

construction of the F-D rod enables avoiding knee and/or ankle joint arthroscopy. Telescoping rods are intra-medullary implants which keep long bones straight and prevent fractures, one should consider intra-medullary rods as internal splints.

The orthopedic department offers top-performance diagnostics, the best techniques of surgery and individually adapted rehabilitation in a single, unique place in Croatia.

Techniques used at the St Catherine's Specialty Hospital are a la carte: a personalized approach is offered to each patient from the moment they enter the hospital until the moment they return to their normal life. All procedures are individually designed according to the patient's needs and condition.

Before and after surgery, assistance from physician specialists trained in radiology, physical medicine and rehabilitation, and other medical and surgical areas help speed recovery for our surgical patients.

In addition, our orthopedic surgeons team are engaged in clinical trials in area of musculoskeletal disease, offering our patients the most current options for diagnosis and treatment.

St. Catherine's Hospital is among a few European institutions that started with applications of adipose-derived mesenchymal stem cells (MSC) in clinical practice to treat cartilage defects. Besides that, St. Catherine's orthopedic team made, for the first time in the region, a new medical alternative: the meniscal transplant, an hour-long, outpatient, arthroscopic procedure that utilizes donor tissue to replace damaged meniscus, which can dramatically and substantially slow the onset of arthritis.

Orthopaedic clinic opening hours:

Zagreb: Monday, Wednesday, Thursday 11 am - 7 pm
Tuesday and Friday 8 am - 4 pm

Zabok: Monday - Friday 8 am - 4 pm



365
days of excellence



CENTER FOR ORTHOPEDIC SURGERY AND SPORTS MEDICINE

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 **St. Catherine**
SPECIALTY HOSPITAL



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CENTER FOR ORTHOPAEDIC SURGERY

St. Catherine's orthopedic surgeons are recognized nationally and internationally for their technical excellence and innovative abilities to solve both simple and complex orthopedic problems. By collaborating with scientists all around the world our orthopedic surgeons develop new solutions for patients that improve healing, speed rehabilitation and improve patient outcomes.

At St. Catherine's hospital, your team of orthopedic surgery experts uses the latest techniques and technology to improve care for people with musculoskeletal problems. From diagnosis through treatment, orthopedic surgeons are at the forefront of employing advanced technologies in the best interest of patients.

Our orthopedic surgeons can address and treat all disorders of the bones, joints, ligaments, tendons and muscles.

The surgeons at St. Catherine's hospital, specialize in the most advanced surgical orthopaedic procedures: from arthroscopy and the newest minimally invasive techniques, to total joint replacement. Their expertise and extensive experience translates into better results and fewer complications for our patients.

Orthopedic surgeons at St. Catherine have expertise in all areas of orthopedics, including:

- Joint replacement surgery
- Hand surgery
- Arthroscopy
- Anterior cruciate ligament reconstruction (ACL reconstruction)
- Shoulder surgery
- Ankle and foot surgery procedures
- Pediatric orthopedic surgery of complex musculoskeletal conditions including osteogenesis imperfecta
- Sports injuries
- Arthroscopic Meniscal Transplantation
- Regenerative Orthopedics and Tissue Engineering



ST. CATHERINE'S HOSPITAL IS "THE CENTER OF EXCELLENCE" FOR CARTILAGE DEFECT TREATMENT WITH MESENCHYMAL STEM CELLS

The Lipogems® technology, patented in 2010 and clinically available since 2013 (PCT/IB2011/052204), represent a new completely closed tool to harvest, wash, process, and reinject human (or animal) lipoaspirates. Briefly, the surgical procedure consists in two steps: the infiltration step, in which adrenalin, in a saline solution, and very diluted lidocaine are injected to induce vasoconstriction and local anesthesia, facilitating the subsequent lipoaspiration; the aspiration step, in which a standard liposuction technique is performed. In short, the Lipogems® technology is characterized by optimal handling ability and a great regenerative potential based on adipose-derived mesenchymal stem cells (MSC).

Lipogems® recently obtained FDA clearance. In this novel technology, the adipose tissue is washed, emulsified, and rinsed and adipose cluster dimensions gradually are reduced to about 0.3 to 0.8 mm. In the resulting Lipogems® product, pericytes are retained within an intact stromal vascular niche and are ready to interact with the recipient tissue after transplantation, thereby becoming mesenchymal stem cells (MSC) and starting the regenerative process

St. Catherine's orthopedic team:

Dr. Damir Hudetz, M.D., PhD, Orthopedic Surgeon,
Head of Orthopedic Department

Prof. Darko Antičević, M.D., PhD., Orthopedic Surgeon

Dr. Željko Jeleč, M.D., PhD, Orthopedic Surgeon

Dr. Eduard Rod, M.D., Orthopedic Surgeon

Dr. Andrej Radić, M.D., Orthopedic Surgeon, FEBOT

Dr. Trpimir Vrdoljak, M.D., Orthopedic Surgeon



ST. CATHERINE'S HOSPITAL IS "THE CENTER OF EXCELLENCE" FOR USE OF A CELL-FREE COLLAGEN TYPE I MATRIX (CARES-1S) FOR THE THERAPY OF LARGER CARTILAGE DEFECTS IN THE KNEE JOINTS

CaReS-1S matrix technology is a new approach in the therapy of cartilage defects. Matrix technology (includes) 99.8%, native collagen with osmotic properties that stimulate the ingrowth of cells into the implant. In addition, this technology helps migration of autologous cells from the surrounding tissue to the entire implant. Finally, migrated chondrocytes express collagen type II that is the typical substance for hyaline cartilage.

Indications for application of CaReS-1S are: focal, full-layer cartilage defects) ICRS classification 3 and 4), defects without and with involvement of subchondral bone, defect size up to 8 cm², patient age: 18-60 years, BMI <35, Osteochondritis dissecans.

ST. CATHERINE'S HOSPITAL IS "THE CENTER OF EXCELLENCE" FOR SURGICAL TREATMENT OF OSTEOGENESIS IMPERFECTA

Our orthopedic team has more than 25 years of experience in treating patients with OI and currently we perform more procedures than any other hospital in the region. Orthopedic i.e. surgical treatment of fractures and deformities of lower extremity long bones is a mainstay of lifelong management. Corrective surgery is crucial for ambulation due to the fact that bowed long bone soon will be fractured on the apex of bow. Among all other orthopedic procedure our team is using third generation of telescoping rods is Fassier-Duval (F-D) rod which has the advantage of percutaneous insertion with minimal soft tissue trauma. Specific

