

# **Minimally Invasive Surgery**

<b>RECOOP HST Research Activity Inventory</b>	
Please complete the template for each selected project your organization would like to share with the partners of the RECOOP HST Consortium and would like to invite other organizations to write FP7 or NIH proposals.	
<b>Organization</b>	Department of Orthopedics Medical School, University of Pécs
<b>Area of the Research</b>	Large joint grafts: hip prosthesis, knee prosthesis, minimal invasive surgical technique
<b>Title of the Research Activity</b>	Minimally Invasive Surgery
<b>Department (complete address)</b>	<b>Principal Investigator or Head of the Research Group</b>
Department of Orthopedics Medical School, University of Pécs, H-7643 Pécs, Ifjúság út 13, Hungary	Name: Prof. Dr. BELYEI, Árpád
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<b>Abstract</b>	Maximum 500 characters
<p><b>Research area</b> Development of large joint grafts <u>Hip joint endoprstheses:</u> The production, development, clinical trial and distribution of cemented, cementless and revisional hip prostheses in cooperation with Biotech Hungary, a multinational firm. Following the development of the complex system and acquisition of CE qualification, the process of trial has been started. Thirty-six cemented or cementless prostheses were implanted with a continuous assessment of the results, and, in seven cases, revisional surgery was performed. All this was carried out using minimal invasive surgical techniques. The Department functions as reference centre for Biotech. Demonstration of surgical procedures is carried out both for facilitating the distribution in institutions in this country and in the National Traumatology Institute in Zagreb.</p> <p>The development of a complex systematic technology for the production of cemented, cementless and revisional hip prostheses has been launched in cooperation with Sanatmetal Ltd. (Eger). Following the acquisition of the CE qualification for the cemented and cementless components, they were implanted in humans in seven cases altogether. Further development planned for this year includes the development of revisional hip prostheses, the acquisitions of CE qualification and the implantation into humans. All this is performed with minimal invasive surgical techniques.</p> <p><u>Total knee joint prostheses:</u> In cooperation with Biotech Hungary, a multinational firm, the development of total knee joint prostheses and, following the acquisition of CE, qualification for the implantation into humans has already been started. So far, surgical application has been used in seven cases with continuous assessment of the result.</p> <p><b>Human resources</b> physicians (3), assistants (2)</p> <p><b>Special instruments</b> Additionally, for the implantation of the grafts with special regard to the hip and knee joint prostheses, a set of instruments suitable for minimal invasive techniques has been developed.</p>	

<b>Products and services:</b> Complex system of hip prostheses (cemented, cementless and revisional), Reference Centre, training in surgical techniques offered both in institutions in Hungary and abroad.	
<b>Methods used</b>	Maximum 300 characters
<b>Related references (max 3)</b>	Indicate the impact factor of the cited reference
<b>Related Inventions Disclosures and Patents</b>	

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<b>Organization</b>	Department of Surgery (CRC) Medical School
<b>Area of the Research</b>	
<b>Title of the Research Activity</b>	Minimal invasive surgery, medical technology, biomechanics, biomedical engineering and medicines, OPRA – technique, new laparoscopic devices, haemostatics, vascular stapler
<b>Department (complete address)</b>	<b>Principal Investigator or Head of the Research Group</b>
Department of Surgery (CRC), Medical School, University of Pécs, H-7643 Pécs, Ifjúság u. 13, Hungary	Name: Prof. Dr. WÉBER, György
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<b>Abstract</b>	Maximum 500 characters
<p><b>Research area</b></p> <ol style="list-style-type: none"> <li>1 Development and clinical investigation of different minimal invasive surgical and vascular surgical interventions.</li> <li>2 Investigation of biomechanical features of the abdominal wall. Pathomechanism of incisional and groin hernia, therapeutic possibilities. Development and clinical investigation of silicone covered polypropylene mesh (patent pending).</li> <li>3 Evaluation of hemodynamic and morphological features of a vascular stenosis. Analysis of different diagnostical and therapeutic possibilities in vascular disease. Histological investigation of graft incorporation and endoluminal reconstruction.</li> <li>4 Complex rehabilitation of lower extremities amputees. Development and clinical introduction of OPRA – technique (Osseointegrated Protheses for the Rehabilitation of Amputees).</li> <li>5 Organize and conduct of multicenter, prospective, randomized studies</li> </ol> <p><b>Human resources</b> surgeons (3), residents (2), PhD students (3) and a lot of independent co-workers</p> <p><b>Special instruments</b> Possibilities to perform clinical investigations at the Department of Surgery, Faculty of General Medicine, University of Pécs, high tech laser technology in the South-Trans-Danubian Cooperative Research Centre of University of Pécs and technical support of Proszilomed Ltd.</p> <p><b>Products and services</b></p> <ul style="list-style-type: none"> <li>▪ Silicone-covered polypropylene mesh</li> <li>▪ Osseointegrated Protheses for the Rehabilitation of Amputees (OPRA – technique)</li> </ul>	

<ul style="list-style-type: none"> <li>▪ New laparoscopic devices (hemostatics, vascular stapler etc.)</li> </ul>	
<b>Methods used</b>	Maximum 300 characters
<b>Related references (max 3)</b>	Indicate the impact factor of the cited reference
<b>Related Inventions Disclosures and Patents</b>	Patent: Surgial net silicon laminating for surgery (applicants: inventors)