willy Brandt.

Visitors can expect a diverse cultural life with exhibitions and music. Old houses and Lübeck’s famous 7-tower silhouettes of monumental churches characterize the image of the city center, which is recognized as a Unesco World Heritage Site. From here you can easily reach Hamburg or take the ferry to Sweden, Finland and the Baltic States. Lübeck also has a rapidly growing regional airport.
Department of Anesthesiology and Surgical Intensive Care

Emphases in Patient Care
• All modern anesthesia procedures (24,000 narcoses per year, including high-risk patients and transplant emphasis), supported by invasive and non-invasive monitoring procedures (transesophageal echocardiography, neuromonitoring, etc)
• Surgical intensive care (about 3,000 patients per year), including treatment of severe injuries
• Sepsis Center, with special respiratory therapy and complex organ replacement procedures
• Emergency and acute medicine, with ground and air transport for Kiel and surrounding areas, including a mobile intensive care unit for trans-regional patients
• Inpatient and outpatient Pain Palliative care (including interdisciplinary pain and palliative care center with facilities for invasive multimodal diagnostics and treatment of chronic pain) with approximately 3,000 patients per year
• 24-hour acute pain therapy service with specially qualified Anesthesiologists
• Inner hospital-emergency management for the entire Kiel campus
• Outpatient Anesthesiology

Emphases in Research
• Clinical research: Multicenter studies, clinical drug trials, application studies for new anesthetics (Xenon, etc.), invasive and noninvasive hemodynamic monitoring
• Experimental research: Molecular mechanisms and molecular biological basic research in Anesthesia, Intensive Care and Emergency Medicine, development of innovative ventilation techniques and novel treatment approaches in Sepsis, functional imaging of the Lungs Shock and resuscitation research in animal models
• Perioperative care research: Patient risk management, patient surveys, process reorganization, surgical management, cost and revenue calculations

Emphases in Education
• Anesthesiology and Operative Intensive Care
  • Interdisciplinary courses: Emergency Medicine, Health Economics, Influenza Disease, Ethics
  • Elective courses: Pain, Neuromuscular system
• Skills lab: interdisciplinary examination course
• Simulator training for the training of standardized treatment procedures (algorithms) for complex life-threatening situations

Additional Information/Services
• Additional courses: “Specialized Pain Therapy”, “Chief Emergency Doctor”, “Palliative Medicine” and “Transesophageal Echocardiography"
• Organization of an annual trans-regional AINS conference
• Weekly training events with designated external speakers (in cooperation with the academic teaching hospitals of Schleswig-Holstein)

Contact
UKSH International
+49 431 500-10730
international@uksh.de
www.uksh.de/international_department/en

Universitätsklinikum Schleswig-Holstein
Dept. of Anesthesiology and Surgical Intensive Care
Acting Director
Prof. Dr. Markus Steinfath

Campus Kiel
Department of Applied Cellular Medicine

Emphases in Patient Care

• Anti-Inflammatory treatment concepts (pH-balancing Intravenous Infusions)
• Balance of the metabolome (sugars, carbohydrates, fats and proteins)
• Balance of the Microbiome (Gut, Lung, and Skin)
• Hormone replacement therapy with bioidentical hormones
• Anti-Oxidant treatments
• Heavy metal detoxification
• Complimentary treatments for patients suffering from adverse effects due to ongoing Allopathic Medications

Emphases in Research

• It’s major task is the launch of clinically conducted trials in order to test and validate cellular products for the treatment of chronic inflammatory diseases.
• A first indication which will be tested in a multicentre clinical trial is the efficacy and safety of anti-inflammatory, regulatory macrophages for the treatment of advanced diabetic ulcers and ischemic limb diseases

Additional Information/Services

• The Clinic of Applied Cellular Medicine was established to bridge the gap between academic research, the development of new innovative treatment concepts in the field of immunotherapy and the translation of these concepts into clinical application.
• Monitoring of the patient’s proteomic parameters which allows to customize treatment regiments to a personalized individual level

Contact
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international@uksh.de
www.uksh.de/international_department/en
Emphases in Patient Care

- Coronary surgery: - Complex Aneurysm Revascularization - Minimally invasive bypass surgery
- Heart Valve surgery: - Complicated Heart Valve reconstruction - Minimally invasive Heart Valve Surgery
- Aortic surgery: - Complex surgery for Aneurysms and Dissections - Aortic Valve reconstruction
- Arrhythmia surgery: - MAbE procedures for Atrial Fibrillation - Implantation of Cardiac Pacemakers and Defibrillators
- Transplant surgery: - Heart, Lung, and Heart-Lung Transplants
- Congenital Heart Defect surgery: - Operation of complex malformations of the heart and the proximal cardiac - Blood vessels from the neonatal period
- Vascular surgery: - Complex Aneurysm Surgery - Endoluminal Aortic Implants

Emphases in Research

- Endovascular Cardiac Valve replacement - Minimally invasive Coronary Surgery - Acute Myocardial Infarction - Atrial fibrillation - Cardiac Surgery Intensive Care - Terminal Heart Failure - Endovascular treatment of Aortic Aneurysms - Neangiogenesis using stem cells - Biological Bypass using tissue engineering

Emphases in Education

- Lectures
- Bedside teaching
- Supervision of interns
- Practical training year
- Preclinical and clinical skills lab

Additional Information/Services

- Only medical center in Schleswig-Holstein which performs thoracic transplant and pediatric cardiac surgery

Department of Cardiac and Vascular Surgery

Emphases in Patient Care

- Coronary surgery: - Complex Aneurysm Revascularization - Minimally invasive bypass surgery
- Heart Valve surgery: - Complicated Heart Valve reconstruction - Minimally invasive Heart Valve Surgery
- Aortic surgery: - Complex surgery for Aneurysms and Dissections - Aortic Valve reconstruction
- Arrhythmia surgery: - MAbE procedures for Atrial Fibrillation - Implantation of Cardiac Pacemakers and Defibrillators
- Transplant surgery: - Heart, Lung, and Heart-Lung Transplants
- Congenital Heart Defect surgery: - Operation of complex malformations of the heart and the proximal cardiac - Blood vessels from the neonatal period
- Vascular surgery: - Complex Aneurysm Surgery - Endoluminal Aortic Implants

Emphases in Research

- Endovascular Cardiac Valve replacement - Minimally invasive Coronary Surgery - Acute Myocardial Infarction - Atrial fibrillation - Cardiac Surgery Intensive Care - Terminal Heart Failure - Endovascular treatment of Aortic Aneurysms - Neangiogenesis using stem cells - Biological Bypass using tissue engineering

Emphases in Education

- Lectures
- Bedside teaching
- Supervision of interns
- Practical training year
- Preclinical and clinical skills lab

Additional Information/Services

- Only medical center in Schleswig-Holstein which performs thoracic transplant and pediatric cardiac surgery
Institute of Clinical Molecular Biology

Emphases in Patient Care
• Clinical study center for Chronic Inflammatory Bowel disease (together with head of the Department of General Internal Medicine)
• Priority care of patients with bowel diseases
• Gastroenterology

Emphases in Research
• Genetic causes and molecular Pathophysiology of Chronic Inflammatory Barrier Disease, Gallstone Disease, Colon CA, Varices, and longevity
• Operation of the national population-based biobank “popgen”
• “Next generation” ultra-high-throughput sequencing
• Genotyping platform in the National Genome Research Network
• Focus on “environmental health” with investigation of microbial interactions on barrier organs
• Clinical study center for Chronic Inflammatory Bowel Diseases (together with section head of the Department of General Internal Medicine)

Emphases in Education
• Organization of the compulsory elective course “Genetic Basis for Diseases of Civilization”
• Involvement in Biochemistry courses and the teaching of the graduate school

Additional Information/Services
• Networking of patient-oriented research and patient care
• Excellence Cluster “Inflammation at Interfaces”

Contact
UKSH International
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international@uksh.de
www.uksh.de/international_department/en
Department of Conservative Dentistry and Periodontology

Emphases in Patient Care

• All types of direct and indirect restorations
• Highly aesthetic composite restorations
• Minimally invasive approach
• Caries minimization technique
• Caries risk reduction and monitoring
• All types manual and power driven root canal debridement
• Lateral and vertical condensation methods
• Removal of fractured instruments
• Closure of perforations with MTA
• All preventive and therapeutic measures in the deciduous and mixed dentition
• All non-surgical and surgical techniques for root debridement with manual and power driven instruments
• Restorative and regenerative therapies
• Long-term supporting therapy

• Special focuses:
  – Preservation of natural tooth structure
  – Prevention of secondary decay
  – Therapy with surgical microscopes
  – Severe Periodontitis

Emphases in Research

• Prevention of caries
• Analysis of Intracanalicular Biofilms in success and failure
• Psychological concepts for guidance in pediatric dentistry
• Long-term outcome of Periodontal therapy
• Etiology and Pathogenesis of aggressive and chronic Periodontitis
• Prevention of Periodontitis
• Interactions between Periodontal and systemic health
Department of Dental, Oral and Maxillofacial Surgery

Emphases in Patient Care
- Cleft Lip, Palate, and Infraorbital Malformation surgery
- Center for skull base diseases, including the surgical treatment of Craniosynostosis
- Clinical center for reconstructive surgery and tissue engineering
- Facial plastic surgery
- Craniosynovial traumaology
- Orthodontic surgery
- Pro-Prosthetic surgery, Dental implantology
- Maxillofacial rehabilitation and Epithetic rehabilitation
- Surgery of the Temporomandibular Joint
- Oncology
- Surgery of malformations
- Treatment of inflammations by dental surgery
- Treatment of Maxillofacial cancer
- Treatment of Maxillofacial injuries and reconstructive surgery

Emphases in Research
- Tissue engineering and gene therapy with Osteogenic protein-1 tissue engineering
- Stem cell therapy with Maxillary defects, Collagen research, Isolation and Cloning of more highly efficient, Archaic Antimicrobial Peptides (highly-funded projects)
- Company funded biomaterials research: Special labs for tumour diagnostics
- Special labs for Ossesous Biology

Emphases in Education
- Education in Dentistry and Medicine, including lectures, seminars and practical training
- Interactive small group bedside training
- Complete surgical curriculum for dental licensing
- Cooperation with the faculty of medicine
- Postgraduate courses of study for dental medicine and dental implantology
- Postgraduate master’s courses of study (MASDIER)

Additional Information/Services
- The department is the only one in Schleswig-Holstein teaching Dental and Medical students
- The Department of Maxillofacial Surgery of Kiel (MKG) covers the whole scope of Maxillofacial surgery, including Plastic, Reconstructive and Aesthetic surgery
- Received several teaching awards
Department of Dermatology, Venereology and Allergology

Emphases in Patient Care
• Dermato-oncology
• Dermatological surgery
• Chronic inflammatory skin diseases (Psoriasis, Atopic Dermatitis, Autoimmune diseases)
• Skin ulcers
• Allergies and environmental medicine
• Dermatopathology
• Mycology
• Photophysics and Photodiagnostics
• Photopheresis
• Skin infections
• Phlebology
• Sexually transmitted diseases

Emphases in Research
• Basic research: Photobiology and photocarcinogenesis, Inflammation and antimicrobial skin function, Genetics of Psoriasis and Atopic dermatitis, Protease inhibitors, Mycoses, Skin barrier function
• Clinical research: cutaneous lymphoma, Melanoma, Poirtiace, Atopic dermatitis, Wound care, Phototherapy and Photodynamic therapy, Allergies, Mycoses, Biology of skin infections

Emphases in Education
• surgical dermatology, dermatopathology
• Clinical dermatology
• Dermato-oncology
• Allergology/environmental medicine
• Bedside teaching
• Genetics and epidemiology of skin diseases

Additional Information/Services
• Leading German clinical trial center for dermato-oncology and inflammatory Diseases
Department of Diagnostic Radiology

Emphases in Patient Care
• Intimately involved in the treatment of patients by means of image-guided diagnostic and therapeutic measures
• Non-invasive and invasive diagnostic, and therapeutic radiology of all organs and body regions for all clinicians of the Kiel campus Campus Kiel 24 hours a day (X-ray, ultrasound, CT, MRI, DSA)
• Special Radiological services for external referring physicians
• Interventional Radiology (for example PTA and stent application for all vascular territories. Ablative and Thermic Aortic Prosthesis Transplants, TIPS, Myomectomy, Tumor Embolization, Chemoembolization, Restoration of Hemodialysis shunts, RF ablation of tumors (Liver, Lung, Kidney, Skeleton), PCI, Drainage, Organ Punctures and Biopsies, Dacryocystography and Dacryocystoplasty, Sialography, Vertebroplasty)
• Breast diagnostics

Emphases in Research
• Diagnostic and interventional therapy of Degenerative and Inflammatory Vascular Diseases
• Morphological and Functional diagnosis of the Lungs (Volumetry, Perfusion, Ventilation)
• 3/2-D/4-D imaging
• Cardiac imaging (CT, MRI)
• Bone structure analysis
• Molecular radiology (MRI, micro-CT, optical methods)
• Breast diagnostics

Emphases in Education
• Methodology of Imaging (X-ray, CT, Ultrasound, MRI)
• Radiology of all Organ systems
• Interventional Radiology
• Specialized Breast Diagnostics
• Specialized Pediatric Radiology
• Image processing
• Doctoral seminar
• Lectures and seminars, including written examination, and second/third sections of the medical exam covering the entire spectrum of diagnostic radiology
• Radiation protection seminars

Additional Information/Services
• Expertise in the entire range of Diagnostic and Interventional Radiology
• Vascular interventions
• Only Pediatric Radiology Center
• Center for Breast Diagnostics
• Natural scientific/technical work groups
Institute for Emergency Medicine

Main Focus
- Training in Basic and Advanced Life Support
- Training in Crew resource management
- Simulation training in Emergency and Innovative Care Medicine
- Simulation training in Obstetrics for Paramedics and Emergency Physicians
- Quality management in pre-hospital and in-hospital emergency medicine
- German Resuscitation Registry
- Courses in disaster management for emergency physicians and paramedics
- Hospitals contingency planning

Research Focus
- Resuscitation research
- Management of the German Resuscitation Registry
- Coordination of the European Registry of Cardiac Arrest
- Studies on out-of-hospital and in-hospital cardiac arrest

Emergency medicine and disaster management
- Studies in emergency management
- Studies in disaster management

Additional Information/Services
- Expertise in all fields of emergency medicine
- Wide range of courses and trainings around medical emergency situations, as well as individually designed to meet specific demands
- Various projects on Telemedicine, Emergency Medicine and Basic Life Support for various target groups
Institute of
Experimental Cancer Research

Emphasis in Research
• Gastrointestinal Cancer: initiation, progression, and metastasis
• Biomarker identification
• Inflammatory Carcinogenesis
• Molecular Gastroenterology
• Molecular Oncology
• Translational Nanomedicine
• Tumor-Host-Interactions
• Metabolic alterations in Tumorigenesis
• Death receptors in Tumorigenesis

Additional Information/Services
• Biomaterial bank of the Comprehensive Cancer Center (EMBCCC)
• Close cooperation with Molecular Imaging North Competence Center
• (MOIN-CC)
• Integral member of the Kiel Oncology Network (KON) and Kiel Life Science (KLS) Initiative
Institute of Experimental and Clinical Pharmacology

Emphases in Patient Care
- Pharmacotherapeutic counseling including ward round

Emphases in Research
- Pharmacogenomics and Pharmacopigmomics
- Pharmacology of cancer drug resistance
- Conceptional design and execution of clinical studies phase I and IV
- Analysis of Molecular Interactions and functions
- Pharmacotherapy of Neurodegenerative Diseases
- Member of the Cluster of Excellence “Inflammation at Interfaces”
- Member of “Kiel Life Sciences”
- Member of “Kiel Oncology Network”
- Member of “Kiel Nano Surface & Interface Science”

Emphases in Education
- Interdisciplinary lectures and seminars in Clinical Pharmacology
- Lectures and courses in Pharmacology and Toxicology for medical students
- Lectures in Pharmacology for Dentistry students
- Lectures and courses in Pharmacology, Pharmacotherapy, and Clinical Pharmacy for Pharmacy students
- Courses in Pharmacology for master students of medical life sciences
- Contributions to interdisciplinary courses in medicine of the elderly and pain
- Postgraduate training for physicians and pharmacists in cooperation with the Medical Association and the Pharmacists’ Association of Schleswig-Holstein

Additional Information/Services
- The institute comprises the disciplines of experimental and clinical pharmacology.
- The functions of the institute include basic research of pathophysiological mechanisms, translational research, and the application of individualized treatment of patients.
- Regular advanced courses and seminars
- Counseling of practicing physicians and pharmacists
Institute for Forensic Medicine

Emphases in Patient Care
• Consulting services
• Autopsies and Necropsies
• Physical examination, traumatology, preservation of trace materials
• Examination of victims of violence
• Crime scene expertise
• Postmortem examinations
• Emergency toxicological analysis, medication, and drug analysis
• Alcohol identification, markers of alcoholism
• Paternity tests, genetic testing, trace analysis
• Forensic bone analysis
• Assessment of driving ability
• Legal and ethical advice
• Age determination

Emphases in Research
• Vitality and wound age determination
• Sudden infant death syndrome
• Forensic Molecular Biology, biological trace analysis
• Population Genetics and Forensic Genetics
• Molecular neurobiology, e.g., cellular stress responses
• Age-related changes in mitochondrial DNA
• Microglia and Neurodegeneration
• Detection methods for medication and drugs
• Alcoholology, breath alcohol concentration
• Ethics, Medical Ethics
• Molecular Anthropology, biological investigation of (ancient) bones
• Traffic medicine
• Medical law

Emphases in Education
• Medical law core lecture
• Forensic Medicine lessons in small groups (Autopsy, Toxicology, Alcoholology, Psychopathology, Molecular Genetics/Forensics)
• Interdisciplinary lecture “Violence”
• History, theory, and ethics of medicine
• Occupational and social medicine
• Lecture, internships, and courses in biology (minor in Forensic Medicine)
• Forensic medicine for lawyers

Additional Information/Services
• Only forensic medicine department in Schleswig-Holstein
• Services approximately 2.8 million inhabitants at both university hospital sites (Kiel and Lübeck)
• Lessons offered at both medical faculties (Kiel and Lübeck)
• Supervision of the Center for Ethics at the Christian Albrechts University of Kiel
• Interdisciplinary courses offered in other subjects (biology, law, law enforcement)
• Member of the Human Development in Landscapes Graduate School

Universitätsklinikum Schleswig-Holstein
Institute for Forensic Medicine

Director
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Department of General-, Visceral-, Thoracic-, Transplant- and Pediatric Surgery

Emphases in Patient Care
• Oncologic surgery of the Gastrointestinal Tract including the Esophagus, Stomach, Small, and Large Intestines
• Hepatobiliary and pancreatic surgery
• Oncologic Thoracic and Thoracoacropic surgery
• Endocrine surgery
• Minimally invasive Visceral surgery
• Pediatric surgery
• Treatment of Peritoneal Carcinomatosis (cytoreductive surgery and HIPEC)
• Robotic surgery of complex procedures
• Esophagus, Colon, Rectum, Pancreas, Liver, Lung, Stereoperiton, Bariatric surgery especially redoprocedures
• Transplant surgery of all visceral organs, including the Small Intestine, Liver, Kidney, Pancreas, Heart, Lung, Cord, Lung, Kidney, Pancreas, Heart
• Renal Transplantation robotic minimal invasive live donor nephrectomy
• Surgical endoscopy, proctology, and endosonography
• Psycho-Oncological care (pre-op to follow-up care)

Emphases in Research
• Molecular Oncology with a focus on the Pancreas, Lung, Colon and Bla-Duct system
• Clinical significance of molecular analysis of disseminated tumor cells
• Apoptosis resistance and immunosuppression mechanisms
• Therapy induced malignant modulation of gastrointestinal and pulmonary tumors
• Clinically adapted Orthotopic tumor models and molecular imaging
• Transplantation medicine, stem cell research
• Clinical tolerance studies, programming of human neo-hepatocytes, and islet cells
• Established animal models for heart, liver, and kidney transplants
• Clinical QOL studies (GI and urological tumors)
• Transplantation and biomshology research

Emphases in Education
• Interdisciplinary courses in the field of surgery, with other surgical disciplines (technical and organizational direction)
• Active participation in curriculum development, Master of Medical Education program
• Basic and specialist surgery courses, practical training
• Bedside teaching
• Ethics seminars
• Practical year curriculum

Additional Information/Services
• This clinic consists of three divisions: Transplantation Medicine, Oncological Surgery, Thoracic Surgery (Prof. Dr. Jan-Hendrik Egberts)
• DHG Certified Oncology Center
• Only center for small intestine transplantation in the North of Germany
• QOL reference center, psycho-oncology, quality assurance
• Ablative procedures (RITA, ECU)
• Fast-track surgery
• Surgical Anesthetic Intensive Care Unit
• Shock and Sepsis research
• Quality of Life research
• Applied IT research
• Transplantation and biotechnology research

Universitätsklinikum Schleswig-Holstein
Dept. of General-, Visceral-, Thoracic-, Transplant- and Pediatric Surgery
Director
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Division of Pediatric Surgery

Emphases in Patient Care

- Prenatal Surgery and Prenatal Counselling
- Surgery of Congenital Malformations (such as: Anorectal Malformations, Clubfoot, Hirschsprung Disease, Gastroschisis, Omphalocele, Esophageal Atresia, Tracheoesophageal Fistula, Congenital Diaphragmatic Hernia, Conjoined Twins, Congenital Pulmonary Airway Malformations (CPAM), Pulmonary Sequestration, Choleodochal Cysts, Biliary Atresia, and others)
- Fetal Surgery
- Neonatal and Newborn Surgery
- Surgery of Infants
- Surgery of toddlers and adolescents
- Minimally invasive and robotic surgery
- Surgery and treatment of Vascular Malformations
- Funnel Chest, Pectus Excavatum, Pectus Carinatum
- Surgical Oncology (such as Wilms Tumor, Hepatoblastoma, Nephroblastoma, Neuroblastoma, Rhabdomyosarcoma, Sacromas, and others).

Emphases in Research

- Our research focuses on minimally invasive surgery, robotic surgery and fetal surgery. We are the only pediatric surgery department in Germany with a long standing history of experimental fetal interventions.

Emphases in Education

- We educate the students of the Christian Albrechts University of Kiel in pediatric surgery with emphasis on hands on experience and one-on-one teaching in the operating theatre.

Additional Information/Services

- The Division of Pediatric Surgery is embedded in the Department of General-, Visceral-, Thoracic-, Transplant- and Pediatric Surgery and works closely with all other surgical specialties for treating children of ages. Within our surgical network, we can provide every surgical support your child needs.
Department of Gynecology and Obstetrics

Emphases in Patient Care
- Certified centre for the Screening and Management of Breast Cancer
- Breast conserving surgery
- Breast reconstructive surgery
- Oncoplastic surgery
- State of the art, systemic treatment for early stages of breast cancer and advanced disease (chemotherapy, endocrine therapy, targeted therapy, immunology)
- Management of Gynaecological Cancer
- Tumour-Risk-Assessment and genetic predisposition
- Treatment of dysplasia
- Certified centre for minimally Invasive Surgical and Robotic surgery
- Endometriosis certified centre
- Fertility Centre and Reproductive Medicine (In vitro fertilisation, IVF, ICSI, TESE, Preimplantation Diagnosis)
- Prenatal diagnostic and screening
- Special consultation for children and youth
- Conservative treatment of prolapse and Pelvic Reconstructive Surgery
- Urogynaecology and treatment of incontinence

Emphases in Research
- Gynecologic Oncology: Mutation analysis of Predisposing Genes (DHPLC)
- Molecular Cytogenetics
- In vitro efficiency analysis
- Cellular Immunotherapy
- Design and implementation of phase I to phase III clinical trials
- Reproductive Biology
- Preimplantation diagnostics
- First-trimester screening and high-risk pregnancies
- Clinical research for the treatment of Malignant gynaecological diseases, including Breast Cancer
- Cancer Genetics
- Clinical research in minimally invasive Gynecological Surgery

Emphases in Education
- Core lecture on Gynecology and Obstetrics, including E-learning
- Practical training course on Gynecology and Obstetrics
- National and international training courses of the Kiel School of Endoscopy (Kiel School)
- Michaelis Midwifery School
- Subspecialization in reproductive medicine
- Courses on reproductive medicine

Additional Information/Services
- Breast center (EUSOMA accredited)
- Study direction center for Gynecologic Oncology and ‘quality assured mammary diagnostics (QuaMaDi)"
- Center for Hereditary Breast and Ovarian Cancer
- Maximal level Perinatal Center (Pediatric Section of the German Society of Ultrasound in Medicine)
- AGE training center for Gynecological Endoscopy
- Certification in minimally invasive Gynecological Surgery
- Prenatal diagnostic and screening
- Special consultation for children and youth
- Conservative treatment of prolapse and Pelvic Reconstructive Surgery
- Urogynaecology and treatment of incontinence

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Division of Reproductive Medicine

Emphasis in Patient Care

- Emphasis in Patient Care, Team Work and a Multi-specialty - Multidisciplinary approach is our secret to achieve a successful pregnancy for our patients

ART Clinical Services

- Should I freeze my Oocytes/Sperm? - Evaluation and counselling for present concerns for future reproduction
- Consultation for Social Freezing and oocyte/sperm Cryopreservation
- Detailed workup and management of patients with repeated implantation failure
- Office Hysteroscopy (without the risk of anaesthesia)
- HyCoSy – Ultrasound guided analysis of the tubal status (instead of exposure to X-Rays)
- Natural cycle monitoring
- Mini-IVF
- Donor sperm program
- Individualised Ovarian stimulation protocols

IVF Lab Services

- Tailoring of the lab protocol based on patient’s clinical and previous history
- ISO Class 8 Clean Room with VOC Filters and 22 air exchanges per hour
- Tripile-gas bench top incubators for a safe environment for your embryos / excellent blastocyst conversion
- WHO Certified Embryologists performing Semen Analysis and processing
- Cryopreservation: Oocyte and embryos Banking
- Detailed workup and management of patients with repeated implantation failure
- Office Hysteroscopy (without the risk of anaesthesia)
- HyCoSy – Ultrasound guided analysis of the tubal status (instead of exposure to X-Rays)
- Natural cycle monitoring
- Mini-IVF
- Donor sperm program
- Individualised Ovarian stimulation protocols

Special Care for patients with recurrent loss of pregnancy/repeated abortions

- Exclusive individualised clinical assessment
- Evidenced based management
- Option of GM-CSF based medium and Hyluranum medium at transfer to improve implantation and prevent abortions

Collaboration with the Department of Endoscopic Surgery and Kiel School of Endoscopy

- Conservative surgical treatment of Fibroids, Endometriosis, Polyps, Adenomyosis, and other conditions
- Ovarian Tissue Extraction for freezing (in cancer patients)

Collaboration with the Institute of Human Genetics

- Evaluation of patients with affected children and repeated pregnancy loss
- Risk assessment of patients with genetic diseases and abnormal genetic analysis

Collaboration with the Department of Nutrition and Bariatric Surgery

- When weight is the primary issue, parallel treatment of weight loss, and infertility
- Nutritional counselling for a healthy reproductive system

Collaboration with the Traditional Chinese medicine

- Acupuncture has been shown to significantly improve the chances of pregnancy in IVF
- Association with internationally trained specialists

Collaboration with the Department of Oncology/ Paediatric Oncology

- Sperm freezing or Testicular tissue freezing with a 95 % post-thaw survival rate
- Oocyte vitrification (freezing) with a 92 % post-thaw survival rate
- Ovarian tissue freezing

Collaboration with the Department of Gynecology and Obstetrics: Division of Reproductive Medicine

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Institute of Immunology

Emphases in Research

• Antigen-specific T cells and their role in human immune Pathologies (Allergy, Inflammatory Bowel Disease, Autoimmunity), Chronic Infectious Diseases (Invasive Mycoses, Tuberculosis) or Cancer

• Immune regulation and the role of anti-inflammatory T cell subsets for inflammatory diseases

• Microbiota interaction with the Immune System

• Signal transduction of lymphocyte activation and effector function

• Characterization of lymphocyte-derived intra- and extracellular effector vesicles

• Regulation of non-apoptotic cell death (Necroptosis, Parthanatos) in the Immune System and Cancer

• γδ T cell activation, signaling and effector function in immunity, tolerance, and cancer immunology

• Characterization of different tumor escape mechanisms in the interaction with T cells

Clinical research

• Development of Antigen-Specific T cell-based diagnostics for infectious Diseases and Chronic Inflammatory Diseases

• Cytometric Immunomonitoring

• Development of α/β and γδ T cell based immunotherapies

Emphases in Education

• Lectures, seminars, and practical courses in basic and advanced immunology for medical students and master students in life sciences

• Flow-Cytometry and Cell Sorting

• Supervision of Bachelor, Master, MD and PhD students

Additional Information/Services

• Cell sorting and flow cytometry (FACS) core facility

• 2D-DIGE proteomic platform

• Member in the Cluster of Excellence “Precision Medicine in Chronic Inflammation (PMI)”

• Member in various national research networks, such as CRC/SP8 877, CRC/TRR 241, “Infect Control 2020” and FOR2799
Institute of Infection Medicine

Emphases in Patient Care
- Infection diagnostics
- Accredited laboratories according to DIN ISO EN 15189
- Clinical Microbiology, Infectiology
- Clinical advice for antimicrobial therapy and diagnostics

Emphases in Research
- Herpes-simplex virus and Varicella-Zoster Virus
- Oncovirus E8-7 herpesviruses and gene transfer
- Antiviral and antibacterial compounds and resistance development
- Interleukin-28
- Infection Epidemiology

Emphases in Education
- General Microbiology and Ecology for preclinical medical students
- Microbiology, Virology and Infection control for clinical medical students
- Microbiology, virology, infection control; and environmental medicine for dentistry students
- Infectiology for medical students
- Clinical environmental medicine for clinical medical students
- Molecular Virology for science and medical students
- Full medical specialization training in Microbiology, Virology, and Infection Epidemiology

Additional Information/Services
- Post-transplantation infections
- Tumor Viruses
- Sepsis diagnostics and rapid species identification
- Drug resistance of bacteria and viruses
- Federal sentinel laboratory for antibiotic resistance
- Medical analysis laboratory of the state Schleswig-Holstein
- Service functions for the communal and state health administrations
- Participation in the outpatient department “Universitäres diagnostisches MVZ Kiel”
- State reporting center for notifiable infectious diseases
Department of Medical Informatics and Statistics

Emphases in Research

- Development and application of Biometrical and Epidemiological research tools
- Administration, analysis, and statistical evaluation of clinical and molecular research data
- Development, evaluation, and implementation of conceptual frameworks for biobanks
- Theoretical research in population and evolutionary genetics

Emphases in Education

- Coordination of the interdisciplinary curriculum “Epidemiology, Medical Biometry and Medical Informatics”
- Lecture, seminar, and practical course on “Methods of Scientific Research” (seminar in collaboration with local clinicians)
- Interfaculty lecture “Genetic Epidemiology and Population Genetics”
- Interfaculty lecture “Bioinformatics”
- Biometrics tutorial
- Individual biometrics and statistics counseling (doctoral and post-doctoral students, research projects), as a service for the medical faculty
Institute of Medical Psychology and Medical Sociology (IMPS)

Emphases in Patient Care
- Psychotherapy (focus on behavioral therapy)
- Prevention medicine for children, adolescents and families
- Psychological pain treatment
- Clinical neuropsychology
- Psychotraumatology (trauma outpatient department)
- Special consultations for mental disorders, physical disorders, pain disorders, and neurological disorders, and others, both in adults as well as in childhood and adolescence, couples therapy, and others

Emphases in Research
- Basic and applied research to pain
- Neuropsychobiology of learning and memory
- Developmental neuropsychobiology (headache, ADHD, trauma)
- Development and evaluation of behavioral medicine programs (headache, adiposity, ADHD and others)
- Neuropsychobiology of Psychotrauma

Emphases in Education
- Basics of Medical Psychology and Medical Sociology
- Medical Psychology and Medical Sociology seminar
- Medical Psychology and Medical Sociology lab
- Interdisciplinary pain and prevention courses
- Neurobiological colloquium, postgraduate, and research colloquium

Additional Information/Services
- The outpatient clinic of behavior prevention in families (Vifa) is a corporate facility of the Institute of Medical Psychology and Medical Sociology and Clinic of Neuropediatrics
- The Institute is certified by DIN EN ISO 9001:2000
I. Department of Medicine
General Internal Medicine

Emphases in Patient Care
• Disease of the Gastrointestinal Tract, particularly Gut, Liver and Bile
• Chronic inflammatory diseases
• Endocrine disorders, Diabetes Mellitus
• Chronic Lung diseases
• Medical Oncology
• Medical intensive care
• Medicine of healthy ageing
• Disorders of blood coagulation, including thrombosis
• Endoscopy: interventional endosonography, ERCP, ligations
• Scarless operations in the gastrointestinal tract (NOTES)
• Ultrasound, including contrast agents
• Nutrition
• Peripheral vascular diseases
• Infection diseases

Emphases in Research
• Gerontology:
  – Mechanisms and predictions of healthy ageing
  – Genetic mechanisms of human longevity
• Gastroenterology/Hepatology:
  – Pancreatic Carcinoma
  – Chronic inflammatory bowel disease (Crohn Diseases, Ulcerative Colitis)
  – Chronic viral hepatitis
  – Gall Stone genetic and etiology
  – Colorectal carcinoma
• Endocrinology/Bone Diseases:
  – Osteoporosis
  – Tumors of the hypophysis
  – Adrenogenital syndrome
• Pneumology:
  – Interstitial Lung diseases
  – Mechanisms of lung regeneration
• Oncology:
  – Cellular resistance mechanisms
  – Oncodermatology
• Diabetology

Universitätsklinikum Schleswig-Holstein
I. Dept. of Medicine
General Internal Medicine
Director
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II. Department of Medicine
Hematology and Oncology

The Clinic for Internal Medicine II is divided into the Core Clinic and two sections: section for stem cell and immunotherapy in the Dr. Mildred Scheel House and the section for hematology special diagnostics at Langer Sogen. The core clinic includes the outpatient departments at the Karl-Lennert Cancer Centre, the special hematomalic ward and the oncologisch-hematologi- cal ward.

Medical focus is the diagnosis and therapy of malignant organ tumors and diseases of the Hematopoietic system, rheumatologically diseases and infectious diseases. Our patients are treated either fully or partly inpatient as well as in various outpatient departments. We offer patients with Hematological and Oncological diseases rapid and comprehensive treatment through care in an interdisciplinary tumor outpatient clinic. We have expanded our special outpatient departments for hematology oncology and infectiology (focus on HIV medicine) into central contact points for patients from all over Schleswig-Holstein.

The aim of all our therapeutic measures is to improve the quality of life of our patients. They should be able to reintegrate into work, family, and society as quickly as possible. Many struggle not only with their medical, but also with psychological and social problems. That is why sensitive and human care in our clinic is as important as modern medical treatment.

In addition to specific tumor therapy, a comprehensive treatment concept for tumor patients also includes palliative medical care for terminally ill patients and support in the final phase of life. Maintaining the quality of life is at the forefront of medical and nursing efforts. The palliative medical care of our patients is provided in close cooperation with the interdisciplinary Pain and Palliative Centre (ISPZ) in the UKSH, both inpatient and outpatient.

The laboratory for hematology special diagnostics at our clinic is one of the largest and most efficient in Germany. We offer both patient-oriented diagnostics and basic research.

Thus, we combine under one roof all modern diagnostic and therapeutic procedures necessary for the care of complex Hemato-Oncological Diseases - including state-of-the-art treatment procedures such as immune and antibody therapies. Individual therapy settings are made on the basis of current and future-oriented therapy protocols - also within international study protocols. In addition, we ensure the high medical standard of our clinic through our own innovative research projects and the active membership of our employees in many national and international specialist societies.
II. Department of Medicine: Division of Specialized Hematological Diagnostics

Emphases in Patient Care
• Cytomorphological evaluation of bone marrow aspirates, blood smears, cytospin of cerebrospinal fluids, and other aspirates for diagnosis of hematological malignancies and differential diagnosis to reactive lesions
• Molecular analyses for diagnosis, stratification, and prognostic evaluation in suspicion of acute and chronic lymphoid and myeloid leukemia, myeloproliferative neoplasms, myelodysplasia, and lymphomas
• Multicolor flow-based analysis of bone marrow aspirates, peripheral blood, cerebrospinal fluid, and effusions for diagnosis and staging in hematological malignancies
• Flow-based quantification of T-cell subsets
• Molecular quantification of minimal residual disease in disease in acute and chronic lymphocytic leukemia, mantle cell lymphoma, follicular lymphoma, multiple myeloma, and chronic myeloid leukemia
• Flow-based quantification of minimal residual disease in disease in acute and chronic lymphocytic leukemia, mantle cell lymphoma, follicular lymphoma, and multiple myeloma

Emphases in Research
• Identification and validation of new prognostic or therapeutic molecular markers in Hematological Malignancies
• Establishment, standardization, and validation of innovative molecular methods to quantify minimal residual disease in hematological malignancies within international cooperations
• Establishment of high throughput methods to analyze immune gene rearrangements for monitoring of minimal residual disease and perform B- and T-cell repertoire analyses
• Characterization of clonal evolution and selection processes during and after treatment in Lymphoid Neoplasias

Additional Information/Services
• Reference laboratory within many national and international phase I-IV treatment studies in acute and chronic lymphocytic leukemia, follicular lymphoma, mantle cell lymphoma, chronic myeloid leukemia, and multiple myeloma
• Since 2010 accredited according to DIN EN ISO 15189 by the DAkkS (Deutsche Akkreditierungsstelle)
• Member of the EuroFlow Consortium
• Member of the EuroClonality Consortium
• Member of the EuroClonality NGS Consortium
• Member of the EuroMRD Consortium
II. Department of Medicine: Division of Stem Cell Transplantation and Immunotherapy

**Emphases in Patient Care**
- Hematological and Oncological care
- Allogeneic and Autologous bone marrow transplantation
- Stem cellapheresis facility and GMP-laboratory
- Immunotherapy
- Special focuses:
  - Engineering of stem cell transplants
  - Treatment of myeloma patients with innovative therapy
  - Antibody therapy
  - Phase 1 to 3 clinical trials
  - Immunodiagnostic procedures

**Emphases in Research**
- Biology of Hematopoietic stem cells
- Targeted therapy in multiple myeloma
- Antibody and Immunotherapeutics for therapeutic use

**Emphases in Education**
- Transplantation medicine
- Hematology and Oncology
- Immunotherapy
- Immunodiagnostics

**Additional Information/Services**
- Accreditation by EBMT (CIC 256)
- Accreditation by the Joint Accreditation Agency
- Strong focus on translational research
- GMP-laboratory
- Study nurses on site
Emphasizes in Patient Care

- The Department of Cardiology offers a broad spectrum of diagnostics and therapy for all cardiac diseases. Special clinical emphasis is placed on:
  - Emergency treatment of all acute heart diseases, including Acute Myocardial Infarction
  - Interventional therapy of coronary artery disease, including balloon dilation (PTCA), stents (bare-metal and drug-eluting) as well as rotablation
  - Minimally invasive treatment of valvular heart disease (valvuloplasty of the mitral valve, percutaneous aortic valve replacement in cooperation with the Department of Cardiac Surgery) including TAVI, Mitraclip, and left atrial appendage (LAA)
  - Interventional closure of atrial septal defects as well as persistent foramen ovale
  - Interventional ethanol ablation of the ventricular septum in patients with Hypertrophic Obstructive Cardiomyopathy (HOCM)
  - Diagnosis and treatment of heart rhythm disorders, including electrophysiological testing and catheter ablation of arrhythmias such as WPW- syndrome, AV re-entry tachycardia, and atrial fibrillation
  - Pacemaker and device therapy, including cardiac resynchronisation therapy
  - Cardiac imaging, including cardiac MRI and CT scans
  - Diagnosis and specialized treatment of acute and chronic heart failure
  - Diagnosis and treatment of pulmonary hypertension
  - Peripheral disease, PTA of iliac, femoral and orural arteries
IV. Department of Medicine – Nephrology and Hypertension

Emphases in Patient Care
• Acute Renal diseases
• Chronic Renal diseases
• Autoimmune diseases
• Arterial hypertension
• Transplantation medicine
• Conservative treatment of Nephrolithiasis
• Hemodialysis
• Peritoneal dialysis
• Detoxification methods
• Sonography
• Special focuses:
  – Transplantation medicine
  – Acute treatment of nephrological emergencies
  – General nephrology
  – Hypertension
  – Autoimmune diseases

Emphases in Research
• Transplantation immunology
• Pathogenesis of Glomerulonephritis
• Monoclonal antibodies for therapy
• Pharmacokinetics following transplantation
• Clinical hypertension research

Additional Information/Services
• Central outpatient clinics for:
  – Transplantation (kidney, pancreas, live organ donation)
  – Arterial hypertension, Glomerulonephritis
  – Autoimmune diseases
• Mechanical detoxification methods
• Plasma exchange
Department of Neurology

Emphases in Patient Care
- Deep Brain Stimulation
- Epilepsy
- Movement disorders
- Neurodegenerative diseases
- Neurogeriatrics
- Neuroimmunology
- Pain, neuropathic pain
- Vascular diseases

Emphases in Research
- Experimental stroke research
- Functional imaging of movement disorders and pain
- Neurodegeneration: Early detection, causative management strategies
- Neurogeriatrics
- Neuroimmunology
- Neuropathic pain: Mechanisms and treatment

- Technology and Neurology: Magnetoencephalography
- Magnetoelectric sensors
- Sensor-based quantitative assessment strategies
- Tremor research
- Pathophysiology of Movement Disorders

Emphases in Education
- Core lecture and practical course in Neurology
- Elective seminars (“Pain”, “Neuromuscular”, “Statistics”)
- Interdisciplinary lectures (“Aging”, “Neurorehabilitation”, “Neurogeriatrics”)
- Practical training year
- Preclinical and clinical skills lab
- Postgraduate training for Neurologists
- Continuing Medical Training for Movement Disorder Specialists

Further specialization:
- Epileptology
- Electrophysiology (EEG, ENG, EMG)
- Ultrasound

Additional Information/Services
- Division of Neurological Pain Research and Therapy
- Epilepsy Monitoring Unit
- Leading neurological center for movement disorders, pain and neurogeriatrics
- Postgraduate training center
- Trans-regional stroke unit and stroke network
Institute of Neuroradiology

Emphases in Patient Care
- Magnetic resonance imaging (MRI)
- Computer tomography (CT)
- Digital subtraction angiography (DSA)
- X-MRT
- Magnetic resonance imaging including functional MRI, spectroscopy, and brain perfusion
- Interventional neuroradiology (carotid stent, aneurysm embolization, stroke therapy) with X-MRI

Emphases in Research
- Examination of vascular disorders and tumors of the brain
- Development of new minimally invasive treatment processes for stroke and aneurysms

Emphases in Education
- Lecture: Neuroradiology
- Lecture and hands-on training in neuro-imaging

Additional Information/Services
- Combined two-plane X-MRI for interventional stroke therapy
- 3 T MRI-System for high resolution examinations of the brain and cerebral vessels
- Preventive stroke diagnostics
- Interventional Stroke Prophylaxis of Stenosis and Aneurysms (stents and coils)
Department of Neurosurgery

Emphases in Patient Care

- Tumor surgery: brain tumor, meningioma, glioma, metastasis, spinal tumor, and tumor of peripheral nerves
- Spinal surgery: disk herniation, spinal canal stenosis and instability, inflammation, and vascular malformations
- Vascular Neurosurgery: treatment of cerebral artery pathologies: cerebral hemorrhage, aneurysm and angoma, subarachnoidal hemorrhage, and surgical care of spinae
- Pediatric Neurosurgery including Neuroendoscopy: hydrocephalus, spinal dysraphism, craniosynostosis, and spinal fusion
- Functional Neurosurgery: deep brain stimulation for Parkinson’s disease, tremors, and dystonia
- Neurointerventional oncology: salvage of all cranial and spinal injuries
- Surgical care of Peripheral Nerves: carpal-canal syndrome
- Minimally invasive neurosurgery if indicated
- Intraoperative high-field MRI and function-guided surgery
- Special focus on - Image-guided Tumor Surgery (including fluorescence microscopy) tumor surgery in the MRI, awake craniotomy for tumors in eloquent areas, meningiomas, and vestibular neurinomas - Deep brain stimulation: Parkinson’s disease, tremors, and dystonia - Spinal surgery: disk herniation, spinal canal stenosis, instability, and spinal tumors

Emphases in Research

- Neurooncology: radical tumor removal, image-guidance, and molecular biology
- Cranial vascular disease
- Functional neurosurgery including electrophysiology of basal ganglia
- Neuro-navigation and functional MRI
- Neurotraumatology including spine injury
- Vertebral column
- Pediatric neurosurgery
- Minimally invasive neurosurgery
- Brain tumor biology
- Medical engineering

Additional Information/Services

- Adjuvant immunomodulatory therapies for primary and recurrent high-grade gliomas
- Combined Endovascular and Neurosurgical Therapy of Cerebrovascular diseases: aneurysm, arterio venous malformations, stenosis
- Special outpatient clinics for the following sectors: tumors, children, interdisciplinary spine pain, cerebrovascular diseases, and movement disorders
Department of
Nuclear Medicine

Emphases in Patient Care
• Thyroid diagnosis and therapy with open radionuclides
• Treatment of bone metastases, malignant endocrine tumors, and radiosynoviorthesis
• Complete nuclear medicine diagnostics, including: PET/CT, SPECT/CT, and radionuclides

Emphases in Research
• New indications for intracavitary brachytherapy (middle ear and temporomandibular joint)
• Radiator Ra 223 for bone metastases therapy (EU leading clinic)
• Molecular imaging in experimental prostate cancer (MIGN project)
• Sentinel lymphnode diagnostics in different malignant diseases
• Different projects in radioneuclear protection
• Participation in many research trails with molecular imaging in nerves and malignant tumor entities

Emphases in Education
• Imaging method lectures
• Clinical nuclear medicine courses
• Radiosynoviorthesis courses of the European Association of Nuclear Medicine (EU certified)
• Interdisciplinary Oncology Conference

Additional Information/Services
• Only specialist clinic providing comprehensive care in Schleswig-Holstein
• Integrated establishment practices
• Participation in MRIs

• Development of new radionuclides in the field of molecular imaging in diagnostics and therapy
• Experimental research projects
Department of Ophthalmology

Emphases in Patient Care
• Vitreo-retinal surgery: 20 gauge and 23 gauge sutureless vitrectomy, scleral buckle
• Retinal detachment surgery
• Diabetic Retinopathy surgery
• Age-related macular degeneration (AMD)
• Intravitreal application of Lucentis, Avastin, and Triamcinolone
• One patient and impatient cataract surgery
• HLA-matched corneal graft surgery
• Glaucoma surgery: Trabeculectomy with Mitomycin C, Ahmed-valve, and Cyclophotocoagulation
• Refractive surgery
• Lid surgery
• Intraocular inflammation (Uveitis)
• Photodynamic therapy
• Ophthalmic Histopathology
• Strabismus
• Neuro-Ophthalmology

• Fundus Fluorescent Angiography
• High-resolution optical coherence tomography (spectral domain OCT)
• Ocular Oncology
• Electrocephalography

Emphases in Research
• Mechanisms of anti-angiogenetic therapies in age-related macular degeneration
• High-resolution imaging of vitreo-retinal pathologies
• Vitreo-retinal surgery
• Corneal graft rejection
• Corneal graft surgery
• Inflammation in vasculitis
• Selective Retina Therapy (SRT) of the retinal pigment epithelium
• Novel laser applications
• Commercial and non-commercial clinical trials in novel therapies of ophthalmic diseases

Emphases in Education
• Basic principles and clinical practice of Ophthalmology
• bedside teaching in small interactive groups
• video-demonstrations of Ophthalmic Diseases

Additional Information/Services
• Cornea bank
• Refractive laser surgery
• Only academic department providing a comprehensive ophthalmic service in Western Schleswig-Holstein for a population of approximately one million
• Ruthenium Plaque Brachytherapy for Intraocular tumors

Contact UKSH International
+49 431 500-10730
international@uksh.de
www.uksh.de/international_department/en
Department of Orthopedic and Trauma Surgery

Emphases in Patient Care
Orthopedics
- Joint replacement and revision surgery
- Foot surgery
- Shoulder surgery
- Arthroscopy
- Tumor orthopedics
- Joint-preserving contour surgery
- Sports medicine
- Children’s orthopedics
- Special focus: – Prosthetics – Spinal surgery

Trauma Surgery
- Polytrauma care and comprehensive treatment of severe injuries
- Severe injuries of the Pelvis and Pelvic Surgery
- Severe injuries of the Spine and Spine Surgery
- Hand surgery
- Microsurgery
- Plastic surgery
- Reconstructive bony surgery
- Arthroscopic joint surgery in shoulder, elbow, wrist, hip, knee joint and ankle
- Trauma in sports
- Pediatric trauma
- Tumor surgery
- Foot and Ankle surgery
- Shoulder and Elbow surgery
- Spine surgery
- Hip and Knee joint arthroplasty surgery
- Special focus: – Polytrauma care – Spine surgery – Pelvic surgery – Hand surgery, plastic surgery, and microsurgery – Arthroscopic joint surgery and trauma in sports – Tumor surgery and reconstructive bony surgery – Pediatric trauma – Orthopaedic trauma lectures and skills lab

Emphases in Research
Orthopedics
- Musculoskeletal research circle
- Biomechanics
- Regenerative
- Clinical research

Trauma Surgery
- Polytrauma care
- Spinal injuries
- Pelvic fractures
- Pediatric trauma
- Tissue regeneration
- Trauma physiology and inflammation
- Computer assisted operations

Additional Information/Services
Orthopedics
- Diabetic foot surgery
- Replacement surgery and septic exchange
- Long-Segmental spine surgery
- Computer-aided surgery

Trauma Surgery
- Emergency room
- Intensive care unit for trauma patients
- Physical rehabilitation
- Same day surgery
- Outpatient clinic
- National trauma board-certified level I trauma center
- National center for Advanced Trauma Life Support (ATLS®)
- Quality assurance system for computer assisted operations
- External quality management for polytrauma care, spinal injuries, pelvic fractures, pediatric trauma, and arthroscopic joint surgery
- National and international congress organization in topics of orthopedic and trauma surgery
Division of Orthopedic Oncology and Rheumatology

Emphases in Patient Care
- Joint preserving technique Cartilage repair
- Musculo-skeletal pain Deformities
- Amputees
- Joint replacement (Hip, Knee, and Shoulder)
- Spine surgery
- Children Orthopaedics Sport injuries
- Joint revision surgery

Emphases in Research
- Clinical trials
- Evidence based medicine research
- Joint replacement and revision technology minimal invasive surgery
- Multiple awards
- Translational research alliance

Emphases in Education
- University
- International fellowship exchange
- Member of the american academy of orthopedic surgeons
- Research fellowship
Division of Hand, Plastic, and Microsurgery

Emphasizes in Patient Care

Breast Surgery
- Breast reconstruction after breast cancer
- Silicone breast implants
- Pedicled flap surgery
- Free tissue transfers (DEEP etc.)
- Resection and reconstruction surgery of the thoracic wall
- Reduction mammoplasty and breast augmentation
- Liposuction and fat tissue transfer
- Correction of congenital disorders

Reconstructive Surgery
- Reconstructive Surgery after trauma, infection, and tumor resection (soft tissue, nerve, vessel, tendon, and bone)
- Minor burn injuries
- Scar management
- Acne inversa
- Pressure ulcer
- Body contouring surgery after massive weight loss

Tumor
- Resection and reconstruction surgery in soft tissue sarcoma and cancer metastasis
- Member of the Comprehensive Cancer Center

Hand
- Trauma surgery
- Tumor surgery
- Infection diseases
- Nerve compression syndromes
- Morbus Dupuytren, joint replacement, tendovaginitis stenosans
- Correction of congenital disorders

Division of Hand, Plastic, and Microsurgery

Emphasizes in Patient Care

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- Correction of congenital disorders
Department of Orthodontics

Emphases in Patient Care
• Treatment of jaw and tooth misalignment in children and young adults
• Orthodontic treatment of adults and elderly patients
• Innovative Adult-Bracket System
• “Invisible” treatment by means of Invisalign
• Treatment of Cranio-mandibular Dysfunction
• Treatment of sleep-related breathing disorders/ snoring

Emphases in Research
• Study of Biocompatibility and materials science of orthodontic treatment materials
• Stress-strain analysis of the “tooth, periodontium and jawbone” system
• Study of Oral Health-Related Quality of Life (OHRQL)
• Computer-controlled production of orthodontic arch wires

Emphases in Education
• Fundamentals, diagnostics, and orthodontic treatment of tooth and jaw misalignment
• Theoretical and practical training

Additional Information/Services
• Certified orthodontic specialist training
Emphases in Patient Care

- Head and Neck Oncology
- Transoral Laser Microsurgery
- Oncologic Surgery
- Surgery of Major Salivary Glands
- Image-guided sinus and skull base surgery
- Surgery of the orbit
- Facial Plastic and Reconstructive Surgery
- Traumatology
- Middle Ear Surgery
- Cochlear Implant Surgery
- Active Middle Ear Implants / BAHA
- Audiologic, Neuro–Otolologic, and Electrophysiologic Diagnostics
- Speech Therapy
- Allergology

Emphases in Research

- Clinical studies of the efficacy of transoral laser microsurgery for squamous cell carcinoma of the head and neck
- Oncologic and functional outcomes in oncologic surgery
- Quality of life analysis
- Molecular biological characterization of head and neck squamous cell carcinomas
- Human papilloma viruses in head and neck cancer
- Inflammation research: influence of endogenous, exogenous, and factors on boundary layer lesions of the respiratory epithelium in granulomatosis with polyangiitis
- Audiologic research: cochlear implants, speech coding strategies, multifrequency tympanometry, and directional hearing

Emphases in Education

- Lectures, practical skills, and bedside teaching
- Introduction to clinical medicine (4th semester)
- Cardinal symptoms course (7th semester)
- Bedside teaching (9th semester)
- Pre- and post-doctoral programs
- Lectures for students of the speech therapy school
- Nursing education

Additional Information/Services

- Clinic with comprehensive care
- International training center for transoral laser microsurgery for head and neck cancer (operation courses for head and neck surgeons)
- International ultrasound courses
Institute of Pathology

Emphases in Patient Care
- Surgical Pathology (32,000 cases)
- Cytopathology (12,000 cases)
- Autopsies (100 cases)

Emphases in Research
- Translational Oncology
- Clinical and Molecular Pathology
- Hepato-Gastrointestinal Tumors
- Malignant lymphomas
- Childhood lymphomas and soft tissue tumors
- Amyloids

Emphases in Education
- All offered courses and lectures for pathology
- Coordination of interdisciplinary clinical pathology conferences
- Coordination of the Oncological counsel
- Hematopathology courses

Additional Information/Services
- Kiel lymph node registry (malignant lymphoma)
- Amyloid registry
- Children’s tumor registry of the German Pediatric Society
- Hematology and Oncology
- Integration of cytopathology, pediatric pathology, and hematopathology within the Institute for Pathology
Division of Hematopathology and Lymph Node Registry

Emphases in Patient Care
- Diagnosis of Lymphomas and Hematological diseases in all tissue types
- Hematopathological evaluation of bone marrow and blood using aspirates and bone marrow trephines
- Broad spectrum of immunohistochemistry tests for immunophenotyping
- Molecular analysis of clonality, translocations and mutations of hematopoietic tumors
- Diagnosis of cutaneous inflammatory disorders, and lymphomas using skin biopsies
- Central Reference Pathology and biobank for clinical trials of lymphoma treatment
- Close cooperation with Institute of Human Genetics and Clinic of Internal Medicine II along with respective diagnostic labs

Emphases in Research
- Translational research within clinical trials for malignant lymphoma
- Lymphomas in children, adolescents, and young adults in cooperation with the collaborative groups NHL-BFM AND EICNHL
- Identification of molecular characteristics of malignant lymphomas in elderly patients
- Clinicopathological, biopathological, and molecular characterization of cutaneous lymphomas
- Diagnostic and prognostic subgroups of follicular lymphoma and mantle cell lymphoma
- Molecular characterization of malignant lymphomas by gene expression (Nanostring) and next generation sequencing molecular analysis of cell-free (tumor) DNA in lymphomas
- Microenvironment of follicular lymphomas, diffuse large B-cell lymphomas, and Hodgkin Lymphomas by gene expression profiling and quantitative image analysis of Immunohistochemistry

Emphases in Education
- Regular national and international tutorials for pathology training in lymphoma diagnosis
- Weekly in-house educational tutorials for trainees in Hematopathology

Additional Information/Services
- Reference center for all German collaborative lymphoma study groups and the German Competence Network Malignant Lymphomas (Kompetenznetz Maligne Lymphome e.V.).
- Central pathology and bio-banking in clinical lymphoma trials in cooperation with pharmaceutical companies
- Weekly in-house interdisciplinary scientific meetings with varying topics in the field of lymphoma research
Department of Paediatrics and Adolescent Medicine I

**Emphases in Patient Care**
- Haematology/Oncology/Haematopoietic stem cell transplantation
- Endocrinology
- Diabetology
- Nephrology/Urology
- Pulmonology
- Hepatology
- Gastroenterology
- Organ transplantation
- Neonatology
- Intensive care medicine
- Infectious diseases
- Rheumatology
- Metabolic diseases
- Pediatric surgery
- Pediatric psychology

**Emphases in Research**
- Molecular characterization of acute leukemias, especially treatment-resistant phenotypes
- Molecular genetic analysis of Minimal Residual Disease (MRD) in Acute Lymphoblastic Leukemia (ALL)
- Participation in national and international clinical trials in particular for children and adolescents with Leukemia and Cancer
- Comparative treatment approaches in lymphomas including Haematopoietic Stem Cell Transplantation
- EBV-associated lymphomas
- Biochemical and molecular genetic characterization of normal sex development and disorders of sex development (intersexuality)
- Biochemical and Molecular Genetic characterization of Steroid Biosynthesis and Adrenal Diseases (congenital adrenal hyperplasia)
- Molecular characterization of salt-losing syndromes
- Disorders of tubular CA-transport, Pathogenesis of Enuresis in children
- Inflammation, Acute Respiratory Distress Syndrome (ARDS): pathophysiology and preclinical model
- Pulmonary function monitoring for the improvement of artificial ventilation of premature neonates
- Epidemiology of Respiratory infections

**Emphases in Education**
- Clinical pediatrics (lectures, bedside teaching, and clinical internships)
- Case-oriented e-learning

**Additional Information/Services**
- Intensive care unit
- Hematology/Oncology unit
- Neonatal Intensive Care, intermediate care and integrated unit for newborns and infants in the perinatal center for the treatment of premature neonates and newborns with severe diseases according to level I with corresponding follow-up program
- Division for general and infectious diseases
- Diagnostic procedures and treatment of hematologic and solid malignant neoplasms in children and adolescents, as well as young adults
- Bone marrow and blood stem cell transplantation (autologous and allogeneic)
- Palliative treatment for cancer patients

**Emphases in Research**
- Organ replacement therapy: High-Frequency Oscillation (HFO) and nitric oxide (NO) ventilation, and renal replacement procedures (hemodialysis and peritoneal dialysis)
- Pediatric liver transplantation
- Clinical diagnosis and therapy in growth disorders, disorders of sex development, and congenital adrenal hyperplasia (CAH)
- Diagnostic reference laboratory and clinical trial center of the ALL-BFM study group
- National and international reference laboratory of steroid hormone analysis (steroid hormone profiling, DNA-analysis of adrenal disorders of steroid biosynthesis)
- Certified center for the diagnosis and treatment of diabetes in children and adolescents
- Special pulmonary outpatient clinic, allergy outpatient clinic, bronchoscopy, pulmonary function monitoring and sleep laboratory
- Special unit for rheumatism and systemic inflammatory diseases in children and adolescents
- Special outpatient clinic for children with short bowel syndrome
Emphases in Education

- Introductory lectures and seminars in general pediatrics and specialized pediatrics (Neuropediatrics)
- Bielefeld teaching
- Training and examination for national certificates of Electroencephalography and Epileptology

Additional Information/Services

- Together with the Clinic of Pediatric and Adolescent Medicine I and Clinic of Pediatric Cardiology, the Clinic of Pediatric and Adolescent Medicine II constitutes a center of comprehensive medical care, with the broadest therapeutic spectrum in Schleswig-Holstein.
- Only Neuropediatric clinic in Schleswig-Holstein; only provider of non-invasive presurgical epilepsy monitoring for children and adolescents in northern Germany.
Department of Congenital Heart Defects and Paediatric Cardiology

Emphases in Patient Care
• Surgical treatment of all types of congenital heart defects (CHD)
• Neonatal Cardiac Surgery of univentricular hearts (international leading position for babies with hypoplastic left heart syndrome)
• Adults with complex CHD
• Complete spectrum of interventional treatment of CHD
• Evaluation of intensive care treatment, especially in postoperative settings

Emphases in Research
• The Right Ventricle in CHD: invasive and non-invasive tests of ventricular function in clinical and experimental settings
• Kardio-MR (cardiovascular remodeling and myocardial perfusion in congenital heart disease, and interventional treatment of CHD)
• Intensive care studies: postoperative monitoring of organ (e.g. brain) perfusion

Emphases in Education
• Clinical pediatrics (lecture and bedside teaching)
• Participation in the interdisciplinary examination course (Faculty Teaching Award 2005)
• Participation in the skills lab
• Establishment of an advanced training center for the German Association of Pediatric Cardiology

Additional Information/Services
• One of the largest pediatric heart centers in the country, with referrals from all parts of Germany
Department of Prosthodontics, Propaedeutics, and Dental Materials

Emphases in Patient Care

• Basic prosthetic therapy provided by undergraduate students
• Advanced prosthetic therapy provided by faculty
• Prosthetic therapy including:
  - Veneers, Partial Crowns, and Crowns
  - Pretreatment Restorations
    - Conventional Fixed-Dental Prostheses
    - Resin-bonded Fixed-Dental Prostheses
    - Removable Partial Dental Prostheses
    - Removable Precision Attachments
    - Removable complete dental prostheses
    - Implant Retained Crowns
    - Implant Retained Fixed-Dental Prostheses
    - Implant Retained Overdentures
    - Occlusals
    - Occlusal Splints
    - Occlusal Night Guards

• Special focuses:
  - Comprehensive care in prosthodontics using a synoptic treatment concept
  - Minimally invasive tooth replacement using CAD/CAM technology
  - Computer-guided treatment planning in dental implantology

Emphases in Research

• Clinical trials regarding new prosthetic treatment modalities and materials, focusing on all-ceramic restorations, resin-bonded restorations and implant-retained restorations
• Preclinical evaluation of Dental Biomaterials and dental technologies
Department of Radiation Oncology

Emphases in Patient Care
- Multimodal cancer therapy
- High-precision Radiotherapy and Radiosurgery
- Intracavitary Brachytherapy
- Concurrent Radiochemotherapy
- Palliative Radiotherapy and Oncology

Emphases in Research
- Radiation Sensitization by Cytostatics and targeted drug therapies
- Radiosurgery for primary and metastatic lesions
- Treatment of recurrent tumors
- Predictive markers
- Radiotherapy in Pediatric Cancers
- Partial breast irradiation
- Prostate Cancer, Breast Cancer, Head and Neck Cancer, Tumors of the skull base, Sarcomas

Additional Information/Services
- Image-guided radiotherapy
- Real-time HDR-brachytherapy implants for prostate cancer
- Brachytherapy and radiosurgery of eye tumors
Department of Radiology and Neuroradiology

Emphases in Patient Care

Diagnostic Radiology
- Intimately involved in the treatment of patients by means of image-guided diagnostic and therapeutic methods
- Non-invasive and invasive diagnostic and therapeutic radiology of all organs and body regions for all clinicians of the Kiel campus Campus Kiel 24 hours a day (X-ray, ultrasound, CT, MRI, and DSA)
- Special radiological services for external referring physicians
- Interventional Radiology (PTA and stent application for all vascular territories, abdominal and thoracic aortic aneurysm prosthesis transplants, TIPS, esophageal stent insertion, percutaneous drainage, organ punctures and biopsies, Dacryocystography and Dacryocystoplasty, Sialography, Vertebroplasty)

Neuroradiology
- Magnetic resonance imaging (MRI, spectropetroscopy, and brain perfusion)
- Interventional Neuroradiology (carotid stent, aneurysm embolisation, and stroke therapy) with X-MRI

Emphases in Research

Diagnostic Radiology
- Diagnosis and interventional therapy of degenerative and inflammatory vascular diseases
- Morphological and functional diagnosis of the lungs (volumetry, perfusion, and ventilation)
- 3-D/4-D imaging
- Cardiac Imaging (CT, MRI)
- Bone structure analysis

Neuroradiology
- Molecular Radiology (MRI, micro-CT, and optical methods)
- Breast diagnostics

Emphases in Education

Diagnostic Radiology
- Methodology of imaging (X-ray, CT, ultrasound, and MRI)
- Radiology of all organ systems
- Interventional Radiology
- Specialized Breast Diagnostics
- Specialized Pediatric Radiology
- Image processing
- Doctoral seminar
- Lectures and seminars, including written examination and second/third sections of the medical exam covering the entire spectrum of diagnostic radiology
- Radiation protection seminars

Neuroradiology
- Lecture: Neuroradiology
- Lecture and hands-on training in neuro-imaging

Additional Information/Services

Diagnostic Radiology
- Expertise in the entire range of diagnostic and interventional radiology
- Vascular Interventions
- Pediatric Radiology
- Center for Breast Diagnostics
- Natural sciences/technical work group

Neuroradiology
- Combined two-plane X-MRI for interventional stroke therapy
- 3 T MRI System for high resolution examinations of the brain and the cerebral vessels
- Preventive stroke diagnostics
- Interventional Stroke Prophylaxis of Stenosis and Aneurysms (Stents and Coils)
Institute of Toxicology and Pharmacology for Natural Scientists

Emphases in Patient Care
- Drug therapy counseling
- Counseling in cases of acute and chronic poisoning caused by environmental chemicals

Emphases in Research
- Polymorphisms as susceptibility factors for diseases caused by tobacco smoke constituents
- Enzymatic protection mechanisms against toxic substances
- Metabolism of new chemotherapeutic agents
- Protein profiling (proteomics) as a new approach in toxicological research
- Microbial degradation of pollutants in soil and in wastewater for sanitation purposes
- Cytoprotective effects of antioxidants against oxidative stress
- Development of Toxicodynamic and Toxicokinetic models
- Design of hazard and risk assessment models
- Biomonitoring of contaminants
- Detection of persistent environmental chemicals and toxic elements in marine and terrestrial food webs
- Search for biochemical indicators of environmental pollution with regard to health disorders in humans
- Development of new therapeutics to treat obesity and diabetes

Emphases in Education
- Lectures: Toxicology for Nutritionists, Foundations of Toxicology for Natural Scientists, Specialized Toxicology for Natural Scientists, Pharmacology for Pharmacists, Toxicology of Auxiliary Materials and Pollutants for Pharmacists, Pharmacology and Toxicology for Medical Students, Ecotoxicology, and Toxicology for Dieticians
- Seminar on selected topics in environmental toxicology
- Seminar and practical course on molecular cellular toxicology
- Toxicology seminar and practical course for natural scientists

Additional Information/Services
- Pharmacology and toxicology course for medical students
- Interdisciplinary lecture, seminar, and practical course on environmental medicine
- Compulsory elective seminar and practical course on pharmacology for pharmacists
- Seminar on risk assessment of environmental chemicals
- Only university Department of Toxicology in Schleswig-Holstein
- Public commentary on current pollution problems
- Consultations concerning chemical waste disposal
Department of Urology and Pediatric Urology

Emphases in Patient Care

- Comprehensive Urological diagnostics and treatment
- Urological oncology including Nerve-Sparing Radical Prostatectomy
- da Vinci surgery (robot-assisted surgery with prostate cancer, bladder cancer, renal cell carcinoma, and reconstructive kidney surgery)
- Metastatic and extended lymph node surgery
- Penile Cancer: specialized diagnostics and therapy
- BPH: greenlight laser (robot-assisted surgery)
- Endourology/Stone Therapy: minimally invasive endoscopic surgery techniques
- Incontinence: Urodynamics, Neuropathetics, and Botulinum treatment
- Neurology
- Pediatric Urology: enuresis congenital malformations, etc.
- Urologic Prosthetics (penile prosthesis, sphincter prosthesis, ...)

- Special focuses:
  - Robot-assisted Urooncological Surgery
  - Robot-assisted reconstructive Urological Surgery
  - Salvage robot-assisted Surgery of Lymph Node Metastases in advanced Prostate and Bladder Cancer
  - Neurooncology and incontinence treatment; Neuromodulation, da Vinci Prostate Surgery, and Urology prosthesis in male and female
  - Andrology (including microsurgery and prosthesis)

Emphases in Research

- Effects of Metastatic Salvage Surgery on Cancer specific survival in Prostate- and Bladder Cancer
- Salvage surgery in recurrent prostate cancer
- Physiology and Pharmacology of the Bladder
- Incontinence, Prolapse Surgery, and Neuromodulation (including neuroprosthetics)
- Robot-assisted surgery
- Media: Developing innovative adaptive multimedia tools for patients

Additional Information/Services

- Certified Prostate Center
- Certified Continence Center
- Outpatient department
- Prof. Dr. Klaus-Peter Jünemann is the speaker of the Center for Laparoscopic and Robot-assisted Surgery at the University Medical Center Schleswig-Holstein in Kiel
- Prof. Jünemann is the Vice Chairman of the German Society of Robotic-assisted Urology (DGAIU)
Department of Anesthesiology

Emphases in Patient Care

- Anesthesiology
- Intensive care medicine
- Emergency medicine
- Pain therapy

Emphases in Research

- Clinical research:
  - Perioperative determination of Lung function and Ventilation-Perfusion ratio
  - Perioperative mood disturbances, postoperative cognitive dysfunction, and delirium
  - Diagnosis and treatment of acute kidney injury
  - Plasma and tissue markers of organ function and Ischaemia/Reperfusion
  - Immunomodulatory effects of anesthetics and surgical trauma
  - Treatment of Coronary Artery Disease by stem cell therapy

- Maritime Emergency Medicine (SARRAH-project: search and rescue, resuscitation, and rewarming in accidental hypothermia)
- Ethical issues in intensive care medicine
- History of Anesthesiology and Intensive Care Medicine
- Pain in children
- Medical technology research:
  - Invasive and non-invasive Hemodynamic monitoring
  - Biotechnical system regulation
- Basic science research:
  - Hypoxia-induced gene-expression
  - Pulmonary Surfactant and acute Lung injury

Emphases in Education

- Theoretical and practical seminars on anesthesia and intensive care medicine
- Simulative training in anesthetics
- Continuous medical education

Additional Information/Services

- 2nd Biennial International Cardiac Surgery Care Meeting – Neuroprotection during cardiac surgery – 2008
- 4th Hansecongress – Interdisciplinary symposium on Intensive Care Medicine and Critical Care Nursing – 2009
- 5th Symposium on Perioperative Medicine – 2010
Emphases in Patient Care

- Heart Valve Surgery
- Off-Pump Coronary Artery Bypass Surgery (OPCAB)
- Coronary Artery Bypass Surgery
- Aortic Surgery
- Heart insufficiency surgery and mechanical cardiac assist devices
- Heart Rhythm Surgery
- Left Ventricular assist program
- Special focus: – Minimally invasive Aortic Valve reconstruction – Ross procedure – Minimally invasive Mitral valve reconstruction – Off-Pump Complex Aortic Reconstruction (OPCAB)
  - Minimally Invasive Coronary Artery Bypass Surgery (MIDCAB)
  - Katheter-Based Aortic Valve Implantation (TAVI)
  - Aortic stent-grafting
  - Ventricular Aneurysm Surgery
  - Aortic surgery in tissue disorders, especially Marfan-Syndrome

Emphases in Research

- Biomechanical hearts
- Tissue engineering of heart valves
- Heart Valve development (Biological and Mechanical)
- Bioprosthetic Aortic Valves
- Genomic analysis
- Cardiac Surgery in elderly patients
- Mechanical cardiac assist devices

Additional Information/Services

- German Ross Registry
- Special consultations: – Marfan Syndrome and Aortic Surgery – Heart rhythm surgery
Department of 
Dermatology, Allergology and Venerology

Emphases in Patient Care

• Autoimmune Blistering disorders (pemphigus, pemphigoid, and dermatitis herpetiformis)
• Inflammatory skin diseases (e.g. atopic dermatitis, psoriasis, lichen planus)
• Dermatologic oncology (e.g. melanoma, lymphoma, Merkel cell carcinoma)
• Surgical Dermatology
• Phlebology
• Allergology
• Hair disorders
• Pediatric Dermatology
• Genital diseases (lichen sclerosus)
• Laser therapy
• Aesthetic medicine
• Phototherapy
• Veneral diseases
• Special focuses: – Dermatohistopathology

Emphases in Research

• Autoimmune Blistering Disorders (pemphigus, epidermolysis bullosa acquisita, pemphigoid, and dermatitis herpetiformis)
  – Immunopathology
  – Diagnosis
  – Treatment
• Dermato-Oncology
• Treatment of Psoriasis and atopic Dermatitis
• Tissue regeneration and Fibrosis
• Skin barrier function

Additional Information/Services

• Reference center for diagnosis of Autoimmune Bullous skin diseases
• Reference center for Phlebology (foam sclerotherapy, endovascular laser therapy, and chronic ulcers)
• Study center for novel treatment options in chronic inflammatory skin diseases and metastazising melanoma
Department of
Ear, Nose, and Throat Medicine, Phoniatrics and Pediatric Audiology

Emphases in Patient Care
- Treatment of head and neck cancer (surgery, study center, brachytherapy, and palliative medicine)
- Plastic Reconstructive Surgery of extended defects in the head and neck after tumor surgery or trauma
- Plastic and Aesthetic Surgery of the head and neck
- Minimally Invasive Sinus Surgery (FESS) and Balloon Sinusymphony (FESS)
- Surgery of the middle ear, implantable hearing aids, and Cochlear implants
- Surgery of the Anterior, Lateral Skull Base, and Orbit
- Treatment of Salivary Gland Disorders (endoscopic surgery, and lithotripter)
- Pediatric Audiology and Phoniatrics
- Otorhinolaryngology
- Sleep medicine
- Deep-sea diving center

Emphases in Research
- Tumor Biology and Immunotherapy
- Stem cell technology and tissue engineering
- Imaging methods
- Rhinological research
- Minimally Invasive Plastic Surgery
- Sleep medicine
- Phoniatrics and Audiology Research

Additional Information/Services
- Auricle reconstruction
- Specialized Center for Chronic Sinusitis and Nasal Polyps
- Specialized Center for Complex Head and Neck Cancer Cases (Study Center for Immunotherapy)
Department of Ear, Nose, and Throat Medicine, Phoniatrics and Pediatric Audiology: Division of
Phoniatrics and Pediatric Audiology

Emphases in Patient Care

• Early detection of hearing disorders in children: newborn hearing screening, confirmation diagnos- tic, psychoacoustic, and physiological hearing test for children from 0 to 18 years of age
• Speech-language delay and disorder
• Velopharyngeal insufficiency and incompetence (children with cleft palate)
• Fluency disorders (stuttering and other)
• Dysarthria
• Speech, language, voice, and swallowing disorders in patients with Neurological Diseases (e.g. stroke, M. Parkinson, and multiple sclerosis) or gastrointes- tinal situations including: Dysphagia, Apha, and Dysphonia, including the use of rhinendoscopic Evaluation of swallowing (FEES)
• Vocal Cord Dysfunction (VCD)
• Speech, voice, and swallowing disorders in patients with head-neck cancer including the use of rhinoendoscopic evaluation of swallowing (Video-Strobo- scope, FEES, FESU, TOES)
• Dystonia and feeding disorders in children including, rhinendoscopic examination
• Chronic voice disorders including: use of video-strobe- scope, electrophotography, electromyography, and acoustic voice analysis
• Special focuses:
  – Auditory Processing Disorder (APD)
  – Fitting of hearing aids, personal FM-devices, active middle ear implants, bone conduction implants, and cochlear implants
  – Acoustically evoked potentials in “video isolation” and general anesthesia
  – Hearing diagnostic for geriatric patients
  – Hearing diagnostic for children and adults with mental handicap
• Spastic Dysphonia including treatment using botulinum toxin
• Phonosurgery in local anesthesia in cases of vocal fold paralysis and other vocal fold inexcavancies

Emphases in Research

• Newborn hearing screening. The department also hosts the hearing screening centre of Schleswig- Holstein
• Auditory processing disorders
• Fitting of hearing aids, personal FM-devices, active middle ear implants, bone conduction implants, and cochlear implants
• Treatment of patients with Dystonia and cavernous voice or swallowing disorders using botulinum toxin
• Disorders of the singing voice
• Profound voice care
• Phonosurgery in local anesthesia

Additional Information/Services

• Founding member of the Comprehensive Hearing Centre Lübeck (HZL)
• Member of the Centre of population medicine
Institute of Experimental and Clinical Pharmacology and Toxicology

Emphases in Patient Care
• Consulting services for Clinical Pharmacotherapy and Toxicology

Emphases in Research
• Pathophysiology of Stroke and Multiple Sclerosis
• Peptidergic Endocrine Systems in Metabolic Syndromes
• Blood-Brain barrier
• Gene therapy of Neurological Diseases
• Impact of sleep on memory
• Complications of Diabetes

Emphases in Education
• Medical courses: Pharmacology, Toxicology (lecture and course), Clinical Pharmacology, Pharmacotherapy, and Clinical Environmental Medicine
• Advanced experimental Pharmacology course; selected aspects of experimental Pharmacology
• Molecular Life Science courses: drug discovery research lecture, practical training courses, and Neuroscience
• Cooperative courses for subjects offered at the Lübeck University of Applied Sciences (biomedical Engineering, Medical Technology, Chemical Engineering, and Environmental Engineering): Pharmacology and Toxicology introductory courses Nutritional Toxicology
Department of Gynecology and Obstetrics

Emphases in Patient Care
- Surgical Gynecology (Endoscopic interventions, Oncological interventions, Breast surgery, Incontinence and Prostate Surgery, interventions on benign Gynecological Diseases, and endometriosis surgery)
- Obstetrics and Perinatal Care (High risk deliveries, Prenatal diagnosis, and therapy)
- Fertility treatment
- In-vitro-fertilization, ICSI, and vitrification
- Gynecological Endocrinology
- Breast Cancer treatment
- Endometriosis treatment
- Hormone consultations
- Treatment of uterine prolapse and incontinence
- Gynecological Endoscopy

Special focuses:
- Fertility treatment, Endometriosis treatment, Prenatal diagnosis and high-risk delivery obstetrics, Breast cancer treatment, Prostate and incontinence treatment, Treatment of gynecological cancer, Minimal-invasive, and robotic surgery

Emphases in Research
- Basic research on malignant diseases
- Basic research on reproductive medicine issues (in vitro maturation, and vitrification)
- Endocrinological research (PCO-syndrome, ovarian stimulation, and gender research: hormone profiles)
- Basic research on Prenatal Medicine issues
- Clinical research in Reproductive Medicine
- Clinical research in Prenatal Medicine and Obestetrics
- Fetal Echoangiography
- Anusplody screening
- Fetal Tachyarrhythmias
- Long term outcome of Fetal Tachyarrhythmias
- Soft marker for the detection of aneuploidy in the second trimester
- Doppler sonography in fetus with growth restrictive
- On and long term outcome
- Prognostic factors of leucoma with growth restriction
- Clinical and basic research in Gynecologic Endocrinology

- Doppler Sonography during delivery
- Doppler Sonography during the placental period
- Prenatal characteristics of patients with risk pregnancies
- Lapparoscopic Node detection in Carcinomas:
  - Clinical studies on Breast cancer, ovarian cancer and endometrial cancer

- Clinical research on Andrology:
  - ICSI follow-up studies, Multicenter study on incidence of testicular tumors in TESE-patients, and testosterone deficiency

Emphases in Education
- Weekly lecture on Gynecology and Obstetrics
- Seminars on Gynecology and Obstetrics
- Weekly practical training on Gynecology and Obstetrics
- Endocrinological Colloquium
- Emergencies in Gynecology and Obstetrics

- Clinical and practical training on clinical applications of lasers
- Numerous training seminars for physicians
- Regular organization of regional, national, and international meetings (symposiums regarding special aspects in gynecology and obstetrics, intensive lectures on clinical endocrinology, and reproductive medicine)

Additional Information/Services
- Breast consultations
- Fertility treatment consultations
- Endometriosis consultations
- Urogynecological consultations
- Outpatient chemotheraphy in the Chemio Pavilion
- Lecture in anatomy
- Hands-on lectures
- Seminars for doctoral candidates
- Interdisciplinary lecture on clinical applications of lasers
- Regular organization of regional, national, and international meetings (symposiums regarding special aspects in gynecology and obstetrics, intensive lectures on clinical endocrinology, and reproductive medicine)
Department of Gynecology and Obstetrics: Division of Gynecological Endocrinology and Reproductive Medicine

Emphases in Patient Care
- Peri-Conceptual care
- Treatment of Gynecological hormone disorders
- Menopausal cycle monitoring and timed intercourse
- Ovulation induction
- Tubal patency testing
- Mini-Hysteroscopy
- Intra-Uterine Insemination
- In-Vitro Fertilisation (IVF)
- Intracytoplasmatic Sperm Injection (ICSI)
- Physiological Intracytoplasmatic Sperm Injection (PICS)
- Cryopreservation of sperm, testicular tissue, oocytes and ovarian tissue
- Fertility preservation before gonadotoxic treatment
- Fertility preservation for social reasons
- Polar body diagnosis
- Preimplantation genetic diagnosis
- Donor Sperm Treatment
- Sperm analysis
- Testicular Sperm Extraction (TESE)
- Reproductive Surgery
- Ovarian Transposition, Ovarian transplantation, Laparoscopic Ovarian drilling, and Tubo-Noseoscopy
- Reversal of tubal ligation

Emphases in Research
- Endocrinology of controlled ovarian stimulation
- Epidemiology of infertility
- Cryopreservation of gametes

Additional Information
- Member of the Fertiprotect Network
- Member of the German IVF registry
Department of Hematology, Oncology, and Stem Cell Transplantation

Precision medicine in cancer therapy

Progress in the understanding of the molecular and genetic cause of cancer increasingly enables the development of targeted therapeutic strategies. This personalized therapy has improved treatment outcomes for many types of cancer. The individualization of therapy decisions even when standard treatment has already failed requires the creation of new care services. One possible strategy for selecting an individual, “molecularly stratified” treatment for cancer patients is the creation of Molecular Tumor Boards.

MTB

A special feature of the UCCSH is the Molecular Tumor Board (MTB), which is set up in addition to the organ-specific tumor boards. It comes into play when there is no prospect of therapeutic success with a guideline-based therapy. Affinity in-depth research on individual cases, molecular pathological and genetic analyses are performed to identify predictive biomarkers and target structures for targeted therapies. In about half of the cases, genetic changes can be identified in this way, from which therapy recommendations can be derived. Then a therapy with a suitable drug is performed or - if not yet available - a suitable study or a drug is sought that is not approved for this disease but contains the right active ingredient (“off-label” treatment).

In individual cases, the provisional use of a drug that has not yet been approved is also applied for. The molecular approach overcomes thinking in “organ drawers” and makes medicine more personalized. The Molecular Tumor Board also contributes to better research into rare cancers.

Access to the MTB

Access to the MTB of the UCCSH can be obtained from your treating hematologist/oncologist. For an introduction we only need the information from your treating physician and the histopathological findings from the tissue samples. We will then request the stored tissue samples. Individualized and extended examinations are performed on these samples or on freshly taken tissue samples. Molecular diagnostics and the evaluation of the results are carried out according to standardized procedures. The test results are discussed in our MTB session in a circle of experts from different fields. If therapy recommendations can be derived, concrete therapy suggestions are made and ways are shown how the recommended therapy could be implemented. For all recommendations, so-called evidence levels are noted, which show your attending physician the reasons that led to the recommendation.

Universitätsklinikum Schleswig-Holstein
Dept. of Hematology, and Oncology

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Department of Infectious Diseases and Microbiology

Emphases in Patient Care
- Taking care of patients suffering from infectious diseases in and in- outpatient setting
- Comprehensive diagnostic, management and control of community-acquired, nosocomial, and travel-associated infectious diseases
- Extensive clinical advice for antimicrobial therapy for all kinds of infections
- Post-exposure Prophylaxis
- Vaccination guidance before traveling

Emphases in Microbial Diagnostics
- Extensive diagnostic repertoire, accredited by DIN/ISO 17025, on bacterial, viral, fungal and parasitic infection
- Conventional culture based techniques and fast-track molecular methods, including POCT
- Communicable disease control

Emphases in Research
- Hospital-acquired and blood stream infections
- Pathogenesis of intracellular infections
- Member of several national and international research consortia (e.g. German Centre for Infection Research)

Emphases in Education
- Teaching of medical and non-medical students in "Infectious Disease", "Clinical Microbiology" and "Infection Biology"
- Training for Medical Doctors and PhD’s
- Specialization for "Microbiology, Virology and Infection Epidemiology", 5 years
- Specialization for "Infectious Diseases", 1 year
- Education for Laboratory Assistants
- Specialization for Internal Medicine
Department of Maxillofacial Surgery

Emphases in Patient Care

- Maxillofacial traumatology
- Oral and maxillofacial tumors
- Cranial deformities, cheek lips, jaws and palates
- Enbolic facial surgery
- Plastic oral and maxillofacial surgery
- Orthognathic surgery
- Treatment of Mandibular Joint malfunctions
- Maxillary Sinus Diagnostics and therapy
- Prosthetic surgery
- Implantology
- Dental surgery
- Salivary gland transplantation for treatment of dry eye syndrome

- Special focuses:
  - Tumor surgery
  - Traumatology
  - Reconstructive surgery
  - Treatment of dry eye syndrome

Emphases in Research

- Radiogenic injury of the salivary glands
- Oncological research: expression of matrix proteins
- Osteomyelitis diagnostics using nuclear imaging
- Long-term results of submandibular gland transfer in cases of Keratoconjunctivitis Sicca
Institute for Medical Biometry and Statistics

Emphases in Research
- Genetic Epidemiology: clinical cooperation and method development
- Medical statistics and Clinical Epidemiology: clinical cooperation and method development
- Genomic statistics: clinical cooperation for analyses of gene expression and proteomics data

Emphases in Education
- Q1 “Medical Biometry” (40 lessons per student in small groups, up to a maximum of 23 students per course)
- Elective subjects: “Interdisciplinary Seminar for Doctoral Candidates” and “Evidence-Based Medicine”
- Computer Science (Bachelor and Master, UzL), Molecular Life Science (Bachelor, UzL), Computational Life Science (Bachelor and Master, UzL), and School for Assistant Medical Technicians
Emphases in Patient Care

• Gastroenterology:

• Endocrinology:
  Full spectrum of endocrine disorders. Diagnosis and treatment of the Endocrine Glands such as Pancreas, Thyroid, Parathyroids, Adrenal Glands, and gonads. Special focus on the evaluation of Hyperfunction (endocrine hypertension), Endocrine Tumours, Ovarian cysts, endometriosis, and gender identity disorders.

• Diabetology:
  Diagnosis and treatment of all types of Diabetes: Type 1, Type 2, MODY, gestational diabetes and special forms as well as the diagnosis and treatment of all diabetes-associated complications including the diabetic foot syndrome. Evaluation and treatment of associated risk factors for vascular disorders, such as Lipid Disorders, Hypertension, and diabetes-related complications.

• Nephrology:
  Full spectrum of diagnosis and treatment of Kidney Disorders (including renal biopsy) assessment of acid-base homeostasis, evaluation and treatment of Hypertension. Treatment with all state-of-the-art replacement methods such as Peritoneal Dialysis, Hemodialysis, Hemofiltration, Plasmaapheresis or Immune Absorption Lipid phosphorylation, Kidney Transplantation and simultaneous kidney pancreas transplantation including living donor transplantation and ABO-incompatible transplants. Interdisciplinary treatment of kidney patients in close collaboration with the intensive care unit.

• Hematology, Oncology, and Hemostaseology:
  Diagnosis and treatment of all tumor disorders, including malignancies of bone marrow, lymphatic system, as well as solid organs. High-dose chemotherapy with autologous stem cell transplantation, large clinical laboratory for hematology and for assessment of hematopoiesis.

• Intensive Care and Emergency Medicine:
  Interdisciplinary treatment of patients with severe disorders necessitating intensive care treatment with state of the art ICU methods.

Emphases in Research

• Endocrinology:
  Focus on neuroendocrinology, neuroendocrine tumours, pathophysiology of the metabolic syndrome and diabetes complications as well as brain and energy metabolism.

• Nephrology:
  Cytokines and chemokines in inflammation and angiogenesis, cell-cell and cell-matrix interactions, immune modulation of renal cell populations, stem cell biology, and its impact on nephrogenesis.

• Gastroenterology:
  Chronic inflammatory bowel disease, in particular antigen presentation by enterocytes and antimicrobial peptides in IBD; multi-center treatment studies in viral hepatitis; animal models of experimental colitis.

• Hematology, and Oncology:
  Pharmacological studies in Oncology, in particular studies on combination treatment in multiple myeloma and tumor cell lines, anti-angiogeneic treatment, analysis of endothelial progenitor cells, numerous multi-center treatment studies in leukemia, lymphoma, multiple myeloma, and solid tumors.
Emphases in Education

• **Endocrinology**
  Obligatory courses in internal medicine, courses on physical examination; additional teaching courses on endocrinology, differential diagnosis in internal medicine, clinical endocriology, and methods in endocrinology

• **Nephrology**
  Obligatory teaching in pathophysiology and clinical nephrology; courses on tissue engineering, dialysis, and renal pharmacology

• **Gastroenterology**
  Obligatory courses on Gastroenterology and Hepatology; interdisciplinary seminars on Gastroenterology and Oncology

• **Hematology and Oncology**
  Obligatory courses in Hematology, Hemostaseology and Oncology; interdisciplinary seminars in Hematology-Oncology and Pathology; multiple tumor boards

• **Special courses**
  Master class Internal Medicine for promotion of particularly talented students
II. Department of Medicine
Cardiology, Angiology, and Intensive Care Medicine

Emphases in Patient Care

- Coronary artery disease including 24/7 service for patients with acute coronary syndromes and complex coronary interventions
- All forms of Cardiomyopathy including management of advanced and end-stage heart failure
- Complete cardiac rhythm management including implantation of all available cardiac devices (loop recorders, pacemakers, defibrillators, and three chamber system) and ablation therapy of complex rhythm disorders using high-end mapping systems
- Valvular Heart Disease including all available diagnostic and therapeutic technologies (i.e. percutaneous valve replacement therapy for aortic valve stenosis, edge-to-edge repair of the mitral valve by MitraClip and interventional treatment of tricuspid regurgitation)
- Peripheral Artery Disease including percutaneous interventions in peripheral arteries as well as implantation of aortic stents in patients with acute aortic and chronic syndromes

- Large acute and intensive care medical section covering the whole spectrum of acute and intensive care medicine
- Special focuses:
  - Treatment of acute coronary syndromes (High volume center)
  - Complex coronary and Structural Cardiac interventions
  - Treatment of patients with complex rhythm disorders
  - Percutaneous treatment of Aortic and Mitral Valve Disease
  - Acute and critical care medicine interventional treatment of complex arrhythmias including ventricular tachycardias and atrial fibrillation

Additional Information/Services

- International fellowship program in Interventional Cardiology
- Large number of courses in the field of interventional cardiology with guests from around the world (ULICC Lübeck interventional cardiology course)
- Worldwide recognized center for treatment of cardiogenic shock and Percutaneous Valve treatment
- University hospital offering all stages of medical education
Division
Rhythmology

Emphases in Patient Care
- Catheter Ablation of Atrial Fibrillation via Cryo, Laser, or radiofrequency-energy
- Catheter Ablation of typical and atypical atrial flutter
- Diagnostic and Catheter Ablation of AV-node-reentry-tachycardia
- Diagnostic and Catheter Ablation of Wolf-Parkinson-White-Syndrome
- Catheter ablation of focal atrial tachycardias
- Catheter ablation of premature Ventricular Contractions and Ventricular tachycardia
- Epicardial approaches for catheter ablation procedures
- Medical treatment of Arrhythmias
- Individualized Stroke Prophylaxis via oral anticoagulation
- Minimal invasive occlusion of the left atrial appendages for stroke prophylaxis
- Implantation and programming of pacemaker and implantable cardiac defibrillator devices

- Implantation and programming of cardiac resynchronization therapy devices for heart failure patients
- Leadless pacemaker implantation
- Subcutaneous implantable cardiac defibrillator implantation
- Lead extractions
- Diagnostics of syncope via event recorder implantation

• Emphasis in Research
- Catheter ablation of Arrhythmias via modern technologies
- Evaluation of new techniques of arrhythmia treatment (rotor ablation, and multi-electrode mapping)
- Evaluation of epicardial left atrial appendage closure systems
- Cerebral protection during catheter ablation procedures

• Emphasis in Education
- European Heart Rhythm Association recognized training center
- German Cardiac Society recognized training center for rhythmology, invasive electrophysiology, and active rhythm-devices
- Additional Information/Services
- Implantable cardiac defibrillator devices support group
- Heart rhythm outpatient clinic

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Division of Rhythmology

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Campus Lübeck
III. Department of Medicine

Pulmonology

Emphases in Patient Care
- Respiratory and Lung Diseases
  Modern diagnostic with flexible and rigid Bronchoscopy and Endobronchial Ultrasound. Use of innovative interventional therapies such as laser ablation, stent implantation, small chamber endobronchial therapy (in collaboration with the Department of Radiology), and Photodynamic Therapy (PDT).
- Important and rare interventional therapy of tumors located in the esophagus. Participation in multi-center studies.
- Non-invasive ventilation therapy and sleep medicine.
- Competence center for lung infections. Participation in international treatment studies.
- Certified center for Clinical Infectiology, including HIV medicine.
- Respiratory Allergies: interdisciplinary allergy center of the university hospital.

Emphases in Research
- Localized immunity and prevention of pulmonary infections.
- Persistent Pulmonary Infections.
- Innate immunity of aspiration Pneumonia and sepsis.
- Infectious diseases of the respiratory system.
- Non-invasive monitoring of inflammation.

Emphases in Education
- Compulsory curriculum:
  Clinical examination course, core lecture and practical course on internal medicine, seminar on issues of internal medicine for students in the practical year, and compulsory elective “Diagnostics for Infectious Diseases, Clinical Infectious Diseases, Clinical Allergology”.
- Elective courses:
  Pneumonia radiology seminar, medicine in tropical countries, and problem-based learning.
Institute of Molecular Medicine

Emphases in Patient Care
- The Department of Molecular Medicine has no duties in patient care

Emphases in Research
- Biochemistry, Molecular Biology, and Pre-clinical application of nucleic acid-based drugs including antisense RNA and oligonucleotides, siRNA, miRNA, ribozymes, aptamers, and CpG-stimulating oligonucleotides
- Design and application of biologically active nucleic acid tools and drugs
- Cellular uptake of naked nucleic acids by mammalian cells
- Structure and function of nucleic acids in vivo and in cell culture
- Non-invasive diagnostic approaches based on extracellular nucleic acids in body fluids
- Emphases in education
- Lectures, seminars, and laboratory courses in the area of Molecular Biology, Biochemistry, and Molecular Medicine of Nucleic Acids
- Educational services performed within the faculties of medicine and technology
- Supervision of academic theses on the level of bachelor’s, master’s, PhD. and MD programs

Additional Information/Services
- Technology transfer and patents in the areas of nucleic acid-based drugs including antisense and siRNA, as well as novel innovative and non-invasive nucleic acid-based diagnostics

Universitätsklinikum Schleswig-Holstein
Institute of Molecular Medicine

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Department of Neurology

**Emphases in Patient Care**
- Cerebrovascular Diseases
- Movement Disorders
- Vertigo syndromes and Neuro-Ophthalmological Disease
- Tumor Diseases

**Emphases in Research**
- Genetics of movement disorders
- Cognitive Neurology (movement control, memory, pain, and visual awareness)
- Oculomotor networks and Vestibular System
- Biochemistry of Neuronal Networks
- Stroke (Rehabilitation and Sonographic Diagnostics)

**Emphases in Education**
- Lectures, practical courses, and bedside teaching in Clinical Neurology
- PBL (Problem-Based Learning)
- Seminars for doctoral students
- Involvement in bachelor’s and master’s courses of the Molecular Life Science curriculum and in the Graduate School for Computing in Medicine and Life Sciences at the University of Lübeck
Institute of Neuroradiology

Emphases in Research

• Imaging of Cerebrovascular Diseases
• Center of neurointerventional studies (participation in numerous Neuroradiological treatment trials for stroke and aneurysms)
• CT- and MR-imaging in Acute Stroke
• Diffusion-MRI in peripheral Nerve Diseases
• Experimental imaging in Neurooncology and Chronic Fatigue Syndrome
• Functional MR imaging in pain processing, movement disorders, and obesity
• Diabetes
• MR-Spectroscopy of the Brain (protons and phosphorus)

Additional Information/Services

• Special focuses:
  – Interventional Endovascular Neuroradiology including treatment of all Intracranial, Cervical, and Spinal Vasculopathies (Aneurysms, Familial, AV-malformations, Stenoses, Acute Endovascular stroke treatment)
  – Multimodal imaging of Cerebrovascular Diseases including advanced Vascular imaging
  – Multimodal imaging in Neurooncology, Dementia and Movement Disorders
  – Imaging of Peripheral Nerves

Emphases in Patient Care

• Head and Spine Imaging (MRI 3.0 Tesla and 1.5 Tesla, multislice-CT)
• Multimodal MR-Imaging including MR-Perfusion, MR-Angiography, 4D-MRA, MR-Spectroscopy, and functional MRI (B-MRI)
• Multimodal CT-Imaging including CT-Angiography, Perfusion-CT, 4D-CTA, and Multispectral Stroke-CT
• Diagnostic Angiography (biplane DSA with integrated 3D/4D and CT capabilities)
• Interventional Endovascular neuroradiology (comprehensive Supraregional Neurovascular Center)
• Image guided minimal invasive therapy of Spinal Pain Disorders
• MR-Neurography of the Peripheral Nerves/Plexus imaging
• Neuropediatric imaging

• Special focuses:
  – Interventional Endovascular Neuroradiology including treatment of all Intracranial, Cervical, and Spinal Vasculopathies (Aneurysms, Familial, AV-malformations, Stenoses, Acute Endovascular stroke treatment)
  – Multimodal imaging of Cerebrovascular Diseases including advanced Vascular imaging
  – Multimodal imaging in Neurooncology, Dementia and Movement Disorders
  – Imaging of Peripheral Nerves
Department of Neurosurgery

Emphases in Patient Care

• Treatment of Brain, Meningitis, and Spinal Cord Tumors
• Treatment of craniotomic and degenerative spinal disorders (fractures, herniated discs, and spinal canal stenosis)
• Treatment of vascular malformations (aneurysms and angiomas)
• Neurosurgical intensive care, functional Neurosurgery
• Neuropediatrics
• Peripheral Nerve Surgery

Emphases in Research

• Intraoperative imaging:
  - Optical coherence tomography and multi-photon fluorescence microscopy for intraoperative analysis of microscopic residual tumor tissue, intraoperative ultrasound and contrast agent kinetics
• Neuro-Navigation and Robotics:
  - Spinal robotics and navigation robotics

Emphases in Education

• Obligatory Courses:
  - Practical courses, operative, and non-operative general clinical examinations
• Elective Courses:
  - Master Medical Technology Part I: Applied Medical Technology in Tumor Surgery; Part II: Techniques in Molecular Neuro-oncology, interdisciplinary lecture series on pain, seminar series of the neurosurgical clinic, and exam preparation course

  - 2 hours per semester week of Biomedical Neuroscience on the Lübeck campus

  - “Biochemistry I” lecture for medical students, “Amino Acids and Proteins” segment, and proficiency certificate
  - “Molecular Biology” lecture for students of Molecular Life Sciences, “Cloning Vectors and Transcription” segment, and proficiency certificate

  - Student seminar on Ethics (Ethics in Medicine seminar series)

  - Integration into other subjects within the medical technology program via joint courses Participation in lectures at the Graduate School for Computing in Medicine and Life Sciences at the University of Lübeck

  - Nursing and Pediatric Nursing training and specialist training in anesthesia and intensive care

Additional Information/Services

• Molecular Biology laboratory with research on Neuro-Oncology and Neuro-Regeneration using adult neural progenitor cells
• Medical technical development with the Department of Robotics and proprietary development Lübeck
Institute of Nutritional Medicine

Emphases in Patient Care
- Nutritional therapy in:
  - Oncology
  - Inflammation Medicine
  - Metabolic Medicine
  - GI-Disorders
- Personalised Nutrition
- Pharmacovitaminisation
- Clinical Trials
- Special focus:
  - Nutritional needs in Cachexia and Malnutrition
  - Non Alcoholic Fatty Liver Disease (NAFLD)
  - Lipid metabolism (Hypercholesterinemia)
  - Inflammatory Bowel Diseases and Celiac Disease
  - Irritable Bowel Syndrome and Food intolerance
  - Small Intestinal Bowel overgrowth (SIBO)
- Food-Drug Interaction

Emphases in Research
- Metabolic Inflammation and Immunometabolism
- Fatty Liver Disease
- Gut Microbiome and Intestinal Inflammation
- Inflammation and Cancer Development
- Mitochondrial Diseases
- Molecular Nutrition
- Biomarker Research
- Therapeutic Antibodies
- Translation in Metabolic and Nutritional Medicine

Additional information
- Bachelor and Master Study Program “Nutritional Medicine”
- Interdisciplinary Gastroenterology at the Comprehensive Center of Inflammation Medicine, Lübeck
- Diagnostic and Therapeutic Endoscopy
- Compound Screening Platform
- Consultancy in Metabolic and Nutritional Medicine
Department of Ophthalmology

Emphases in Patient Care
- Diagnosis and treatment of Retinal and Vitreous diseases, especially age-related macular degeneration, diabetic retinopathy, neovascular pathologies, inflammation, and genetic diseases
- Laser medicine issues, particularly photodynamic therapy, and laser diagnostics
- Diagnosis and treatment of Glaucomatous Diseases
- Diagnosis and treatment of diseases of the Ocular Surface (Conjunctiva and Cornea)
- Diagnosis and treatment of malignant melanoma of the choroid
- Refractive Lens surgery
- Cornea and Amniotic Membrane Transplantation
- Diagnosis and treatment of "dry eyes" (Sjögren Syndrome consultations)
- Minimally invasive surgery of the anterior and posterior eye segments (e.g. Microincision Cataract Surgery and 23-G pars Plana Vitrectomy)
- Lid and Tear Duct Surgery
- Outpatient surgery
- Pediatric Ophthalmology
- Orthoptics
- Ambulances for the visually impaired
- Stereotactic Radiosurgery
- Argus II Retinal Prostheses System
- Laser Cataract Surgery
- Microincision Glaucoma-Surgery with Microstents
- Uveal Melanoma diagnostics and treatment

Emphases in Research
- Clinical studies in the aforementioned areas of expertise
- Pathophysiology of age related macular degeneration
- Experimental Ophthalmology and basic research for the further development of surgical techniques, especially for those used in retinal and vitreous surgery
- Evaluation of imaging techniques in Ophthalmology, optical coherence tomography of the anterior and posterior eye segments
- Diagnosis of Vitreoretinal Diseases (angiography and genetics)
- Toxicity testing in in vitro and ex vivo models for intracellular medications
- Experimental inhibition of wound healing mechanisms in the eye
- Laser medicine issues, including development of equipment
- Extracellular Matrix and Cell Biology

Emphases in Education
- Core lecture on Ophthalmology (graduated certification)
- Practical course on Ophthalmology
- Examination course
- Several individual lectures offered by our professors
- Course on Microsurgery
- Master’s degree in Medical Technology (technical school)

Additional Information/Services
- Reference center for Microincision Cataract Surgery
Emphases in Patient Care

- Minimally invasive joint replacements
- Revision arthroplasty of all joints
- Spine and Disc Surgery
- Tumor Orthopedics
- Pediatric Orthopedics
- Arthroscopic shoulder reconstruction
- Correction of limb deformities
- Foot surgery
- Sports Orthopedics
- Rheumatoid Arthritis
- Special focuses:
  - Joint preserving osteotomies
  - Minimally invasive spine surgery
  - Septic revision arthroplasty
  - Bone Metastases
  - Clubfoot

Emphases in Research

- Cartilage repair
- Biomechanics of shoulder arthroplasty
- Ehlers-Danlos Syndrome
- Clinical studies

Additional Information/Services

- Interdisciplinary back pain pathway
- Shock-wave treatment
- Orthodontics
- Sports Medicine
- Special outpatient consultations
- Back pain and spine surgery
- Tumor and metastases
- Pediatric Orthopedics
- Shoulder reconstruction
- Hip and Knee reconstruction
- Ehlers-Danlos Syndrome
Department of Orthopdics and Trauma Surgery: Division of Trauma Surgery

Emphases in Patient Care
- Full spectrum of Trauma and Orthopedic Surgery
- Acute and reconstructive surgery with state of the art diagnostic and therapeutic methods
- The Department of Trauma Surgery currently has 61 beds, as well as several intensive care beds
- Care provided for 2,000 inpatient and 10,000 outpatient visitors per year
- Acute Traumatology, including polytrauma care and comprehensive treatment of severe injuries
  • Fracture treatment of the extremities using the latest care systems, such as angle plates and inter- medullary nails
  • Treatment of complex spinal and pelvic fractures
- Endoprosthesis for Shoulder, Elbow, Knee, and Hip
- Minimally invasive procedures, for example minimally invasive hip replacements
- Arthroscopic joint surgery on Shoulder, Elbow, Wrist, Hip, Knee, Joint and Ankle
- Surgical and conservative treatment of tendon injuries of the Shoulder (Rotator Cup), Elbow (Biceps tendon), Knee (Cruciate, Patellar, and Quadriceps ligaments) and Achilles Tendon
- Stabilization of non-healing bone fractures (nonunion revision)
- Joint stiffness due to post-traumatic wear
- Treatment of bone and joint infections
- Close cooperation with Physiotherapists
- Geriatric Trauma network for optimal care of elderly patients

Emphases in Research
- Biomechanical studies of prosthetics
- Minimally invasive arthroplasty
- Biomechanical studies of the foot
- Resonance measurements of hip replacements for relaxation diagnostics
- Navigation in the field of Arthroplasty
- Stem cell research

Emphases in Education
- Compulsory courses:
  - Trauma surgery section of the core surgery lecture, participation in physical examination courses, emergency medicine courses, surgical practical training courses, and lectures in the Department of Anatomy and Department of Orthopedics
- Elective courses:
  - Specialized traumatological rounds, trauma surgery polyclinic, and international teaching center for minimally invasive hip arthroplasty (MIS/DAA courses in Lübeck with anatomical specimens)
Institute of Pathology

Emphases in Patient Care
- Complete spectrum of Surgical Pathology
- Immunohistological diagnostics for neoplastic and Non-Neoplastic diseases
- Molecular Pathology with focus on malignant tumors
- Consultation and Reference Center for Uropathology
- Consultation and Reference Center for Neoplastic and Non-Neoplastic Lung Diseases
Department of Pediatric and Adolescent Medicine

Emphases in Patient Care
• General Pediatrics: standard and comprehensive care (only Department of Pediatrics in the region)
• Perinatal Center, premature and newborn medicine
• Pediatric Intensive Care
• Perinatologically intensive care (pediatric, neurological, plastic surgery, ENT, dental, ophthalmology, orthopedics, etc.)
• Burn Unit (together with the Department of Pediatric Surgery and Department of Plastic Surgery)
• Infectology
• Endocrinology and diabetes
• Blood, Cancer, Immune, and Rheumatic diseases
• Lung Diseases and allergies
• Neuropediatrics
• Epiology therapy, including ketogenic diet and vagus nerve stimulation Social pediatrics, and social pediatric center
• Psychosomatics and psychotherapy
• Kidney disease and Malformations (together with the Department of Pediatric Surgery)
• Gastro-intestinal diseases (parenteral nutrition and short bowel syndrome)
• Congenital Syndromes and Malformations (together with the Department of Prenatal Medicine and Department of Human Genetics)
• Radiology and Ultrasound
• Psychosocial services
• Educational programs for children and parents: obesity, asthma, diabetes, and epilepsy

Emphases in Research
• Mode of action of steroid hormones
• Genetic causes for diseases in premature births
• Surfactant function and dysfunction in breathing problems
• Respiratory failure and Pulmonary Hypertension
• Immune functions and childhood infections
• Impact of chronic illness and disability in childhood and adolescence on quality of life, family functioning, psychosocial adaptation, and participation

Emphases in Education
• Compulsory courses: practical training course
• Elective courses: Endocrinology, Pediatric Endocrinology, Diabetology and Intersex seminars, Neonatal disease seminar and lecture, Neonatologists, and Social Pediatrics developmental neurology seminars
• Participation in doctoral seminars and tutoring programs
• Examination course and instruction for students during the practical year
• Regular advanced training events within the hospital
• Training programs: obesity, asthma, diabetes (mobile team for the whole of Schleswig-Holstein), and epilepsy
• Simulation center

Additional Information/Services
• Home parenteral nutrition for children
• Palliative care of seriously ill children
• Control infusion and Cytoxan preparation
• Psychosocial care and supervision service
• Social Pediatrics center
Department of Pediatric and Adolescent Medicine: Division of Pediatric Pulmonology and Allergy

Emphases in Patient Care
• Asthma
• Allergic Rhinitis
• Bronchiectasis
• Cystic Fibrosis
• Food Allergy
• Atopic Dermatitis
• Primary Giliary Dyskinesia
• Tuberculosis
• Congenital Pulmonary Malformation (Bronchopulmonary Cyst and CCAM)
• Follow-up care of preterm infants with Broncho-Pulmonary Dysplasia (BPD)
• Follow-up care of children with Tracheomalacia (i.e. after esophageal atresia)
• Rare Lung Diseases
• Modern diagnostic with Video-Microscopy for Ciliary Disorders
• Non-invasive ventilation therapy

Emphases in Research
• Early origins of allergic and asthmatic diseases
• Translational Research of Molecular Events
• Clinical Trials
• Training and Education

Emphases in Education
• Clinical examination course, core lecture, seminar and practical course on pediatric pulmonology, and allergy
• Elective courses: Practical skills in Pediatric Pulmonology and Allergy
• Modern diagnostic with Video-Microscopy for Ciliary Disorders
• Translational Research of Molecular Events
• Clinical Trials
• Training and Education
• Elective courses: Practical skills in Pediatric Pulmonology and Allergy

Additional Information/Services
• Member of the Airway Research Center North (ARCN), and Member of the German Lung Research Center (DZL)
• Certified Center for Cystic Fibrosis
• For further information: www.uksh.de/kinderpneumologie/
Emphases in Patient Care

- Differences of Sex Development (DSD)
  - Genetics
  - Clinical Management
  - Surgery
- Disorders of Puberty
- Congenital Adrenal Hyperplasia
- Disorders of Growth
- Disorders of Mineral Metabolism
  - Hypophosphatemic Rickets
  - Pseudohypoparathyroidism
- Diabetes in Children and Adolescents
- Specialised laboratory for endocrine conditions in childhood

Emphasis in Interdisciplinary Care

- Accredited as European Centre of Reference in the European Reference Network
- Part of the "Hormone Centre North"

Emphases in Research

- Clinical Care in DSD
- Translational Research of Molecular Events
- Training and Education
- Ethics
- Laboratory Medicine in Endocrine Conditions

Department of Pediatric and Adolescent Medicine: Division of Pediatric Endocrinology and Diabetes
Department of Pediatric Surgery

Emphases in Patient Care

- Diagnosis and treatment of congenital malformation of the Abdominal Wall, intestines, Diaphragm, and Bladder
- Pectus Excavatum (funnel-chest) surgery
- Minimally-invasive chest and abdominal surgery
- Burns and Pediatric Plastic Surgery
- Pediatric Urology
- Abdominal Surgery
- Thoracic Surgery
- Pediatric Oncology
- Outpatient surgery and Endoscopy (Phimosis and Cryptorchidism)

Emphases in Research

- Ultrasound diagnosis of fractures in children

Emphases in Education

- Surgery core lecture, surgery practical course, clinical internship, and practical year
- Elective courses: Pediatric Surgery, Pediatric Traumatology, Pediatric Urology, and Global Health
Department of Plastic and Hand Surgery/Burn Intensive Care

Emphases in Patient Care
- Reconstructive surgery after trauma, tumor, and infection
- Microsurgery, nerve surgery, and replantation surgery
- Hand surgery (injuries, degenerative disorders, and birth defects)
- Aesthetic Surgery
- Acute treatment of severe burn casualties in our own burn intensive care unit, including post-burn care and reconstruction

Emphases in Research
- Treatment of Burns
- Angiogenesis in ischemic tissue
- Dupuytren’s Disease
- Infections of the hand
- Connective tissue research
- Nerve regeneration and modulation in Peripheral Nerves and Central Nervous System
- Monitoring of Biochemical and Microcirculatory changes in free micro-vascular flaps by micro-diaysis technique

Emphases in Education
- Lectures on plastic surgery as part of the main lecture series on surgery
- Individual student rotation program
- Bedside teaching
- Instruction of students during the practical training year
- Compulsory elective course (Wahlpflicht) in Plastic Surgery
- Problem-Based Learning (PBL) tutorial on clinical environmental medicine
- Instruction at the university Nursing School
- Lectures in Plastic Surgery at the Lübeck campus
- Molecular Life Science (Bachelor’s and Master’s, UzL)

Additional Information/Services
- Microsurgery course for students
Department of Radiology and Nuclear Medicine

Emphases in Patient Care
- Non-invasive Cardiac Imaging (Cardiac MRI and Cardiac CT)
- Non-invasive Vascular Imaging (MR Angiography and CT Angiography)
- Minimally-invasive image-guided vascular interventions including aortic stenting
- Detection and characterization of tumors and metastases with US, CT, and MRI
- Interventional treatment of tumors and metastases: embolization, Radiofrequency, Selective Internal Radiotherapy (SIRT)
- Musculoskeletal Imaging including trauma, sports medicine, and rheumatology
- Pediatric Radiology
- Nuclear Medicine (SPECT-CT, PET-CT)
- Imaging and treatment of thyroid diseases
- Special focuses:
  - High-end CT and MRI examination to replace invasive diagnostic procedures
  - Minimally invasive techniques to reduce risks, hospital stays, and costs
  - Reduce radiation exposure for patient safety
  - Active quality management to avoid complications and hazards

Emphases in Research
- Cardiovascular imaging
- Interventional Radiology
- Oncologic Imaging
- Magnetic Particle Imaging

Additional Information/Services
- Interdisciplinary tumor boards for all types of cancer
- Breast imaging including Tomosynthesis and MR Mammography
Department of Radiation Oncology

Emphases in Patient Care
The Department of Radiation Oncology in Lübeck treats about 1,200 cancer patients per year. The in-patient section has 13 beds, where various combinations of systemic treatment (chemotherapies and novel targeted therapies) and radiotherapy are administered. Two modern linear accelerators are available including cone-beam CT, ExacTrac positioning system, and respiratory gating. Several types of radiation therapy are provided such as 3D-conformal radiotherapy, Intensity-Modulated Radiotherapy (IMRT), Volumetric Modulated Arc Therapy (VMAT), Image-Guided Radiotherapy (IGRT), Radiosurgery, Fractionated Stereotactic Radiotherapy (SIBRT) and Stereotactic Body Radiation Therapy (SBRT). This equipment allows high-quality treatment of all cancer types. In addition, a modern HDR-brachytherapy unit is available, mainly for prostate cancer, gynecological malignancies, head- and-neck cancer, breast cancer, sarcomas and recurrent tumors.

The department emphasizes personalized care for each individual patient. As part of a large university cancer center, it takes part in 10 multidisciplinary tumor boards each week and works closely with several other Oncologic Departments.

Emphases in Research
The Department of Radiation Oncology in Lübeck is very active in clinical research. It leads and participates in a large number of national and international studies of various cancer types including Head-and-Neck Cancer, Lung Cancer, Breast Cancer, and Metastatic Disease. Scientists within this department publish more than 30 peer-reviewed scientific papers per year. The department has an international network and closely collaborates with leading institutions in Europe, USA, Canada, and Vietnam.

Emphases in Research
The Department of Radiation Oncology in Lübeck regularly provides teaching and training for medical students, as well as for students of other medical professions including nursing staff members, radiation therapy technologists, medical engineers, and medical physicists. This includes supervision of doctoral, master, and bachelor theses.

Additional Information/Services
Since 2013, the Department of Radiation Oncology in Lübeck is ranked among the very top radiotherapy in Germany (Focus-Ranking). One unique characteristic of the department is that patients requiring palliative support are cared for by a specialized multi-disciplinary Palliative Radiation Oncology (PRO) team.
Department of Rheumatology and Clinical Immunology

Emphases in Patient Care
- Connective tissue diseases
- All Vasculitis entities
- Auto-inflammatory Syndromes
- Metabolic and Joint Disorders
- Systemic Inflammatory Diseases
- Differential diagnosis of rheumatic and other diseases
- Innovative medical therapies
- Special focuses and expertise
- Systemic Sclerosis with experience in treating more than 1200 patients
- ANCA-associated vasculitides: Granulomatosis with polyangiitis and microscopic polyangiitis
- Eosinophilic Granulomatosis with polyangiitis
- Systemic Lupus Erythematosus
- Myositis and related syndromes
- Interstitial lung disease and other lung manifestations (e.g. Pulmonary Arterial Hypertension, PAH) of inflammatory systemic autoimmune diseases
- Digital ulcer treatment
- Giant cell arteritis

Emphases in Research
- Low-dose IL-2 therapy in systemic lupus erythematosus
- Regulatory antibodies targeting G protein-coupled receptors
- Pathogenesis of granulomatosis with polyangiitis and giant cell vasculitis
- Animal models for interstitial lung disease, systemic sclerosis, and PAH
- Clinical studies on AAV/GPA, GCA, SLE and systemic sclerosis

Emphases in Education
- National Reference Center for Systemic Sclerosis
- Vasculitis Center
- Local reference center for severe rheumatic diseases
- Lectures in Rheumatology and Clinical Immunology

Additional Information/Services
- German and European Systemic Sclerosis Network and Registry (EUSTAR and DNSS center)
- Center of the German Trinational Vasculitis Registry (GvAas)
- Center for research on antibodies directed against G protein-coupled receptors
Institute of Social Medicine

Emphases in Patient Care

• Only indirectly involved in patient care
• Contributes to the betterment of patient care in the following areas:
  - Development of guidelines or care pathways, e.g. Chronic Inflammatory Bowel Disease, Allergy Prevention, Rehabilitation of patients with Type 2 Diabetes Mellitus, and Arthritic Diseases
  - Epidemiology and treatment of malignant diseases (c.f. Schleswig-Holstein cancer registry)
  - Quality assured mammogram diagnostics (QuaMa-Di) (c.f. Schleswig-Holstein cancer registry)
  - Rehabilitation quality association: quality assurance initiative in cooperation with numerous medical rehabilitation facilities in Schleswig-Holstein
  - Stroke care quality association
  - Health technology assessment: creation of reports to evaluate medical technologies

Emphases in Research

• Clinical, population-related and health care epidemiology of rheumatic and musculoskeletal diseases, oncological diseases, and gastroenterological or metabolic diseases
• Healthcare research with emphasis on rehabilitation research and prioritizing in medicine
• Evidence-based medicine, guidelines and Health Technology Assessments (HTAs)
• Ethics and history of clinical research
• Methods of clinical epidemiology and healthcare research
• Nursing research

Emphases in Education

• Compulsory curriculum: course on evidence-based and social medicine, involvement in problem-based learning, Introduction to Clinical Medicine for lower semesters
• Elective courses
  - Clinical Rehabilitation, central doctoral seminar of the medical faculty, “The search for the Scientific Basis of Medicine” seminar (together with the Institute of Medical History and Science Research)
  - Epidemiology I and II for medical informatics, “Introduction to Health Technology Assessments” seminar for students of biomedical engineering; Pharmacoepidemiology for pharmacists at the Christian-Albrechts University of Kiel, courses in the subject “Consumer Health Care” at Humboldt-University in Berlin; social medicine and rehabilitation basic courses I and II at the Academy for Social Medicine in Berlin (to acquire the additional title of Social Medicine and Rehabilitation)

Additional Information/Services

• Expert conference NVRF eV/DRV North: “Rehab Requirements and Rehab Prognosis: New Developments” (Lübeck, 01.03./02.03.2007)
• "The Good Doctor" conference with the Medical Association and Statutory Health Insurance Association of Schleswig-Holstein (Breklum, 09./10.03.2007)
• 2nd German Joint Allergy Congress, (Lübeck, 23. – 26.09.2007)
• Symposium: “Rehabilitation and Reintegration – the Rehabilitant in Focus” (Lübeck, 19.11.2007)
• International Symposium: “Advanced Nursing Practice” (Lübeck, 14.11.2008)
Department of Surgery

Emphases in Patient Care
- Entire spectrum of Oncologic Surgery
- Minimally invasive surgery (certified German Center of Excellence for Minimally Invasive Surgery, e.g. > 2,500 laparoscopic colectomies, laparoscopic esophagectomy, laparoscopic pancreas resection, laparoscopic liver surgery)
- Image-guided liver surgery (3D rendered, navigated liver surgery for cancer resection and laparoscopic liver resection in selected patients)
- Obesity surgery (Gastric Banding, Bypass, and Sleeve Resection)
- Thoracic Surgery (entire spectrum of thoracic surgery including Video Assisted Thoracic Surgery, VATS)
- Vascular Surgery (certified interdisciplinary centre for vascular and endovascular surgery)
- Endocrine Surgery (certified interdisciplinary centre for endocrine surgery, and special focus on Neuroendocrine Tumor (NET))
- Special surgery for chronic wounds

Emphases in Research
- Identification of blood and tissue based biomarkers for early diagnosis and prognosis of solid tumors by genome, transcriptome, and proteome analyses with particular emphasis on colorectal cancer and pancreas cancer
- Coordination of the “North German Tumorbank to analyze Colorectal Cancer for improved early diagnosis, therapy, surveillance, and prognosis” (funded by the German Cancer Foundation (DKFZ e.V.)
- Cancer Stem Cell (CSC) research for elucidating carcinogenesis and improving therapies
- Detecting and analyzing Circulating Tumor Cells (CTCs) in the blood for improved, minimal invasive diagnosis, and therapy monitoring
- High-throughput clinical validation of marker panels for early diagnosis based on protein chip technology and tissue microarrays; Coordination of the German Government (BMBF) funded Consortium "ColonCancerScreeningChip" and Workpackage leader for clinical validation of the EU-project FLUIDDIAMON
- Medical Engineering (development of navigated, tracked, motorized, and non-motorized instruments)
- One of five governmental funded (BMBF) regional centers for surgical clinical trials (ChirNET), conducting various regional, and nation-wide clinical studies

Emphases in Education
- Surgery core lecture
- Surgical basic skills course for students
- Basic skills course for minimally invasive surgery (laparoscopic skills OP 50)
- Regular student seminars for laboratory research techniques and Journal Club
- Supplementary seminar for final year students
- Regular educational courses for minimally invasive surgery for external surgeons
- Continuous tutorships in various national and international educational hands-on courses (e.g. Minimally invasive colorectal surgery, European Surgical Institute (ESI); Visceral Surgery, Warnemünde; Summerschool; DGAV – Deutsche Gesellschaft für Allgemein- und Visceralchirurgie
- Thesis-exchange program for medical students and PhD students between the Department of Surgery, Lübeck Campus, University Clinic Schleswig-Holstein, National Cancer Institute (NIH, Bethesda, MD, USA), the Karolinska Institute (Stockholm, Sweden) and Harvard Medical School, Boston, USA
Department of Surgery

Additional Information/Services

- Reference center for Pancreatic surgery (DGAV, Dkg)
- National center of excellence for minimal-nurse surgery (DGAV - Cancer)
- Certified vascular center of the German Society for Vascular Surgery (DGG)
- Certified center of the German Cancer Society for Endocrine surgery (Dkg)
- Certified center of the German Society for Thoracic Surgery (Dkg)
- Consultation center of the German Incontinence Association
- Collaboration with referring doctors and clinics in pre and post inpatient care
Institute of Systemic Inflammation Research (ISEF)

Emphases in Patient Care
- The ISEF has no duties in patient care

Emphases in Research
- Immunology
- Cross-talk between innate and adaptive immune responses and its impact on the development, maintenance and resolution of autoimmunity, allergy, and infection.
- The ISEF is integrated in and largely contributes to one of the university’s main research foci, i.e. “Inflammation and Infection”, as documented by: (i) the direction of the DFG-funded International Research Training Group 1911 “Immunoregulation of Inflammation in Allergy and Infection”; (ii) several ongoing projects in the Excellence Cluster EXC 306 “Inflammation@Interfaces”; (iii) the Research Training Group 1727 “Modulation of Autoimmunity”; and (iv) the Clinical Research Unit 303 “Pemphigoid Diseases”. Prof. Köhl is head of the executive board of the Center for Infectious Diseases and Inflammatory Medicine Lübeck (Z.I.E.L.).

Emphases in Education
- Medical Microbiology, Hygiene and Immunology practical training courses for medical students
- Infectiology and Immunology interdisciplinary courses
- Lecture and seminar series for master’s students within the study programs “Molecular Life Sciences” and “Infection Biology” covering basic principles of Immunology.

Additional Information/Services
The ISEF hosts the technology platform “Cell Analysis Core” (CAAnaCore) of the University of Lübeck comprising a 5-laser BD Aria III high-end cell sorter, a MoFlo Legacy cell sorter, the 4-laser BD LSRII high-end flow cytometer, and a confocal laser scanning microscope (Olympus Fluoview1000 with 4 lasers and 2 scanners).

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Universitätsklinikum Schleswig-Holstein
Institute of Systemic Inflammation Research (ISEF)
Director
Prof. Dr. Jörg Köhl

Emphases in Education
- Medical Microbiology, Hygiene and Immunology practical training courses for medical students
- Infectiology and Immunology interdisciplinary courses
Department of Urology

Emphases in Patient Care
• Prostate, Penile, and Bladder Cancer
• Gonadal tumors, tumors of the kidney and ureter
• Stones of the urogenital tract
• Urogenital infections
• Certified Center for treatment of Incontinence
• Minimal invasive surgery
• Andrology
• Infertility
• Benign prostate syndrome
• Urogenital malformations
• Entire spectrum of open and endoscopic operations in urology
• Laser ablations, photodynamic diagnostic, and therapy for bladder carcinoma
• Laser ablation for therapy of prostate adenoma or carcinoma, and removal of urogenital tract stones
• Laparoscopic operations for oncologic and non-oncologic diseases
• Systemic and topic immunotherapy (BCG and vaccine)

• Microwave and radiofrequency ablations for benign and malignant diseases of the kidney and prostate
• Chemotherapy
• HDR-Brachytherapy

Emphases in Research
• Laparoscopic operations, 4K-Imaging, and single-port-operations
• Laserablation of the Prostate
• Clinical trials in Urologic Oncology
• Immuno Oncology therapy of Urologic Carcinoma
• Mechanism of BCG-therapy in non-muscle invasive bladder carcinoma
• Mechanism of systemic chemotherapy
• Basic research on castration resistant prostate cancer (mCRPC)
• Molecular mechanism in infection of the urinary tract and vaccine therapy
• New molecular therapy
• New molecular diagnostics of bladder carcinoma
• Identification of prognostic parameters for bladder and kidney carcinoma

Emphases in Education
• Compulsory Courses: core lecture in Urology, practical course in Urology, and clinical rounds
• Elective Courses: Infectiology in Urology, scientific, and clinical information events
• Guidance for scientific researchers, in laser use in Urology, Andrology, Pharmacologic Clinical Colloquium, and lectures for registered Urologists
Institute of Clinical Chemistry

Emphases in Patient Care
• Clinical Chemistry
• Protein Chemistry
• Hematology
• Hemostaseology
• Endocrinology
• Immunology
• Therapeutic Drug Monitoring
• Point-of-Care Testing (POCT)
• More than 2,000 laboratory tests available
• Inpatient and outpatient care

Emphases in Education
• "Laboratory medicine" course, as well as clinically-orientated internships, and seminars covering all aspects of clinical chemistry for medical students
• Training of medical specialists and scientists

Additional Information/Services
• Experts in hemostaseological diagnostics and treatment
• Experts in Neuroimmunology
• Accredited according to DIN EN ISO 15189
• Approximately 14 million analyses per year

Contact
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Email: international@uksh.de
www.uksh.de/international_department/en
Central Unit State Medical Analysis Laboratory/Department for Hospital and Environmental Hygiene

Emphases in Patient Care
• Full spectrum of diagnostics in hospital and environmental hygiene
• Accredited laboratories according to DIN ISO EN 17025
• Clinical advice for hospital hygiene
• Infection control of outbreaks
• Environmental hygiene, water, and air

Emphases in Research
• Disinfectants and disinfection procedures
• Fungi and organic compounds in room air
• Trihalomethane in swimming pool water
• Bacterial diversity in drinking and bathing water

Emphases in Education
• Full specialization training in hygiene and environmental medicine
• Training of medical and nursing staff
• Officially recognized laboratory for drinking water tests
• Test laboratory for bathing and swimming pool water
• Testing of disinfectants and disinfection procedures
• Advice in technical and construction hygiene
• Medical analysis office of the state of Schleswig-Holstein
• Service function for the communal health administrations
• Infection control service for external hospitals

Additional Information/Services
• Officially recognized laboratory for drinking water tests
• Test laboratory for bathing and swimming pool water
• Testing of disinfectants and disinfection procedures
• Advice in technical and construction hygiene
• Medical analysis office of the state of Schleswig-Holstein
• Service function for the communal health administrations
• Infection control service for external hospitals
Institute of Human Genetics

Emphases in Education

- For medical students: Organization of the obligate classes of "Human Genetics" (practical course/lecture/role). Participation in classes, "Biology of the Cell" (practical course, lecture), "Methods of Scientific Work" and interdisciplinary lecture series "Current Questions of Medical Ethics"; Practical training year for last-year students

- Scientific Work and interdisciplinary lecture series "Current Questions of Medical Ethics"; Practical training year for last-year students

Emphases in Patient Care

- Cytogenetic, Molecular Cytogenetic and Molecular Genetic Diagnostics
  - Molecular genetic analyses of monogenic and multifactorial disorders
  - Whole Exome and Genome Sequencing
  - Analyses of Constitutional Chromosome Aberrations (Prenatal and Postnatal)
  - Analyses of tumor-associated chromosomal aberrations including reference diagnostics for clinical trials
  - Molecular Cytogenetic (e.g. FISH) and array-based analyses (Array-CGH) of constitutional chromosomal aberrations
  - Diagnosis of disorders caused by epigenetic changes (e.g. imprinting defects)

Clinical genetics and genetic counseling for:
- All types of Hereditary Disorders (Monogenic, Multifactorial, and Epigenetic)
- Diagnosis of Malformation and Retardation Syndromes
- Predictive Genetic testing
- Hereditary Cancer Syndromes
- High risk pregnancies (prenatal genetic)
- Infertility and recurrent miscarriage

Emphases in Research

- Identification non-coding mutations and structural variants as the cause of human disease
- Identification of new candidate genes and epigenetic changes linked to human disease
- Pathophysiological role and clinical relevance of genetic and epigenetic abnormalities in Hematopoietic (Leukemia, Lymphomas) and solid tumors
- Imprinting disorders and syndromes caused by chromosomal (micro)aberrations
- Development of new technologies for genetic and epigenetic research and diagnostics
- Development of single cell technologies

Institute of Human Genetics

- Cytogenetic, Molecular Cytogenetic and Molecular Genetic Diagnostics
  - Molecular genetic analyses of monogenic and multifactorial disorders
  - Whole Exome and Genome Sequencing
  - Analyses of Constitutional Chromosome Aberrations (Prenatal and Postnatal)
  - Analyses of tumor-associated chromosomal aberrations including reference diagnostics for clinical trials
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- Predictive Genetic testing
- Hereditary Cancer Syndromes
- High risk pregnancies (prenatal genetic)
- Infertility and recurrent miscarriage
Institute of Transfusion Medicine

Emphases in Patient Care

• Supply of Blood Products for patients of the University Hospital: Red blood cell concentrates, platelet concentrates, and fresh frozen plasma
• Supply of Special Blood Products for Patients of the University Hospital: Irradiated blood products, HLA and HPA-selected platelets
• Blood transfusion laboratory: Blood grouping, antibody differentiation, cross-matching, hemolytic anemias
• Transplantation Laboratory: HLA typing, antibody differentiation, cross-matching, stem cell therapy, stem cell mobilization, and procurement
• TRALI Screening Laboratory: Transfusion-related acute lung injury (TRALI), and autoimmune thrombocytopenia
• Molecular Diagnostics: Blood groups, platelet and granulocyte antigens, and sequencing
• Perinatal Diagnostics: Hemolytic disease of the newborn, and neonatal alloimmune thrombocytopenia
• Bone Marrow Donor Registry
• Clinical Hemotherapy with 24-hour counseling

Emphases in Research

• Allimmune Thrombocytopenia of the newborn
• Mediators of TRALI Syndrome
• Transfusion-Transmitted Viruses
• Immune regulation by complement

Emphases in Education

• Blood cells, Rational hemotherapy, Transfusion reactions, Immune thrombocytopenia, TRALI syndrome, and Transfusion-transmitted diseases
Department of Physiotherapy (Occupational Therapy and Speech Therapy)

- Our physiotherapists work throughout the different faculties of the hospital and are specially trained in the various fields of medicine
- Physiotherapy must be prescribed and demanded by the attending doctor
- Daily consultations are conducted in a multi-professional team
- Physiotherapy assessments and developments of patient-oriented up to date plans follow the consultation

Areas of Work
- Early mobilization
- Enhancing respiratory functions, e.g. breathing and coughing
- Improvement of movement and muscle functions
- Rehabilitation of muscle strength, balance, and coordination
- Preservation and regaining activities of daily life
- Individual and group therapy in the center of integrative psychiatry

The Physiotherapists are Specially Qualified in the Following Therapies
- Manual therapy
- Manual lymphatic drainage
- Reflexive and holistic respiratory therapy
- Bobath therapy
- Brügger therapy
- Early mobilization on ICU
- Palliative Medicine
- Usage of Orthoses
- Group therapies, e.g. Qi Gong, Body Perception, Training Therapy, Circuits, and Nordic Walking

Emphasis in Research
- Early mobilization on ICU
- Respiratory therapy on ICU
- Weaning Station
- Geriatric Medicine
- Sports Therapy in juvenile oncological patients
- Mobilization and special care in Neurogerontology and stroke units
Wissen schafft Gesundheit